Town Council
Agenda - Final

Mayor Jason Gray
Mayor Pro Tem Kevin Bracken
Councilmember Ryan Hollingshead
Councilmember Laura Cavey
Councilmember Desiree Lefleur
Councilmember Max Brooks
Councilmember Tim Dietz

Tuesday, January 3, 2023 **6:00 PM**

Town Hall Council Chambers
100 North Wilcox Street
Castle Rock, CO 80104
Phone in: 720-650-7664
Meeting code: 2499 482 6922
www.CRgov.com/CouncilMeeting

This meeting is open to the public and will be held in a virtual format in accordance with the Town Council Electronic Participation, Connected, and Hybrid Meeting Policy. Public may choose to attend in person at Town Hall, or electronically or by phone if preferred. This meeting will be hosted online and can be accessed at www.CRgov.com/CouncilMeeting, or phone in by calling 720-650-7664, meeting code 2499 482 6922 (if prompted for a password enter "Jan3Council"). All Town Council Meetings are also streamed online in real time at www.CRgov.com/WatchCouncil, and are broadcast for Comcast Cable subscribers on Channel 22 (please note there is a delay to the broadcast).

All times indicated on the agenda are approximate. Remote participants please visit www.CRgov.com/CouncilComments to sign up to speak to an item, and for related instructions. Public Comments may also be submitted in writing online by 1:00 p.m. on January 3, 2023, to be included in the public record.

5:00 pm COUNCIL DINNER & INFORMAL DISCUSSION

6:00 pm INVOCATION - Jack Serr, Castlewood Canyon Church

- CALL TO ORDER / ROLL CALL

- PLEDGE OF ALLEGIANCE

- COUNCIL COMMENTS

- UNSCHEDULED PUBLIC APPEARANCES

Reserved for members of the public to make a presentation to Council on items or issues that are not scheduled on the agenda. As a general practice, the Council will not discuss/debate these items, nor will Council make any decisions on items presented during this time, rather will refer the items to staff for follow up.
Comments are limited to three (3) minutes per speaker. Time will be limited to 30 minutes. Residents will be given priority (in the order they signed up) to address Council, followed by non-residents representing Castle Rock businesses, then non-residents and businesses outside the Town of Castle Rock, as time permits.

- TOWN MANAGER'S REPORT

1. DIR 2023-001 **Discussion/Direction: Designations for Liaisons to Town Boards and Commissions and other agencies**

2. ID 2023-002 **Update: Calendar Reminders**

3. ID 2023-003 **Update: 2023 Community Survey Process**

4. ID 2023-004 **Update: Quasi-Judicial Projects**

5. ID 2023-005 **Development Services Project Updates**

- TOWN ATTORNEY'S REPORT

- ACCEPTANCE OF AGENDA

If there are no changes, additions or deletions to the agenda, a motion to accept the agenda as presented will be accepted.

- CONSENT CALENDAR

These items are generally routine in nature or have been previously reviewed by Town Council and will be voted on in a single motion without discussion. Any member of Town Council may remove an item from the Consent Calendar.

6. ORD 2022-032 **Ordinance Approving an Agricultural Lease Agreement Between the Town of Castle Rock and Sublette, Inc. (Second Reading - Approved on First Reading on December 20, 2022, by a vote 7-0)** *[Weld County, Colorado]*

7. MIN 2023-002 **Minutes: December 20, 2022 Town Council Meeting**

- ADVERTISED PUBLIC HEARINGS & DISCUSSION ACTION ITEMS

Public comment will be taken on items and limited to four (4) minutes per speaker. Remote participants please visit www.CRgov.com/CouncilComments to sign up to speak to an item, and for related instructions. Public Comments may also be submitted in writing online by 1:00 p.m. on January 3, 2023, to be included in the public record.

8. DIR 2023-002 **Discussion/Direction: Proposed Concept for Improvements to Crowfoot Valley Road Widening Project**

- QUASI JUDICIAL HEARINGS

This is the due process hearing as required under Colorado law. Public comments will be limited to four (4) minutes per speaker. Remote participants please visit www.CRgov.com/CouncilComments to sign up to speak to an item, and for related instructions. Public Comments may also be submitted in writing online by 1:00 p.m. on January 3, 2023, to be included in the public record.

9. DIR 2023-003 **Request to Continue Public Hearings for Ordinance Nos. 2023-001, 2023-002, and 2023-003 to the Town Council meeting scheduled for Tuesday, February 21, 2023, at 6:00 p.m (Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting)**

10. ORD 2023-001 **Ordinance Annexing to the Town of Castle Rock, Colorado, 409.008 Acres of Land Located in the South Half of Section 30 and the North Half of Section 31, Township 7 South, Range 66 West, and the Southeast Quarter of Section 25, Township 7 South, Range 67 West of the 6th Principal Meridian, Douglas County, Colorado, Pursuant to an Annexation Petition Submitted by Canyons South, LLC (First Reading) [Canyons Far South Annexation]** *[409 acres, located east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive]* - **Public Hearing To Be Continued to February 21, 2023**

11. ORD 2023-002 **Ordinance Approving the Initial Zoning for 409.008 Acres of Land Located in the South Half of Section 30 and the North Half of Section 31, Township 7 South, Range 66 West, and the Southeast Quarter of Section 25, Township 7 South, Range 67 West of the 6th Principal Meridian, Douglas County, Colorado, Pursuant to a Zoning Application Submitted by Canyons South, LLC (First Reading) [Canyons Far South Annexation]** *[409 acres, located east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive]* - **Public Hearing To Be Continued to February 21, 2023**

12. ORD 2023-003 **Ordinance Approving the Canyons Far South Development Agreement and Purchase Option Agreement; and Vesting a Site Specific Development Plan through December 31, 2037 (First Reading) - Public Hearing To Be Continued to February 21, 2023**

- ADDITIONAL UNSCHEDULED PUBLIC APPEARANCES

The Council has reserved this time only if the original 30 minutes allocated for Unscheduled Public Appearances as an earlier part of this agenda has been fully exhausted and speakers who signed up to speak were unable to be heard during the original 30 minutes allocated this topic. Residents will be given priority (in the order they signed up) to address Council, followed by non-residents representing Castle Rock businesses, then non-residents and businesses outside the Town of Castle Rock, as time permits.

- ADJOURN

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 1. **File #:** DIR 2023-001

To: Honorable Mayor and Members of Town Council

From: David L. Corliss, Town Manager

Discussion/Direction: Designations for Liaisons to Town Boards and Commissions and other agencies

Executive Summary

Below is a current list of the various boards, commissions, and other committees or agencies which a member of Town Council has represented or served as a liaison, and the meeting times. Where current Councilmembers have served on these boards such current designation is noted. At the January 3, 2023 meeting, Council will be asked to make appointments and designations of liaisons for these boards and commissions.

TOWN BOARDS AND COMMISSIONS		
Board of Adjustment Decides requests for zoning and sign variances and some appeals of administrative decisions *Meets: 1st Thursdays at 6 p.m., at Town Hall Council Liaison: Dietz Alternate: Hollingshead*	**Board of Building Appeals** Decides appeals of decisions made by the Chief Building Official *Meets: 1st Mondays of March, June, September, December at 6 p.m., or as needed, at Town Hall Council Liaison: Hollingshead Alternate: Dietz*	**Castle Rock Water Commission** Makes recommendations related to the master planning of Water capital improvements, rates and fee structures and other policies *Meets: 4th Wednesdays at 6 p.m., at Castle Rock Water Council Liaison: VACANT Alternate: Cavey*
Design Review Board Reviews development applications that require a Downtown site plan *Meets: 2nd and 4th Wednesdays at 6 p.m., at Town Hall Council Liaison: Cavey Alternate: LaFleur*	**Downtown Development Authority Board** Adopts and implements the plan of development for Downtown Castle Rock and works to facilitate economic development and redevelopment Downtown *Meets: 2nd Thursdays at 12 p.m., at Town Hall Council Liaison: Bracken (voting) Alternate: Hollingshead*	**Election Commission** Performs redistricting every 6 years and for newly annexed property. Adopts reasonable rules related to Town-conducted elections *Meets: As needed Council Liaison: Dietz*

Historic Preservation Board Designates historic structures as landmarks at the local level, reviews alterations/renovations to landmarked properties, and reviews construction requests in Craig and Gould to maintain the area's historic and cultural heritage *Meets: 1st Wednesdays at 6 p.m., at Town Hall Council Liaison: LaFleur Alternate: Hollingshead*	**Parks and Recreation Commission** Makes recommendations to Town Council regarding Parks and Recreation operations *Meets: 3rd Wednesdays at 5 p.m., at the Central Service Center Council Liaison: VACANT Alternate: Hollingshead*	**Planning Commission** Reviews development requests, zoning change requests, and other related land proposals *Meets: 2nd and 4th Thursdays at 6 p.m., at Town Hall Council Liaison: Gray Alternate: Dietz*
Public Art Commission Acquires art for public buildings and parks within the Town *Meets: 2nd Thursdays at 4 p.m., at the Central Service Center Council Liaison: VACANT Alternate: Dietz*	**Public Safety Commission** Advises Town Council and Town staff regarding levels of service, funding and other issues related to Town Fire and Rescue and Police operations *Meets: 1st Thursdays at 3 p.m., at Police Station Council Liaison: Cavey Alternate: Hollingshead*	**Public Works Commission** Makes recommendations related to the master planning of capital improvements and the development of the Town's infrastructure and transit *Meets: 1st Mondays at 5:30 p.m., Public Works Service Center Council Liaison: VACANT Alternate: Hollingshead*
Audit Committee Reviews results of the independent audit of Town financial statements that is required annually by State law and Town Charter *Meets: Bi-annually, as needed Town Hall Council Liaison: Gray Alternate: Bracken*	**Police Forfeiture Committee** Reviews and decides on expenditures of Castle Rock's Police resources resulting from assisting State or Federal agencies in seizures of illegal items *Meets: As needed Council Liaison: As needed*	**Water Resources Committee** Reviews and makes recommendations on major water infrastructure projects or complex water resource issues or agreements *Meets: 1st Tuesdays at 3:30 p.m., Town Hall Council Liaison: Bracken Alternate: VACANT*

CASTLE ROCK ORGANIZATIONS		
Castle Rock Economic Development Council Board Provides services to firms relocating to or expanding in Castle Rock *Meets: Quarterly on the 1st Thursday at 11:30 a.m. Council Liaison: Gray (voting) Alternate: LaFleur*	**Castle Rock Economic Partnership** Representatives of the Town, DDA, EDC and Castle Rock Chamber cooperating on economic development issues in Castle Rock *Meets: 2nd Tuesdays at 3 p.m. Council Liaison: Gray Alternate: Bracken*	**Castle Rock Fire Volunteer Pension Board** Decides on issues related to this program through the Fire and Police Pension Association of Colorado (FPPA) *Meets: Semiannually (requires Mayor as voting member) Council Liaison: Gray*

Chamber of Commerce Board of Directors A nonprofit organization that delivers events, programs and initiatives to boost business and economic success *Meets: 4th Thursdays at 11:30 a.m. Council Liaison: Bracken Alternate: LaFleur*	**Downtown Merchants Association** A nonprofit organization made up of Downtown business and property owners, which aims to create a sense of place in the heart of Castle Rock *Meets: 2nd Thursdays at 12 p.m. (usually adjoined with the DDA meetings) Council Liaison: LaFleur Alternate: Bracken*	

REGIONAL ORGANIZATIONS		
Centennial Airport Community Noise Roundtable Aims to reduce and mitigate noise impacts from users of Centennial Airport *Meets: 1st Wednesdays at 6 p.m. Council Liaison: Cavey (voting) Alternate: Sandy Vossler*	**Chatfield Watershed Authority** Promotes protection of water quality in the Chatfield Watershed, including for recreation and drinking water supplies *Meets: 4th Wednesdays at 2 p.m. in May, Aug, Nov. Council Liaison: Cavey (voting) Alternate: LaFleur*	**Cherry Creek Basin Water Quality Authority** Aims to improve, protect and preserve water quality in Cherry Creek and the Cherry Creek Reservoir *Meets: 3rd Thursdays at 8:30 a.m. Council Liaison: VACANT (voting) Alternate: LaFleur Staff: David VanDellen*
Colorado Municipal League (CML) Policy Committee Makes position recommendations on known or expected legislation of the Colorado General Assembly to CML's executive board *Meets: Varies - 1 Friday at 10 a.m. in Feb., Oct., Dec. Council Liaison: Dietz (voting) Staff: Kristin Read*	**Denver Regional Council of Government (DRCOG)** Collaborates to establish guidelines, set policy and allocate funding in the areas of transportation and personal mobility, growth and development, and aging and disability resources *Meets: 3rd Wednesdays at 6:30 p.m. Board Work Session Meets: 1st Wednesday at 4:00 p.m. Council Liaison: Gray (voting) Alternate: Dietz Staff: Brad Boland, Thomas Reiff*	**Metro Mayors Caucus** The Mayor serves on this organization of mayors who work together on issues of regional importance *Meets: Quarterly Council Liaison: Gray*

Douglas County Community Foundation Nonprofit, provides stewardship of philanthropic resources to enrich the lives of the County's residents. *Meets: as needed Council Liaison: Gray*	**Douglas County Homeless Initiative Executive Committee** Municipal and county leaders, as well as other community leaders, provide strategic guidance on DCHI direction *Meets: 2nd Thursdays at 9-10:30 a.m., at Philip S. Miller Building Council Liaison: Dietz Council Liaison: Gray Alternate: VACANT Staff: Kristin Read*	**Douglas County Housing Partnership** Aims to preserve, provide and develop housing choices within the County *Meets: 4th Thursdays at 8:30 a.m. Council Liaison: Gray (voting) Alternate: Hollingshead Staff: Brad Boland*
Douglas County Youth Initiative Coordinates local youth-serving efforts and programs. *Meets: 2nd Mondays at 8:30-10 a.m. Council Liaison: Dietz Alternate: Hollingshead*	**Partnership of Douglas County Governments** Facilitates information sharing among public entities within Douglas County to achieve efficiencies and improvements to services *Meets: 3rd Wednesdays at 7:30 a.m., bi-monthly Council Liaison: Gray Alternate: Cavey (All members of Council are welcome to attend)*	

2022 Council Liaisons

(For designations on 1/3/2023)

Town Boards and Commissions	Designation	Meeting Dates
Board of Adjustment	Dietz / Hollingshead (alt)	1st Thursdays at 6 p.m.
Board of Building Appeals	Hollingshead / Dietz	1st Mondays at 6 p.m. in March., June, Sept., Dec.; or as needed
Castle Rock Water Commission	VACANT / Cavey (alt)	4th Wednesdays at 6 p.m.
Design Review Board	Cavey / LaFleur (alt)	2nd & 4th Wednesdays at 6 p.m.
Downtown Development Authority	Bracken (voting) / Hollingshead (alt)	2nd Thursdays at 12 p.m.
Election Commission	Dietz	As needed
Historic Preservation Board	LaFleur/Hollingshead (alt)	1st Wednesdays at 6 p.m.
Parks and Recreation Commission	VACANT / Hollingshead (alt)	3rd Wednesdays at 5 p.m.
Planning Commission	Gray / Dietz (alt)	2nd & 4th Thursdays at 6 p.m.
Public Art Commission	VACANT / Dietz (alt)	2nd Thursdays at 4 p.m.
Public Safety Commission	Cavey / Hollingshead (alt)	1st Thursdays at 3 p.m.
Public Works Commission	VACANT / Hollingshead (alt)	1st Mondays at 5:30 p.m.
Audit Committee	Gray / Bracken	Bi-annually, as needed
Police Forfeiture Committee	As needed	As needed
Water Resources Committee	Bracken / VACANT (alt)	1st Tuesdays at 3:30 p.m.
Castle Rock Organizations		
Castle Rock Economic Development Council Board	Gray (voting) / LaFleur (alt)	Quarterly: 1st Thursdays at 11:30 a.m.
Castle Rock Economic Partnership	Gray / Bracken (alt)	2nd Tuesdays at 3 p.m.
Castle Rock Fire Volunteer Pension Board	Gray	Semiannually (requires Mayor as voting member)
Chamber of Commerce	Bracken / LaFleur (alt)	4th Thursdays at 11:30 a.m.
Downtown Merchants Association	LaFleur / Bracken (alt)	2nd Thursdays at 12 p.m., with DDA meetings
Regional Organizations		
Centennial Airport Community Noise Roundtable	Cavey (as needed) [voting] Staff: Sandy Vossler	1st Wednesday at 6 p.m.
Chatfield Watershed Authority	Cavey (voting) / LaFleur (alt)	4th Wednesdays at 2 p.m. in May, Aug, Nov.
Cherry Creek Basin Water Quality Authority	VACANT (voting) / LaFleur (alt) Staff: David VanDellen	3rd Thursdays at 8:30 a.m.
Colorado Municipal League Policy Committee	Dietz (voting) Staff: Kristin Read	Varies: 1 Friday at 10 a.m. in Feb., Oct., Dec.
Denver Regional Council of Government (DRCOG)	Gray (voting) / Dietz (alt) Staff: Brad Boland and Tom Reiff	3rd Wednesdays at 6:30 p.m. Work Session: 1st Wednesdays at 4 p.m.
Metro Mayors	Gray	Quarterly
Douglas County Organizations		
Douglas County Community Foundation	Gray	As needed
Douglas County Homeless Initiative Executive Committee	Dietz and Gray / VACANT (alt) Staff: Kristin Read	2nd Thursdays at 9-10:30 a.m.
Douglas County Housing Partnership	Gray / Hollingshead (alt) Staff: Brad Boland	4th Thursdays 8:30-10:30 a.m.
Douglas County Youth Initiative	Dietz / Hollingshead (alt)	2nd Mondays, 8:30 - 10 a.m.
Partnership of Douglas County Governments	Gray / Cavey (alt) (all members of Council welcome to attend)	3rd Wednesdays at 7:30 a.m., bi-monthly

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 2. **File #:** ID 2023-002

To: **Honorable Mayor and Members of Town Council**

From: **David L. Corliss, Town Manager**

Update: Calendar Reminders

Executive Summary

Attached is an outline of upcoming items of general interest.

TOWN COUNCIL MEETING

TOWN MANAGER'S REPORT

DAVID L. CORLISS, TOWN MANAGER
JANUARY 3, 2023

UPCOMING CALENDAR ITEMS

4 JAN	**Police Department Swearing-in and Awards Ceremony – 3 p.m.** Public Safety Training Facility, 301 Malibu Street
16 JAN	**Town Offices Closed for Martin Luther King Jr. Day** MAC and Recreation Center modified hours
17 JAN	**Town Council Meeting – 6 p.m., hybrid format (dinner at 5 p.m.)** Council Chambers, online or phone-in
31 JAN	**Development Services Boards & Commissions Appreciation Dinner - 6 p.m.** Red Hawk Ridge Golf Course, 2156 Red Hawk Ridge Drive
7 FEB	**Town Council Meeting – 6 p.m., hybrid format (dinner at 5 p.m.)** Council Chambers, online or phone-in
11 FEB	**Fire and Rescue Department Awards Ceremony and Banquet – 6 p.m.** The Oaks at Plum Creek, 321 Players Club Drive
20 FEB	**Town Offices Closed for Presidents' Day** MAC and Recreation Center modified hours
21 FEB	**Town Council Meeting – 6 p.m., hybrid format (dinner at 5 p.m.)** Council Chambers, online or phone-in

NEIGHBORHOOD MEETINGS

Scheduled on Town Calendar

05 JAN	**Scileppi's Remodel and Addition, 6:00 p.m., Virtual, 2nd Meeting** Proposing an addition and remodel to the existing building. Located at 210 Third St.
10 JAN	**Castle Park West 1st Amendment Lot 3 Wellspring Apartments SDP, 6:00 p.m., Hybrid @ 884 Park St., 1st Meeting** Proposing to convert the existing La Quinta Inn to community housing and residential facility with 5 staff suites, 5 studio apartments and 25 one-bedroom units on the 1.49-acre site. Located east of Park St. and south of Wolfensberger Rd.
11 JAN	**Meadows Filing 19 Meadowmark Senior Multifamily SDP, 6:00 p.m., Virtual, 3rd Meeting** Proposing a single 4-story, 184,685 sq. ft. apartment building, with 200 units of 1 and 2 bedrooms and be income and age restricted. Located north of N. Meadows Dr. on Timber Mill Pkwy.

*These items are tentative

24 JAN	***City Hotel Redevelopment, 6:00 p.m., Hybrid @ Philip S. Miller Library, 1st Meeting** Proposing the restoration of the historic City Hotel building and development of a new 22,000-square-foot boutique hotel. Located at 415 Perry St.
30 JAN	***Crystal Valley Shops SDP, 6:00 p.m., Hybrid, 1st Meeting** Proposing to build a new retail center with 4 buildings (total of 25,823 square feet) on the 5.169-acre lot. Located at the southwest corner of Crystal Valley Pkwy. and Plum Creek Blvd.

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 3. **File #:** ID 2023-003

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Kristin Read, Assistant Town Manager

Update: 2023 Community Survey Process

Executive Summary

In every odd-numbered year since 2011, the Town has completed resident and business surveys to gauge these groups' perceptions about Town services and issues. The same firm, now known as ComEngage, has conducted these surveys on the Town's behalf since 2015. Using the same vendor provides consistency and allows the Town to best trend its performance year-over-year.

Staff has begun working with ComEngage to prepare for the 2023 community survey. On February 7, staff and the consultant will present Council with draft resident and business surveys for feedback. If any Councilmembers wish for a more detailed review of past and planned survey practices, staff recommends they request an individual meeting ahead of this discussion.

Current planning calls for the surveys to be finalized soon after the Council discussion so they can be administered from mid-February to early April. That schedule will allow for a review of survey results with Council on April 18. This timing purposefully provides the results well ahead of the Town's annual budget process so that any priorities that emerge can be evaluated and prioritized.

Discussion

Conducting community surveys is a common practice within Douglas County. The County has surveyed residents at least every other year since 2006, and our neighboring communities of Lone Tree and Parker also survey their communities every few years.

The Town's survey provides a scientific way to gauge sentiments within the community. It asks for opinions about Town services, quality of life, key community issues and more. Data collected is compared to that from past years, and movements in opinions are explored. The results can show where service delivery is perceived to be lacking, where issues of equity may be worth considering - through cross-tabulations by a number of demographics including election districts - and where educational campaigns should be targeted.

The approach to administering the survey will be slightly different this year than in years past. The Town's contract with ComEngage allows for continuous survey/engagement over a three-month period, conducted in three "waves." Each wave will consist of a 10- to 12-minute survey. Over the course of the three waves, every household in Castle Rock will be invited by mail to participate in the scientific survey, which will have password-protected access. ComEngage will complete follow-ups by phone as necessary to ensure a respondent pool that demographically reflects the Town's population.

The process planned for this year is different from the past process, in which there was one resident survey of 30 to 40 minutes in length, to which 15,000 Castle Rock households were invited to respond. The updated methodology offers all households the chance to participate and the potential for higher-quality responses, by segmenting the survey into shorter waves.

The methodology for this year's business survey is planned to remain the same as in the past. Every Town-licensed business located within Castle Rock will be invited to participate in a roughly 10-minute survey. Town staff is working with community partners from the Castle Rock Chamber and Economic Development Council in determining what questions are best to recommend for the business survey.

Staff looks forward to discussing the survey drafts with Council next month and is available between now and then for more detailed conversations as desired. The 2021 resident (**Attachment A**) and business (**Attachment B**) surveys are attached for Council's reference as they begin to consider this item.

Budget Impact

The Town's contract with ComEngage is for up to $84,165. The Town Manager's Office 2023 budget includes $75,000 for this project. The additional amount will be covered by unspent 2022 funds ($20,000) that were designated for survey purposes. The cost for this year's survey is slightly higher than in the past, because roughly double the number of invitations will need to be printed and mailed in order to invite all households in Town to participate. The cost also includes a nominal $5 incentive to the first 500 households to complete more than one survey "wave."

Attachments

Attachment A: 2021 resident survey
Attachment B: 2021 business survey

CR1TOWN OF CASTLE ROCK, CO CITIZEN SURVEY
NWRG Project Number: CR_2019_CITIZEN_SURVEY

LAST REVISION: 5/20/2021

INSTRUMENT CONVENTIONS:

DENOTES PROGRAMMING INSRUCTIONS

- **DENOTES INTERVIEWER INSTRUCTIONS**
- Text in light blue highlight means that the data is benchmarkable against NWRG's nation-wide CityMarks
- Text in ALLCAPS is not read to respondents
- Text in [ALLCAPS SURROUNDED BY BRACKETS] are interviewer and CATI programming instructions, not read to respondents
- Text in [ALLCAPS SURROUNDED BY BRACKETS BOLD TYPE] are interviewer and CATI programming instructions, not read to respondents
- Question marks (?) and 'X' or 'x' indicate information needed or to be determined in conjunction with the client
- (Response options in parenthesis) are read to respondents as necessary
- For web – do not show don't know / prefer not to answer response options unless respondent attempts to skip question
- For web – changes response options that are all in CAPS to Sentence case (Capitalize first letter of word / phrase only)
- For web rating scales display grid as illustrated below:

	Much Worse Than Other Communities										Much Better Than Other Communities
	0	1	2	3	4	5	6	7	8	9	10
Easy to get around by car	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯
Public transportation available to where I need to go	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯

SAMPLE PLAN

Total Population 18+	36,706		Sample Size	400
	% of Population	Minimum n	Maximum n	% of Sample
Males 18+	49%	177		44%
Female			223	56%
Males				10%
Males				
Male			67	17%
Females				10%
Females				
Females			75	19%

Source: 2011-2015 ACS 5 Year Estimates

SAMPLE VARIABLES

NWRGID	Internal ID shared with client. Not imported into any dialing or sample procedures
SAMPLEID	Internal sample id. Not shared with client. This is imported into sample dialing
USERID	Unique login ID TO LOGINTO THE WEBSITE. Not shared with client
SAMPLETYPE	Indicator for type of sample SAMPLETYPE=01 Landline phone number attached - no email SAMPLETYPE=02 Cellular phone number attached - no email SAMPLETYPE=03 No phone number -no email SAMPLETYPE=04 Landline phone number attached - email address attached SAMPLETYPE=05 Cellular phone number attached - email address attached SAMPLETYPE=06 No phone number -email address attached
TOMAIL	Indicator that this element was randomly selected to receive a mailer
SEND_EMAIL	Indicator that we need to send an email to this sample element
EMAIL_1	Primary Email Address for Household - Use this one first
EMAIL_2	Secondary Email Address for Household - Use if Bounceback on Email_1
GEOID	Census block reference variable
AGE	Reference variable for estimated age of respondent
AGETARGET	Indicator to target for likelihood of age grouping (from sample and city) AGETARGET=01 18 to 34 AGETARGET=02 35 to 64 AGETARGET=03 65 and older
LATITIDE	Latitude
LONGITIDE	Longitude
DWELLINGTYPE	Census block reference variable DWELLINGTYPE=01 Single family home DWELLINGTYPE=02 Multi-family home
GENDER	Indicator for gender (estimated) GENDER=01 Male GENDER=02 Female

SCREENING QUESTIONS

---------- **<new screen>** ----------

INTROTEL **[SHOW IF PHONE]** Hello. This is _____ with **ComEngage**, calling on behalf of the Town of Castle Rock. We are conducting a survey to help the Town improve services for your community and would like to include the opinions of your household.

Let me assure you that this is not a sales call.

The information will be used to help Castle Rock plan for the future and improve services to the community. This study is being conducted for research purposes only, and everything you say will be kept strictly confidential. This call may be monitored and/or recorded for quality control purposes.

[IF NECESSARY: Your phone number has been randomly chosen for this study.

[ONCE CORRECT PERSON IS ON THE LINE, REINTRODUCE AND CONTINUE]

INTROWEB **[SHOW IF WEB]** Thank you for agreeing to complete this important survey for the Town of Castle Rock. Your input will be used to improve services to the community.

Your household is one of a small number of households randomly selected to participate in this survey, so your participation is vital to the success of this research. Your responses will help the Town better meet residents' needs and expectations, decide how to best use its resources, and set goals.

SCR1 Are you a current resident of Castle Rock?

00 YES
02 NO **[SKIP TO THANK01]**
998 **[WEB: DO NOT SHOW]** DON'T KNOW **[SKIP TOTHANK03]**
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER **[SKIP TO THANK03]**

AGE Just to make sure that our study is representative of the Town of Castle Rock, may I please have your age?
(if you prefer not to answer, please enter "999")

___ ENTER AGE [RANGE 18:99] **[IF UNDER 18 TERMINATE – THANK02]**

ASK AGE_ACT IF AGE=998 OR 999

AGE_CAT Which of the following categories does your age fall into?

[READ OPTIONS]

01 18-24
02 25-34
03 35-44
04 45-54
05 55-64
06 65 or older
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PROGRAMMER: CREATE VARIABLE, "AGE_BAN" MONITOR FOR DISTRIBUTION IN PORTAL
VALUE LABLES FOR AGE (LOGIC IN PARENTHESIS)
01 18 TO 34 [((AGE GE 18) AND (AGE LE 34)) OR (AGE_CAT = 01, 02)]
02 35 TO 54 [((AGE GE 35) AND (AGE LE 54)) OR (AGE_CAT = 03, 04)]
03 55 PLUS [((AGE GE 55) AND (AGE LE 98)) OR (AGE_CAT = 05, 06)]
999 UNKNOWN [AGE_CAT = 998 | 999]

GENDER **[PHONE NOTE:RECORD RESPONDENT'S GENDER]** Are you . . .

1 MALE
2 FEMALE
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PROGRAMMER: CREATE VARIABLE, "AGEGEBNDER" MONITOR FOR DISTRIBUTION IN PORTAL
VALUE LABLES FOR AGE (LOGIC IN PARENTHESIS)
01 MALE 18-34 [(AGE_BAN=1) AND (GENDER=1)]
02 FEMALE 18-34 [(AGE_BAN=1) AND (GENDER=2)]
03 MALE 35-54 [(AGE_BAN=2) AND (GENDER=1)]
04 FEMALE 35-54 [(AGE_BAN=2) AND (GENDER=2)]
05 MALE 55+ [(AGE_BAN=3) AND (GENDER=1)]
06 FEMALE 55+ [(AGE_BAN=3) AND (GENDER=2)]
999 UNKNOWN [(AGE_BAN=999) OR (GENDER=998 | 999)]

5-STAR RATING

---------- <new screen> ----------

CURRSTAR1 Using a scale from 0 to 10 where "0" means the quality of life in Castle Rock "Does not meet your expectations at all" and "10" means the quality of life "Greatly exceeds your expectations," how would you rate the overall quality of life in Castle Rock?

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Does Not Meet Expectations at All (0)	1	2	3	4	5	6	7	8	9	Greatly Exceeds Expectations (10)
Overall quality of life in Castle Rock	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

CURRSTAR2 Using the same expectations scale, how would you rate the overall quality of services provided by the Town of Castle Rock?

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Does Not Meet Expectations at All (0)	1	2	3	4	5	6	7	8	9	Greatly Exceeds Expectations (10)
Overall quality of services provided	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

CURRSTAR3 Compared with other cities and towns, how would you rate Castle Rock as a place to live? Use a scale from 0 to 10 where "0" means "Significantly worse than other cities and towns" and "10" means "Significantly better than other cities and towns."

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Significantly Worse than Other Cities and Towns (0)	1	2	3	4	5	6	7	8	9	Significantly Better than Other Cities and Towns (10)
Castle Rock compared to other communities	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

CURRSTAR4 Using a scale from 0 to 10 where "0" means "Strongly headed in the wrong direction" and "10" means "Strongly headed in the right direction," overall, would you say that Castle Rock is headed in the right or wrong direction?

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Strongly Headed in the Wrong Direction (0)	1	2	3	4	5	6	7	8	9	Strongly Headed in the Right Direction (10)
Direction Town is headed	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

CURRSTAR5 Thinking about Town provided services in Castle Rock, do you believe you are getting your money's worth for your Town tax dollar or not? Please use a scale from 0 to 10 where "0" means "Definitely not getting your money's worth" and "10" means "Definitely getting your money's worth."

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Definitely Not Getting My Money's Worth (0)	1	2	3	4	5	6	7	8	9	Definitely Getting My Money's Worth (10)
Value for tax dollar	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PLACE TO LIVE

----------<new screen>----------

CR1 What would you say is the single most important issue facing Castle Rock in the next 5 years?

[OPEN END – LIST BELOW IS FOR POST CODING REFERENCE ONLY]

01 *TRAFFIC / CONGESTION / DIFFICULT TO GET AROUND BY CAR / TOO MANY CARS / NEED MORE ROADS*
02 *ROAD UPKEEP AND MAINTENANCE*
03 *SPRAWL / UNPLANNED GROWTH / GROWING TOO FAST*
04 *LOSS OF AGRICULTURAL LANDS / OPEN SPACE*
05 *LOOSING SMALL TOWN FEEL / SENSE OF COMMUNITY*
06 *ANNEXATION / ZONING*
07 *POLLUTION / AIR QUALITY*
08 *ECONOMY / JOBS / ATTRACTING NEW BUSINESS / UNEMPLOYMENT*
09 *EDUCATION / SCHOOLS*
10 *PUBLIC SAFETY / CRIME / DRUGS*
11 *LACK OF / INADEQUATE PUBLIC TRANSPORTATION / BUS SYSTEM*
12 *WATER / LACK OF WATER / WATER PLANNING / WATER ISSUES*
888 *SOMETHING ELSE **(SPECIFY)***
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

CR2 Next, using a scale from 0 to 10 where "0" means "Very poor" and "10" means "Excellent," how would you rate each of the following aspects of Castle Rock?

RANDOMIZE ORDER SHOWN

	Very Poor (0)	1	2	3	4	5	6	7	8	9	Excellent (10)
CR2A The ability to buy things locally	o	o	o	o	o	o	o	o	o	o	o
CR2B Employment opportunities within the Town	o	o	o	o	o	o	o	o	o	o	o
CR2D Opportunities for youth	o	o	o	o	o	o	o	o	o	o	o
CR2I The cost of living in Castle Rock	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

---------- <new screen> ----------

CR5 Now, please indicate how likely would you be to recommend Castle Rock to someone for each of the following. . . Use a scale from 0 to 10 where "0" means "not at all likely" and "10" means "very likely."

RANDOMIZE ORDER SHOWN

	Not at all Likely (0)	1	2	3	4	5	6	7	8	9	Very Likely (10)
CR5B As a place to work	o	o	o	o	o	o	o	o	o	o	o
CR5D As a place to raise children	o	o	o	o	o	o	o	o	o	o	o
CR5E As a place to retire	o	o	o	o	o	o	o	o	o	o	o
CR5F As a place to do business	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

---------- <new screen> ----------

GOV1 From what you have experienced, seen or heard, please specify the extent to which you agree or disagree with each of the following statements about Castle Rock's local government? Use a scale from 0 to 10 where "0" means "strongly disagree" and "10" means "strongly agree."

RANDOMIZE ORDER SHOWN

	Strongly Disagree (0)	1	2	3	4	5	6	7	8	9	Strongly Agree (10)
GOV1A Keeps residents informed regarding Town happenings and initiatives in general	o	o	o	o	o	o	o	o	o	o	o
GOV1B Seeks residents' involvement and input	o	o	o	o	o	o	o	o	o	o	o
GOV1C Keeps residents informed regarding Castle Rock Water services and projects	o	o	o	o	o	o	o	o	o	o	o
GOV1D Keeps residents informed regarding Parks and Recreation initiatives	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

SPECIAL TOPICS

----------<new screen> ----------

SPECIAL4 One option for diversifying the Town's revenue sources is requesting voter approval for a new lodging tax, which would be placed on per night hotel room rentals within the Town limits. Only those staying in hotels in Town would pay the tax, likely of 4%-6%. The proceeds could be spent to fund Town services. Using a scale from 0 to 10 where "0" means "Strongly oppose" and "10" means "Strongly support," would you support or oppose implementing a lodging tax?

	Strongly Oppose (0)	1	2	3	4	5	6	7	8	9	Strongly Support (10)
Implementing a lodging tax to fund Town services	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

SPECIAL6 Public safety services such as police, fire, and emergency medical services are predominantly supported through sales tax. As the community grows, so does the need for public safety personnel. However, sales tax revenue cannot provide the revenue needed to pay for additional services.

One option to support additional public safety services is to ask for voters' approval to increase the Town's mill levy. Currently, the average property owner pays $3 per month in property taxes to the Town. Would you support or oppose the Town raising the mill levy by approximately $12 per month to pay for additional public safety personnel?

Use a scale from 0 to 10 where "0" means "Strongly oppose" and "10" means "Strongly support," would you support or oppose raising the mill levy to pay for public safety services?

	Strongly Oppose (0)	1	2	3	4	5	6	7	8	9	Strongly Support (10)
Increasing the mill levy to support public safety	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

SPECIAL6A **[ASK OF ALL]** If the mill levy increase had a sunset clause, meaning it would expire after 10 years, would that change your opinion?

[ROTATE ORER ASKED]

01 No, it would not change my opinion
02 Yes, it would make me **less** likely to support the mill levy increase
03 Yes, it would make me **more** likely to support the mill levy increase
998 **[WEB: DO NOT SHOW]** DON'T KNOW **[SKIP TOTHANK03]**
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER **[SKIP TO THANK03]**

SPECIAL6B **[ASK IF SPECIAL 6 < 5 AND IF SPECIAL6A = 1]** How do you propose the Town get additional revenue to fund public safety?

[OPEN END]

COMMUNITY CHARACTER

----------<new screen> ----------

COMM1 Overall, how would you rate the sense of community in Castle Rock? Use a scale from 0 to 10 where "0" means "No sense of community at all" and "10" means "Strong sense of community."

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	No Sense of Community at All (0)	1	2	3	4	5	6	7	8	9	Strong Sense of Community (10)
Sense of Community in Castle Rock	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

COMM4 The Town's Comprehensive Master Plan is built upon the following Four Cornerstones: Distinct Town Identity, Responsible Growth, Community Services and a Thriving Economy. Using a scale from 0 to 10 where "0" means "Not Important at all" and "10" means "Very Important," how would you rate the importance to the Town for each of these cornerstones?

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

RANDOMIZE ORDER SHOWN

	Not important at all (0)	1	2	3	4	5	6	7	8	9	Very Important (10)
Having a distinct Town identity	o	o	o	o	o	O	o	o	o	o	o
Managing growth responsibly	o	o	o	o	o	O	o	o	o	o	o
Providing top-notch community services	o	o	o	o	o	O	o	o	o	o	o
Having a thriving economy	o	o	o	o	o	O	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

COMM6 The next two sets of questions are to further explore your thoughts around the distinct Town identity cornerstone.

Several aspects can contribute to a distinct Town identity. For each item in the following list, please indicate if you believe it does or does NOT feed into a distinct Town identity.

RANDOMIZE ORDER SHOWN

	Does Not Contribute to a Distinct Town Identity	Does Contribute to a Distinct Town Identity
Special events and activities for the community	o	o
Supporting small, local businesses	o	o
Easy access to open spaces and natural beauty	o	o
Safe neighborhoods and streets	o	o
A vibrant downtown	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

COMM7 How has the distinct Town identity of Castle Rock changed since you have moved here?

	The Town has Completely Lost its Distinct Identity (0)	1	2	3	4	5	6	7	8	9	The Town's Distinct Identity is Significantly Stronger (10)
Change in distinct Town identity	O	o	o	o	o	o	o	o	o	o	o

STRATEGIC PRIORITIES

---------- **<new screen>** ----------

STRATEGY1 Town Council sets budget priorities based upon past Council actions, community survey results and public and staff feedback.

[WEB DISPLAY] The six priorities within the 2021 Budget are listed below. Look at each one and indicate if you believe that each priority is right for the Town or not right for the Town.

[PHONE DISPLAY] I am going to read the six priorities within the 2021 Budget. As I read each one, please tell me if you believe that it is right for the Town or not right for the Town.

	This Priority is NOT Right for the Town	This Priority is Right for the Town
Ensuring outstanding public safety	o	o
Enhancing our transportation	o	o
Securing our water future	o	o
Maintaining strong Parks and Recreation	o	o
Supporting economic development	o	o
Managing Town finances conservatively	o	o

STRATEGY1A Why do you believe that **[INSERT PRIORITY SELECTED AS NOT RIGHT FOR TOWN]** is not the right priority for the Town?

[OPEN END]

STRATEGY1B Is there anything that is missing from these priorities?

01 YES
00 NO
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

[ASK IF STRATEGY1A=1] **STRATEGY1C** What is missing?

[OPEN END]

PLANNING FOR GROWTH

----------<new screen> ----------

RANDOMIZE DISPLAY ORDER OF GROW3A AND GROW3B

GROW3A Using a one or two-word phrase, what aspect of growth in Castle Rock is causing you the most concern?

[OPEN END]

GROW3B Using a one or two-word phrase, what aspect of growth in Castle Rock do you consider most beneficial?

[OPEN END]

POLICE

----------<new screen> ----------

POLICE1 Have you had any contact with the Castle Rock Police Department during the past two years?

[PHONE AS NEEDED: DISPLAY ON WEB *The Castle Rock Police Department includes not only interactions with police officers, but also 911 services, services offered at the police station front counter, victim's assistance, and animal control***]**

01 YES
00 NO
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

ASK POLICE1A IF POLICE1=01

POLICE1A Which of the following Police services have you contacted or utilized in the past two years?
[MULTIPLE SELECT]
[RANDOMIZE ORDER SHOWN]
PHONE READ LIST DISPLAY ON WEB

01 911 or Non-emergency dispatcher
02 Participated in a community activity with police
03 Reported a crime or provided information to police
04 Stopped, arrested, or suspected of a crime by police
05 Animal Services such as Animal Control
06 Victim's assistance
07 Front Counter at police station **[PHONE READ AS NEEDED / DISPLAY ON WEB** *The front counter handles such things as fingerprinting, VIN verification, etc.***]**
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

POLICE2 Using a scale from 0 to 10 where "0" means "Did not meet my expectations at all" and "10" means "Greatly exceeded my expectations" please rate the Castle Rock Police Department on each of the following?

RANDOMIZE ORDER SHOWN

	Does Not Meet My Expectations at All (0)	1	2	3	4	5	6	7	8	9	Greatly Exceeds My Expectations (10)
POLICE2A **[SHOW IF POLICE1A=1]** Communication with 911 or non-emergency dispatch	o	o	o	o	o	o	o	o	o	o	o
POLICE2C **[SHOW IF POLICE1A=2,3,4]** Professionalism of the police officer or detective	o	o	o	o	o	o	o	o	o	o	o
POLICE2E **[SHOW IF POLICE1A=5]** Animal services such as Animal Control	o	o	o	o	o	o	o	o	o	o	o
POLICE2F **[SHOW IF POLICE1A=6]** Victim's assistance services	o	o	o	o	o	o	o	o	o	o	o
POLICE2G **[SHOW IF POLICE1A=7]** Professionalism of the police station front counter staff	o	o	o	o	o	o	o	o	o	o	o
POLICE2H **[SHOW TO ALL]** Frequency of Patrols	o	o	o	o	o	o	o	o	o	o	o
POLICE2I **[SHOW TO ALL]** Response time	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

---------- <new screen> ----------

POLICE3 How would you rate the approachability of Police Officers in Castle Rock? Use a Scale from 0 to 10 where "0" means "Not at all approachable" and "10" means "Very easy to approach."

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Not at all Approachable (0)	1	2	3	4	5	6	7	8	9	Very Easy to Approach (10)
Approachability of Police Officers in Castle Rock	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

POLICE6 How confident are you in the following aspects of the Town's Police Department? Use a Scale from 0 to 10 where "0" means "Not at all confident" and "10" means "Extremely confident."

	Not at all Confident (0)	1	2	3	4	5	6	7	8	9	Extremely Confident (10)
Police's ability to provide a safe and secure community	o	o	o	o	o	o	o	o	o	o	o
Police's ability to uphold and maintain the trust of residents	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

FIRE / EMS

---------- <new screen> ----------

FIRE4: Below is a list of services provided by Castle Rock Fire and Rescue. Please rank the **three items that are <u>most important to you</u>.**

RANK TOP 3

1. Fire Suppression: *(Extinguishment of building, vehicle, and other misc. fires)*
2. Wildland Fire Suppression: *(Extinguishment of wildland and urban interface fires)*
3. Hazardous Materials Mitigation: *(Emergency investigation and incident stabilization of hazardous materials incidents)*
4. Fire Prevention: *(Fire code enforcement, building inspections and building plan review)*
5. Public Education / Fire and EMS Safety: *(Public education and training in fire safety, injury prevention, and first aid)*
6. Technical Rescue: *(Commercial vehicle/machinery entrapment, extraction, confined space, high/low angle rope, trench/below grade, structural collapse and ice/water rescue)*
7. Domestic Preparedness, Planning and Response: *(Preparation and initial response to natural or man-made disasters to include terrorist actions)*
8. Fire Investigations: *(Determination of fire cause, origin and evidence collection, investigation to support possible prosecution)*
9. Emergency Medical Services: *(Ambulance / Paramedic)*

FIRE5: Now, please rank your confidence in the Castle Rock Fire and Rescue Department on each of the following …

RANDOMIZE TOP 3 PRORITIES FROM PREVIOUS QUESTION – always show last row

	Not at all Confident (0)	1	2	3	4	5	6	7	8	9	Extremely Confident (10)
Top 3 Item selected above	o	o	o	o	o	o	o	o	o	o	o
Top 3 Item selected above	o	o	o	o	o	o	o	o	o	o	o
Top 3 Item selected above	o	o	o	o	o	o	o	o	o	o	o
Overall confidence of Castle Rock Fire and Rescue to respond to emergencies	o	o	o	o	o	o	o	o	o	o	o

LIST DISPLAYED IN FIRE5

Extinguish building, vehicle, and other fires
Provide wildland fire suppression
Provide emergency investigation and stabilization of hazardous materials incidents
Provide fire code enforcement, building inspections and building plan review
Provide public education and training in fire safety, injury prevention, and first aid
Provide technical rescue services
Respond to natural or man-made disasters
Investigate fires
Provide emergency medical services
Overall confidence of Castle Rock Fire and Rescue to respond to emergencies

PUBLIC WORKS

----------<new screen> ----------

PUB2 Thinking about the roads in Castle Rock, and using a scale from 0 to 10 where "0" means "Does not meet my expectations at all" and "10" means "Greatly exceeds my expectations," how would you rate each of the following?

RANDOMIZE ORDER SHOWN BUT ALWAYS SHOW PUB2_E LAST

	Did Not Meet My Expectations at All (0)	1	2	3	4	5	6	7	8	9	Greatly Exceeded My Expectations (10)
PUB2A The overall condition of the road surface	o	o	o	o	o	o	o	o	o	o	o
PUB2B Traffic signal timing	o	o	o	o	o	o	o	o	o	o	o
PUB2C Level of congestion on the Town streets	o	o	o	o	o	o	o	o	o	o	o
PUB2D Cleanliness of the streets	o	o	o	o	o	o	o	o	o	o	o
PUB2E Overall convenience and accessibility of the roads in Castle Rock	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PUB3 The Town has two primary goals for its snowplowing operations. Using a scale from 0 to 10 where "0" means "Very poor" and "10" means "Excellent," please rate the Town's performance on the following:

	Very Poor (0)	1	2	3	4	5	6	7	8	9	Excellent (10)
Keeping a lane open for emergency access while it is snowing.	o	o	o	o	o	o	o	o	o	o	O
WEB SHOW: Plowing all travel lanes within 10 hours of the snow stopping. *(residential streets are **not** plowed after minor snow event)* **PHONE SHOW:** Residential streets are not plowed after minor snow events. Knowing this, how would you rate the Town's performance in plowing all travel lanes within 10-hours of the snow stopping?											

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PUB4 How would you rate the adequacy of bike lanes and multi-use paths along roadways in Castle Rock? Use a scale from 0 to 10 where "0" means "significantly worse than other cities and towns" and "10" means "significantly better than other cities and towns."

	Significantly Worse than other Cities and Towns (0)	1	2	3	4	5	6	7	8	9	Significantly Better than other Cities and Towns (10)
Adequacy of bike lanes and multi-use paths along roadways	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PUB7 Take a moment to think about the frequent trips you take within Castle Rock. How would you rate the consistency of travel within the Town in terms of the length of time it takes to get from point A to point B? Use a scale from 0 to 10 where "0" means "travel time is extremely inconsistent" and "10" means "travel time is extremely consistent."

	Extremely Inconsistent (0)	1	2	3	4	5	6	7	8	9	Extremely Consistent (10)
Consistency of travel time within the Town	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

CASTLE ROCK WATER

---------- **<new screen>** ----------

UTIL1 Castle Rock Water's functions include daily operations, maintenance, asset management, upgrades and expansions associated with maintaining the Town's water, wastewater and stormwater systems.

Using a scale from 0 to 10 where "0" means "Very poor" and "10" means "Excellent," please tell me how well Castle Rock Water is doing on each of the following items. . .

RANDOMIZE DISPLAY ORDER – SHOW UTIL1_G LAST

	Did Not Meet My Expectations at All (0)	1	2	3	4	5	6	7	8	9	Greatly Exceeded My Expectations (10)
UTIL1A The overall quality of the water *(taste, purity)*	o	o	o	o	o	o	o	o	o	o	o
UTIL1B Securing and managing long-term water supplies	o	o	o	o	o	o	o	o	o	o	o
UTIL1C Providing a water bill that is easy to understand	o	o	o	o	o	o	o	o	o	o	o
UTIL1D Customer service	o	o	o	o	o	o	o	o	o	o	o
UTIL1E Water conservation programs	o	o	o	o	o	o	o	o	o	o	o
UTIL1G Value of service for rates paid	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

UTIL3 Which of the following statements best describes your current beliefs about long-term water issues in Castle Rock?

[Select only one answer]

[RANDOMIZE ORDER SHOWN]

01 I have serious concerns about the long-term water supply and believe that the Town does **not** have a solid plan to address this issue.
02 I am somewhat concerned about the long-term water supply and am **not confident** in the Town's plan to address this issue.
03 I am somewhat concerned about maintaining our long-term water supply but I believe that the Town is on the right path.
04 I am not concerned about the long-term water supply because I believe that the Town has an adequate plan.
05 I am not concerned about the long-term water supply because I just don't believe that it is an issue.
06 I do not know enough about the issue to make an informed decision.
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

UTIL6 **[IF UTIL3 == 1 || UTIL3 == 2 SHOW]** What specific concerns do you have about the Town's plan to address long-term water?

[IF UTIL3 == 6 SHOW] What information would be useful in helping you understand the Town's long-term water plan, and what is the best way for the Town to ensure you get the information you need?

UTIL4 The Town is also evaluating the use of "smart" water metering. This will allow residents to monitor water usage in near-real time. Do you believe this is a valuable service?

00	No
01	Yes
998	**[WEB: DO NOT SHOW]** DON'T KNOW
999	**[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PARKS AND RECREATION

---------- <new screen> ----------

PARK14 Do you believe that the access you have to parks and trails is a good value to you as a resident of Castle Rock? Use a scale from 0 to 10 where "0" means "Definitely **not** a good value at all" and "10" means "Definitely getting a good value."

	Definitely Not a Good Value At All (0)	1	2	3	4	5	6	7	8	9	Definitely Getting a Good Value (10)
Value received from parks and open spaces	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PARK12 The Parks and Recreation Department has a goal of providing a park or open space for recreation within roughly half a mile of each household. Using a scale from 0 to 10 where "0" means "Not at all close" and "10" means "Extremely close," do you believe that the Town is achieving that goal?

	Not at all Close to Achieving (0)	1	2	3	4	5	6	7	8	9	Extremely Close to Achieving (10)
Providing parks or open spaces within roughly one-half mile distance of each household	o	o	o	o	o	o	o	o	o	o	o

998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

PARK15 What Parks and Recreation amenities that do not exist currently do you want to see developed in Castle Rock?

[OPEN END – INTERVIEWER, PROBE ONCE]

COMMUNICATIONS AND MEDIA

---------- **<new screen>** ----------

MEDIA2 How do you **currently** communicate or receive information from the Town of Castle Rock?

[ONLY READ LIST IF NEEDED]

[MULTIPLE SELECT – RANDOMIZE DOWN TO "I PREFER NOT TO COMMUNICATE"]

01 Direct mail (including magazines, newsletters)
02 Email (including CRgov.com subscriptions)
03 Social media
04 Denver Post
05 Castle Rock News-Press
06 Watching local television news
07 Your Town Talk (water bill newsletter)
08 Town's website
09 Calling Town Hall
10 Open houses regarding Town projects
11 Cable Channel 22
12 Through my HOA (website, newsletter, etc.)
14 I prefer not to communicate with the Town
15 Something else *(please tell us:_____)*
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

SHOW MEDIA 2A IF MEDIA2_13 == 1

MEDIA2A Which social media platform(s) do you **currently** use to communicate or receive information from the Town?

[ONLY READ LIST IF NEEDED]

[MULTIPLE SELECT – RANDOMIZE DOWN to "other"]

01 Facebook
02 Twitter
03 Instagram
04 YouTube
05 Nextdoor
06 Something else (*please tell us:____)*

MEDIA1 How would you **prefer** to communicate or receive information from the Town of Castle Rock?

[ONLY READ LIST IF NEEDED]

[MULTIPLE SELECT – RANDOMIZE DOWN TO "I PREFER NOT TO COMMUNICATE"]

01 Direct mail (including magazines, newsletters)
02 Email (including CRgov.com subscriptions)
03 Social media
04 Denver Post/
05 Castle Rock News-Press
06 Watching local television news
07 Your Town Talk (water bill newsletter)
08 Town's website
09 Calling Town Hall
10 Open houses regarding Town projects
11 Cable Channel 22
12 Through my HOA (website, newsletter, etc.)
13 Social Media
14 I prefer not to communicate with the Town
15 Something else *(please tell us:_____)*
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

SHOW MEDIA 2A IF MEDIA1_13 == 1

MEDIA1A Which social media platform(s) would you **prefer** using to communicate or receive information from the Town?

[ONLY READ LIST IF NEEDED]

[MULTIPLE SELECT – RANDOMIZE DOWN to "other"]

01 Facebook
02 Twitter
03 Instagram
04 YouTube
05 Nextdoor
06 Something else (*please tell us:____)*

WEB1 Have you accessed the Town's website (https://CRgov.com) in the past two years?

01 YES
00 NO
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

SHOW WEB1A IF WEB1 == 1

WEB1A What information are you typically looking for when you visit the Town's website (https://CRgov.com)?

[OPEN END – PROBE ONCE]

DEMOGRAPHICS

----------<new screen> ----------

DEMOINT The following, final questions are for classification purposes only. Your answers will remain strictly confidential and will only be used to help us group your answers with other respondents to the survey

DEMO2 How many years have you lived in Castle Rock?
[ALLOW FRACTIONAL ANSWERS]
[IF LESS THAN 6 MONTHS, ENTER "0"]
[IF 6 MONTHS TO 1 YEAR, ENTER "1"]

___ ENTER NUMBER OF YEARS LIVED IN CASTLE ROCK
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

DEMO3 Do you own a business that is licensed with the Town of Castle Rock?
01 YES
00 NO
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

DEMO4 Do you own or rent your home?
01 OWN
02 RENT
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

---------- <new screen> ----------

DEMO5 Including yourself, how many people currently live in your household in each of the following age categories?

[IF NECESSARY: *"Please include yourself when answering this question."*]

DEMO5 MUST CONTAIN A RESPONSE IN AGE 18 – 64 OR 65 AND OVER

DEMO5A	____	Under 5
DEMO5B	____	5 – 12
DEMO5C	____	13 – 17
DEMO5D	____	18 – 64
DEMO5E	____	65 and over
998	**[WEB: DO NOT SHOW]** DON'T KNOW	
999	**[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER	

WEB INSTRUCTION: IF DEMO5 DOES NOT HAVE A RESPONSE IN 18 – 64 OR 65 AND OVER, DISPLAY THIS MESSAGE: *"Please include yourself when answering this question."*

COMPUTE VARIABLE *HASKIDS*
0=NO KIDS [IF (SUM DEMO4A, DEMO5B, DEMO5C=0)]
1=HAS KIDS [IF (SUM DEMO5A, DEMO5B, DEMO5C GE 1)]

COMPUTE VARIABLE *NUMADULTS* = SUM(DEMO5D, DEMO5E)

COMPUTE VARIABLE *HHCOMP*
1=SINGLE PERSON HH [IF (HASKIDS=0 AND NUMADULTS=1)]
2=ADULTS ONLY [IF (HASKIDS=0 AND NUMADULTS > 1)]

3=FAMILY [IF (HASKIDS GE 1)]

DEMO6 Do you speak a language other than English at home?

01 YES
00 NO
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

ASK DEMO6A IF DEMO6 = 01
ALLOW FOR MULTIPLE RESPONSES

DEMO6A What language

[MULTIPLE SELECT]

[DO NOT READ LIST]

01 SPANISH
02 CHINESE / CANTONESE / MANDARIN
03 VIETNAMESE
04 KOREAN
05 RUSSIAN
06 JAPANESE
07 HINDI
08 GERMAN
09 FRENCH
10 TAMIL
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

RACE Do you identify yourself as?
(select all that apply)
[MULTIPLE SELECT]

01 White
02 Black or African American
03 American Indian or Alaskan Native
04 Asian or Pacific Islander
05 Native Hawaiian or Other Pacific Islander
06 Hispanic or Latino
888 **[DO NOT READ]** Something else *(please tell us:_____)*
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

DEMO7 Are you registered to vote in the Town of Castle Rock?

01 YES
00 NO
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

DEMO8 Prior to the start of the COVID-19 pandemic, approximately what percent of the time did you work from home?

___ ENTER PERCENT OF TIME WORKED FROM HOME PRIOR TO PANDEMIC
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

DEMO8A Currently, what percent of time do you work from home?

___ ENTER PERCENT OF TIME YOU CURRENTLY WORK FROM HOME
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

DEMO8B In 12 months, what percent of time do you anticipate you will be working from home?

___ ENTER PERCENT OF TIME YOU ANTICIPATE WORKING FROM HOME.
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

INCOME What is the approximate total annual income of all members of your household?

01 Less than $20,000
02 $20,000 to less than $35,000
03 $35,000 to less than $50,000
04 $50,000 to less than $75,000
05 $75,000 to less than $100,000
06 $100,000 to less than $150,000
07 $150,000 to less than $200,000
08 $200,000 or more
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

FUTURE RESEARCH

---------- **<new screen>** ----------

FUTURE1 Keep the feedback coming! Join an online community to provide additional input to help the Town improve.

As a member of the community, you will help the Town plan for the future by better understanding residents' needs. By participating in online research activities (typically one to two times a month) on various topics, you can express your ideas and know they are being heard by the Town's leaders. Each activity takes approximately 5-10 minutes to complete.

As a community member, you will receive five points for each completed (with quality responses) activity. Each point is worth $1.00. As you complete an activity, you accumulate points. In addition, each month, all active community members will be entered into a drawing; five community members will be eligible to receive an additional 50 points. Once you have accumulated at least 10 points, you can request a VISA gift card.

The community is expected to run through April and will be moderated by our partner ComEngage.

00 NO
01 YES
998 **[WEB: DO NOT SHOW]** DON'T KNOW
999 **[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

ASK FUTURE3 IF (FUTURE1=1)

FUTURE3 Please provide an email address so you can participate in future research. We will only use this email address for this specific research for the Town of Castle Rock.

_____ENTER EMAIL ADDRESS
_____CONFIRM EMAIL ADDRESS **[MUST MATCH]**
997 **DO NOT READ:** I DO NOT HAVE AN EMAIL ADDRESS
998 **DO NOT READ:** DON'T KNOW
999 **DO NOT READ:** PREFER NOT TO ANSWER

THANK SECTION

---------- **<new screen>** ----------

THANK1 Thank you for your time, but we are only interviewing residents of the Town of Castle Rock.

THANK2 Thank you for your time, but we are only interviewing residents 18 years of age or older.

THANK3 Thank you for your time, but we cannot continue without that information

THANK4 **[TO BE USED ON OUTBOUND CALLS]** Thank you very much for your time. We greatly appreciate your help. Have a good day/night.

SCREENING QUESTIONS

----------<new screen> ----------

INTROTEL **[SHOW IF PHONE]** Hello. This is _____ with **ComEngage**, calling on behalf of the Town of Castle Rock. We are conducting a survey among businesses in our Town and are asking that your business participate in this important survey.

Let me assure you that this is not a sales call.

Your responses will help the Town better meet the needs and expectations of businesses in the Town, decide how to best use its resources, and set goals. This study is being conducted for research purposes only, and everything you say will be kept strictly confidential. This call may be monitored and/or recorded for quality control purposes.

[IF NECESSARY: Your phone number has been randomly chosen for this study.]

[ONCE CORRECT PERSON IS ON THE LINE, REINTRODUCE AND CONTINUE]

INTROWEB **[SHOW IF WEB]** Thank you for agreeing to complete this important survey for the Town of Castle Rock. Your input will be used to improve services to the community.

As a business owner/operator in Castle Rock, you have been selected to participate in this survey. Your participation is vital to the success of this research, so please take a few minutes of your time to complete this survey. Your responses will help the Town better meet the needs and expectations of businesses in the Town, decide how to best use its resources, and set goals.

SCR1 To confirm, do you currently own or operate a business that is licensed within the Town of Castle Rock?

01 YES
02 NO **[SKIP TO THANK1]**
999 DON'T KNOW/PREFER NOT TO ANSWER **[SKIP TO THANK3]**

SCR2 **Including yourself**, how many people currently work at your business?
If you have more than one location, only count those working in Castle Rock.

[IF NECESSARY: "Please include yourself when answering this question."**]**

SCR2 MUST BE GE 01

____ Number of people [INCLUDING YOURSELF]
998 DON'T KNOW
999 PREFER NOT TO ANSWER

SCR2A **[ASK IF SCR2 >1]** How many of those people are **employees** that physically work in Castle Rock?

____ Number of **EMPLOYEES**
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BSTAR QUESTIONS

---------- **<new screen>** ----------

BSTAR2 From what you have experienced, seen, or heard, compared with other cities and towns, how would you rate Castle Rock as a place to operate a business? Use a scale from 0 to 10 where "0" means "Significantly worse than other cities and towns" and "10" means "Significantly better than other cities and towns."

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Significantly Worse than Other Cities and Towns (0)	1	2	3	4	5	6	7	8	9	Significantly Better than Other Cities and Towns (10)
Castle Rock as a place to operate a business	o	o	o	o	o	o	o	o	o	o	o

998 DON'T KNOW
999 PREFER NOT TO ANSWER

BSTAR3 Using a scale from 0 to 10 where "0" means "Does not meet expectations at all" and "10" means "Greatly exceeds expectations," how would you rate the overall quality of services provided to businesses by the Town of Castle Rock?

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Does Not Meet Expectations at All (0)	1	2	3	4	5	6	7	8	9	Greatly Exceeds Expectations (10)
Overall quality of services provided	o	o	o	o	o	o	o	o	o	o	o

998 DON'T KNOW
999 PREFER NOT TO ANSWER

BSTAR4 Using a scale from "0" to "10" where "0" means "Strongly headed in the wrong direction" and 10 means "Strongly headed in the right direction," overall, would you say that Castle Rock is headed in the right or wrong direction?

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Strongly Headed in the Wrong Direction (0)	1	2	3	4	5	6	7	8	9	Strongly Headed in the Right Direction (10)
Direction Town is headed	o	o	o	o	o	o	o	o	o	o	o

998 DON'T KNOW
999 PREFER NOT TO ANSWER

BSTAR5 Thinking about services and facilities in Castle Rock, do you feel you are getting your money's worth for your tax dollar or not? Please use a scale from 0 to 10 where "0" means "Definitely not getting your money's worth" and "10" means "Definitely getting your money's worth."

(AS NEEDED) Please use your best estimate. There are no right or wrong answers.

	Definitely Not Getting My Money's Worth (0)	1	2	3	4	5	6	7	8	9	Definitely Getting My Money's Worth (10)
Value for tax dollar	o	o	o	o	o	o	o	o	o	o	o

998 DON'T KNOW
999 PREFER NOT TO ANSWER

BUSINESS ENVIRONMENT

---------- **<new screen>** ----------

BE1 Which of the following reasons factored most into your decision to open a business in Castle Rock? *(Select up to three)*

01 I live here / have a home-based business
02 Demand for a product / unique to the area
03 I like the area
04 Great / convenient location
05 I purchased an existing business / building
06 The growth potential
07 It is close to home
08 Availability of quality workforce
09 Cost of doing business is low
10 Something else (specify)
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BE4 Did your 2020 revenue decrease, stay the same, or increase compared to 2019?

01 Decrease
03 Stayed the same
04 Increase
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BE4A **[SHOW BE4A IF BE4=1 OR 3]** By what percent did your 2020 revenue [INCREASE / DECREASE] compared to 2019?

[show from 5% up to 85% in increments of 5% as a drop down]

BE5 Do you anticipate your 2021 revenue to decrease, stay the same, or increase when compared to 2020?

01 Decrease
03 Stayed the same
04 Increase
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BE5A **[SHOW BE5A IF BE5=1 OR 3]** By what percent do you anticipate your 2021 revenue [INCREASING / DECREASING] compared to 2020?
[show from 5% up to 85% in increments of 5% as a drop down]

BE6 In 2021 do you anticipate the number of your employees in Castle Rock to decrease, stay the same, or increase?

01 Decrease
03 Stayed the same
04 Increase
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BE8 Do you have all the resources you need to effectively run your business in Castle Rock?

01 Yes
02 No
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BE8A **[SHOW BE8A IF BE8=2]** What resources are missing?
[OPEN ENDED QUESTION]

BE5 Using a scale from 0 to 10 where 0 means "Very poor" and 10 means "Excellent," how would you rate the Town of Castle Rock on each of the following…

RANDOMIZE ORDER SHOWN

	Very Poor (0)	1	2	3	4	5	6	7	8	9	Excellent (10)
BE5_A Affordability of commercial real estate	o	o	o	o	o	o	o	o	o	o	o
BE5_B Availability of a variety of commercial real estate spaces	o	o	o	o	o	o	o	o	o	o	o

998 DON'T KNOW
999 PREFER NOT TO ANSWER

EMPLOYEE ENVIRONMENT

----------<new screen> ----------

[SKIP THE EE6 QUESITONS IF NUMBER OF EMPLOYEES FROM SCR2A = 0]

EE6 Next, using a scale from 0 to 10 where "0" means "Strongly disagree" and "10" means "Strongly agree," how would you rate each of the following aspects of Castle Rock?

RANDOMIZE ORDER SHOWN

	Strongly Disagree (0)	1	2	3	4	5	6	7	8	9	Strongly agree (10)
EE6_A I am able to find qualified employees living in Castle Rock	o	o	o	o	o	o	o	o	o	o	o
EE6_B Castle Rock is a good place for my employees to live	o	o	o	o	o	o	o	o	o	o	o
EE6_C There is a range of housing options available for my employees	o	o	o	o	o	o	o	o	o	o	o
EE5_D There are affordable housing options available for my employees	o	o	o	o	o	o	o	o	o	o	o
EE6_E There are transportation options available for my employees to get to/from work	o	o	o	o	o	o	o	o	o	o	o
EE6_F My employees want to live in Castle Rock	o	o	o	o	o	o	o	o	o	o	o
EE6_G Castle Rock is a safe place to do business	o	o	o	o	o	o	o	o	o	o	o
EE6_H Castle Rock is a safe place for my employees to live	o	o	o	o	o	o	o	o	o	o	o

998 DON'T KNOW
999 PREFER NOT TO ANSWER

EE7 **[SHOW EE6F <= 5]** You indicated that your employees most likely do not want to live in Castle Rock. Why not?
[OPEN ENDED QUESTION]

PLANNING FOR GROWTH

----------<new screen> ----------

BGROW1 Castle Rock's population is expected to more than double by the time the Town is fully built out. Good planning must be in place to ensure that the Town grows appropriately. Please tell me how much you agree or disagree with each statement regarding growth in Castle Rock. Use a scale from 0 to 10 where "0" means "Strongly disagree" and "10" means "Strongly agree."

RANDOMIZE ORDER SHOWN

	Strongly Disagree (0)	1	2	3	4	5	6	7	8	9	Strongly Agree (10)
BGROW 1_C It is important that future buildings continue to match the look and feel of the natural environment	o	o	o	o	o	o	o	o	o	o	o
BGROW 1_D Castle Rock needs to focus on development techniques that can be maintained for generations	o	o	o	o	o	o	o	o	o	o	o
BGROW 1_E Maintaining and improving Downtown is important to Castle Rock's distinct Town identity, sense of community and economic vitality	o	o	o	o	o	o	o	o	o	o	o
BGROW 1_F Castle Rock should promote the building of more multi-family housing in order to attract more workers and businesses	o	o	o	o	o	o	o	o	o	o	o

998 DON'T KNOW
999 PREFER NOT TO ANSWER

BUSINESS CHARACTERISTICS

----------<new screen> ----------

BDEMOINT The following, final questions are for classification purposes only. Your answers will remain strictly confidential and will only be used to help us group your answers with other respondents to the survey

BDEMO1 How many years has your business been located in Castle Rock?
[ALLOW FRACTIONAL ANSWERS]
[IF LESS THAN 6 MONTHS, ENTER "0"]
[IF 6 MONTHS TO 1 YEAR, ENTER "1"]
___ ENTER NUMBER OF YEARS
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BDEMO2 Are you also a current resident of Castle Rock?
00 NO
01 YES
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BDEMO3 Which of the following classification best fits your business?
01 Agriculture
02 Amusement/entertainment
03 Automotive
04 Construction/developers
05 Education
06 Financial
07 Health care
08 Hotel/lodging/hospitality
09 Insurance/real estate
10 Manufacturing/processing
11 Professional services (attorney, CPA, etc.)
12 Public utilities
13 Publisher/printers
14 Restaurant, café, caterer
15 Retail
16 Wholesale/distributor
17 Customer service
18 Nonprofit organization
19 Salon/spa
20 Something else (Please tell us) _____
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BDEMO4 Where is your business located? **[PHONE SHOW:** "Is it. . ."**]**

01 A home-based business
02 A free-standing retail location
03 A center location retail location **[AS NEEDED (WEB DISPLAY):** Such as a mall or shopping complex**]**
04 A free-standing office location
05 An office complex
06 Something else (Please tell us) _____
998 DON'T KNOW
999 PREFER NOT TO ANSWER

BDEMO5 What was your approximate 2020 revenue? **[PHONE SHOW:** "Was it. . ."**]**

01 Less than $100,000
02 $100,000 to less than $250,000
03 $250,000 to less than $500,000
04 $500,000 to less than $750,000
05 $750,000 to less than $1,000,000 **[PHONE SHOW:** $750,000 to less than $1 Million**]**
06 $1,000,000 to less than $5,000,000 **[PHONE SHOW:** $1 Million to less than $5 Million**]**
07 $5,000,000 to less than $10,000,000 **[PHONE SHOW**: $5 Million to less than $10 Million**]**
08 $10,000,000 or more **[PHONE SHOW:** $10 Million or more**]**
998 DON'T KNOW
999 PREFER NOT TO ANSWER

FUTURE RESEARCH

---------- **<new screen>** ----------

ASK FUTURE1 IF BDEMO2 = 1 (Also a resident)

FUTURE1 Keep the feedback coming! Join an online community to provide additional input to help the Town improve.

As a member of the community, you will help the Town plan for the future by better understanding residents' needs. By participating in online research activities (typically one to two times a month) on various topics, you can express your ideas and know they are being heard by the Town's leaders. Each activity takes approximately 5-10 minutes to complete.

As a community member, you will receive five points for each completed (with quality responses) activity. Each point is worth $1.00. As you complete an activity, you accumulate points. In addition, each month, all active community members will be entered into a drawing; five community members will be eligible to receive an additional 50 points. Once you have accumulated at least 10 points, you can request a VISA gift card.

The community is expected to run through April and will be moderated by our partner ComEngage.

00	NO
01	YES
998	**[WEB: DO NOT SHOW]** DON'T KNOW
999	**[WEB: DO NOT SHOW]** PREFER NOT TO ANSWER

ASK FUTURE3 IF (FUTURE1=1)

FUTURE3 Please provide an email address so you can participate in future research. We will only use this email address for this specific research for the Town of Castle Rock.

_____	ENTER EMAIL ADDRESS
_____	CONFIRM EMAIL ADDRESS **[MUST MATCH]**
997	**DO NOT READ:** I DO NOT HAVE AN EMAIL ADDRESS
998	**DO NOT READ:** DON'T KNOW
999	**DO NOT READ:** PREFER NOT TO ANSWER

THANKS / DISPOSITIONS

---------- **<new screen>** ----------

THANK1 Thank you for your time, but we are only interviewing people who own or operate a business located in the Town of Castle Rock.

THANK2 Thank you for your time, but we are only interviewing residents 18 years of age or older.

THANK3 Thank you for your time, but we cannot continue without that information

THANK4 **[TO BE USED ON OUTBOUND CALLS]** Thank you very much for your time. We greatly appreciate your help. Have a good day/night.

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 4. **File #:** ID 2023-004

To: David L. Corliss, Town Manager

Through: Tara Vargish, Director Development Services

From: Kevin Wrede, Planning Manager

Update: Quasi-Judicial Projects

Executive Summary

The purpose and intent of this report is to provide Town Council with a summary of quasi-judicial projects. In order to provide all parties with due process under law, decision makers must be fair and impartial when considering quasi-judicial applications such as those included in this memorandum. Many of these projects do not have public hearing dates yet, but Town Council could be asked to consider them in the future.

New Applications

No new applications have been submitted.

On-going Quasi-Judicial Applications (currently under review)

The full list of on-going quasi-judicial projects along with vicinity maps can be found on the attached Staff Memorandum.

Meeting Date: January 3, 2023

AGENDA MEMORANDUM

To: David L. Corliss, Town Manager

Through: Tara Vargish, Director Development Services

From: Kevin Wrede, Planning Manager

Title: **Update: Quasi-Judicial Projects**

Executive Summary

The purpose and intent of this report is to provide Town Council with a summary of quasi-judicial projects. In order to provide all parties with due process under law, decision makers must be fair and impartial when considering quasi-judicial applications such as those included in this memorandum. Many of these projects do not have public hearing dates yet, but Town Council could be asked to consider them in the future.

New Quasi-Judicial Applications:

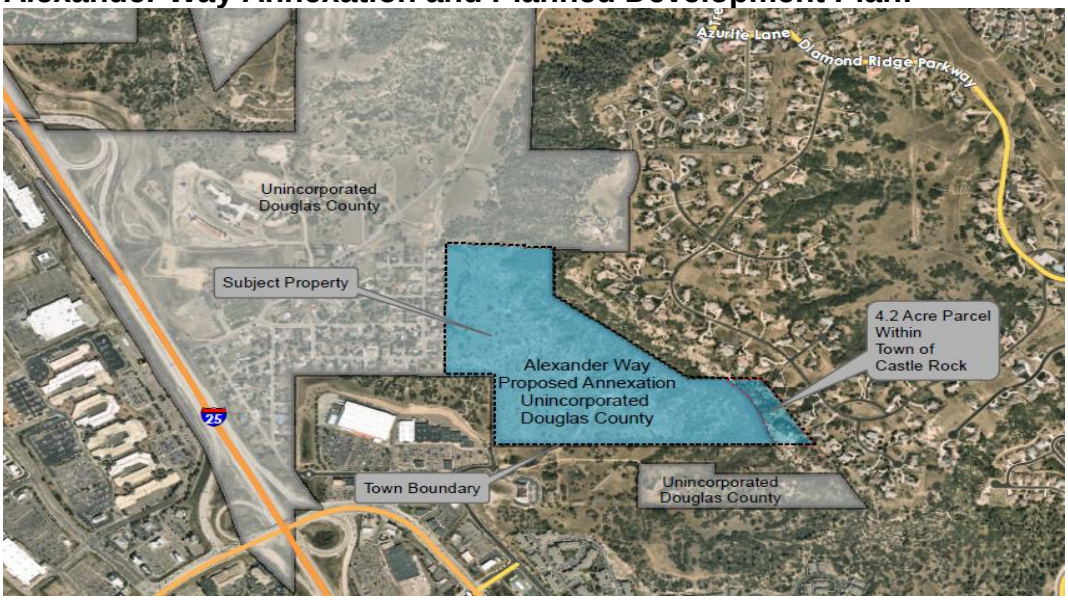
No new applications have been submitted.

On-going Quasi-Judicial Applications (currently under review):

544 Senter Drive Accessory Dwelling Unit:

Property owners, Anthony and Irene Chin have submitted an application for a Use by Special Review for an Accessory Dwelling Unit. The accessory dwelling unit is a detached structure located in the south corner of the property. The proposed structure includes 2 stories with a garage and accessory dwelling totaling 1,112 square feet. The Use by Special Review will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The property is located in Councilmember LaFleur's district.

Alexander Way Annexation and Planned Development Plan:



The property owner has submitted an annexation petition to annex 73.76 acres north of the Alexander Place and Brewer Court intersection. The project is being referred to as Alexander Way. The property owner has submitted an application for a Planned Development Plan and Zoning Regulations for the annexation area and a 4.2-acre parcel that is already in the Town, for 77.96 acres total. The applicant is seeking zoning which would allow for 53 single family homes, 24 live/work units, and includes 30 acres of open space. This project will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The proposal is located adjacent to both Councilmember Cavey and Councilmember LaFleur's districts.

Auburn Heights Apartments Planned Development Plan Major Amendment and Site Development Plan Major Amendment:

The property owner has submitted an application to amend the zoning and the currently approved site development plan for lot 2 of Auburn Ridge, which is approximately 6 acres in size and generally located in the southwest quadrant of E. Wolfensberger Road and Auburn Drive, southwest of the Auburn Ridge Senior Apartments. Currently, the zoning permits 100 multi-family units for seniors. The zoning amendment seeks to permit 104 multi-family units for people of all ages and the SDP amendment seeks to rearrange the buildings on the site to reduce impacts to surrounding neighbors. The project is known as Auburn Heights Apartments and proposes a total of five apartment buildings containing a total of 104 units, a clubhouse, pool, dog run, playground, and 222 parking spaces. The proposed parking is a combination of attached garages, detached garages, and surface parking. Both the PDP Amendment and the SDP Amendment will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The project is located within Mayor Pro Tem Bracken's district.

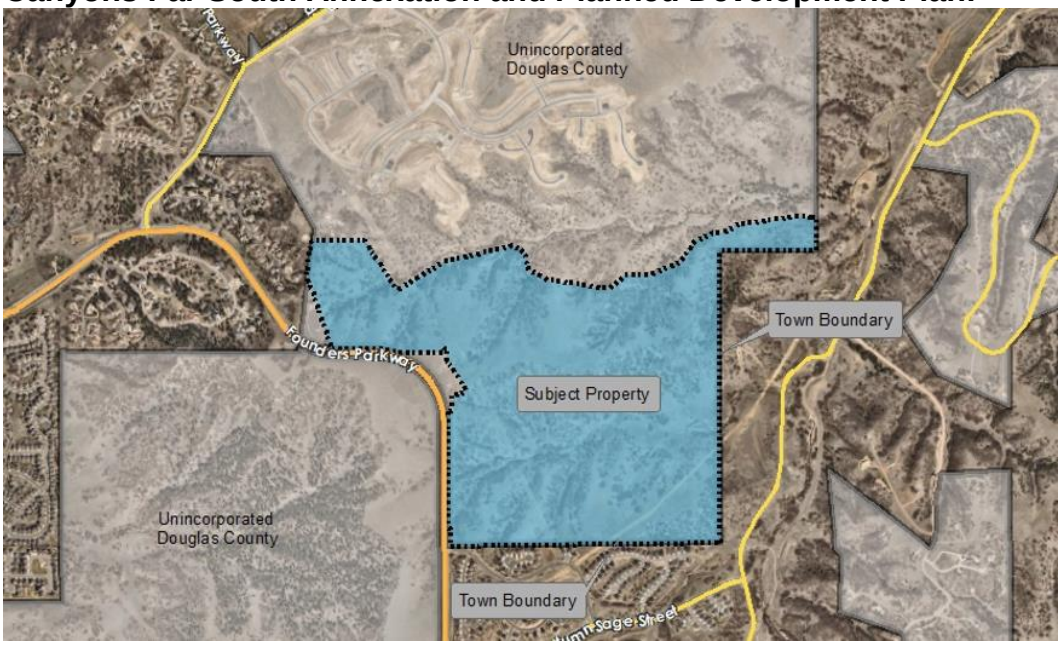
Avilla at Founders Site Development Plan:

The property owner, NexMetro Communities, has submitted an application for a Site Development Plan (SDP) proposing a 105 unit for rent community on approximately 9 acres. The 105 units are composed of 71 single family detached homes and 17 paired homes (34 units). The property, which is within the Bella Mesa Planned Development (PD), is located at the northwest corner of Mikelson Blvd. and Mitchell St., south of Mesa Middle School. The SDP will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The property is located in Councilmember Brooks' district.

Brickyard Planned Development Plan:

Confluence Companies has submitted a quasi-judicial application for The Brickyard Planned Development Plan and Zoning Regulations, a mixed use development with a maximum of 600 multi-family dwelling units, and office, retail, hotel, performance venue and recreational space. The site is approximately 31 acres and is located on Prairie Hawk Drive, north of Plum Creek Parkway and south of Topeka Way. The proposed rezoning will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The project is located in Mayor Pro Tem Bracken's district.

Canyons Far South Annexation and Planned Development Plan:



The property owner has submitted an annexation petition to annex a 409-acre site located south of Crowfoot Valley Road, east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive into the Town of Castle Rock. The owner has also submitted the Canyons Far South Planned Development Plan for zoning of the property for a new neighborhood consisting of 474 single-family homes and 60,000 sq. ft. of neighborhood commercial. The annexation and zoning will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The project is adjacent to Councilmember Cavey's district.

Chateau Valley Site Development Plan:

Highline Engineering & Surveying has submitted an application for the Chateau Valley Site Development Plan (SDP) proposing a 423-unit residential subdivision on 113 acres. The 423 units is composed of 297 single family detached homes and 63 paired homes (126 units). The property, which is within the Young American Planned Development (PD), is generally located east of Memmen Park, north of the Baldwin Park subdivision, and south of the Southridge Townhome subdivision. The Site Development Plan includes a total of 42.2 acres of open space. The SDP will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The property is located within Councilmember Brooks' district.

Downtown Circle K Site Development Plan:

A new quasi-judicial application from Land Development Consultant, on behalf of Circle K, was submitted for a Site Development Plan for a new 3,700 sq. ft. convenience store building to replace the existing 1,838 sq. ft. building. No changes are proposed for the existing fueling station, which is to remain open during construction of the new convenience store building. The property is approximately 1.8 acres in size and located at 310 S. Wilcox St. in Downtown Castle Rock, south of the Castle Rock library. The SDP will require a public hearing before the Design Review Board (DRB) for review and final decision. The project is located within Councilmember LaFleur's district.

Dunkin Donuts Site Development Plan:

Ethos Architecture Group, on behalf of property owner Linden Partners, has submitted a Site Development Plan for a 2,340 square foot Dunkin Donuts with drive through. The proposed location is a 1.13-acre lot at the north east corner of Founders Pkwy. and Aloha Ct. within the Founders Marketplace development. The proposal will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The project is located within Councilmember Cavey's district.

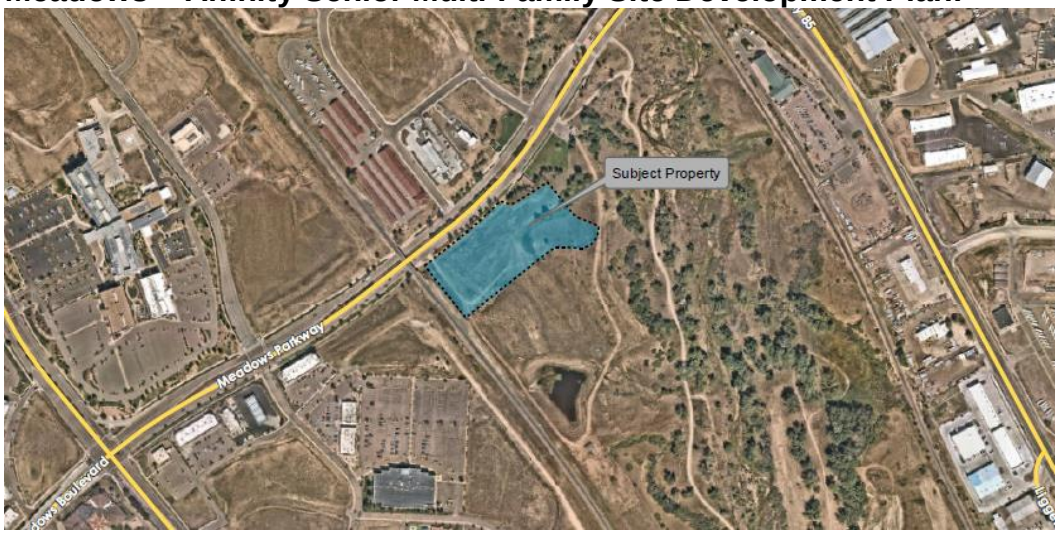
Eternal Rock Evangelical Lutheran Church Site Development Plan Amendment:

The property owner has submitted an application for a Site Development Plan known as Eternal Rock Evangelical Lutheran Church for approval of new landscaping, new signage, new storage facility, and to reconfigure the parking lot with the addition of a second entrance together with new curb/gutter/sidewalk along Phelps Street on the 0.63-acre property. The Downtown Site Development Plan will require a public hearing before the Design Review Board for review and final decision. The property is located in Councilmember LaFleur's district.

Front Street Triplexes Site Development Plan:

Total Development Corporation, on behalf of Front & Center, LLC, has submitted an application for a Site Development Plan for approval of two triplex residential buildings on a 0.273-acre lot on Front Street between Fifth and Sixth Streets. Each unit will be two bedrooms and 2.5 bathrooms and a total of 14 parking spaces will be provided on the property. The property falls within the Front Street Overlay District and the Craig & Gould neighborhood. The Site Development Plan will require a public hearing before Planning Commission who will provide a recommendation to Town Council who will review and decide on the project at a public hearing. The applicant has also submitted an application for architectural review by the Historic Preservation Board as the property is within the Craig & Gould neighborhood. A public hearing will be held before the Historic Preservation Board for review and approval of the project's architecture. The property is located in Councilmember LaFleur's district.

Meadows – Affinity Senior Multi-Family Site Development Plan:



The property owner has submitted a Site Development Plan on a 7-acre site that is located south of Meadows Parkway, east of the movie theater and west of the Plum Creek Trailhead parking lot in the Meadows. The proposal is for an active adult, age-restricted development to include 174 units for lease at market rate. The 4-story building includes 1st floor parking. Amenities planned include a theater room, fitness center, game room, pub, golf simulator, indoor pool, workshop and community garden. The proposal requires public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The property is located in Mayor Pro Tem Bracken's district.

Meadows Town Center Site Development Plan:

The property owner has submitted a new quasi-judicial application for a Site Development Plan for a proposed mixed use development of 3 parcels in the Meadows Town Center, located on Future and Mercantile Streets. The Garrett Companies is proposing 85 residential units as a combination of townhomes and mixed use apartment buildings. Approximately 6,248 square feet of retail space will be available on the ground floor of one building. Amenities on the site include surface and garage parking, and outdoor pool and gathering area. The proposal requires public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision The property is located in Mayor Pro Tem Bracken's district.

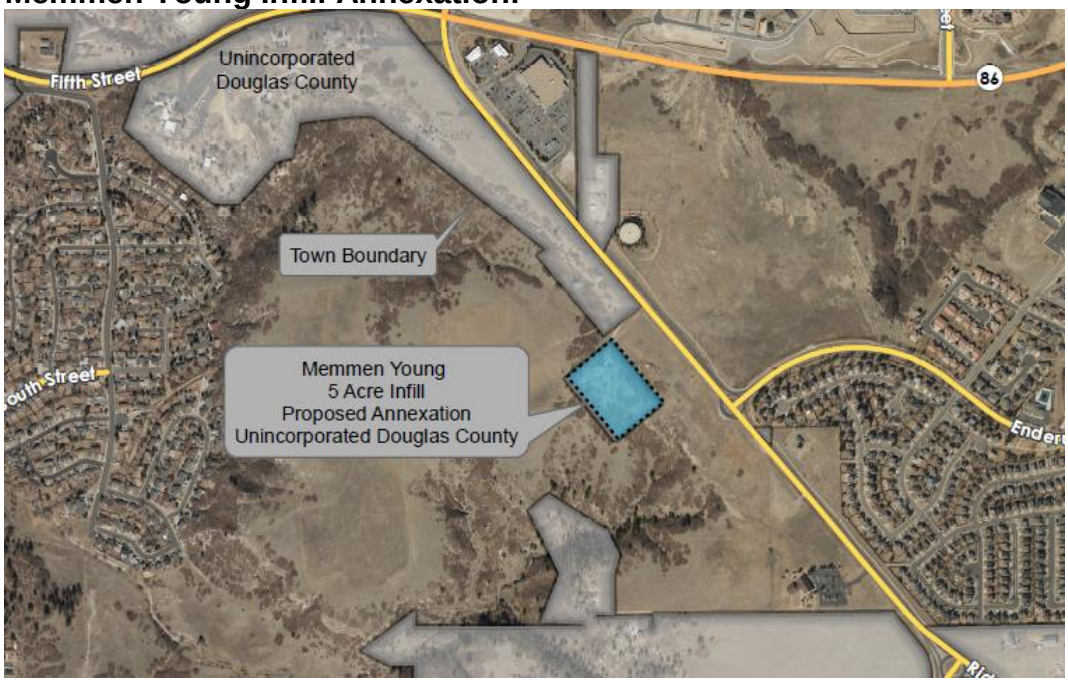
Meadows Filing 16 Site Development Plan Amendment:

A new quasi-judicial application was submitted from Castle Rock Development Co. for Meadows Filing 16, Parcel 6, for a residential Site Development Plan Amendment. The property is approximately 136 acres and is located east of Coachline Road, south of Red Hawk Ridge Golf Course, west and north of Town open space. The property has an approved site plan for 59 single family lots and proposed to dedicate 83 acres as public/private open space. The proposed Site Development Plan amendment proposes 77 lots for single family homes, 83 acres of Town owned open space, and an additional 30 acres of open space dedicated to the Meadows HOA. This SDP amendment also increases the buffer between the residential development and the adjacent golf course from the previously approved plan. The proposal requires public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. This property is located within Mayor Pro Tem Bracken's district.

Meadows Filing 19 Senior Multi-Family Site Development Plan:

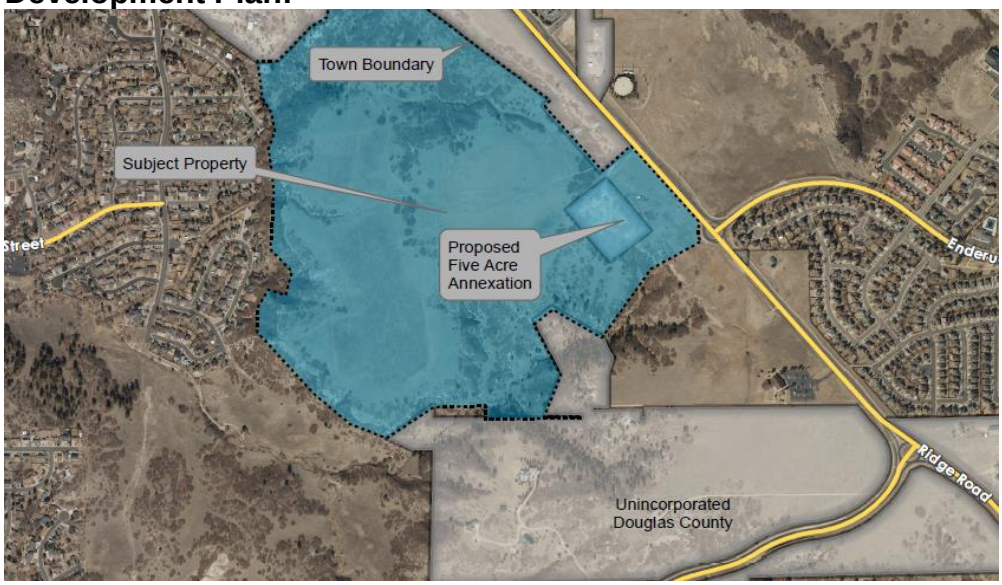
Ulysses Development has submitted a Site Development Plan for a 4-story 183,999 square foot senior housing apartment development that contains 200 units. The project is proposing an associated 271 parking spaces with the project and will contain a mixture of 1 and 2 bedroom units. The proposed location is a 5.5-acre site located west of Timber Mill Parkway and North Meadows Drive. The proposal requires public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision The project is located in Councilmember Hollingshead's district.

Memmen Young Infill Annexation:



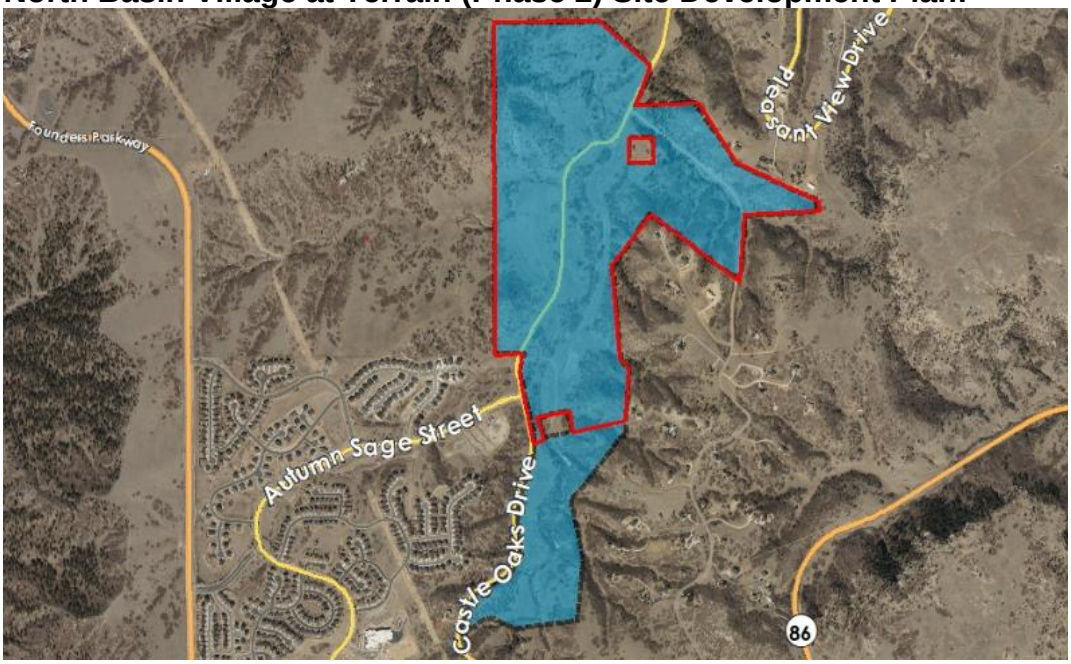
The property owner has submitted a Petition for Annexation for a five-acre parcel. The parcel is located south of Fifth Street, north of East Plum Creek Parkway, and west of Ridge Road. The 5-acre parcel is completely surrounded by the existing Memmen Young Infill Planned Development. A single family residence is currently on the property. The applicant will propose to incorporate the parcel into the Memmen Young Infill PD through the Major Amendment under review. The annexation of the parcel and the Memmen Young Infill PD Major Amendment would be considered concurrently during required public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The project is surrounded by Councilmember Brooks' district.

Memmen Young Infill Planned Development Plan and Founder's Vista Site Development Plan:



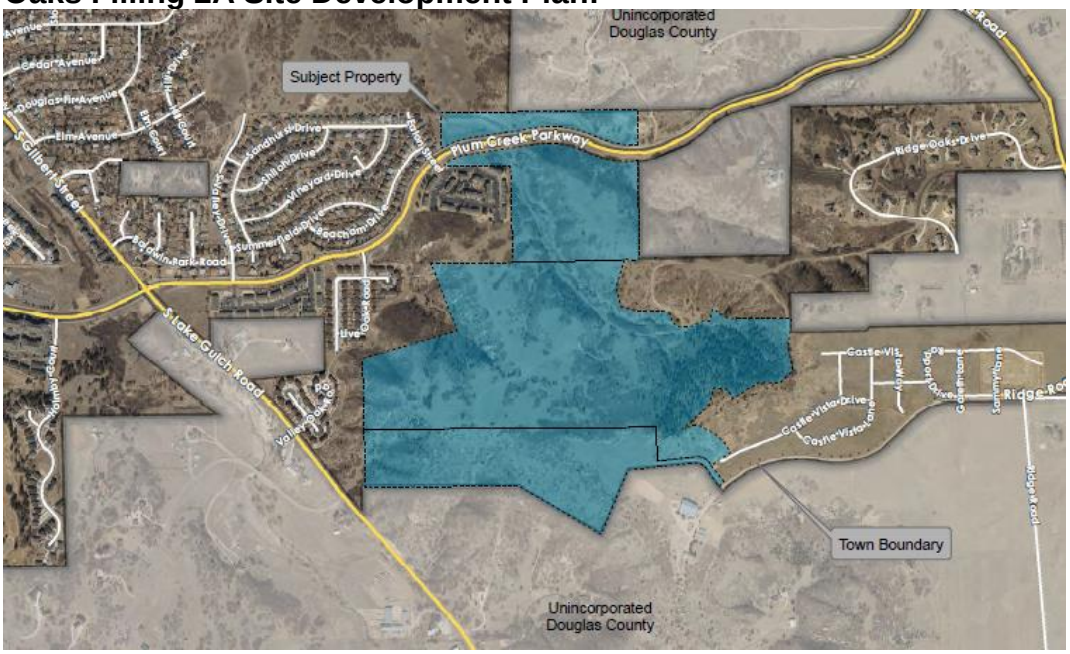
The property owner has submitted a Planned Development Plan and a Site Development Plan (SDP) for a 561-unit residential development within the Memmen Young Planned Development, also known as Founder's Vista. The Site Development Plan proposes 333 single-family homes and 228 paired homes. The proposed development is 180.5 acres in size of which 86.7 acres is proposed to be open space. The proposed Site Development Plan is contingent on the approval of the Memmen Young Infill Planned Development Major Amendment and the annexation of a 5-acre parcel. The Planned Development Plan Amendment will require public hearings before the Planning Commission for review and recommendation and the Town Council for review and final decision. If the Planned Development Plan Amendment is approved, then the Site Development Plan would move forward to public hearings before the Planning Commission for review and recommendation and the Town Council for review and final decision. The project is located in Councilmember Brooks' district.

North Basin Village at Terrain (Phase 2) Site Development Plan:



The property owner has submitted a Site Development Plan (SDP) for 105 single family homes on approximately 1,180 acres within the Terrain North Basin Phase 2 development. The proposed development also includes approximately 150 acres of Open Space dedication. The project is located along Castle Oaks Drive. The SDP will require public hearings before the Planning Commission for review and recommendation, and Town Council for review and final decision. The project is located within Councilmember Cavey's district.

Oaks Filling 2A Site Development Plan:



Henry Design Group, Inc., on behalf of the property owner, Castleview LLC, has submitted an application for a site development plan (SDP) for a residential neighborhood known as the Oaks of Castle Rock Filing 2A. The Oaks of Castle Rock Filing 2A is approximately 165 acres in size and generally located south of Plum Creek Parkway, east of Lake Gulch Rd., and west of N. Ridge Road. The SDP proposes 114 single-family homes, open space and a public trail system. The SDP will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The property is located in Councilmember Brooks' district.

Pinon Manor Apartment Planned Development Plan:

The property owner has submitted a rezoning application for 472, 481 and 498 S. Gilbert Street. The application proposes to consolidate three properties totally 3.25 acres into one zoning classification known as Pinon Manor Planned Development (PD). The rezoning would allow for the existing developed apartments to remain and to provide for the development of an adjacent parcel to contain 3 new apartment buildings with a total of 20 new dwellings. The PDP will require public hearings with the Planning Commission for review and recommendation and Town Council for review and final decision. The project is located within Councilmember Dietz's district.

Pioneer Ranch Annexation and Planned Development Plan:

The property owner has submitted an annexation petition to annex a 388-acre site located west of Founders Parkway and east of Front Street into the Town of Castle Rock. The applicant is proposing the Pioneer Ranch Planned Development Plan zoning to allow 1,123 dwelling units (a mix of single-family and multi-family), 78 acres of open space, and 39 acres dedicated for public uses, such as schools and parks. The annexation and planned development plan require public hearings before Planning Commission for review and recommendation and Town Council for review and final decision. The project is adjacent to Councilmember Cavey's district and Councilmember LaFleur's district.

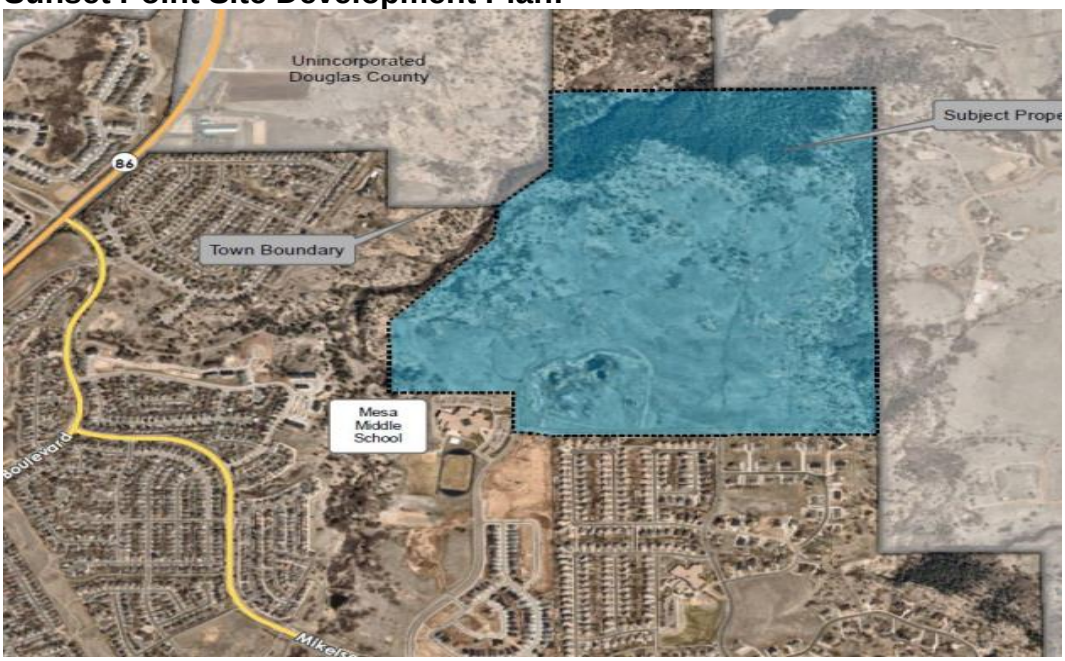
Plum Creek Planned Development Amendment:

The Douglas Group, Inc. has submitted an application to amend a planned development plan to create 3 single family lots from a tract in Plum Creek Planned Development. The general location of the tract is directly west of the intersection of West Prestwick Way and Mount Royal Drive, in the southwest portion of Plum Creek Planned Development. The parcel size of Tract B is 1.5 acres. The applicant is proposing to create three lots ranging in size from 20,271 to 22,581 square feet. The proposal will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The project is located in Councilman Dietz's district.

Scileppi's/Slice Works Restaurant Downtown Site Development Plan:

The property owner, Scileppi Properties, LLC, has submitted an application for a Downtown Site Development Plan for an expansion to the Scileppi's/Slice Works restaurant. The expansion located on the east side of the existing building, where the existing parking lot is located, is approximately 6,000 square feet in size with 4,000 square feet of the expansion at ground level and 2,000 square feet within the basement. Seven on-site parking spaces will be located off the rear alley of the 0.278-acre property. The Downtown Site Development Plan will require a public hearing before the Design Review Board for review and final decision. The property is located in Councilmember LaFleur's district.

Sunset Point Site Development Plan:



The property owner, Fourth Investment USA, LLC, has submitted an application for a Site Development Plan (SDP) for a residential neighborhood known as Sunset Point, formally known as Bella Mesa North. Sunset Point is approximately 293 acres in size and generally located northeast of Mesa Middle School. The SDP proposes 525 single-family homes, dedicated open space and a trail system. The SDP will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. The property is located within Councilmember Brooks' district.

Wellspring and Castle Oaks Covenant Church Annexation:

The property owner has submitted a new quasi-judicial application for annexation of a parcel of land for Wellspring Community Center and Castle Oaks Covenant Church. The annexation petition is to annex approximately 2.07 acres located at 498 E. Wolfensberger Road, for future Wellspring and Castle Oaks Covenant Church facilities. After staff review, this annexation petition will be scheduled for Substantial Compliance and Eligibility hearings with Town Council. The annexation will require public hearings before the Planning Commission for review and recommendation and Town Council for review and final decision. This property is located adjacent to Mayor Pro Tem Bracken's district.

The Town's Development Activity map provides additional information on these quasi-judicial applications, as well as projects that are under administrative (non quasi-judicial) review. This map is available at: CRgov.com/developmentactivity.

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 5. **File #:** ID 2023-005

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Tara Vargish, Director of Development Services

Development Services Project Updates

The high-growth nature of Castle Rock results in numerous and diverse questions from individuals seeking information about existing conditions and future plans. Information on community development activity and formal land use applications are located on the Town website under the Development Activity Map link.

Development activity continues to be strong, with continued interest for a variety of project types in Castle Rock. Permit activity remains steady, and homebuilders and commercial builders remain active.

Please see the attached Staff Memorandum for project details.

Meeting Date: January 3, 2023

AGENDA MEMORANDUM

To: David L. Corliss, Town Manager

From: Tara Vargish, PE, Director of Development Services

Title: **Town Manager Report – Development Project Updates**

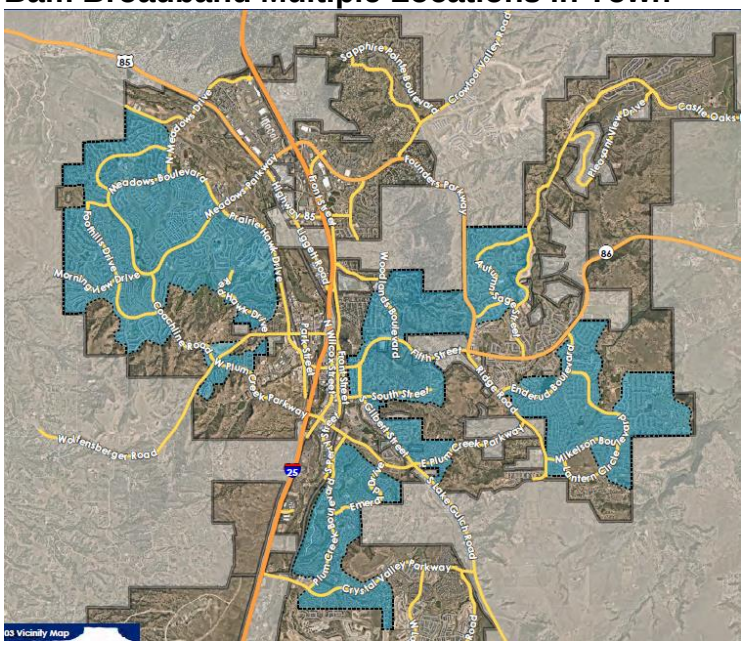
This report contains development updates and new submittals or requests that have been submitted to staff since the last update to Town Council. The high-growth nature of Castle Rock results in numerous and diverse questions from individuals seeking information about existing conditions and future plans and formal applications for development. More information on community development activity and formal land use applications are located on the Town website under the Development Activity Map link, which can be accessed at CRGov.com/DevelopmentActivityMap

New Quasi-Judicial Applications Requiring Public Hearings

None

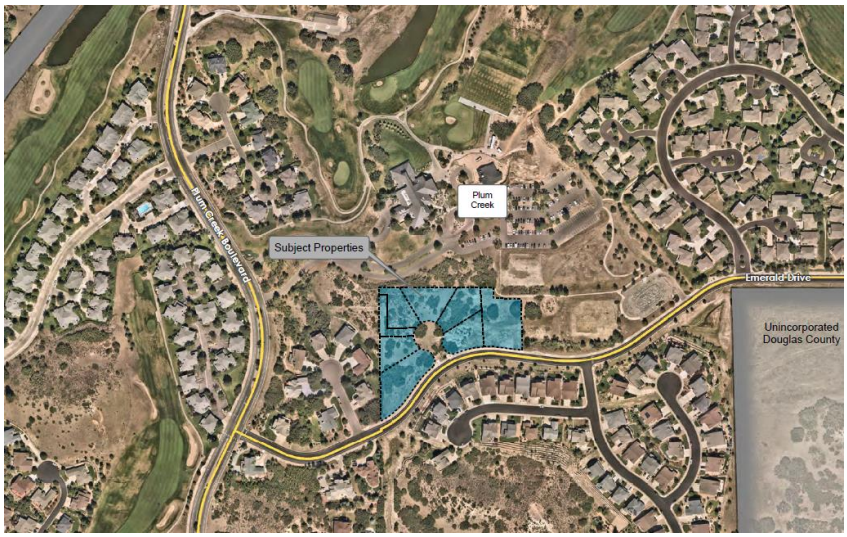
New Pre-Application Meeting Requests

Bam Broadband Multiple Locations in Town



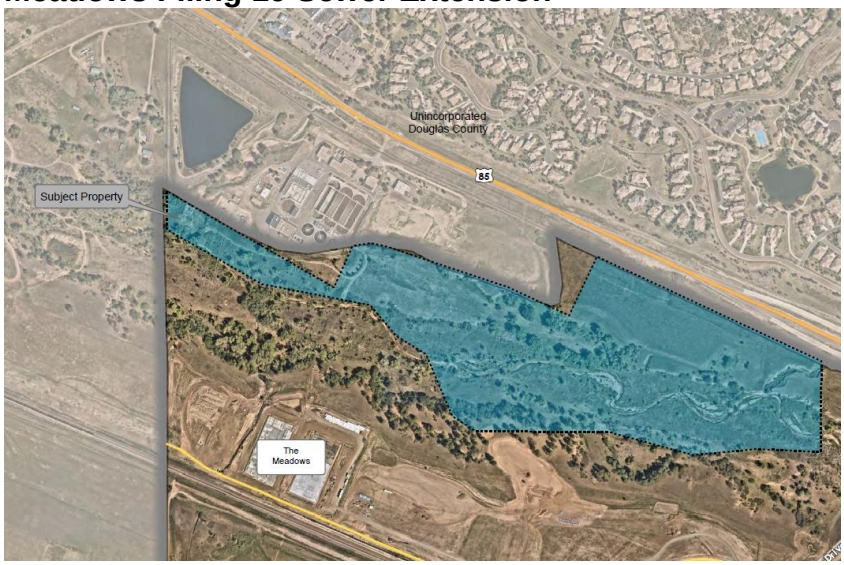
A pre-application meeting request from Bam Broadband was submitted seeking information on application and submittal requirements to add Fiber to the Home (FTTH) in the Right of Ways and Utility Easements in numerous existing neighborhoods. The applicant intends to start in the Meadows and then move to southeast neighborhoods and on to eastern neighborhoods throughout Castle Rock. This project is proposed in parts of all Council districts.

Emerald Hills Construction Documents



A pre-application meeting request seeking information on application and submittal requirements to update construction drawings and to move forward with the installation of infrastructure for seven single-family lots. These seven lots are currently undeveloped and are located on approximately 3.49 acres off Emerald Drive, east of Emerald Court in the Plum Creek Fairway 9 Subdivision, Filing 1, 2nd Amendment. The project is located in Councilmember Dietz's district.

Meadows Filing 19 Sewer Extension



A pre-application meeting request was submitted seeking information on application and submittal requirements to extend the sanitary sewer line from Meadows Filing 19, Lot 1 to the Plum Creek Regional Wastewater Treatment Facility located on the south side of the intersection of State Highway 85 and West Happy Canyon Road. The applicant is proposing to construct approximately 5,000 linear feet of eight-inch PVC line to provide service to the site (previous pre-application submitted for an automotive business on Lot 1). The project is located in Councilmember Hollingshead's district.

The Ridge at Crystal Valley Monument Signs

A pre-application meeting request was submitted seeking information on application and submittal requirements to make changes to the monument signs located in The Ridge at Crystal Valley, Filing 1. The applicant, Toll Brothers, is proposing to remove two monument signs on Renbarger Street as they are not located at the entrances to the neighborhood, and make the sign located at War Knot Lane a larger entrance sign into the community. Toll Brothers is also requesting to remove wood accents throughout this filing to make their monument sign similar to other neighborhoods inside Crystal Valley Ranch. The project is located in Councilmember Dietz's district.

<u>Ongoing Development Activity</u>:

Commercial Development Activity

- **Promenade:**
  - Alana at Promenade Apartments, building and site construction for 300 unit multi-family residential development, located on Alpine Vista Circle, west of Promenade Parkway.
  - Buffalo Wild Wings, building and site construction, located on the southwest corner of Factory Shops Boulevard and New Memphis Court.
  - Los Dos Portrillos, pad site construction, and restaurant site plan review for new 7,400 square foot restaurant, located west of TJ Maxx off Promenade Parkway. Grading only approved
  - Chipotle pad site, site plan, plat and construction documents approved, and building site plan approved for building elevations for a future Chipotle, located off Promenade Parkway north of Sam's Club.
  - Promenade Commons Park, site plan, plat and construction document approved for new half-acre park connecting the Alana multi-family and the proposed commercial area, located on the west side of Promenade Parkway and Alpine Vista Circle.
  - Lazy Dog Restaurant site plan review for a new stand-alone restaurant, located on the northeast corner of Castlegate Drive West and Promenade Parkway.
  - Whole Foods, site plan amendment to add EV charging stations in the existing parking lot, located at 6384 Promenade Parkway.

- **Meadows:**
  - Access road, construction documents approved for public street construction that will support future commercial/office developments, located northwesterly of the North Meadows Drive roundabout.
  - Aspen View Academy, building and site construction for an addition, located at 2131 Low Meadow Boulevard.
  - Bridge and access road, site construction, connection of the roundabout on North Meadows Parkway south, and then east crossing Plum Creek.
  - Castle Rock Adventist Hospital Medical Office Building and site constriction for a new 70,000-square-foot medical office building, located at 2350 Meadows Boulevard.
  - Castle Rock Industrial at the Meadows Lot 1, site and building construction for new 80,000+/- square foot warehouse space, located on the future Timber Mill Parkway north of North Meadows Drive.
  - Castle Rock Industrial at the Meadows Lot 2, site and building construction for new 80,000+/- square foot warehouse space, located on the future Timber Mill Parkway north of North Meadows Drive.
  - Kum and Go, building and site construction for a 5,620 square foot Convenience Store and Fuel Canopy, located at the northwest corner of Meadows Parkway and Lombard Street.
  - Lot grading, retaining wall, and waterline construction plan and plat approved, located on vacant commercial lots north of the AMC theatre.
  - The Learning Experience, revised site development plan and construction plan review for a 10,000-square-foot, single-story daycare center to be located on Meadows Boulevard between Springbriar Drive and Shane Valley Trail.
  - Meadows Parkway Intersection improvements, construction document review for improvements to the intersections of Meadows Parkway at Regent Street and Lombard Street.
  - Meadows Senior Multi-Family, site plan, plat and construction document review for a new 4- story senior housing apartment development with 200 units, located near North Meadows Drive and Timber Mill Parkway.
  - Meadows Affinity Senior Multi-Family, site plan and plat review for a new 4- story senior housing apartment development with 174 units, located near Meadows Parkway and Regent Street.
  - Meadows Town Center Townhomes/Mixed-use, site plan and construction document review for 85 residential units with approximately 6,248 square feet of retail, located on three lots off Future Street.
  - Moore Lumber at the Meadows, building and site construction for a new 16,880 square foot retail, warehouse, and office building, located at the north end of Regent Street.
  - Prairie Hawk Dental, site plan review for new 5,100 square foot dental office building, located at the northeast corner of Prairie Hawk Drive and Limelight Avenue.
  - Sol Danza Auto Repair, site plan review for new 4,600 square foot automotive service center, located near the intersection of Prairie Hawk Drive and Sol Danza Drive.

- **Downtown:**
  - 221 Wilcox Street construction documents approved for infrastructure for future mixed-use building, with 28 residential units and 8,100 square foot retail space, located on the southwest corner of Wilcox Street and Third Street.
  - Circle K, site plan review for new 3,700 square foot convenience store to replace the existing building on the site. Located at 310 South Wilcox Street.
  - Douglas County Libraries, building and site construction for 62,000 square foot library building and demolition of the existing building, located at 100 South Wilcox Street.
  - Eternal Rock Church, site plan review for new landscaping, signage, and storage, located at 2 Phelps Street.

- Keystone Hotel site plan approved for the addition of a new patio on the west side of the building, located at 217 Fourth Street.
- Perry Street Social, site development plan approved and construction document review to create a mini entertainment district, located at 404 North Perry Street.
- Pizza Hut Retail Center, building and site construction for a new commercial center located at 340 South Wilcox Street.
- Railroad Quiet Zone, Town project, construction documents approved for improvements at Second Street, Third Street, and Fifth Street.
- Scileppi properties, site plan review for a 6,000 square foot addition and the addition of seven parking spaces, located at 210 Third Street.
- The View, site and building construction for a 6-story building with mixed-uses including 218 residential units, located at Sixth Street and Jerry Street.

- **Dawson Trails Residential/Commercial:**
  - Dawson Trails, Planned Development Plan amendment approved for 2,064 acres with 5,850 residential dwelling units and a maximum of 3,200,000 square feet of commercial/non-residential uses, located to the west of I-25 and generally south and north of Territorial Road.
  - Dawson Trails Demo, construction plan review to demo infrastructure within the Dawson Trails development, located south of Territorial Road.

- **Other Commercial Projects throughout Town:**
  - 282 Malibu Commercial buildings, site development plan amendment review for a new patio and site construction for two 4,000 square foot commercial buildings, uses are unknown at this time, located at 282 Malibu Street.
  - Castle Rock Auto Dealerships, site development plan approved for service center expansion, located at 1100 South Wilcox Street.
  - Founders Marketplace, Dunkin Donuts, site plan review for a new restaurant with drive-through, located at the northeast corner of Founders Parkway and Aloha Court.
  - Founders Marketplace, Liberty Express Carwash, building TCO and site construction, located northeast of Fifth Street and Founders Parkway.
  - Founders Marketplace, Retail building, site development plan approved for mixed-use retail building, located on Ridge Road between King Soopers Fueling Station and IREA substation.
  - Garage Condos, site and building construction, located on Liggett Road.
  - Heckendorf Ranch Retail, building and site construction for a new 8,100 square foot retail building located on Crystal Valley Parkway west of Plum Creek Boulevard.
  - Outlets at Castle Rock, site development plan review, two new pad sites on the west side of the mall on Factory Shops Boulevard.
  - Phillip S. Miller Regional Park, construction plan approved for Play Loop Trail.
  - Plum Creek Golf Course, site plan amendment review and building and site construction for a new clubhouse, located at Plum Creek Boulevard and Players Club Drive.
  - Sanders Business Park, site construction for 2.4-acre site, located south of The Plum Creek Community Church. The future use is a facility for distribution of heating and plumbing equipment.
  - Sanders Business Park, site construction for approximately 51,000 square feet of industrial flex space, located south of The Plum Creek Community Church.
  - StorQuest, building and site construction for new 98,000 square foot self-storage and RV parking, located off Liggett Road west of Kellogg Court.
  - T-Mobile small cell sites, construction documents for 4 locations in the public right-of-way: 1) Park Street and Eighth Street, 2) Factory Shops Boulevard & New Memphis, 3) Factory Shops and Outlet Entrance, 4) Limelight near Hospital ER Entrance.

- The Brickyard, erosion control and demolition plan approved for demolition of existing building on 4.5 acres, located on the south end of Prairie Hawk Drive.
- The Brickyard Planned Development Plan and Zoning Regulations, under review for a mixed-use development with a maximum of 600 multi-family dwelling units, located on the south end of Prairie Hawk Drive.
- The Famous Steak House, site development plan and interior building renovation, located in former Jarre Creek Brewery building south of Chili's.
- Verizon small cell sites, construction documents for multiple locations in public right-of-way: 1) Factory Shops Boulevard and New Beale Street, 2) Promenade Parkway and Castle Rock Parkway (approved plans), 3) Promenade Parkway (approved plans), 4) Castlegate Drive West (approved plans), 5) Castlegate Drive West and Castle Rock Parkway (approved plans), 6) Factory Shops Boulevard and Meadows Boulevard, 7) Mitchell Street near Mesa Middle School, 8) South Valley Drive north of Plum Creek Parkway, 9) Low Meadow Boulevard and Night Song Way, 10) South Gilbert Street between Gilbert and Sellers Drive at Birch Avenue, 11) Foothills Drive and Soaring Eagle Lane, 12) Foothills Drive and Morning View Drive.
- Walmart, site development plan approved for new drive-through ATM at the west end of the existing parking lot.
- Wellspring and Castle Oaks Covenant Church, annexation petition is to annex approximately 2.07 acres located at 498 East Wolfensberger Road, for future Wellspring and Castle Oaks Covenant Church facilities
- Woodlands Medical Office Building site plan review for a new 14,336 square-foot medical office building located near Woodlands Boulevard and Barranca Drive.
- Zaika Indian Restaurant, site plan review to enclose the existing patio on the south side of the building, located at 78 Allen Street.

Residential Development Activity:

- 302 North Lewis Street Historic Preservation application, 830 square foot detached garage.
- 306 North Lewis Street Historic Preservation application, 400 square foot addition.
- Alexander Way, annexation petition for 73.76 acres of land, located north of Alexander Place and Brewer Court.
- 544 Senter Drive, use by special review for a new two-story accessory dwelling unit with garage.
- Auburn Heights Apartments, rezoning application to amend the zoning and the currently approved site development plan for Lot 2 of Auburn Ridge.
- Avilla at Founders, site plan and construction document review, for 105 for-rent single-family dwellings, located on the northwest corner of Mikelson Boulevard and Mitchell Street.
- Bella Mesa, site plan, plat and construction documents approved for relocation of existing detention pond, located north of Mesa Middle School off Mitchell Street.
- Canvas at Castle Rock, site construction for 102 townhome units, located at Plum Creek Boulevard and Crystal Valley Parkway.
- Canyons South Longstory Avenue, under construction for water and sanitary mains for future development, located in Douglas County on the east side of Crowfoot Road.
- Canyons South Filing No. 3, construction plan review for water and sanitary mains for future development, located in Douglas County on the east side of Crowfoot Road.
- Crystal Valley Ranch, site construction, single-family subdivisions, located southeast and southwest of Crystal Valley Parkway and West Loop Road. Also, in the southern interior portion of Loop Road, south of Loop Road, and between West Loop Road and the Lanterns property.
- Crystal Valley Ranch, construction plan approval for a recreation facility that will serve

the new single-family home project, located at the southeast corner of West Loop Road and Crystal Valley Parkway.

- Echelon (formerly Caliber at Terrain), site and building construction for a 238-unit multi-family development, located in the northeast quadrant of Founders Parkway and State Highway 86.
- Founders Village, site construction, detached single-family home neighborhood, located northeast of Mikelson Boulevard and Mitchell Street.
- Founders Village the Enclave, site construction, 88 additional townhomes to complete the existing development located at Enderud Boulevard and Wagonwheel Trail.
- Front Street Triplexes, site plan review for two triplex buildings, located on Front Street between Fifth and Sixth Streets.
- Greystone Townhomes, construction plan and plat approved for one three-story building with 5 units, located northwest of Plum Creek Parkway and Gilbert Street.
- Hillside, site construction, single-family attached and detached age 55 and older, located at the northeast corner of Coachline Road and Wolfensberger Road.
- Lanterns/Montaine, home construction, 107 single-family lot subdivision, located in the northerly portion of the project.
- Lanterns/Montaine, home construction, 85 single-family lot subdivision, located in the south-central portion of the project.
- Lanterns/Montaine, grading and construction documents approved, 133 single-family lot subdivisions, located in the southeasterly portion of the project.
- Lanterns/Montaine, site construction for 165 single-family residential lots, located in the east interior of Montaine Circle and southeast portion of the property.
- Lanterns/Montaine, site construction for 82 single-family residential lots, located in the northerly interior of Montaine Circle.
- Lanterns/Montaine, site construction for 68 single-family residential lots, located in the northerly interior of Montaine Circle.
- Lanterns/Montaine, subdivision plat, construction documents, and erosion control plans approved for 183 single-family residential lots, located southwest of Montaine Circle.
- Lanterns/Montaine, construction documents approved for 117 single-family residential lots, located at the northeast corner of the Lanterns development.
- Lanterns/Montaine, site construction for family amenity center, located on the northeast corner of East Montaine Circle.
- Lanterns/Montaine, subdivision plat and construction documents for 182 single-family residential lots, located southwest of Montaine Circle.
- Liberty Village, site development plan review, for amended lot layout due to floodplain for 42 single-family lots, located on the south side of Castle Oaks Drive and Pleasant View Drive.
- Liberty Village, site construction for 19 lot single-family project at Missoula Trail and Castle Oaks Drive and completion of Castle Oaks Drive/bridge replacement within the Cobblestone Ranch property.
- Meadows, site construction, 209 single-family lot subdivision, located north of Red Hawk subdivision and west of Prairie Hawk Drive.
- Meadows, site construction for 57 single-family detached homes on the east and west sides of Coachline Road north of Wolfensberger Road.
- Meadows, site plan, plat and construction documents for 77 single-family detached homes on the west sides of Coachline Road north of Wolfensberger Road.
- Meadows, Paint Brush Park, Town Project, tributary improvements plans in review.
- Memmen Young Infill, rezoning, site development plan review, and associated 5-acre annexation under review, located west of Ridge Road and north of Plum Creek Parkway.

- Plum Creek Residential Planned Development plan amendment for three single-family lots, located near the intersection of Mount Royal Drive and Prestwick Way.
- The Oaks Filing 2A, site development plan review for 114 single-family lots on 165+/- acres, located south of Plum Creek Parkway and east of Eaton Circle.
- Oakwood Apartments, site construction and building permits, for senior housing project redevelopment, located on the northeast corner of Front Street and Oakwood Drive.
- Red Hawk, home construction, 29 single-family home project, located south of Melting Snow Way and east of Bent Wedge Point.
- Ridge at Crystal Valley, site construction for 142 single-family home project, located southwest of Loop Road in Crystal Valley Ranch.
- Sunset Point, site plan review for 525 single-family homes on 293 acres, located northeast of Mesa Middle School.
- Terrain North Basin, Phase 1, site construction for approximately 96 single-family home project, located along Castle Oaks Drive.
- Terrain North Basin, Phase 2, site development plan review for approximately 105 single-family home project, located along Castle Oaks Drive.
- Terrain Upper Sunstone, home construction, 261 single-family home project, located south of State Highway 86 and east of King Soopers/Ridge Road.

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 6. **File #:** ORD 2022-032

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Mark Marlowe, P.E., Director of Castle Rock Water
Matt Benak, P.E. Water Resources Manager
Lauren Moore, Water Resources Program Analyst

Ordinance Approving an Agricultural Lease Agreement Between the Town of Castle Rock and Sublette, Inc. (Second Reading - Approved on First Reading on December 20, 2022, by a vote 7-0) *[Weld County, Colorado]*

Executive Summary

Castle Rock Water is seeking Town Council approval of an ordinance (***Attachment A***) for an Agricultural Lease with Sublette, Inc. (Sublette) for the Town's Rothe Property in Weld County. Sublette, an adjacent landowner, has leased the property for the past seven years and is interested in renewing their lease on the Rothe Property. Over the past seven years, Sublette has used part of the property for growing crops, establishing dry-land with a native seed mixture, as well as hunting. As this lease expires this year, Sublette has expressed interest in renewing the lease with similar terms. Since the original lease was entered into in 2015, the lease rate has been increased by 24.47% to account for the Consumer Price Index (CPI-U) increases over the past 7 years.

History of Past Town Council, Boards & Commissions, or Other Discussions

On August 19, 2014, Town Council approved the Purchase Agreement for the Rothe Recharge project. As part of this purchase, 640 acres of land were acquired by the Town.

June 24, 2015, Utilities Commission was updated on the key points regarding the Rothe Surface Use Lease Agreement. Utilities Commission supported entering into a surface use agreement with Sublette, Inc.

On August 4, 2015, Town Council approved the 2015 Surface Use Lease with Sublette.

Castle Rock Water staff presented this item to the Castle Rock Water Commission at their meeting held on December 14, 2022, and the Castle Rock Water Commission voted 7 to 0 to recommend Town Council approval of the Resolution as presented.

Discussion

The Rothe Property, as shown in **Attachment B**, was purchased in support of the Box Elder Project. The Box Elder Project is part of the Town's long-term renewable water plan. A key component of this project is the purchase of water rights in the South Platte Basin. In 2014, Castle Rock purchased the Rothe Water Rights as part of the project. As part of the Town's purchase of the Rothe Recharge water rights, the Town also acquired 640 acres of land in southeastern Weld County. Successful implementation of the Box Elder Project requires that the Town maintain this property properly until it is sold or otherwise disposed.

Sublette, an adjacent landowner, has leased the property for the past seven years and is interested in renewing their lease on the Rothe Property. Being a good neighbor will provide local support for the Town's project. More importantly, property management of the land will also maximize the availability of the Town's water rights. The Town would like to enter into a new Agricultural Lease (**Exhibit 1**) with Sublette with similar terms.

The key terms of this agreement are as follows:

- 5-year cash lease, with two 1-year annual renewals;
- Annual rent due in the amount of $6,225;
- Hunting and grazing rights;
- Repairs to sprinkler system owned by Castle Rock shall be the responsibility of Castle Rock with support from Sublette with managing contractors installing and replacing equipment;
- Lease can be terminated by Castle Rock 120 days prior to the termination date;
- Lease can be terminated by Sublette 30 days prior to the termination date;
- Water used for irrigation shall come from Sublettes source of supply; and
- Sublette will be responsible for procuring and maintaining Comprehensive General Liability and Comprehensive Automobile Liability Insurance at its own cost.

This Agricultural Lease will show the surrounding community that the Town is willing to work with the nearby neighbors. The Town will also be good neighbors by the fact that we are not letting the property become overrun with weeds and have eyes on the property at all times. The Town will also be able to generate some revenue from the property.

Budget Impact

If Council approves the agreement, Castle Rock Water would receive $6,225 in rent annually. The revenue will be deposited into Water Resources Fund Capital Leases account 211-4375-393.70-00.

Staff Recommendation

Staff recommends approval of the Agricultural Lease Agreement with Sublette, Inc. over the course of five years, with two one-year annual renewals which will generate a revenue of $6,225 annually.

Proposed Motion

"I move to approve the Ordinance as introduced by title."

Alternative Motions

"I move to approve the Ordinance as introduced by title, with the following conditions: (list conditions).

"I move to continue this item to the Town Council meeting on _____ date to allow additional time to (list information needed)."

Attachments

Attachment A: Ordinance
Exhibit 1: Lease Agreement
Attachment B: Location Map

ORDINANCE NO. 2022

AN ORDINANCE APPROVING AN AGRICULTURAL LEASE AGREEMENT BETWEEN THE TOWN OF CASTLE ROCK AND SUBLETTE, INC.

WHEREAS, the Town of Castle Rock, Colorado (the "Town"), acting by and through its enterprise, Castle Rock Water, and Sublette, Inc. ("Sublette") have agreed to the terms and conditions of an Agricultural Lease Agreement (the "Lease"); and

WHEREAS, pursuant to Section 14.02.050 of the Town of Castle Rock Municipal Code, the lease of any real property interests for a term of greater than one year shall be authorized and approved by ordinance; and

WHEREAS, the Town is the owner of an approximately 640-acre parcel of land located in Weld County, Colorado (the "Property"); and

WHEREAS, Sublette desires to lease the Property for hunting, livestock grazing and related agricultural purposes; and

WHEREAS, the Town desires to lease the Property to Sublette for a five (5)-year term, as more particularly described in the Lease.

NOW, THEREFORE, IT IS ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO:

Section 1. **Authorization and Approval**. The Lease between the Town and Sublette is hereby approved in substantially the same form attached as ***Exhibit 1***, with such technical changes, additions, modifications, or deletions as the Town Manager may approve upon consultation with the Town Attorney. The Mayor and other proper Town officials are hereby authorized to execute the Lease by and on behalf of the Town.

Section 2. **Severability.** If any clause, sentence, paragraph, or part of this Ordinance or the application thereof to any person or circumstances shall for any reason be adjudged by a court of competent jurisdiction invalid, such judgement shall not affect the remaining provisions of this Ordinance.

Section 3. **Safety Clause.** The Town Council finds and declares that this Ordinance is promulgated and adopted for the public health, safety and welfare and this Ordinance bears a rational relation to the legislative object sought to be obtained.

APPROVED ON FIRST READING this 20th day of December, 2022, by a vote of __ for and ___ against, after publication in compliance with Section 2.02.100.C of the Castle Rock Municipal Code; and

PASSED, APPROVED AND ADOPTED ON SECOND AND FINAL READING this _____ day of _____, 2022, by the Town Council of Castle Rock by a vote of __ for and __ against.

ATTEST:

Lisa Anderson, Town Clerk

TOWN OF CASTLE ROCK

Jason Gray, Mayor

Approved as to form:

Michael J. Hyman, Town Attorney

Approved as to content:

Mark Marlowe, Director of Castle Rock Water

AGRICULTURAL LEASE AGREEMENT

THIS AGRICULTURAL LEASE AGREEMENT ("Lease Agreement") is entered into as of this ____ day of _____, 2022 ("Effective Date"), by and between the **TOWN OF CASTLE ROCK**, a Colorado home rule municipal corporation, acting by and through the **TOWN OF CASTLE ROCK WATER ENTERPRISE**, 100 N. Wilcox Street, Castle Rock, Colorado 80104 ("Lessor") and **SUBLETTE, INC.**, a Colorado corporation, PO Box 21, Orchard, Colorado 80649 ("Lessee") (collectively, Lessor and Lessee are referred to as the "Parties").

RECITALS:

A. Lessor is the owner of an approximately 640-acre parcel of land located in Weld County, Colorado, as more particularly described in the attached ***Exhibit 1*** ("Property").

B. Lessee desires to lease the Property for hunting, livestock grazing and related agricultural purposes.

C. Lessor desires to lease the Property to Lessor on the terms and conditions specified in this Lease Agreement.

NOW, THEREFORE, in consideration of the mutual agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

COVENANTS:

Section 1. **Lease**. Subject to the terms and conditions set forth herein, Lessor hereby leases to Lessee and Lessee leases from Lessor the Property for the purposes expressly stated herein. Lessee shall have quiet and peaceable possession of the Property for such purposes, provided that Lessee is and remains in compliance with the terms and conditions of this Lease Agreement.

Section 2. **Term**. The initial term of this Lease Agreement shall commence on August 4, 2022, and expire five years thereafter ('Initial Term"), provided, that Lessee may extend the Lease for 2 additional 1-year terms upon written notice to Lessor ("Extended Term").

Section 3. **Rent**. Lessee shall pay rent in the amount of $6,225.00 per year. Payment for the first year shall be due upon the execution of this Lease Agreement. Payments for each subsequent year of the Initial Term or any Extended Term shall be due on or before August 4 of each year.

Section 4. **Permitted Uses**. Lessor hereby grants to Lessee (to include Lessee's partners, officers, directors, employees, their family members, and invitees), the exclusive and unrestricted right to occupy and utilize the Property for all lawful hunting, grazing, agricultural and recreational activities.

Section 5. **Hunting**. Lessee may enter upon the lands at any time, without notice to Lessor, to lawfully hunt or to prepare for hunting. Lessor shall not lease, license, or give permission to any other party for hunting purposes on the Property during the term of this Agreement, provided however, Lessor and their accompanied guests may hunt legal game on the property after obtaining specific permission for each hunting day or event from the Lessee. Lessee shall not cause damage to the Property and shall be liable to Lessor for any such damages. Lessee may use all roads as they may exist (or as they may be altered from time to time by mutual agreement) to access the Property. Lessee may construct temporary hunting blinds and pits, providing that all dug pits are not located on center pivot wheel tracks, over buried electrical or pipeline services, or on existing roadways; that such pits are marked appropriately with flagging and/or reflectors when not in use; and such pits will be closed and covered when not in use to help prevent potential accidents.

Section 6. **Suitability for Hunting Purposes**. Lessor makes no assurances or warranties as to the suitability and/or huntable conditions existing on the Property. Lessee may improve the suitability and/or condition of the Property for hunting with the consent of Lessor.

Section 7. **Crops and Irrigation**. Lessee may, at its sole expense plant and harvest agricultural crops to enhance the hunting conditions on the Property. Lessor, at its sole expense, shall be responsible for equipment repairs as they relate to the sprinkler system (including but not limited motors, pumps, etc.), provided such repairs are not necessitated by the negligence of Lessee. Lessee, at its sole expense, shall be responsible for day-to-day maintenance of the sprinkler systems (including, but not limited to oil changes, filter replacements, etc.) All water for irrigating such crops shall come from Lessee's own source of supply and in no event shall water owned or controlled by Lessor be used on the Property for such agricultural purpose. Lessor shall be responsible for all post-pumping depletions incurred prior to the Effective Date. Lessee shall use best land management practices at the end of each harvest season and comply with all local, State and Federal regulations in the application of any fertilizer on the Property.

Section 8. **Lessor's Use of Property**. Lessor reserves the right to utilize the Property for all other activities so long as such activities do not interfere with the permitted uses granted to Lessee under this Lease Agreement.

Section 9. **Termination**. This Lease Agreement shall terminate:

A. Upon 120 days prior written notice by Lessor for any or no reason. In such event, any Rents previously paid, shall be prorated through the date of termination and returned to Lessee upon such termination.

B. At any time by Lessee upon 30 days written notice to Lessor for any reason or no reason. In such event, any Rents previously paid, shall be prorated through the date of termination and returned to Lessee upon such termination.

C. Upon expiration of the term of this Lease Agreement.

Section 10. **Insurance**. At all times during the term of this Lease Agreement, Lessee shall procure at its own cost and maintain the following policies of insurance:

A. Comprehensive General Liability insurance with minimum combined single limits of One Million Dollars ($1,000,000) each occurrence and One Million Dollars ($1,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including for contractual and employee acts), blanket contractual, independent contractors, products, and completed operations. The policy shall contain a "severability of interests" provision.

B. Comprehensive Automobile Liability Insurance with minimum combined single limits for bodily injury and property damage of not less than One Million Dollars ($1,000,000) each occurrence and One Million Dollars ($1,000,000) aggregate with respect to each of Lessor's owned, hired and/or non-owned vehicles assigned to or used in on the Property. The policy shall contain a "severability of interests" provision.

The policies required above shall be endorsed to include Lessor, its officers and employees, as an additional insured. Certificates of insurance shall be completed by Lessee's insurance agent as evidence that policies providing the required coverage, conditions and minimum limits are in full force and effect, and shall be subject to review and approval by the Lessor. Each certificate shall identify the Property and shall provide that coverage afforded under the policies shall not be cancelled, terminated or materially changed until at least thirty (30) days prior written notice has been given to the Lessor. If the words "endeavor to" appear in the portion of the certificate addressing cancellation, those words shall be stricken from the certificate by the agent(s) completing the certificate. The Lessor reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

Failure on the part of Lessee to procure or maintain policies providing the required coverage, conditions, and minimum limits shall constitute a material breach of contract upon which the discretion may procure or renew any such policy or any extended connection therewith, and all monies so paid by the Lessor shall be repaid by Lessee to the Lessor upon demand, or the Lessor may offset the cost of the premiums against any monies due to Lessee from the Lessor.

Section 11. **Governmental Immunity**. The parties understand and agree that the Lessor is relying on, and does not waive or intend to waive by any provision of this contract, the monetary limitations (presently $424,000 per person, $1,195,000 per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, §24-10-101, et sec., C.R.S., as from time to time amended, or otherwise available to Lessor, its officers, and employees.

Section 12. **Indemnification**. Lessee shall indemnify and hold Lessor harmless against any claim of liability or loss from personal injury or property damage resulting from or arising out of the use and occupancy of the Premises by Lessee, its servants, agents or invitees, excepting, however, such claims or damages as may be due to or caused by the negligent or willful acts or omissions of Lessor, or its employees or agents.

Section 13. **Warranties**. Lessee and Lessor each acknowledge and represent that it is duly organized, validly existing and in good standing and has the right, power and authority to enter into this Agreement and bind itself hereto through the party set forth as signatory for the party below.

Section 14. **Default and Right to Cure**.

A. The following will be deemed a default by Lessee and a breach of this Lease Agreement: (i) non-payment of Rent if such Rent remains unpaid for more than thirty (30) days after receipt of written notice from Lessor of such failure to pay; or (ii) Lessee's failure to perform any other term or condition under this Agreement within. If Lessee remains in default beyond any applicable cure period, Lessor will have the right to exercise any and all rights and remedies available to it under law and equity, to terminate the Lease, retake possession of the Property and recover damages and reasonable attorney's fees.

B. The following will be deemed a default by Lessor and breach of this Lease Agreement. Lessor's failure to perform any term, condition, or breach of any warranty or covenant under this Lease Agreement within thirty (30) days after receipt of written notice from Lessee specifying the failure. If Lessor remains in default beyond the applicable cure period, Lessee will have the right to exercise any and all rights available to it under law and equity.

Section 15. **Assignment**. Any assignment of this Lease Agreement by Lessee shall require the prior written approval of Lessor, which approval shall be at the sole discretion of Lessor. However, Lessor acknowledges Lessee intends to use others to perform work and to manage such work at its sole expense.

Section 16. **Notices**. All notices, requests, demands, and communications hereunder will be given by first class certified or registered mail, return receipt requested, or by a nationally recognized overnight courier, postage prepaid, to be effective when properly sent and received, refused or returned undelivered. Notice will be addressed as follows:

If to Lessor: Town of Castle Rock
Castle Rock Water
175 Kellogg Court
Castle Rock, Colorado 80109

With a copy to: Town of Castle Rock
100 N. Wilcox Street
Castle Rock, Colorado 80104
Attn: Town Attorney

If to Lessee: Sublette, Inc.
PO Box 21
Orchard, Colorado 80649

Either party may change the place for giving notice to it by thirty (30) days written notice to the other party as provided herein.

Section 17. **Severability**. If any term or condition of this Lease Agreement is found unenforceable, the remaining terms and conditions will remain binding upon the parties as though said unenforceable provision were not contained herein. However, if the invalid, illegal, or unenforceable provision materially affects this Lease Agreement, then the Lease Agreement may be terminated by either party on ten (10) days prior written notice to the other party.

Section 18. **Casualty**. Lessor will provide notice to Lessee of any casualty affecting the Property within forty-eight (48) hours of discovery of the casualty. If any part of the Property is damaged by fire or other casualty so as to render the Property unsuitable, in Lessee's sole determination, then Lessee may terminate this Lease Agreement by providing written notice to the Lessor, which termination will be effective as of the date of such damage or destruction. Upon such termination, Lessee will be entitled to collect all insurance proceeds payable to Lessee on account thereof and to be reimbursed for any prepaid Rent on a prorate basis.

Section 19. **Taxes**.

A. Lessee shall be solely responsible for and shall timely pay all personal property taxes levied and assessed against it or its personal property. Lessee shall be solely responsible for and shall timely pay all real property taxes levied and assessed against the Premises, if any, as a result of Lessee's use of the Property under this Agreement. At the request of Lessor, Lessee shall provide evidence of payment of taxes.

B. Lessee shall have the right to contest all taxes, assessments, charges and impositions assessed against its personal property or improvements, and Lessor agrees to join in such contest, if required by law, and to permit the Lessee to proceed with the contest in Lessors name, provided that the expense of the contest is borne by Lessee.

Section 20. **Sale of Property**. If, at any time during the terms of this Lease Agreement, Lessor decides to sell all or any of portion of the Property, Lessor shall notify Lessee of its intent to sell and Lessee shall have a ninety (90)-day exclusive period to negotiate a contract with the Lessor to purchase that portion of the Property being offered for sale. If, for whatever reason, the Parties are unable to successfully negotiate a purchase contract within this period of time, Lessor may proceed with such sale.

Section 21. **Existing Utilities**. The existing electric meter with Morgan County REA shall be transferred to Lessee upon execution of the Lease Agreement. Lessee shall be responsible for all electrical charges incurred during the term of this Lease and shall be entitled to any capital account moneys paid during the time Lessee is responsible for such electric service.

Section 22. **Miscellaneous**.

A. **Amendment/Waiver**. This Lease Agreement cannot be amended, modified or revised unless done in writing and signed by an authorized agent of the Lessor and an authorized agent of the Lessee. No provision may be waived except in a writing signed by both parties.

B. **Bind and Benefit**. The terms and conditions contained in this Lease Agreement will run with the Property and bind and inure to the benefit of the parties, their respective heirs, executors, administrators, successors and assigns.

C. **Entire Agreement**. This Lease Agreement and the exhibits attached hereto, all being a part hereof, constitute the entire agreement of the parties and will supersede all prior offers, negotiations, and agreements with respect to the subject matter of this Lease Agreement.

D. **Governing Law**. This agreement will be governed by the laws of the State of Colorado. Whenever possible, each provision of this Lease shall be interpreted so as to be effective and valid under Colorado law. If any provision of this Lease is, for any reason and/or to any extent, invalid or unenforceable, then neither the remainder of this Lease in with the provision appears or the application of the provision to other persons or other circumstances shall be affected by such invalidity or unenforceability.

E. **Interpretation**. Unless otherwise specified, the following rules of construction and interpretation apply: (i) captions are for convenience and reference only and in no way define or limit the construction of the terms and conditions hereof; (ii) use of the term "including" will be interpreted to mean "including but not limited to"; (iii) whenever a party's consent is required under this Lease Agreement, except as otherwise stated in this Lease Agreement or as same may be duplicative, such consent will not be unreasonably withheld, conditioned or delayed; (iv) exhibits are an integral part of the Lease Agreement and are incorporated by reference into this Lease Agreement; (v) use of the terms "termination" or "expiration" are interchangeable; and (vi) reference to a default will take into consideration any applicable notice, grace and cure periods.

IN WITNESS WHEREOF, the parties have caused this Agreement to be effective as of the date written above.

ATTEST:

TOWN OF CASTLE ROCK, acting by and through the **TOWN OF CASTLE ROCK WATER ENTERPRISE**

_____
Lisa Anderson, Town Clerk

_____
Jason Gray, Mayor

Approved as to form:

Approved as to content:

_____
Michael J. Hyman, Town Attorney

_____
Mark Marlowe, Director Castle Rock Water

STATE OF COLORADO)
) ss.
COUNTY OF DOUGLAS)

The foregoing instrument was acknowledged before me this ____ day of _____, 2022 by Lisa Anderson as Town Clerk and Jason Gray as Mayor of the Town of Castle Rock, Colorado.

Witness my official hand and seal.

My commission expires: _____

[S E A L]

_____
Notary Public

SUBLETTE, INC.

By: _____

Its: _____

STATE OF)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this ____ day of _____, 2022 by _____ as _____ for Sublette Inc., a Colorado corporation.

Witness my official hand and seal.

My commission expires: _____

[S E A L]

_____
Notary Public

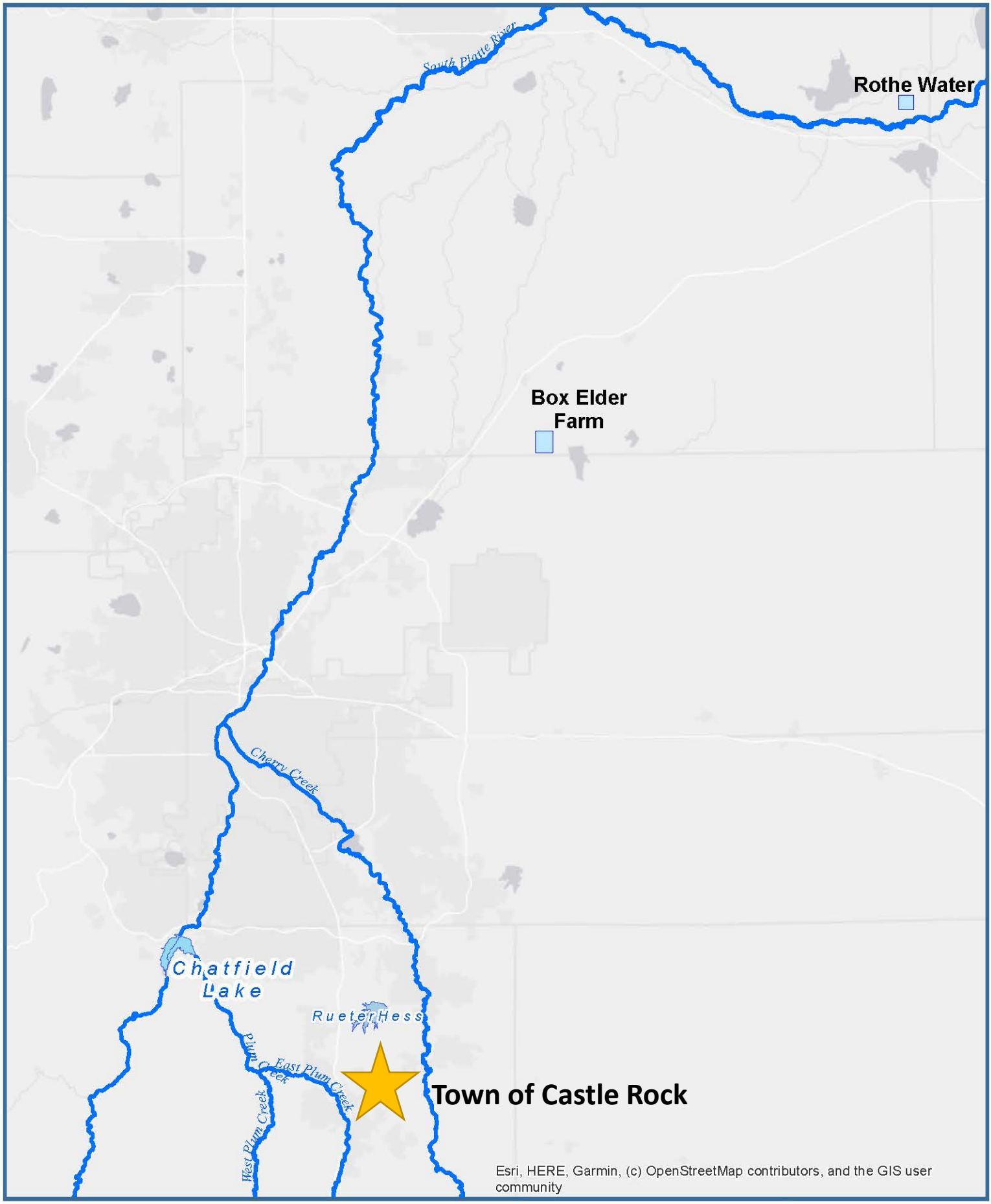
EXHIBIT 1

Parcel A:

The East 1/2 of Section 11 and the West 1/2 of Section 12, all in Township 4 North, Range 61 West of the 6th P.M., County of Weld, State of Colorado.

Parcel B:

Together with a non-exclusive easement for the purposes of ingress and egress for agricultural and hunting purposes over and across the North 30 feet of the Northeast 1/4 of Section 12, Township 4 North, Range 61 West of the 6thP.M., County of Weld, State of Colorado



CASTLE ROCK Qwater
Securing our future drop by drop

0 21,250 42,500 85,000 Feet

Date: 11/29/2022 1 inch = 41,909 feet

Disclaimer: The data presented has been compiled from various sources, each of which introduces varying degrees of inaccuracies or inconsistencies. Such discrepancies in data are inherent and in supplying this product the Town of Castle Rock assumes no liability for it's use or accuracy. Questions or comments regarding the cartographic composition of this map including, but not limited to, errors, omissions, corrections, and/or updates, should be directed to the Utilities Department, Town of Castle Rock, (720) 733-6056. Copyright 2022, Town of Castle Rock Utilities Mapping.

CASTLE ROCK UTILITIES MAP (INTERNAL USE ONLY)

Document Path: J:\B. PLAN & ENG\15.0 WR and Conservation Mgmt\15.1. Water Resources\15.1.9. Projects\ASOS\Rothe Recharge\Agreements and Contracts\Surface Use Lease (Agricultural L

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 7. **File #:** MIN 2023-002

To: Honorable Mayor and Members of Town Council

From: Lisa Anderson, Town Clerk

Minutes: December 20, 2022 Town Council Meeting

Executive Summary

Attached are minutes from the December 20, 2022 Town Council meeting for your review and approval.

Town Council
Meeting Minutes - Draft

Mayor Jason Gray
Mayor Pro Tem Kevin Bracken
Councilmember Ryan Hollingshead
Councilmember Laura Cavey
Councilmember Desiree Lefleur
Councilmember Max Brooks
Councilmember Tim Dietz

Tuesday, December 20, 2022 **6:00 PM**

Town Hall Council Chambers
100 North Wilcox Street
Castle Rock, CO 80104
Phone in: 720-650-7664
Meeting code: 2488 559 3389
www.CRgov.com/CouncilMeeting

This meeting is open to the public and will be held in a virtual format in accordance with the Town Council Electronic Participation, Connected, and Hybrid Meeting Policy. Public may choose to attend in person at Town Hall, or electronically or by phone if preferred. This meeting will be hosted online and can be accessed at www.CRgov.com/CouncilMeeting, or phone in by calling 720-650-7664, meeting code 2488 559 3389 (if prompted for a password enter "Dec20Council"). All Town Council Meetings are also streamed online in real time at www.CRgov.com/WatchCouncil, and are broadcast for Comcast Cable subscribers on Channel 22 (please note there is a delay to the broadcast).

All times indicated on the agenda are approximate. Remote participants please visit www.CRgov.com/CouncilComments to sign up to speak to an item, and for related instructions. Public Comments may also be submitted in writing online by 1:00 p.m. December 20, 2022, to be included in the public record.

COUNCIL DINNER, INFORMAL DISCUSSION, NEW COUNCIL PHOTOS

INVOCATION - Donald Haymon II, Calvary Church Of Denver

Mayor Gray provided the Invocation.

CALL TO ORDER / ROLL CALL

Present: 7 - Mayor Gray, Mayor Pro Tem Bracken, Councilmember Hollingshead, Councilmember Cavey, Councilmember LaFleur, Councilmember Brooks, Councilmember Dietz

PLEDGE OF ALLEGIANCE

COUNCIL COMMENTS

Mayor Gray wished everyone a Merry Christmas and reflected on a great year of 2022.

Councilmember Hollingshead wished everyone Merry Christmas and Happy New Year; and thanked everyone for making the Town a special place.

Councilmember Cavey thanked Town staff for all they have done and is looking forward to a new good year and wished everyone a Merry Christmas.

Councilmember Brooks wished everyone Merry Christmas and to stay safe over the New Year.

Councilmember Dietz asked everyone to remember what the season is all about.

Mayor Pro Tem Bracken wished everyone Merry Christmas and is looking forward to a new year. He thanked the Town Attorney for his time on the homeless initiative and the focus group held last week.

UNSCHEDULED PUBLIC APPEARANCES

No public comment.

TOWN MANAGER'S REPORT

DIR 2022-022 **Discussion/Direction: 2023 Council Meeting Schedule**

David Corliss, Town Manager, presented the proposed 2023 Council meeting schedule and recommended to call a special meeting on May 9 at 5pm for Boards and Commissions interviews, and cancelling meeting on July 4 and the August 1 meeting for National Night Out.

Moved by Councilmember LaFleur, seconded by Councilmember Cavey, to call a special meeting on May 9 at 5pm for Boards and Commissions interviews, and cancel meetings on July 4 and August 1. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

ID 2022-131 **Introduction to Town Boards and Commissions and Other Agencies**

[for liaison designations on January 3, 2023]

David Corliss, Town Manager, went over various boards and commissions and other organizations needing Council liaison designations. These appointments will occur at the January 3, 2023 meeting.

Mayor Gray asked Council to communicate with each other if there is a board or commission that they are interested in.

Mayor Pro Tem Bracken felt Council should have first right of refusal for boards they are currently serving on and indicated he would be willing to give up the Water Resources board.

Councilmember Hollingshead asked everyone to email their preferences.

Councilmember Brooks asked if there is a vacancy for any meeting that needs to be attended prior to January 3. Corliss felt we are fine until that meeting.

ID 2022-132 **Update: Calendar Reminders**

David Corliss,Town Manager, reminded everyone that the Town offices are closed Friday and Monday for Christmas, and that they are debating what to do on Thursday with the extreme cold weather coming . Offices will also be closed January 3, January 16 and February 20 for holidays. Corliss also mentioned several other calendared items, upcoming Council meetings, and neighborhood meetings.

ID 2022-133 **Update: Monthly Department Reports**

ID 2022-134 **Update: 2023 Major Projects List**

David Corliss, Town Manager, stated that we respond to changes. We are seeing fewer single-family permits that impacts the ability to proceed with some capital projects but we are still focusing on top priorities . Public Safety: we are adding additional positions, financial incentives for certain shifts, certifications, etc. Transportation: priorities are the Crystal Valley interchange, the pavement maintenance program, and completing construction on several projects. Water: priorities include landscape criteria, advancing long-term renewable water, expanding water purification facility, construction of a reservoir, upgrades on infrastructure, and adding positions. Parks and Recreation: will continue work on various projects, replacing equipment and turf, and adding a position. Economic Development: fulfill existing agreements. Financial: continue conservative financial policies, energy savings, etc. Community character: continued effort with the Cantrill School, Metzler family open space and looking for additional opportunities.

ID 2022-135 **Update: State Carryout Bag Fee**

David Corliss, Town Manager, pointed out that the bag fee is a state mandate not a Town mandate which imposes a 10 cent per bag fee. It does not apply to all businesses. Any questions should be directed to the state. 60% of the bag revenue comes back to the Town. Communications will be sent to businesses with the state contact.

Councilmember Cavey will get more information from Parker Councilmember Hefta about what they passed.

Councilmember LaFleur stated Jackson Hole, Wyoming did away with plastic bags years ago and their revenue goes back to parks.

ID 2022-136 **Update: Legislative Update**

Kristin Read, Assistant Town Manager, provided an update on proposed legislation which includes making all car thefts a felony, local control on mushrooms, and statewide land use regulations. There will be another policy committee meeting in February. If Council wishes to support any bills, they should make a motion.

Moved by Councilmember Cavey, seconded by Councilmember Dietz, to state support to make all car thefts a felony, support local control on mushrooms, and oppose statewide land use regulations. . The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

ID 2022-137 **Update on Water Court Cases** *[Cases located in Douglas County, Weld County and other areas near the Lower South Platte River]*

Mark Marlowe, Director of Castle Rock Water, updated Council on current water court cases.

ID 2022-138 **Update: Customer Financial Hardship Program through Castle Rock Water** *[Entire Castle Rock Water Customer Base]*

Mark Marlowe, Director of Castle Rock Water, stated that in 2020 they had a Covid assistance program. They would like to convert that to a financial hardship program and are taking part in the LEAP low-income program. Customers would go to the Help and Hope center to determine if they qualify. If so, they would receive a $300 credit to their account. $150 is a grant and $150 they would pay back over 12 months at no interest. They would budget $5,000 per year for this program. The Water Commission is in favor.

ID 2022-139 **Presentation of the Metropolitan District Summary for the year ending December 31, 2021**

Pete Managers, Assistant Director - Budget & Revenue, presented the 2021 summary of Metropolitan Districts. They are a taxing entity separate from the Town and finance public improvements which are repaid through property taxes from property owners. The total debt is $943M. The policy for future Metro districts sets a 50 Mill cap and a 35 year term.

Mayor Pro Tem Bracken asked if we can put some guidelines for new metro districts. Corliss stated that we did set up those guidelines in the model plan presented.

Councilmember Cavey noted that half of the debt is interest.

Corliss noted that most metro districts are not as easy to access to get information; so the Town providing this information is valuable.

Mayor Pro Tem Bracken noted his frustration that some metro districts are not willing to refinance the debt when the rates go down.

Corliss stated 50 mills is reasonable for road, water, and sewer infrastructure but most significant is that the mill levy term is limited to 35 years. Some developers put infrastructure costs in the price of the lot vs. incurring debt in a metro district that is paid back over time. Corliss stated the next time Council will look at this is the Canyons Far South development agreement. Cavey asked if they could be forced to refinance to lower rates. Corliss stated that some of their contracts do not allow refinancing.

ID 2022-140 **Development Services Project Updates**

Tara Vargish, Director of Development Services, provided an update on various projects being proposed. They have had 19 since the last update.

ID 2022-141 **Update: Quasi-Judicial Projects**

Tara Vargish, Director of Development Services, provided an update on all of the quasi-judicial projects that should not be discussed outside of a public hearing.

TOWN ATTORNEY'S REPORT

No report.

ACCEPTANCE OF AGENDA

Moved by Mayor Pro Tem Bracken, seconded by Councilmember LaFleur, to Accept the Agenda as presented. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

CONSENT CALENDAR

Moved by Mayor Pro Tem Bracken, seconded by Councilmember LaFleur, to Approve the Consent Calendar as presented.. The motion failed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

APPT 2022-012 **Douglas County Open Space Advisory Committee (COSAC) Nomination: Patti Hostetler**

RES 2022-137 **Resolution Approving the First Amendment to the Equipment and Services Acquisition Agreement with Nine Point Eight Capital LLC D/B/A DRC Construction Services for the Storm Sewer Video Inspection Services**

RES 2022-138 **Resolution Approving the First Amendment to The Town of Castle Rock Equipment and Services Acquisition Agreement with Calgon Carbon Corporation for the Installation of Additional Granulated Activated Carbon Filter Media at the Town's Plum Creek Water Purification Facility** *[Plum Creek Water Purification Facility in Castle Rock, CO]*

RES 2022-139 **Resolution Designating the Public Place for Posting Notices Pursuant to C.R.S. Section 24-6-402(2)(c)**

MIN 2022-021 **Minutes: December 6, 2022 Town Council Meeting**

ADVERTISED PUBLIC HEARINGS & DISCUSSION ACTION ITEMS

RES 2022-140 **Resolution Approving the Economic Development Assistance Agreement Between the Town of Castle Rock, and Portercare Adventist Health System D/B/A Castle Rock Adventist Hospital**

Frank Gray, Castle Rock EDC, stated this provides primary employment and helps grow our tax base. We don't have a lot of available office space for new employers or expanding employers. Castle Rock Adventist Hospital currently has over 600 employees. The medical office building #3 expects completion in 2023. We currently have approximately 600 cancer patients that would benefit from not leaving Castle Rock for treatments.

Marcus Nothiesen said the opportunity would expand to allow oncology treatments.

They are requesting $368k reimbursement of fees from the Town. This represents 10% of the cost. This EDC recommends approval with 1/3 reimbursed and 2/3 rebated when a CO is issued.

Gray stated it supports a stand alone community, contributes to a thriving economy, and may attract other medical investments to the Town.

Councilmember Cavey confirmed this building is already being built. Gray confirmed that and stated the hospital still needs to decide what will reside in that building.

Jeremy Pitman, CEO of the health campus stated this would allow them to bring cancer treatments to Castle Rock.

No public comment.

Moved by Councilmember LaFleur, seconded by Councilmember Brooks, that Resolution 2022-140 be Approved as presented. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

DIR 2022-023 **Discussion/Direction of Applications for the 2022 Fourth Quarter Council Community Grant Program, One Application**

Pete Mangers, Assistant Director - Budget & Revenue, presented the item showing one applicant for the fourth quarter.

Moved by Councilmember LaFleur, seconded by Councilmember Dietz, to award $2,000 to the American Legion. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

RES 2022-141 **Resolution Approving a Construction Contract with Kraemer North America, LLC, for the Crystal Valley Parkway and Plum Creek Boulevard Roundabout Project**

Dan Sailer, Director of Public Works, provided an overview of the area impacted. They plan to proceed this month and complete at the end of 2023. Public Works Commission recommends approval.

No public comment.

Moved by Councilmember Dietz, seconded by Councilmember Hollingshead, that Resolution 2022-141 be Approved as presented. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

ORD 2022-032 **Ordinance Approving an Agricultural Lease Agreement Between the Town of Castle Rock and Sublette, Inc. (First Reading)** *[Weld County, Colorado]*

Mark Marlowe, Director of Castle Rock Water, provided an overview. They initially

leased it back and they recommend renewing the lease that allows hunting, grazing and growing crops. Water Commission recommends approval.

No public comment.

Moved by Councilmember Brooks, seconded by Councilmember LaFleur, that Ordinance 2022-032 be Approved as presented. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

RES 2022-142 **Resolution Approving a Purchase Agreement between the Town of Castle Rock and Roxborough Water and Sanitation District for Water Rights and Other Infrastructure** *[Northern and Central Douglas County]*

Mark Marlowe, Director of Castle Rock Water, stated there are water rights that are in addition to their long-term water plan, and we will also own capacity in several Bell Mountain wells that we plan to connect to the Bell Mountain water treatment plant. We will provide 220 AF of ground water to the golf course each year for irrigation. We have the ability in a drought to shut that water off if needed. They also incur an extra 10% surcharge with rates updated each year. The Water Commission recommends approval.

No public comment.

Moved by Councilmember Cavey, seconded by Councilmember Brooks, that Resolution 2022-142 be Approved as presented. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

ADDITIONAL UNSCHEDULED PUBLIC APPEARANCES

None.

ADJOURN

Moved by Mayor Pro Tem Bracken, seconded by Councilmember Cavey, to Adjourn. The motion passed by the following vote:

Yes: 7 - Gray, Bracken, Hollingshead, Cavey, LaFleur, Brooks, Dietz

Meeting Adjourned at 8:06 pm.

Submitted by:

_____

Lisa Anderson, Town Clerk

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 8. **File #:** DIR 2023-002

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Daniel Sailer, P.E., Director of Public Works
Aaron Monks, Project Manager

Discussion/Direction: Proposed Concept for Improvements to Crowfoot Valley Road Widening Project

Purpose of Memorandum

The purpose of this Memorandum is to summarize the feedback received for the Crowfoot Valley Road Widening open house that was held October 27, 2022, and obtain any feedback and direction from Town Council on the concept to move forward into design with.

Executive Summary

Public Works staff utilizes the aspects the community values from our public transportation infrastructure: high safety, low downtime, low total lifecycle cost, reliability, and low environmental impacts to guide all activities of the department. The widening project has several primary objectives; improve capacity to accommodate forecasted growth, improve safety for the traveling public, and minimize delay to intersecting street vehicles making turns. These objectives were designed around the elements valued by the community. As a part of the project's communication plan, a second project open house was held to inform the community and other stakeholders of the project conceptual design and overall project timeframes.

The project team has recently assessed two different alternatives, one has left turn acceleration lanes from non-signalized intersections with minimal median widths and one concept that does not have left acceleration lanes with wide medians. The second alternative was developed as a result of feedback from the design consultant that the availability of distance available for the left turn acceleration lanes is less than optimal and may not be utilized by the majority of left turning traffic. Feedback solicited from participants was concise. The main themes provided from the community included:

- Support for left acceleration lanes at non-signalized intersections
- Wider and taller medians at all other locations where practical

General support for the overall project was represented by those that provided feedback. Where concerns and oppositions were expressed, the primary drivers were: safer left turning movements onto Crowfoot Valley Road from side streets, and methods of slowing traffic.

Discussion

Project Background

Crowfoot is a major arterial connecting local and regional travel between two growing communities, and northeast portions of Town to I-25. Roadway and pedestrian improvements for Crowfoot have been identified within the 2017 Transportation Master Plan (TMP) that will maintain adequate capacity, enhance multi-modal travel experiences, improve safety, and ensure efficient road network connections for future development. The improvements identified by staff include:

- 4-lane major arterial configuration from Knobcone Drive to the Town limits
- Addition of sidewalks from Knobcone to Sapphire on the south side
- Intersection improvements to Sapphire Pointe Blvd (Traffic Signal)
- Raised medians
- Implementation of on-street bike lanes/shoulders from Knobcone to Sapphire Pointe on the east/northeast bound lanes

Community Engagement

A concentrated effort to identify the community desires for the project was undertaken with the Community Relations Division during the project's planning phase. Town staff performed the following community notification and outreach efforts related to the project:

- Project website creation, including regularly scheduled updates and feedback form
- Two (2) public open houses during preliminary design to inform and collect feedback
- Created/updated/monitored an email notification line for the project

The primary goals related to community outreach for this project include: creating a culture of trust among adjacent residents and project stakeholders, and facilitate stakeholder buy-in throughout the design process by incorporating community feedback into the project where appropriate.

The first community open house (held in August 2021) solicited feedback to determine what type of intersection traffic control was most favored by the community. A roundabout was provided as an option, or traffic signals once conditions were supported by an engineering evaluation as required by State law. Left turn acceleration lanes were also presented as a potential concept to explore. The majority of feedback received did not support a roundabout, but the left turn acceleration lane concept was favorably received.

The second of the two community open houses was held on October 27, 2022 to share various recommended preliminary design elements provided by the design consultant and collect feedback. Since it was identified that the left turn acceleration lanes are shorter than optimal, and may not be utilized by a majority of the left turning traffic, staff wanted to present this information along with a

revised concept geared to maximizing speed reduction.

October 27, 2022 Open House Summary
The open house was well attended with approximately 70 people in attendance and 80 online feedback forms/comments provided. Between the open house feedback forms received and the online forms received a total of 93 total feedback forms were provided. Stakeholders were asked to provide feedback on the concepts via a project feedback form at the open house and website. Comments were collected and summarized into categories:

- Support
    - Wider and taller roadway medians where possible
    - Keep left acceleration lanes from side streets
    - Right and Left turn lanes at intersections
    - Sapphire Pointe Signal
    - On street bike lanes
    - Sidewalk on both sides

- Concerns
    - High speeds of traffic
    - Perceived lack of ability to safely make left turns from intersections
    - Noise

Staff carefully evaluated concerns to determine if changes to the proposed concept can be implemented to address these comments. Several comments recommended adding a roundabout into the project. Since this wasn't a majority opinion, and based on the input received at the first open house, it doesn't appear that this is supported. Returning left turn acceleration lanes back into the concept will aid with providing improved left turning abilities until conditions are appropriate to install traffic signals at intersections. Sapphire Point Blvd is the only intersection that is forecasted to meet conditions appropriate for a signal to be constructed with this project. All other intersections are forecasted to be more than five years away for conditions to be appropriate for signalization. If traffic signals are installed earlier than supported by conditions, increased safety risks can result as increased accident rates would be likely. This has been studied and well documented nationally.

The addition of left turn acceleration lanes back into the project concept creates tension with the desire to reduce vehicle speeds. With the widening of the roadway to include additional through lanes in each direction and the left turn lanes included, the roadway environment will be very wide. This tends to favor higher speeds. Options to combat this would be extremely costly. The most effective means include trying to add physical elements that force drivers to slow such as roundabouts or adding curvature to the road (such as wide medians at locations that are away from intersections to add curvature of the through lanes). Based on the existing right-of-way available and distance between existing intersections, these options don't appear to be practical. The addition of a roundabout for example is estimated to be in the range of an additional $4.5 - $5 million dollars.

Some feedback has included a recommendation to reduce the speed limit posting. Speed limit postings have also been well studied nationally and results have consistently confirmed that speed

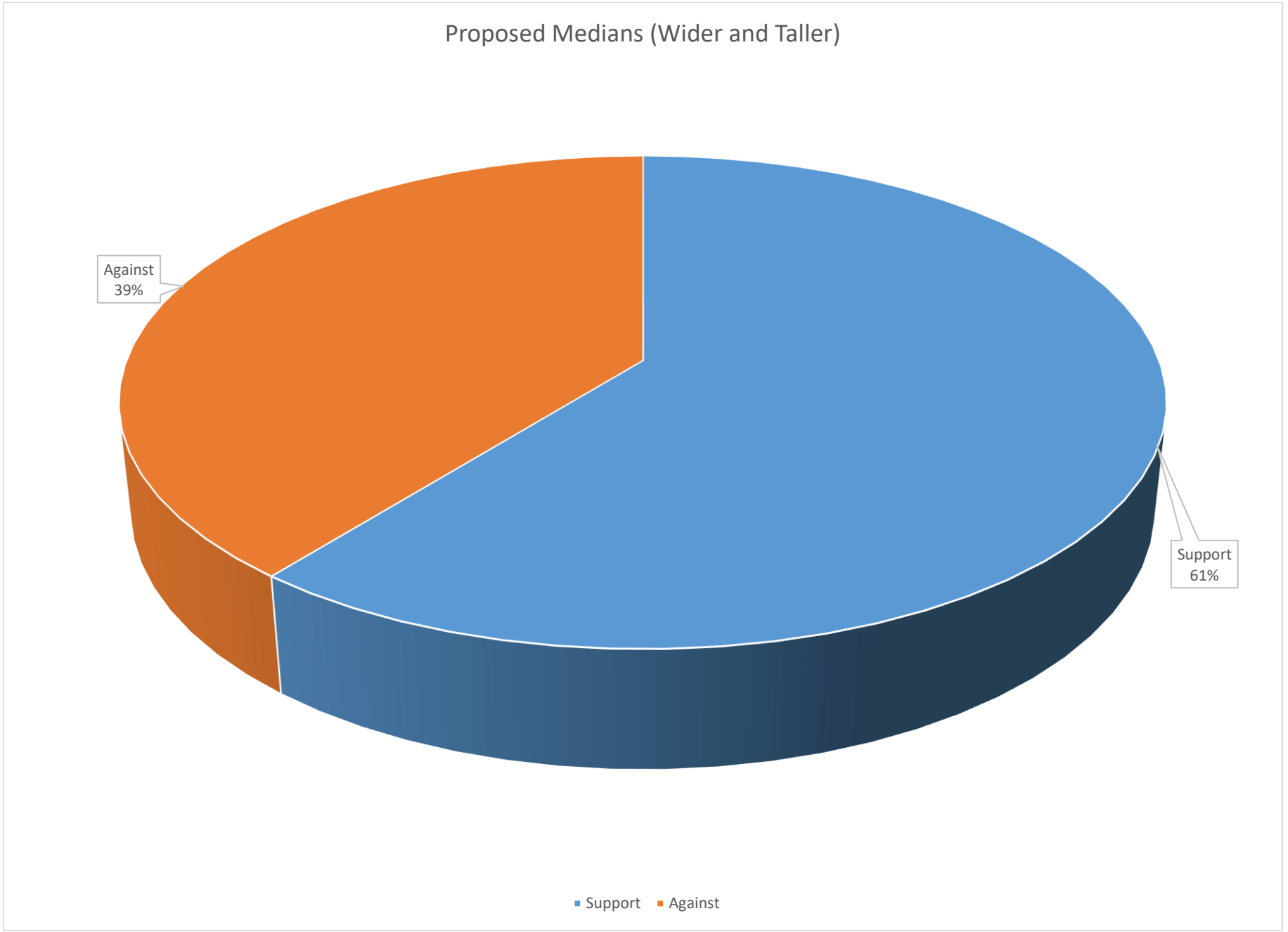
limit postings do not have an impact on actual travel speeds. The primary reason for this is that drivers have a good sense of what a safe operating speed is for the given environment. The result is that actual speeds stay the same in the before and after condition. This essentially puts a larger number of drivers in the scofflaw category and creates more demands on law enforcement. This essentially is not in the majority interests of the public as they are essentially driving at safe operating speeds but are susceptible to penalties. Additionally, this condition can create increased disparity of speeds that can actually lead to increased accident rates. To illustrate this, imagine if the speed limit on I-25 were reduced to 55mph. If you drive I-25 you are likely to know that this wouldn't be a reasonable posting. If drivers were encountered driving this speed, it is also illustrative of the type of safety risk that can exist as the speed differential with the prevailing traffic speeds would create aggressive passing maneuvers.

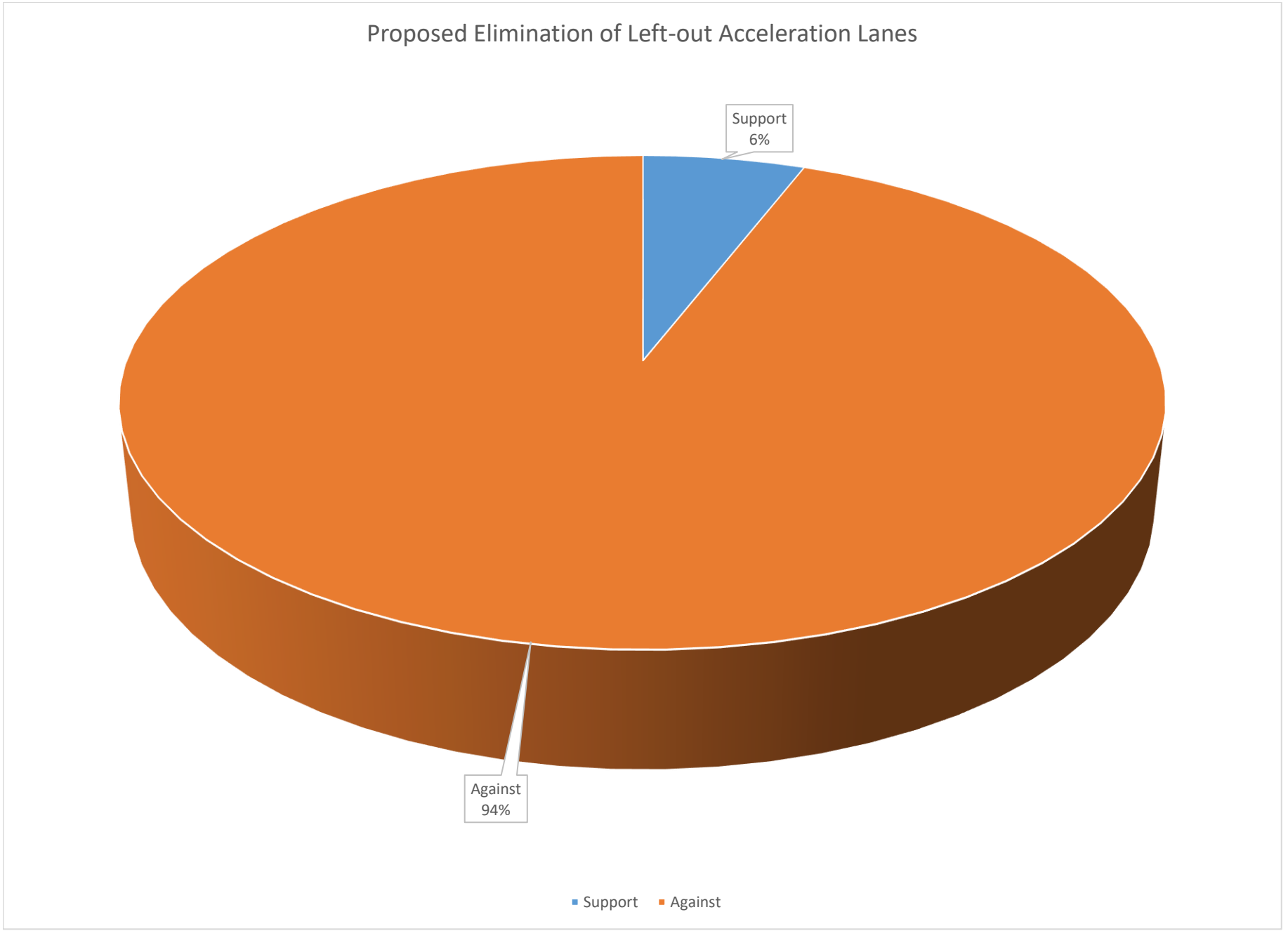
Recommendation

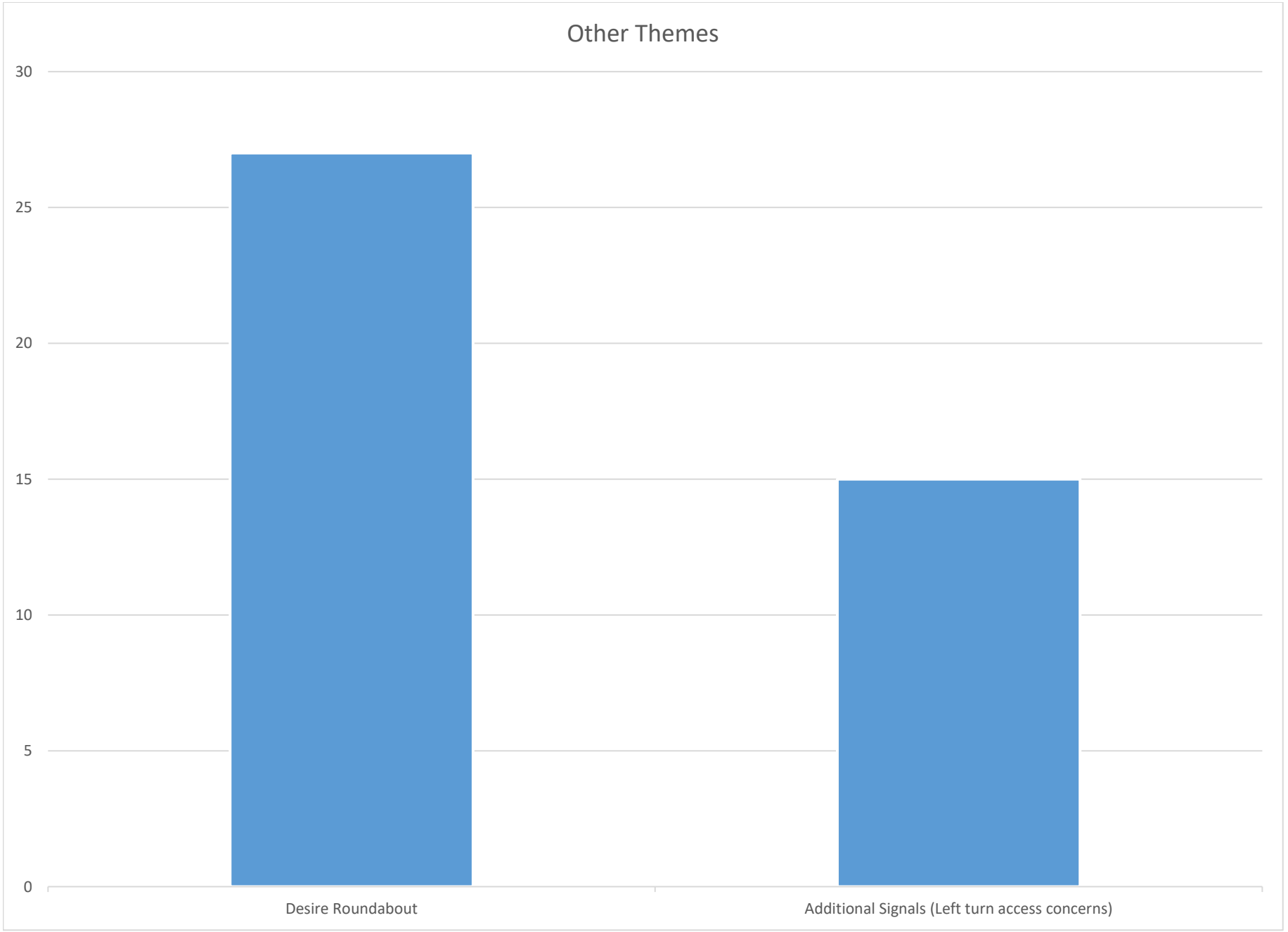
The team seeks to deliver the highest value to the Castle Rock community through the implementation of the Crowfoot Valley Road Widening Project. In consideration of overall community values and input, it is recommended that the project move forward with constructing left acceleration lanes at non-signalized intersections and wide medians with a vertical element where feasible along with a new traffic signal at Sapphire Pointe Boulevard.

Attachments

Attachment A - Crowfoot Valley Road Widening Open House Feedback Summary


Proposed Medians (Wider and Taller)
Against
39%
Support
61%
Support
Against


Proposed Elimination of Left-out Acceleration Lanes
Support
6%
Against
94%
Support
Against


Other Themes
30
25
20
15
10
5
0
Desire Roundabout
Additional Signals (Left turn access concerns)

		SUGGESTIONS OR QUESTIONS	Proposed Medians Support	Proposed Medians Against	Elimination of left-out acceleration lanes Support	Elimination of left-out acceleration lanes Against	Other Desire Crosswalks	Desire Roundabout	Additional Signals (Left turn access concerns)	Stripping visibility concern
	Neighborhood									
	Puma Ridge	Worried about pential back up of the left turn lane into sapphire point. If it backs up to the median where does the traffic go? Turn lane to firehourse? Also will 1ft turn light have arrow and then blinking yellow light/arrow? If so it will allow more cars to turn								
	Macanta					1		1		1
	Timber Ridge								1	
	Macanta		1			1				1
	Cutters Ridge		1			1				
	Cliffside		1			1				
	Cutters Ridge		1		1					
	Timber Canyon		1					1		
	Diamond Ridge		1			1				
	Timber Ridge					1			1	
	Diamond Ridge									
	Timber Canyon							1		
	Cliffside		1							
	Sapphire Pointe					1		1		
	Timber Ridge	Frustrated with the plans in place. It is nearly impossible to get in or out of Timber Ridge during peak traffic now. With a future increase of traffic it will get much worse. An additional route to I25 further north, other than Founders Parkway, would ease the problem and ease the volume .								
	Timber Canyon	I very much appreciate the Town's focus on features to encourage slower driving speeds. Consider establishing a "slow/safe traffic zone" along Crowfoot Valley Road from the Founders Parkway intersection to the Macanta Boulevard intersection by reducing the speed limit to 35 mph in both directions along this short 0.9 mile corridor. Add speed feedback signs. Add treets to proposed medians. Yes, that adds watering requirements, but modern drip feed systems minimize water demands. The tree height will inarguably encourage even slower speeds and significantly beautify this stretch of road, which is the "backdoor" to the Town of Castle Rock community. On behalf of the Timber Canyon HOA Board, we are encouraged by the Town's proactive solicitation and active use of community feedback. Thank you!	1							
	Timber Ridge	Need additional traffic control light at Timber Ridge entrance I'm not in favor of widening Crowfoot Valley Rd. Please do not widen it to 4 lanes. After hearing about the plan not to have a traffic light on Crowfoot Valley Road or a left hand turning lane to pull out onto at the entrance of Timber Ridge, this would be a safety concern. By putting in an island as the city is suggesting, to squeeze traffic 5-6 miles an hour less is a problem. It's down hill to our entrance with cars going well above 40. It's also a blind spot area with the hill being so steep it's difficult to predict the traffic coming over the top. It will not be possible to make a left turn out of our subdivision unless there's a better plan. A traffic light would be best and could be used during high traffic times. speed cameras on Crowfoot Valley Rd. and Founders would help safety and noise issues and give more revenue and funding for police and fire departments. Also police presence would not be needed to watch for speeders then police could be available for other safety needs. Don't agree that bicycles should be on the same pavement as vehicles. Very unsafe. Bicycles end up riding in car lanes. With all the residential neighborhoods on Crowfoot let's keep Crowfoot residential an not like								
	Timber Ridge	Founders. We have a lot of wild life and it would keep then safer and the residents also. Thank you		1					1	
	Sapphire Pointe	I would almost prefer a round about to a light at Sapphire Pointe but would take either at this point! Needs to happen sooner than later						1		
	Timber Ridge	There has to be a break in traffic in order for us to get in and out of Timber Ridge. That traffic break each day becomes shorter and I envison it will only get worse with the projected number of cars and 4 lanes of traffic. I would like to know if public works design guidance can tell us how many accidents will happen at Timber Ridge and Crowfoot under the new design. I understand the road needs improvement and traffic will increase but the town has a choice, make it safe or less safe. If less safe is chosen, then the number of accidents will tip their road guidance and recommend to install a break in traffic. Do it now , it will be cheaper in dollars and less accidents.				1				
		My suggestion is to use a portion of the 16'wide center island to provide a merge lane for left-turners from Diamond Ridge Pkwy. And if the 40mph speed at that point causes inadequate merge length, then lower the speed limit!				1				
	Timber Ridge	I hate roundabouts. But they would give us a fighting chance to go left out of TimberRidge. The only other way will be to turn left, get over a lane and chance a Uturn by Timber Canyon subdivision or at the light. The 16 ft median seems a huge waste of usable space. We need an acceleration lane when turning left out of Timber Ridge. It's extremely dangerous now and getting worse daily.				1		1		
	Timber Ridge	Safety requires a left turn acceleration lane. Otherwise with an increased traffic projected to be 37,000 vehicles up from 14,000 daily it will become nearly impossible to safely turn left.				1				
	Timber Ridge	Suggested roundabout at Diamond and Timber Ridge would be best. We are very concerned that the current plan will not allow us to enter and leave our developments safely						1		
		I attended the 10/27/2022 presentation of the Crowfoot widening. Your presentation and representation was excellent. However I want to clarify my concern for the Diamond Ridge Parkway(DRP) intersection with Crowfoot(CF).								
		A. CF traffic is already very high and getting worse daily. Pulling out from the DRP stop sign for right hand turns remains difficult without the (planned future acceleration lane) in place. B. However your future plan does not include an acceleration lane when making a left hand turn? This is absolutely needed to be added to our plan for construction....light with the CF/Founders light does not solve the added traffic heading north on CF from the two south of								
		DRP subdivisions, and the west bound traffic on Founders making right hand turns onto CF. I would								
		be happy to discuss this in more details if desired.								
	Diamond Ridge					1		1		
	Cutters Ridge	The Sooner the better, signal preferred but ok with roundabout.								
	Timber Ridge	Concern drivers will speed up after leaving signal. Not able to cross if additional lanes are added to enter or exit neighborhood.				1				
	Sapphire Pointe	Looking forward to its completion!								
		Is Crowfoot/Knobcone an "intersection" that will have a dedicated turn lane? It really needs to be. Recommending a roundabout at Diamond Ridge. Replace trees lost do to retention pond work. This is a cut and paste from HOA Facebook page:								
		1, our "escape hatch" to turn left onto Crowfoot from Knobcone is at risk ("To improve safety [?], the project team recommends removing the initially proposed acceleration lanes for left-turning traffic from residential side streets onto Crowfoot Valley Road."). The current acceleration lane out of Knobcone was the result of years of lobbying by our HOA Board* (*several members of our current board were instrumental in this effort - no board I sat on ever did more than whine. We got nowhere. Our board's progress here was a huge win for all of us, especially any young family heading towards Sage Canyon Elementary or beyond).								
		Anyone who needs to head towards Franktown on Crowfoot will remember playing chicken to get through Crowfoot traffic out of Knobcone, before we got our turn lane. Now there's more of traffic coming from both directions, and our access to Crowfoot is at risk.								
		2, in order to accommodate the widening, the Town will dig deeper into its easement against the Crowfoot border of our neighborhood. This is about the 5th time in the 15 years we've been here the Town has crept even closer to our neighbors' back yards, notwithstanding the existence of undeveloped open space across the street.								
		Over the years, various options and mitigants have been discussed, such as a sound barrier (read: wall or berm) along Crowfoot (and Founders), and/or a traffic circle at the Diamond Ridge intersection (which would allow folks in our neighborhood to simply turn around v. risk darting across and into traffic). Folks may also recall the work recently done on the retention pond, and the removal of 15+ mature pines on HOA property, and our expectation that the Town would replace the trees it eliminated. Landscaping and trees can help mitigate some of the privacy and noise effects of the project. These are concepts that do not seem to have made it off the drafting board.								
		#								
		We've (Timber Canyon) been a good partner to the Town over the years. We've quitclaimed property to you at least twice to accomodate Founders/Crowfoot intersection work - got nothing in return. You cut down mature trees around the retention pond and never re-planted. It took years to get us a modest accomodation out of the neighborhood via Knobcone, and now that's gone. Moreover, in the 13 years we've been here, this is about the 9th multi-million dollar project addressing the same 5-600 yards of road.								
		Just be thoughtful about this and do it right. The most complete solution here is a traffic circle at Diamond Ridge. Obviously, folks trying to turn into that community will be taking their lives into their hands cutting across an expressway. A traffic circle slows everyone down, gives those folks a safe way to get on and off crowfoot, and our neighborhood a relatively simple way to get out of our neighborhood and back to the Founders/Crowfoot intersection. The time to do it is now, when you have the space south of Crowfoot, and you're ripping everything up (again) anyway.								
		We (Timber Canyon) also need something. We were an affluent pocket of homes on a sleepy corner of Crowfoot and Founders that has paid our fair share for years. We deserve consideration. Thanks								
	Timber Canyon					1		1		
		Get a traffic stop at Macanta. Create speed traps. Separate the bike lanes. Protect your people from the crazy ones.							1	
		Taller roadway medians would be great- it's hard to enter crowfoot from a cross street (Macanta Blvd) and seeing the lanes- especially when raining. Would also recommend a traffic light at the Macanta intersection. If increasing traffic on crowfoot and adding houses and potentially a school to our neighborhood, it'd be more helpful/safer to add a light at our intersection (rather than sapphire point).								
		I use these lanes to enter crowfoot, especially when traffic is heavy. I would imagine there would be more serious accidents at the sapphire point and Macanta intersections if the acceleration lanes are removed.	1			1			1	1
		All are okay with the excention of the location of the traffic light- it should be at Macanta Blvd. This would also help slow traffic down to the 40mph limit sooner.								
		Please put a traffic light at Macanta Blvd. With the number of houses being put in with the Macanta development we will most certainly need a traffic light at Crowfoot and Macanta Blvd. It is already scary turing left out of macanta Blvd WITH the acceleration lane. Without it will be worse and can lead to more accidents				1			1	
		especially when a bike lane is added.								
		I am very encouraged by this aspect of the project. I am curious if there is a long term plan to provide another way to connect to I-25 from this area, perhaps via the Happy Canyon interchange. This might provide some relief to the intersection at Founders & Crowfoot if drivers had another route.	1							
	N/A	On-street bike lanes need some type of protection from traffic, like a concrete curb that prevents trucks from coming into the bike lanes. Without this protection, the bike lanes are a waste and the sidewalks will be used. Crosswalks that exist without traffic signals need flashing lights at a minimum. Thank you.								
	Diamond Ridge	Definitely will appreciate the dual lanes each direction, and dedicated right turn acceleration lane out of Diamond Ridge. Traffic signal at Sapphire Point seems essential to create traffic breaks at peak times for left turns out of Diamond Ridge. Concur with bike lane additions.If Diamond Ridge traffic warrants a traffic light eventually, would like crosswalk to eastbound lane sidewalk. Also, would like to know what to expect road access to be like (number of lanes available, full road closures at various times, etc.) during the construction phase in 2023-2024.	1							
		The CR Town staff is always so nice.. thanks. Just an FYI.. you are saying a 16' median.. which is confusing.. do you mean 16 INCH " median? I have concerns with the narrow lanes and all the increased truck traffic. I know everything is expensive but if you live in this area and have to drive CROWFOOT you know how the truck traffic has increased and they take more width than cars. There is very little pedestrian traffic and you are putting much effort into a wide sidewalk which is costly. Your presentation boards..are just that.. presentation.. but reality may be a bit different. My opinion is that the overall design is fine.. the engineers have done their job.. but the narrowing won't slow down traffic for more that a few drives.. then it just becomes dangerous. Removing the left turn lane.. really? Just to save a bit of money. We hear the cars racing on Crowfoot.. How does a turning driver judge the oncoming racer? Thank-you for asking for our thoughts... I realize the								
	Timber Ridge	Colorado State DOT is providing their input. Has anyone done a count on the number of large trucks, 4 x 4's SUV's in Castle Rock and Douglas County? This would be a guide to narrowing the road.				1				
	Timber Ridge	We are in Timber Ridge (timber canyon road.) I realize there are no great traffic solutions with the amount building being allowed. The 16' island seems to be a loss of some usable space. The response we kept getting is "the engineer said!" Is there any thought to getting another engineer, that may have some out-of -the-box ideas (I'm not sure that type of engineer exists??).		1						
	Sapphire Pointe	One of the big problems is the outside turn lane from Founders onto Crowfoot. It is a race to get up the hill and people don't merge well. The biggest need is a traffic light. Some want a round about but with the constant stream of traffic that comes, it will be even harder to get into a roundabout. A traffic light is the best resolution.								
		Why not install a roundabout at the Sapphire Pointe Blvd. intersection with Crowfoot Valley Rd. as opposed to the proposed traffic light? It would keep traffic moving at all times. If a traffic light is ultimately installed, please make it as intelligent as possible. No having it change for no reason at any time. That is exceedingly frustrating. Regarding the proposed plan of no traffic control (other than a stop sign) on Diamond Ridge Parkway at Crowfoot Valley Road. This is very short sighted and accidents will happen.								
		Left turns from DRP and Sapphire Pointe Boulevard need something to give them time to get out there onto northbound CVR.								
		Suggestion: See intersection of US 24 at US 285 in Johnson Corners, CO at https://www.google.com/maps/@38.8100854,-106.1128884,1200m/data=!3m1!1e3.								
		This T-intersection has southbound US 285 with a through lane while westbound US 24 has signalized access on to southbound US 285 with an island separating the through traffic from the accelerating traffic. Meter the traffic light to be on-demand only for the DRP eastbound to CVR northbound traffic.								
		The dedicated right turn lanes in Johnson Village are not appropriate to this situation in Castle Rock.								
		In fact, for the relatively small amounts of traffic from Diamond Ridge Estates and Sapphire Pointe that turn north, this solution would probably provide better traffic flow for southbound CVR at all times over a traditional signalized intersection at both locations.								
		I don't believe I've seen this type of intersection anywhere around here. I hope this expands your traffic engineering possibilities.								
	Diamond Ridge							1		
	Sapphire Pointe	I like the idea of the medians, I would just like to see trees and some lighting. Install the light at Sapphire Pointe ASAP!.Is it still too late to install a roundabout at SP?	1					1		
	Sapphire Pointe	I agree to removing left turn acceleration lane, but it takes forever to be able to turn left!I would prefer bike lanes to be off street and go all the way to Stroh Ranch.			1					
	Sapphire Pointe	I wish it was a roundabout instead of a light at SPB and crowfoot. Seems like it would be safer and more efficient						1		

Sapphire Pointe	We've noticed an increase of accidents at the intersection of Sapphire Pointe Blvd. and Crowfoot. A light or roundabout at this intersection I feel would really help with the speeding. Additionally, the timer for the light at Crowfoot and Founders needs to be revisited to handle all this traffic. Currently if you're traveling Southbound on Crowfoot to make a left at the light on Founders, it only lets four cars per lane go through before immediately switching to red. During high traffic times like school dropoffs, each lane can be backed up to 8+ cars. The light doesn't change again for another 2+ minutes. Traffic is going to back up severely with all this growth if the light timer isn't changed to allow more cars to turn left from Crowfoot to Founders at a time. Thank you.					
Sapphire Pointe	We definitely need a traffic signal at Sapphire Pointe Blvd. We have had numerous crashes, including at least 2 fatal in the last few years and with the new developments and the road widening it's just getting worse.					
	Greater safety is needed on Crowfoot Valley Road so I am glad that additional improvements are on the horizon. However, with a large neighborhood being built that is intended to potentially host multiple schools for children, the Macanta Neighborhood has the greatest need for a traffic signal. School starts and work begins for a large amount of the population at the same time. However school is let out before the evening rush home. So, I believe crossing Crowfoot from the Macanta neighborhood to head into CR in the morning has a greater danger potential than the Sapphire Pointe group would face crossing Crowfoot onto Sapphire Point Blvd in the evening. Children are the most important passengers and must be kept safe.					
	I think putting in a signal light at the Crowfoot / Sapphire Pointe intersection is not in keeping with the town's or state's values of climate interest or efficiency. A round about is more effective: it is faster in commuting time, helps slow down speeders, and reduces pollutants.				1	
	Please install a light at Sapphire Pointe Nlvd and Crowfoot. There is too much traffic for a roundabout.					
	I recommend and support approval of the original 4 lane with median with decell and accel lanes coming out of the major neighborhood entrances. keep the traffic speed up on this major thoroughfare. I object to the alternative of of a roundabout and slowing the speed limit. and most of the other suggestions I heard brought up. The four lane road design as presented is appropriate for carrying the heavy traffic expected in this area. This is NOT a subdivision entrance road. This is a major thoroughfare from Castle Rock to Parker. Other similar roads in the area like Founders parkway, Parker road with four lanes can safely carry vehicles at normal speeds. Speed reduction here is not necessary.		1	1		
Sapphire Pointe	I live in Sapphire Pointe, I see lots of speeding traffic on Crowfoot Valley. I'm ok with the widening project except for one thing; I really believe the planned Traffic Signal at Sapphire Pointe Blvd will do nothing to make the road safer. Please reconsider the Roundabout option at Sapphire Pointe Blvd - roundabouts are efficient, effective and will improve the safety of Crowfoot Valley Road.				1	
Diamond Ridge	I would like traffic circles and lights. Too many people drive too fast on these streets. There is no need to widen crowfoot just limit the amount of housing developments. We need to add more schools and resources to support the growth not just raised medians				1	1
Diamond Ridge	We have lived in DR for 23 years. As an avid cyclist, I often ride north on Crowfoot. In addition, we often turn left when going to Parker Road. My absolute concern and fear, is trying to go left past four lanes of speeding traffic on my bike which will be treacherous given the speed mentality of drivers. And, trying to make a left in a car; it is tough as it is.Put a light in, we all know with the rampant growth, that traffic estimates are just that; estimates which are most likely an educated guess at best.					1
Timber Canyon	Speed limit from Founders to the north end of the new expansion needs to be in the 30-35mph range, now that there is not an acceleration lane from Knobcone turning left onto Crowfoot. Bike lanes are the last thing the taxpayer should worry about. Also, begin the construction of a road from Crowfoot to Happy Canyon, so as to join I-25. This will lessen the pressure on the Crowfoot widening project and Founders. Reduce the steepness of Crowfoot during this widening project.					
Timber Canyon	This is yet another example of how the Town continues to make sacrifices at the altar of our car culture. Whether it be Plum Creek, Founders, I-25, or any street in downtown, Castle Rock is surrounded, bisected, and inundated with busy roads. Our waking paths and open spaces are polluted with noise, the proposed sidewalk for this expansion will be degraded by its proximity to a busy road with fast traffic (we know people do not obey speed limits), and the Town continues to miss opportunities to preserve what drew so many people here.My family and I are planning to leave Castle Rock because incessant traffic, fast speeds, and wide roads have detracted from whatever else the area has to offer. This road expansion will mean Crowfoot is mere feet from residential back yards. It will create an unpleasant experience for pedestrians and bikers, it will make exiting certain communities difficult and it will pass without concern. It's sad but to be expected.Instead of wider medians why not build wider sidewalks and buffers between the sidewalk and road? This won't happen because it does not serve the interest of cars. This reduces safety for residents who will now how to dodge traffic to exit their communities. What about us? Should we bear the risk of excessively fast, distracted drivers simply to try and leave our neighborhoods? If safety matters put a stop light at Knobcone. But, like buffers between the road and sidewalks, this won't happen.		1	1		1
Diamond Ridge	Overall the total roadway needs to be wider. I support roundabouts to slow all traffic. As a cyclist on road bike lanes can be perilous to using more off the road for cars and building dedicated bike/multi use paths down the entire road would help. Overall the total roadway needs to be wider. I support roundabouts to slow all traffic. As a cyclist on road bike lanes can be perilous to using more off the road for cars and building dedicated bike/multi use paths down the entire road would help. What is really needed are additional routes to get easily and quickly to I-25. A big part of the problem is that we have so much more traffic and it is all funneled back to founders. I think Happy Canyon should be opened from diamond ridge to I25 and another route to Castle Pines Parkway.				1	
Timber Canyon	Wider and taller medians make sense. I would be in favor of lower (30-35 mph) speed limits as well. If the left turn acceleration lane from Knobcone Drive onto Crowfoot Valley is removed then it will make it nearly impossible to make that left turn during rush hours. This severely negatively impacts my entire community. From the design details that were provided during the town hall, it seems clear that these updates are being made for the benefit of Sapphire Pointe and Macanta communities at the detriment of the communities closer to Founders Parkway. On street bike lanes seems to be of limited benefit considering the lack of bikers currently encountered on Crowfoot Valley Rd. What is being done to mitigate road noise? The increasing amount of traffic on Crowfoot Valley Rd has been causing a nuisance to nearby communities. Creating more lanes to accommodate increasing traffic without mitigating associated noise or lowering speed limits does not seem prudent or in the best interest of residents in affected communities.	1		1		
Timber Canyon	I am one of the closest homes backing up to Crowfoot and I'll be honest, the growth has increased road noise significantly over the years. I would, of course, love to see some kind of a retaining hill or wall, but also appreciate that the town is doing what they can to mitigate the speed (which helps with noise). I am concerned that if the street is widened at Knobcone, those turning from Founders to Crowfoot will accelerate significantly after the turn. Speeds in our back yards are obviously concerning to the residences of Timber Canyon. Right now the merging of the two lanes to one is a natural speed deterrent and has worked REALLY well. Also, the left protected turn out of our neighborhood provides us with a safe way to exit and merge into Crowfoot traffic headed to Founders.			1		
Diamond Ridge	Passive traffic controls such as medians will likely have minimal impact to mitigate the expected huge increase in local traffic. Please provide traffic controls at each intersection where neighborhoods enter or exit crowfoot valley road including Diamond Ridge. Turn lanes and bike lanes will be great.			1		1
Sapphire Pointe	yes, to median improvements and no to a roundabout. If traffic signal is installed there is no need for the left turn acceleration lane, but consider adding one at Diamond Ridge. Coordination of lights from founders/crowfoot and Sapphire/crowfoot would enable the diamond ridge and timber ridge people turning left to have a break. DO NOT put light at Diamond Ridge, winter conditions on the hill will be bad.	1		1		1
Cutters Ridge	Sidewalks and bike lanes wanted, happy with suggested plans to slow down traffic.	1				
Diamond Ridge	Sidewalk is a huge plus! I am shocked at the lack of consideration for the local neighborhoods. I cannot make a left turn from Diamond Ridge Pkwy as it is. How the heck am I supposed to cross 4 lanes of traffic? Is it possible to put a roundabout? Which would slow traffic and allow me to safely leave my neighborhood?			1	1	1
	For the most part, the Crowfoot project is probably as good as we can expect. T the e one thing that I absolutely disagree with is narrowing traffic lanes to accommodate the massive raised medians - medians of that type are wholly unnecessary, and I believe will contribute to greatly increased problems during the winter months. Snow plowing has always been problematic in this area, and this just adds another 'target' for cars on slick roads and wind-driven road anomalies - narrow lanes just make it worse. I am not convinced that traffic volume warrants a signal at Sapphire Pointe, but I suppose it is inevitable despite the really low volume of delays and accidents there.		1			
Timber Canyon	You are seriously degrading the ability to exit onto Crowfoot from Knobcone. The exiting lanes provide a safe way to turn left from Knobcone. With increased traffic and no acceleration lane, this will be quite dangerous. What happened to the traffic circle at Diamond Ridge or Timber Ridge			1	1	
Timber Canyon	SAFETY... Right & Left turn lanes are essential. Adding a traffic light at Sapphire (Isn't there a light already at the Firestation #155?) is similar to a Race Track. Once it turns green let's see who gets to Founders Parkway first? And it'll get worse once the motorist pass Diamond Ridge on there southbound downslope of Crowfoot Valley. Connecting Hess Roadway to I25 mitigate traffic congestion? Will the existing traffic concerns continue for all residents (existing and new) along Crowfoot Valley? Should the Town look outside the 'Box' to see if there is another route connecting to I25			1		
Timber Ridge	I HIGHLY doubt the suggested median is going to reduce speeds enough to create a safe driving environment. Castle Rock, you can do better than this current plan. PLEASE RECONSIDER how you are going to slow down traffic on Crowfoot Valley. It should start with a change in the speed limit. A roundabout would also help. Speed bumps would be the best option to reduce speed but probably not that practical on a road that is handling that much traffic My big concerns are ability to access Crowfoot Valley in either direction from ALL neighborhoods and reducing speeds in the area. Not convinced either are addressed in the current plan. The neighborhoods need to have SAFE access to Crowfoot Valley Parkway. Please note that the changes made to Founders/Crowfoot access were a disaster. Making two turn lanes onto Crowfoot and then immediately merging in to one lane IS NOT working. Two through lanes is a great idea but you have to allow for neighborhood access in both directions on to Crowfoot Valley. I support the traffic signal at Sapphire Point.			1	1	
	Bike lanes are excellent. A lot of bikes out there. Mesa connects to the end of sapphire point Blvd. why is it closed? The access to happy canyon would greatly decrease traffic at the crowfoot entrance. Open to any safety improvements					
Sapphire Pointe	I generally feel the issues are due to impatience. I like the accel lanes			1		
Sapphire Pointe	Remove accel lanes only if you put a signal at SP. Traffic Signal is needed at SP			1		
Sapphire Pointe	I don't believe a wider taller roadway would slow down driving speeds. However, a median would hopefully prevent people from passing in "No Passing " Zones. Widening the roadway would just encourage the people to drive even faster than the already do, especially the racing that goes on during the early morning hours. I am in favor of the sidewalks, and bike lanes. I strongly disapprove of a Traffic Signal at the intersection of Crowfoot Valley Rd and Sapphire Pointe. A "roundabout" would be much be alternative to a Traffic Signal. It would slow traffic and prevent people running reds lights as they currently due at Crowfoot and Founders (not to mention throughout the town).				1	
Timber Canyon	Without the acceleration lanes the best way to improve safety is to reduce the speed on Crowfoot, Again, imposing a 35 mph limit that is occasionally enforced by police is the best way to improve safety.			1	1	
Sapphire Pointe	I'm in support of the plan for calming features. Remove the plan for a stoplight at Sapphire Pointe Blvd and replace with a traffic circle. This was the original plan and is better for traffic flow and has a calming effect.	1			1	
Timber Canyon	I do not think wider and taller medians are a good idea and will not result in slower driving speeds. Wider medians will do nothing except take up precious space and make driving lanes narrower or fewer driving lanes. This will not improve safety. Consider keeping the bike lane out of the street and have them on a sidewalk. Keep the acceleration lanes for all cross streets where driver must wait for a coinciding break in oncoming traffic from both directions. Use as much of the right of way as necessary to make this intersection work well this time and avoid redoing it again in two years.		1	1		
Timber Ridge	I'm concerned about being able to get into and out of Timber Ridge. Currently, even to join Crowfoot traffic in the morning headed towards Founders Rd, which is a right hand turn from the neighborhood is often challenging just because of volume of traffic headed towards Founders in the morning. The complicating factor here is that looking left or north from Timber Ridge the sight line distance is short as a result of looking up the hill to the crest. Thus, you often do not know if another car will come over the hill just as you think you are ready to join the traffic. Turning left out fo the neighborhood is always a challenge because of the limited sight line up the hill when viewing the traffic lane that must be crossed and then trying to join the volume of traffic headed up the hill from Founders. With the expected increase in traffic it will become almost impossible to join the flow of traffic out of the neighborhood onto Crowfoot in either direction. Previously, there was to be a traffic circle installed a the entrance of Timber Ridge to slow the traffic and make joining the flow much easier. I hope that this will be reconsidered.				1	
Timber Canyon	The wider and taller roadway medians may help serve to encourage slower driving speeds, however, they will not improve the aesthetics of the area. In an effort to further reduce driving speeds and harmonize with the surrounding area, landscaping the medians with trees rather than unsightly rocks (which will likely foster weeds as well) is recommended. The spaces dedicated for acceleration and deceleration will only work if the through traffic is slowed to allow safe merging. The speed limit in this area should be reduced to accommodate the conditions such as limited sight lines and road slope, which cannot be remedied. Any design for this area that fails to actively slow vehicle speeds will result in dangerous conditions and a decline to the overall beauty of the area. Speeds on Crowfoot, to the southwest of Timber Canyon Drive, were recently reduced near the intersection at Timber Canyon Drive. However, enforcement of that 35 MPH speed limit does not appear to have been actively continued to address the safety concern in this area. What are the Town's long-term plans to support the infrastructure changes with active enforcement of this safety zone that Mayor Gray and Town Council members support? Have permanent or temporary photo radar cameras been evaluated to incentivize drivers to observe the stated limits in this highly congested area? Previous iterations of the CVR Widening Project concepts indicated a design objective to provide protective measures for pedestrians crossing CVR, however, current plans appear to have removed any type of crossing or other features for pedestrian safety. In fact, the raised medians further restrict the potential crossing locations along the route. Considering the new trailhead feature across from Knobcone Drive will require crossing five lanes and expanded medians to get from the east side to the west, dedicated pedestrian crossing areas with appropriate signage and flashing lights should be restored to the design. High visibility and active signage will help in numerous ways to keep pedestrians and motorists safe. FAQ's on the Town's website appear to be contradictory regarding funding. In updates made on October 27, 2022, FAQ item 7 indicates "there are currently more project needs identified than there are projected funds to implement them", but item 12 states "The current funding available for the project is about $4.2 million. These funds are expected to be sufficient to complete the needed improvements for the corridor." Residents in the area of this project have been active and vocal about the desire for sound mitigation measures to be considered a need because of the impact to the quality of life resulting from the current and projected traffic levels along this route. It is recommended that the Town reconcile and clearly state the "needs" along with the associated funding capabilities to address those needs, and strongly urged to include noise mitigation measures along Crowfoot among them. Construction hours for the approved project must be respectful of the homes within close proximity of the work being performed. No night work should be allowed in this residential area.	1				
Timber Ridge	I'm ok with the traffic signal at Sapphire Pointe Boulevard, but I wish ALL of these intersections were round-abouts. I appreciate the two through lanes in both directions of Crowfoot. I appreciate the dedicated left- and right-turn lanes at intersections. I appreciate the on-street bike lanes. However, I would like to paint them green like the City of Boulder does. My wish would be to have Crowfoot Valley Rd would mimic the incredibly well done Promenade Pkwy by the Outlets. Southbound side on Crowfoot Valley Rd as it approaches Founders Pkwy can be extremely unsafe in the winter months. I strongly feel that reducing the speed with round-abouts at Timer Canyon Dr and Knobcone Dr will greatly help with this safety issue. Pedestrians walking on the only sidewalk available at that intersection is very concerning.			1	1	
Diamond Ridge	At least 1 additional traffic signal and a left-turn merge lane is needed immediately at Diamond Ridge Pkwy. Also, if there is limited space that eliminates accel/merge lanes, then eliminating or moving the bike lane and sidewalk from the northbound side of the roadway is preferable. A roundabout is preferable to a traffic signal at Sapphire Pointe Blvd. A traffic signal slows/stops traffic only when yellow or red. In contrast, a roundabout ALWAYS slows traffic without impeding its flow into or out of the roundabout. This option was also first suggested by the 4-community (Sapphire Pointe, Diamond Ridge, Timber Ridge, Timber Canyon) "working group" that responded to the Town's request for input/feedback on Crowfoot intersection controls in Jan 2021.			1	1	
Diamond Ridge	It is already very difficult to turn left onto Crowfoot Valley from Diamond Ridge. This is going to be terrible for us.			1		
Sapphire Pointe	Keep accel lanes, no median improvements. Keep it flowing, don't add more traffic lights, get rid of bike lanes. And create a safe bike/pedestrian path.			1		
Cliffside	From Macanta to Founders can't be more than a mile and a half - to be safe a 35 mph wouldn't cause more than an extra minute or two to a drive.					
Diamond Ridge	The new proposed right-turn (southbound) acceleration lanes at Diamond Ridge and Timber Ridge are a step in the right direction. However, to provide the same level of safety TURNING LEFT (northbound) at these 2 intersections, we need left-turn accel/merge lanes as well. Without these and/or more intersection controls, motorists will experience significant delays when attempting to make left-turns (northbound) from Diamond Ridge Estates and Timber Ridge. With double the number of lanes on Crowfoot, left-turners will now have to wait and negotiate crossing 2 lanes of southbound traffic instead of the current 1 lane.The Town's assertion that there's "inadequate merge length" to accomplish this is tied directly to your unwillingness to lower speed limits, as first recommended in April 2021 by a "working group" representing almost 1200 homeowners. These 4 neighborhoods recommended that the Town establish a "SLOW/SAFE ZONE" with reduced speed limits of 30-35mph. As speeds are reduced, shorter acceleration lanes become safer. So please lower the speed, and take the space out of the 16 foot wide median to accommodate accel/merge lanes at these two intersections. ____			1		
Diamond Ridge	I think the taller medians are necessary but wider at the expense of straighter roads in this area would negate the road being wider. BIG mistake remove the proposed acceleration lanes for left-turning traffic from residential side streets onto Crowfoot Valley Road. It is almost impossible to turn left from Diamond Ridge Parkway at rush hour both in the morning and afternoon currently so I was optimistic when the left turn acceleration lanes were proposed. I think the bike lanes are a big mistake. Cars generally feel that these lanes are open to them so anyone who travels on Crowfoot on a bike is nothing short of putting their lives at risk. The two lanes each direction is a good idea if these lanes have a medium even if it is only 2 feet wide just to keep someone from passing in the other direction's lane. Traffic signal at Sapphire is a good ideated would be helpful for folks on Diamond Ridge Pkwy to make that left turn even though most cars leaving Sapphire will be able to turn right on a red the light will top those coming out of Macanta.			1		
Sapphire Pointe	I think roundabouts at major intersections like Sapphire Pointe and Crowfoot Valley Road.would eliminate the need for left and right turn lanes and reduce traffic speeds, increasing safety.				1	
Timber Ridge	My understanding is that the plan is for only a single traffic signal at Sapphire Pt, If there are no other traffic controls planned, the result of this in addition to a wider divider will make is extremely unsafe entering Crowfoot Valley Rd from our subdivision. This is very concerning as a left turn onto Crowfoot Valley (North) from my subdivision, without an acceleration late will be nearly impossible and quite unsafe, especially based on the volume of cars and the high speeds that they tend to travel.		1	1		
Puma Ridge	Great project! The removal of an acceleration lane or transition lane will prove to have deadly consequences. The example of Avenida del Sol's lt. turn egress onto Founders Pky. is a good example. Without that lane, it would be extremely dangerous to make that turn.Have the construction company remove cones when not working if possible. These cones and weather contributed to unnecessary deaths in this area.			1		
Timber Ridge	Wider and taller medians may work in studies, but are those where the motorist are traveling down a steep hill? Left turns are the main issue, no acceleration lane = accidents. Please put in left turn acc lanes in, this is dangerous enough with limited sight distance to pull out safely.			1		
Timber Ridge	This has been repeatedly prioritized as a necessary widening to accommodate the arterial realities of the projected and still growing estimated vehicle counts. I strongly urge creation of a Safety (slow speed) zone from town Boundary down to Founders to equalize the Arterial concepts with needed safety and entry/exit concerns along this short corridor for the thousands of Castle Rock and County (Micanta) residences that can only use this short corridor to leave and come to their homes. Town and County planners appear to be only prioritizing Arterial necessities, and downgrading local residents needs for safe entry and exit to their communities. Slow speeds down to 35 mph though out the Zone					
Sapphire Pointe	Please lower speeds through that area!! Cars coming over 50 miles an hour give us little time to turn left onto Crowfoot. I have two young drivers in my house. It scares me to death and the recent fatal accident shows that speeds MUST be reduced and enforces as drivers approach these neighborhoods. I would prefer a round about, but if not, a light is beyond necessary and needs to happen NOW!!! This stretch has proved deadly. Please lower speeds, install measures to stop or slow traffic. I don't really care how but the timeline MUST be moved up to ASAP. This should be a priority.				1	
Diamond Ridge	The traffic light at Sapphire Pointe will need to be calibrated perfectly with the left turn light on Founders Parkway or people at Diamond Ridge will NEVER be able to turn left. Why isn't there another way to I-25? It's ridiculous that the gate between Diamond Ridge Parkway and Happy Canyon Road hasn't been opened. This would be an easy, nearly cost-free way to reduce the load on Crowfoot and Founders. This road is PUBLIC, I've seen it plowed and maintained much more regularly than the side streets. Why isn't it utilized like a public road?					
Sapphire Pointe	I am in favor of roundabouts where possible. Bike lanes are crucial and really need physical barriers more than lines to be safe.				1	
Timber Ridge	I like what I see, no other comments from me					
Timber Ridge	People wanting to exit Timber Ridge already have long wait times and safety issues. The left hand turn is especially troublesome. It will be made worse and more dangerous by adding two lanes of traffic to contend with. Vehicles are moving at high rates of speed down a hill which makes visibility an issue. Now there will be two lanes to contend with. Please find a better solution for the residents of Timber Ridge. Separate email to Cavey: I am writing to request your attention to the expansion of Crowfoot Valley Road outside of the TimberRidge Subdivision. Exiting our subdivision is already a problem. We have a downhill to the north of us which makes visibility an issue when vehicles are traveling at most speeds. One has to enter traffic without much notice on a right hand turn. Left hand turns are nearly impossible at certain times of the day. The new plan to add another lane of southbound traffic will exacerbate this issue and then to take out an acceleration lane for people making left turns? Wow! Our neighborhood already has issues trying to leave the subdivision and now the planners are actually making it dangerous for us. The barriers that are supposed to slow traffic down are questionable - most people speed down the hill starting at Diamond Ridge. Remember the signs on Crowfoot near Founders Parkway that showed speeds? These were supposed to slow people down but only showed that most people drove too fast there.			1		

Sapphire Pointe	I am in favor of additional lanes both directions and I think it is critical to have traffic management at both Diamond Ridge and Sapphire Pointe. A roundabout at Sapphire point would provide a continuous reduction of speed vs. a light that would only control when yellow and red. I also believe there needs to be a dedicated bike lane away from traffic since this used to be a very heavy bike traffic road.							1			
Timber Ridge	Timber Canyon needs 2 through lanes and a dedicated right turn lane on Crowfoot. The current merge is a mess, especially when heavy equipment is involved. Bothe communities need left turn acceleration lanes. 2 through lanes in both directions would be helpful, especially as more traffic picks up on Crowfoot. I am concerned that you have not adequately taken into account the need for both Timber Ridge and Timber Canyon to have the acceleration lanes. There are times where I have had to wait for an extended period of time to make a left hand turn, and this will only get worse with the median and lack of acceleration lanes.				1						
Diamond Ridge	The speed limit must be lowered to 30mph from Saphire point to Founders Parkway. Acceleration lanes must be retained to allow residents to safely merge when exiting their neighborhoods. Stoplights and/or roundabouts are necessary to allow residents to safely turn out of their neighborhoods. It's dangerous enough negotiating a turn across two lanes of traffic. Four lanes will lead to more accidents and likely fatalities. The expansion of Crowfoot should be terminated and an alternate route should be pursued.										
Diamond Ridge	Perhaps putting a traffic light in now at the Diamond Ridge entrance makes sense while you're doing the construction anyway. Why do we need to wait to tear the roads apart in the future to do this, or worse yet, why wait until there is a serious accident to do so. The new proposed right-turn (southbound) acceleration lanes at Diamond Ridge and Timber Ridge are a step in the right direction. However, to provide the same level of safety TURNING LEFT (northbound) at these 2 intersections, we need left-turn accel/merge lanes as well. Without these and/or more intersection controls, motorists will experience significant delays when attempting to make left-turns (northbound) from Diamond Ridge Estates and Timber Ridge. With double the number of lanes on Crowfoot, left-turners will now have to wait and negotiate crossing 2 lanes of southbound traffic instead of the current 1 lane. The Town's assertion that there's "inadequate merge length" to accomplish this is tied directly to your unwillingness to lower speed limits, as first recommended in April 2021 by a "working group" representing almost 1200 homeowners. These 4 neighborhoods recommended that the Town establish a "SLOW/SAFE ZONE" with reduced speed limits of 30-35mph. As speeds are reduced, shorter acceleration lanes become safer. So please lower the speed, and take the space out of the 16 foot wide median to accommodate accel/merge lanes at these two intersections.				1						
Timber Ridge	I already have problems leaving Timber Ridge to head north easily, and all these changes sound like they will do nothing make this easier or safer. I would ask you to please consider again the option of traffic circles which would definitely slow traffic and allow for those of us living in these adjacent neighborhoods to more safely gain access to Crowfoot.							1			
Diamond Ridge	We need left accel lanes. It takes FOREVER to turn left out of our neighborhood now. Medians won't help slow drivers		1		1						
Timber rRidge	PLEASE DO NOT REMOVE LEFT TURN ACCELERATION LANES FROM THE PLAN! I do not see the wider median having any influence on speed. If the stats on lane narrowing to reduce speed are in fact there, go ahead and narrow the lanes….but please use the median space and extra inches from lane narrowing to provide for protected left turn acceleration lanes out of the neighrhoods. I have heard said that the length of the space does not allow for a combined acceleration/deceleration lane between Timber Ridge and Diamond Ridge going uphill(northbound). It is the same length of space as the lane between the two neighborhoods going on the downhill side of the street(southbound) which is also for acceleration/deceleration. So that argument does not hold water for not installing the northbound acceleration lanes.				1						
Timber Canyon	Do NOT remove the acceleration lane or the right hand turn lane on Crowfoot to Knobcone Dr. I Really appreciate left hand turn lane onto Crowfoot from Knobcone for safety reasons. Traffic lights need to be synced (absolute necessity)f put at Sapphire Point Bl and Founders to allow all neighborhoods affected to get in and out of their respective neighborhoods. A general comment is on the short caution lights in town. Flagrant violation I see every day. One reason, I believe, is because the caution light is TOO SHORT and if you are going 40-45 mph you are unable to stop in time to avoid slamming on your brakes. I have never seen so many accidents as there are here locally and I am 74 years old and I have lived in 3 different states. Can't drivers be stiffly fined and income generated from flagrant, unsafe drivers??I believe it would help immensely cut down on accidents if the speed limit were enforced. Very unhappy with lack of planning by town. Quality of life is impacted greatly for me. I would NOT have moved here if this had been disclosed when we bought our home. How did this huge development get passed over by Castle Rock's needs and then was accepted by unincorporated Doug County? We are directly affected in the town of Castle Rock by substantially increased traffic and noise				1						
Timber Ridge	I think safety is a major concern. With so many cars projected I believe it makes sense to increase the amount of traffic lights along Crowfoot. That would keep traffic moving in an orderly fashion, slow cars down, and make it less dangerous for cars turning left out of residential neighbors. Being a resident of Timber Ridge I would like to have a light at our entrance. It is already hard making a left turn during Peak driving times. And keep speed limits down. These are the only things I see adding to safety in the event of 30,000+ cars a day. Crowfoot Valley Road is a road that primarily services residential neighborhoods. The traffic, noise and safety are already issues with not even 15,000 cars a day. No one in the communities that line the road want it to become the size of a large highway, which seems to be the end goal here. This should have been planned out before Macanta all the other new communities were built. That said, at a minimum there should be an alternative route into Castle Rock and to the I-25 and traffic lights into the Timber Ridge, Sapphire Ridge and Macanta communities. In addition to what is being planned (above) there should also be sound walls along Crowfoot to alleviate noise. We already hear loud traffic noise from our street and do not want it to get worse.								1		
Diamond Ridge	By watching the traffic calming solution that was implemented in Diamond Ridge, I can assure you that taller medians will not lower speeds for a majority of people driving on Crowfoot. While I realize the chicanes are not the same as higher medians, the premise is the same - to slow traffic by narrowing or creating a perceived narrowing of the road. All day long I watch people cruise at high speeds effortlessly through these chicanes and am continuously followed with people on my bumper because I slow down. These prove to be more of a fun obstacle to weave through at high speeds, than a deterrent to speeding. Without any other measures proposed for people to safely get across the additional lanes of traffic (a light or a roundabout), removing acceleration lanes from the plan is several accidents, and most likely fatalities in the making. There are many areas in Castle Rock where these lanes are essential in order to merge into the fast moving traffic that we have in Castle Rock (many people are traveling at least 20 miles above posted speed limits), including just down Crowfoot at Timber Canyon, for many fewer residents than we have in Diamond Ridge and our neighbors in Puma Ridge, Cliffside and Sapphire Point who also use Diamond Ridge Parkway to access Crowfoot Valley Rd. I cannot see how removing these lanes will increase safety, but rather accomplish the opposite.Please lower the speed limit and take space from the large proposed medians to allow room for acceleration lanes. At least 1 additional traffic light and a left-turn merge lane is needed at Diamond Ridge Parkway. A roundabout is preferable at Sapphire Point Blvd., as a traffic signal only slows down traffic when it is red. A roundabout will always slow traffic and would also mark an entrance into a slower speed zone and help reduce speeds up until the light at Founders.		1		1			1	1		
Timber Ridge	A smaller median could also accommodate a left turn merge lane, which is desperately needed. Removing left turn accel lane - TERRIBLE. We will never be able to turn left out of our subdivision! All design plans need to be included as well as left-hand turn lanes at all intersections. I would even like to see another stoplight at Diamond Ridge. As a parent of two 15yo boys who have just begun driving, this is terrifying. We need left-hand turn lanes and we need to lower the speed limit. The crest of the hill traveling south allows cars to travel at much higher speeds than the posted speed limit. It is very difficult to get out of the subdivision even to turn right. It's an accident waiting to happen!		1		1				1		
Timber Canyon	Since my home is directly on Crowfoot Valley Road I would like to suggest that the roadway medians that start at Knobcone Drive be only 9 feet in width, which is the current size of the medians already constructed from the start of Crowfoot Valley / Founders Parkway traffic light up to the turn in lane located at Knobcone Drive which is 9 feet in width. As we all know every foot counts on this project and to assume the excessive large medians of 16 feet would encourage slower driving speeds is very much in question. Note: My home is really the only home on the entire Crowfoot Valley Road that is massively effected by this widening project. So, with every foot it will effect my home in safety and security. My Address is: 5266 Knobcone Drive. Greatly agree with NOT putting in the acceleration lanes for left-turning traffic. Greatly agree with NOT putting in the acceleration lanes for left-turning traffic. After looking over the diagram concerning the Crowfoot Valley Road Widening "Recommended Design" it seems the overall total feet is extreme, its appears to be wider than an 8 lane federal freeway. After looking at the SOUTH BOUND (Coming into Castle Road) traffic pattern widths amount of 10' feet for the sidewalk which includes bike lane as well; 2.5' for safety; 10' AUX LANE; 10.5' TRAVEL LANE (1); 10.5' TRAVEL LANE (2) for total size of 43.5'; " MEDIAN 16' ". Looking at the NORTH BOUND (Going towards Parker) traffic pattern widths amount of 10.5' TRAVEL LANE (1); 10.5' TRAVEL LANE (2); 5' for BIKE LANE; 2.5' for safety; VARIES (?) What does this mean?; 8' SIDEWALK for a total size of 36.5' + 16' for the median, making it 52.5'. Overall total width for this roadway is 43.5' (South Bound) + 52.5' (North Bound, including the projected 16' Median) = 96'. As we all know that is a massive overall width for a roadway. I recommend the widening be overall reduced by at least 7' feet to no more than 88' to 89' bt reducing the width of the median to 9' in width from the proposed 16' in width median. Since I'm really the only home that is directly impacted by this massive road expansion project I would like to see if the city/county can help us out by looking at proposing a wall / fence along my property for safety and security reasons since people walking up/down on the sidewalk on Crowfoot Valley are directly in my backyard / patio area. The wall / fence does not have to be that large or long. I was suggesting the length of the wall / fence to be around 20' plus feet.		1	1							
		17	11	3	48		4	27	15		
		Proposed Medians		ination of left-out acc	Other						
		Support	Against	Support	Against		Desire Crosswalks	Desire Roundabout	Additional Signals (Left turn access concerns)	Responses	Responses
		17	11	3	48		4	27	15	99	99

From: George Tocquigny
Sent: Friday, December 30, 2022 11:48 AM
To: TownCouncil Mailbox
Subject: Jan 3rd Recommendations by Public Works, re: Crowfoot Widening Project

Members of the Town of Castle Rock Council:

I sincerely hope that each of you, your family, and loved ones have had a safe and joyful holiday season.

Yesterday, the Town published the agenda for the Jan. 3 Council Meeting, which includes a Public Works presentation on final recommendations for the widening of Crowfoot Valley Road, along the less-than-one-mile section that is within the Town's jurisdiction.

BACKGROUND: For the information of new Council members, my wife and I built one of the first homes in Diamond Ridge Estates during 1997, so we have seen Crowfoot Valley Road evolve from an unpaved road to the major thoroughfare that it is today. The Town states that daily average traffic volume will grow to 37,000 vehicles/day from where it is today…14,000 vehicles/day. This growth will significantly impact the intersections for 4 communities: Sapphire Point, Diamond Ridge Estates, Timber Ridge, and Timber Canyon, representing almost 1200 homeowners, all within Council Member Cavey's district.

For the past 2 years since January 2021, these neighborhoods have come together to form a "working group" pertaining to the Crowfoot Valley Road ("CVR") widening project. This began with the Town's January 2021 "virtual meeting" to discuss "intersection controls" at the aforementioned intersections. While the Town has been great at encouraging citizen input and feedback since then and along the way, it is not always apparent the extent to which this input really changes anything.

Our working group representing almost 1200 households has been clear since the outset in its desires for the CVR project. For instance, my 5/14/21 email to Mayor Gray and Council Member Cavey (cc: Council) included the following four key desires:

1. The creation of a "Safe/slow zone" with reduced speed limits along the 0.7 mile stretch, that will minimally impact drive time by less than 15 seconds.
2. Additional signage to alert drivers that they are entering a residential, slower-speed section of roadway.
3. Inclusion of roundabouts where feasible, especially at Sapphire Point Blvd to mark the start of the "Safe/slow zone" for southbound vehicles.
4. Evaluation of the use of alternate technologies, such as digital speed signs and speed cameras that result in the automatic issuance of a traffic citation.

These initial recommendations were followed-up with meetings requested by our working group that included Town management, Public Works, CRPD, Mayor Gray and Laura Cavey. We are grateful for the time that was afforded us to make certain that our concerns and recommendations were well understood.

CURRENT PUBLIC WORKS RECOMMENDATIONS: We are grateful that Public Works is now recommending left-turn acceleration lanes from the "non-signalized" intersections serving Diamond Ridge, Timber Ridge, and Timber Canyon, as described in their memo to Council posted yesterday for the Jan. 3, 2023

meeting. However, it's very disappointing to see that the above 4 recommendations apparently continue to be ignored:

- Public Works continues to argue that lower speed limits on this very short section of roadway could actually cause more accidents "based on national studies."

- CRPD continues to argue that the use of technology to help in speed enforcement is ineffective. In the meantime, a severe shortage of traffic control officers has caused speeding and reckless driving all over our Town.

- Public Works continues to oppose a roundabout at Sapphire Point due to "citizen opposition" collected in a "citizen survey." However, nobody can produce the data from the survey that would show important factors such as how the survey was conducted, including for instance, survey sample size as a percentage of total affected residents.

- There is no clear signage or other landmark planned for southbound Crowfoot motorists to indicate that they are entering a residential area of the Town of Castle Rock, and should thus slow down and pay close attention to the next 4 intersections before reaching Founders Pkwy.

REQUEST: On behalf of our working group representing nearly 1200 households that depend on Crowfoot Valley Road, I respectfully request that the Council consider the above and challenge Town staff to explain why these elements cannot still be included in the proposed project.

Sincerely,
George Tocquigny

Sent from my IPad

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 9. **File #:** DIR 2023-003

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Tara Vargish, PE, Director, Development Services
Sandy Vossler, Senior Planner, Development Services

Request to Continue Public Hearings for Ordinance Nos. 2023-001, 2023-002, and 2023-003 to the Town Council meeting scheduled for Tuesday, February 21, 2023, at 6:00 p.m (Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting)

Executive Summary

Canyons South, LLC (applicant) has requested a continuance of the Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting public hearings before Town Council from Tuesday, January 3, 2023 to Tuesday, February 21, 2023 at 6 pm. The purpose for the continuance is to allow additional time to address external referral comments from the Colorado Department of Transportation (CDOT).

Recommendation

Staff recommends that Town Council continue the Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting public hearings to Tuesday, February 21, 2023 at 6 pm.

Proposed Motion

"*I move to continue the public hearing on Ordinance Nos. 2023-001, 2023-002, and 2023-003 to the Town Council meeting scheduled for Tuesday, February 21, 2023, at 6:00 p.m."*

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 10. **File #:** ORD 2023-001

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Tara Vargish, PE, Director, Development Services
Sandy Vossler, Senior Planner, Development Services

Ordinance Annexing to the Town of Castle Rock, Colorado, 409.008 Acres of Land Located in the South Half of Section 30 and the North Half of Section 31, Township 7 South, Range 66 West, and the Southeast Quarter of Section 25, Township 7 South, Range 67 West of the 6th Principal Meridian, Douglas County, Colorado, Pursuant to an Annexation Petition Submitted by Canyons South, LLC (First Reading) [Canyons Far South Annexation] *[409 acres, located east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive]* - **Public Hearing To Be Continued to February 21, 2023**

Executive Summary

Canyons South, LLC (applicant) has requested a continuance of the Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting public hearings before Town Council from Tuesday, January 3, 2023 to Tuesday, February 21, 2023 at 6 pm. The purpose for the continuance is to allow additional time to address external referral comments from the Colorado Department of Transportation (CDOT).

Item #: 10. **File #:** ORD 2023-001

Recommendation

Staff recommends that Town Council continue the Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting public hearings to Tuesday, February 21, 2023 at 6 pm.

Proposed Motion

"*I move to continue the public hearing on Ordinance Nos. 2023-001, 2023-002, and 2023-003 to the Town Council meeting scheduled for Tuesday, February 21, 2023, at 6:00 p.m.*"

Attachments

Staff Memorandum
Attachment A: Vicinity Map
Attachment B: Ordinance No. 2023 - __
Attachment C: Canyons Far South Annexation Petition and Plat
Attachment D: Planned Development Plan and Zoning Regulations
Attachment E: Canyons South Planned Development, 7th Amendment
Attachment F: LSAR - Surrounding Densities
Attachment G: LSAR Developable Areas
Attachment H: LSAR Vegetative Cover
Attachment I: LSAR Cultural Resources Map
Attachment J: Castle Rock Water Resources Inclusion Area Map
Attachment K: Traffic Impact Analysis
Attachment L: Fiscal Impact Analysis - December 5, 2022

Meeting Date: January 3, 2023

AGENDA MEMORANDUM

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Tara Vargish, PE, Director, Development Services
Sandy Vossler, Senior Planner, Development Services

Title: **Ordinance No. 2023 - __: An Ordinance Annexing to the Town of Castle Rock, Colorado, 409.008 Acres of Land Located in the South Half of Section 30 and the North Half of Section 31, Township 7 South, Range 66 West, and the Southeast Quarter of Section 25, Township 7 South, Range 67 West of the 6th Principal Meridian, Douglas County, Colorado, Pursuant to an Annexation Petition Submitted by Canyons South, LLC (Canyons Far South Annexation)** [409 acres, located east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive] (First Reading)

Executive Summary

Canyons South, LLC (applicant) has submitted a Petition for Annexation and accompanying plat map (Attachment B and C) and is requesting approval of the Canyons Far South Annexation, a 409-acre property located northeast of the intersection of Founders Parkway and Crimson Sky Drive (Attachment A). The applicant proposes to zone the property as a planned development (PD), and is seeking approval of the Canyons Far South Planned Development Plan and Zoning Regulations (Attachment D).

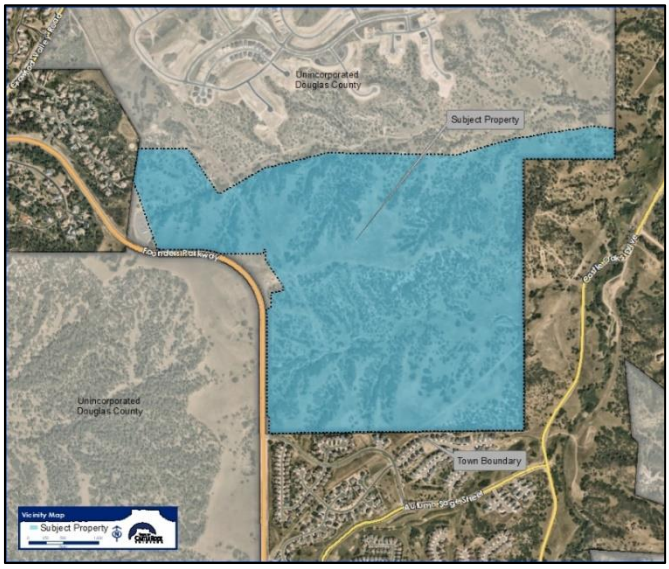


Figure 1: Vicinity Map

Key Benefits of Proposed Annexation and Zoning

- Provides 59% Open Space and Public Land Dedication, including completed Town park for community to enjoy

- Low density provides appropriate transition from urban to county development
- Establishes restrictive residential and commercial landscape regulations
- Provides for acquisition of renewable water resources to meet the water demand
- Preserves cultural resources on the property
- Provides regional trail connections
- Provides key road connections, improving circulation and emergency response
- Provides a 300' buffer on southern edge adjacent to existing Castle Rock neighborhood
- Imposes a 5-mill Regional Mill Levy to be remitted to the Town
- Closes the northern Town boundary
- Allows Town determination and provision of growth patterns, development standards, Code enforcement and public safety

Summary of Proposal

The property proposed for annexation is approximately 409 acres and is currently zoned planned development within the Canyons South PD in unincorporated Douglas County. Town Council held a public hearing on June 15, 2021, and found the annexation petition to be in substantial compliance with the provisions of Article II, Section 30(1)(B) of the Colorado Constitution and Section 31-12-107(1), C.R.S. Further, Town Council held a public hearing on August 17, 2021 and found the property proposed for annexation was eligible to be annexed in accordance with the Colorado Revised Statues. The Town will now consider whether the property should be annexed to the Town, and whether the proposed Planned Development zoning is appropriate and should be approved.

The Canyons Far South PD proposes to allow 474 single-family dwelling units for a gross density of 1.16 dwelling units per acre (du/ac), a maximum of 60,000 square feet (s.f.) of neighborhood commercial uses and approximately 240 acres, 59% of the site, of open space and park land.

The development plan includes restrictive landscape regulations. Front yard landscaping will be limited to Coloradoscape; a xeric design drawing from low water use native plants. No turf will be allowed in residential front yards. Irrigated turf will only be permitted in the backyards, and will be limited to a maximum of 500 square feet, regardless of the size of the lot. Water features are prohibited on commercial lots, and turf requiring more than 10 inches of water annually is prohibited. The applicant is required to dedicate all of the groundwater rights associated with the property to the Town, and will provide renewable water resources necessary to serve the development.

The applicant is requesting that the Canyons Far South Planned Development Plan be vested as a site specific development plan through December 31, 2037.

Planning Commission Recommendation

The Planning Commission voted 7 – 0 to recommend approval to Town Council of the Canyons Far South Annexation at a public hearing held on December 8, 2022.

Background

Zoning History

The property is located east of Founders Parkway, west of Castle Oaks Drive, and north of Crimson Sky Drive. The property is currently zoned planned development as part of the Canyons South Planned Development. The Canyons South PD, approved by Douglas County in 2005, was designed as a golf course community with 968 dwelling units on 2,043 acres. The Canyons Far South property is located in the southern third of the Canyons South PD, and was originally zoned to allow approximately 436 dwelling units and 170 acres of open space.

Since 2005 Douglas County has approved several amendments to the Canyons South PD that essentially modified the planning areas, open space tracts and densities within the PD boundaries. The most recent amendment to the Canyons South PD, approved March 2022, reallocated all of the residential density to planning areas in the northern two-thirds of the PD (Attachment E). This amendment left the remaining southernmost planning areas 8, 11, 12 and 15 zoned to allow residential development, but reduced the allowed densities to 0, see blue highlighted use areas in Figure 2, above. The open space acreage in the Canyons South PD was not increased with the latest PD amendment.

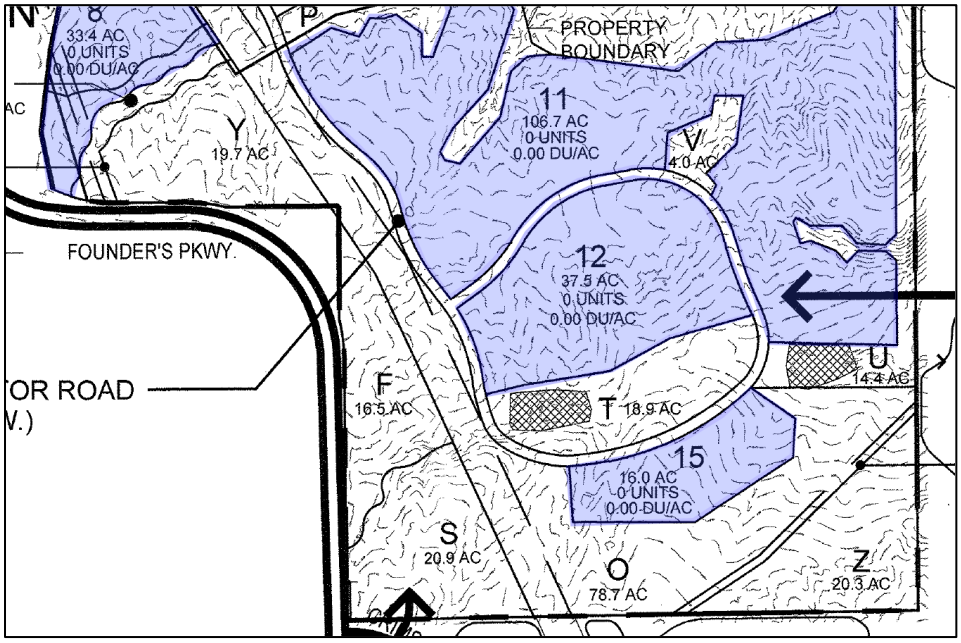


Figure 2: South Portion of Canyons South PD, 7th Amendment

In 2018 the Canyons South PD property was split between two ownership groups. The northern two-thirds is currently being developed by HT Canyons South Development (HT) in Douglas County, as Macanta. The southern 409 acres of the Canyons South PD is represented by the applicant, and is the area proposed for annexation and zoning in the Town. The remainder of this report focuses on the proposed Canyons Far South Annexation and PD Zoning, and includes a brief summary of the obligations included in the Canyons Far South Development Agreement.

Surrounding Zoning and Uses

The Canyons Far South property is adjacent to unincorporated Douglas County to the north and west. The property is adjacent to the Town of Castle Rock boundaries to the northwest, south and east. It is this adjacency with the Town that satisfies the minimum 1/6th adjacency requirement needed for annexation, per the Colorado Revised Statutes (Attachment C).

The Canyons Far South development plan proposes a gross density of 1.16 du/ac that creates an appropriate density transition between the lower density County development to the north and the higher density Town urban development located to the south, east, and as proposed in the pending annexation west of the site (Attachment F).

The Macanta subdivision abuts the Canyons Far South property to the north. As discussed previously, Macanta is zoned PD in Douglas County and is currently under development. The density of the Macanta neighborhood is approximately 0.60 du/ac.

The Terrain PD is approximately 590 total acres and located is within the Town boundaries. The Terrain abuts eastern boundary of the Canyons Far South property. The Terrain PD has a gross density of 2.67 dwelling units per acre.

The Castle Oaks PD is approximately 1,185 acres and is adjacent to the Canyons Far South southern boundary. The Castle Oaks PD has a gross density of 2.3 dwelling units per acre.

The Timber Canyon neighborhood is located northwest of the Canyons Far South PD. It is approximately 61.5 acres and zoned for a density of 1.0 dwelling units per acre.

Pioneer Ranch is located west of the property on the west side of Founders Parkway. Pioneer Ranch is a 388-acre property that is currently zoned Agricultural 1 (A-1) in Douglas County. The owner of Pioneer Ranch has submitted a Petition for Annexation to the Town and is proposing the property be zoned PD to allow 1123 dwelling units, approximately 2.9 dwelling units per acre (du/ac), 400,000 square feet of commercial uses. The Pioneer Ranch annexation and zoning proposal is under review by the Town.

Existing Conditions

The Land Suitability Analysis Report (LSAR), prepared by DIG Studio in August 2022, assessed the site's existing topography, vegetation, man-made improvements, geology, wildlife habitat, soils, wildfire mitigation and rock outcroppings. The LSAR concluded that the site is suitable for development as proposed. The following is a summary of the site features discussed in the LSAR.

The topography of the site consists of plateaus, suitable for development separated by significant drainage corridors and steep slopes along the drainageways (Attachment G). The property generally slopes from the west to the east with all drainage flowing to the

east. Elevations range from 6,170 feet on the eastern edge to over 6,540 feet on the western boundary. An area of unique rock outcroppings centrally located on the site will be preserved within a passive use Town park. A geotechnical investigation dated 2005 concluded that there were no geotechnical constraints that would preclude development. The drainage corridors and associated steep slopes, as well as the area of rock outcroppings posed some geologic hazard concerns, therefore those areas have been incorporated in to the open space acreage and excluded from the areas of development.

Vegetation on the property includes a mix of Gambel Oak and Ponderosa Pines, with an understory of blue grama, yucca, western wheatgrass, prickly pear cactus and sage. The stands of pines are located outside of the residential planning areas (Attachment H). The drainage corridors contain western wheat and blue grama grasses, and stands of scrub oak. There will be minimal disturbance of the drainageway and slope vegetation, except what is necessary to stabilize the channels, install trail connections or provide road crossings. The drainage corridors will continue to provide protective cover, foraging and nesting habitat, as well as movement corridors for wildlife and birds.

The wildlife found on the site is typical of that found in shortgrass habitats in Colorado. Large mammals include elk, mule deer, pronghorn, coyets and red fox. Small mammals include voles, prairies dogs, and ground squirrels. Elk and black footed prairies dogs were observed during site visits. The project area has been assessed for suitable habitat for the Preble's Meadow Jumping Mouse, and no evidence of the mouse was found. No threatened or endangered species or suitable habitat for such animals was found on the site.

Cultural resources on the site include earthen dams and rhyolite check dams constructed by the Civilian Conservation Corp (CCC) (Attachment I) and are considered to be the most historically significant structures on the property. The CCC dams will be preserved and may contribute, to the extent possible, to stabilizing and managing the drainageways. Recently discovered on the property is a stacked rhyolite brick water well, likely constructed to serve the CCC camps. The developer has covered the well and secured the site with temporary fencing. The well and the dams are located outside of the proposed areas of development and are in areas to be dedicated to the Town as open space. A windmill on the site will be retained as a site element if it can be secured for safety purposes. No historical or Native American artifacts have been found on the property.

Discussion of Proposal

Canyons Far South Annexation

The Canyons Far South annexation petition and plat map were accepted and filed with the Town Clerk on May 26, 2021. As required by the Colorado Revised Statutes (C.R.S.), the petition was reviewed by Town Council in two separate hearings. The

Substantial Compliance hearing was held on June 15, 2021 and the Council found that the petition substantially complied with the requirements of the Colorado Constitution and the C.R.S for annexation. The Eligibility hearing was held on August 17, 2021 and Town Council found the property to be eligible to be considered for annexation into the Town.

The area proposed for annexation is approximately 409-acres and is currently zoned Planned Development in Douglas County within the Canyons South PD.

Canyons Far South Planned Development Zoning

Residential Development

The applicant is requesting that the property be zoned Planned Development (PD) (Attachment D). The Canyons Far South Planned Development Plan and Zoning Regulations establish four residential planning areas and one commercial planning area. The proposed zoning would allow 474 single-family detached and attached dwelling units, at a gross density of 1.16 du/ac. Lot sizes are dependent on the housing type, and would range from a minimum of 4,000 s.f. to a maximum of 11,700 s.f. The maximum residential building height would be 35 feet. Setbacks are distinguished by the lot size and housing type and are depicted in the table below.

	Paired Home	Cottage Home	Cluster Home	Small Lot	Medium Lot	Large Lot
Min. Lot Size	4,000 s.f.	4,250 s.f.	4,875 s.f.	5,500 s.f.	6,000 s.f.	7,000 s.f.
Max. Height	35’	35’	35’	35’	35’	35’
Setbacks						
Front	10’	10’	10’	10’	15’	15’
Rear	10’	5’	5’	25’	30’	30’
Side	5’	7.5’	7.5’	5’	7.5’	10’
Side to Shared Wall	0’	N/A	N/A	N/A	N/A	N/A
Side to Street	7.5’	7.5’	7.5’	7.5	10’	12.5’

Figure 3: Development Standards

Commercial Development

Planning Area 5 is proposed to be an area of neighborhood commercial uses with design standards intended to create a pedestrian oriented village center. Permitted uses include retail, restaurant, office and personal services. Daycare facilities, school and restraurant with drive-through are only permitted if approved by Town Council as a use by special review. Among the prohibited uses are auto services, fuel station, car wash, and outdoor storage.

The maximum non-residential square footage allowed is 60,000. The maximum building square footage is 25,000, a limitation that is intended to promote smaller scale buildings. Also, to that end, the maximum building height is 35 feet. Signature architectural elements such as clock towers, windmills, or other entry feature may be a maximum of 45 feet in height.

Commercial building design standards call for four-sided architecture, variations in roof lines and facades to breakup massing, and use of accent materials such as granite, wrought iron slate, etc. are encouraged. Buildings adjacent to a sidewalk shall be

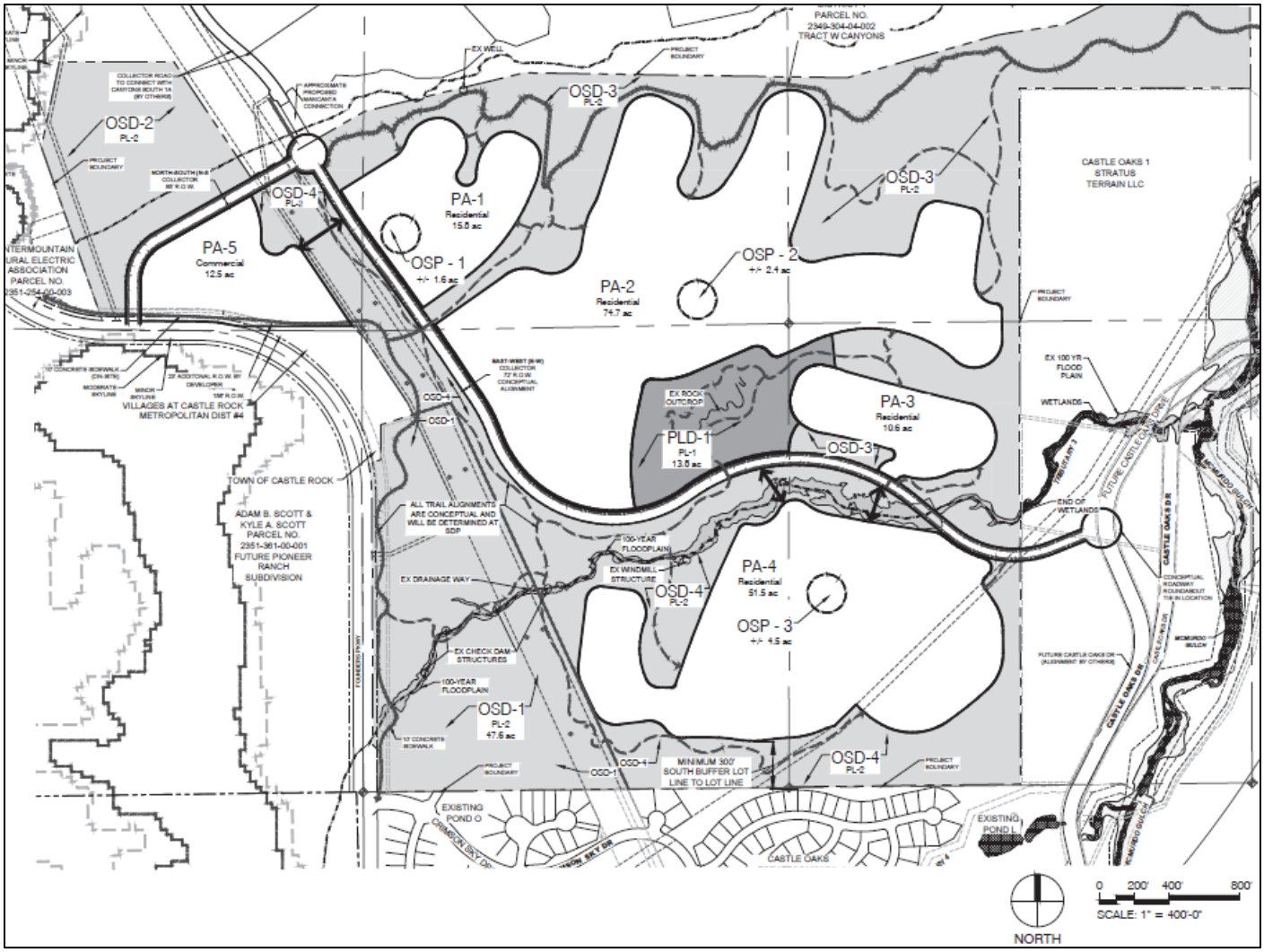


Figure 4: Canyons Far South Planned Development Planning Areas 1-5

oriented to provide a strong visual and physical connection between the sidewalk and first floor. Signage and landscaping will be used to create an unique sense of entry into the development. Conceptual renderings of the typical streetscape included in the PD Zoning regulations provide a visual interpretation of the design standards and may be used as a guide for design professionals and Town staff to achieve the pedestrian oriented village vision.

Open Space, Public Land, Park and Trails

The development plan proposes to set aside 217.6 acres as public open space (OSD). The areas of OSD essentially surround the developable planning areas, providing a transitional buffer to internal and external development and serving to protect drainage corridors, slopes, mature vegetative stands, and wildlife habitat and movement corridors. All OSD acreage will be dedicated to, and owned by, the Town, and will be zoned as Public Land-2 (PL-2). The PL-2 district permits passive uses and development standards as established in the Town's Municipal Code Section 17.30.030. The developer also plans to incorporate approximately 8.5 acres of private open space (OSP) into the residential planning areas. The permitted uses allowed in OSP are listed in the Canyons Far South PD Zoning Regulations and include recreation centers, pools, sports courts and other active recreational uses.

A public land dedication (PLD) of 13.8 acres will be made to the Town and will be developed as a community park. The park will be centrally located within the development and zoned PL-1. The park serves to preserve an area of unique rock outcroppings and will include benches, picnic tables and hiking trails.

Canyons Far South proposes a extensive network of trails, both hard and soft surface, throughout the development. The trails will provide pedestrian connections within the development, and will also provide an important link to the Front Range Trail.

Prescriptive Buffer

Based on input from the surrounding residents, the development plan was revised to create a prescriptive buffer between Planning Area 4 and the Castle Oaks/Terrain neighborhood abutting the southern property boundary of the PD. The buffer area shall be 300 feet from Canyons Far South residential lot line to the Castle Oak/Terrain residential lot line. This buffer is wholly within OSD-4, extending from the east side of the Xcel high power line easement to the eastern boundary of the PD.

Berms and vegetation will be added within the buffer area. The berms will vary in height, not to exceed 10 feet. The vegetation will include low-water use native plantings and trees organically arranged to blend with the natural landscape character. A four foot natural surface trail will traverse the buffer area. Conceptual renderings of the buffer area are included in these PD Zoning regulations as a visual guide to the intended character of the buffer area.

Technical Reports and Analyses

Water

Due to elevation changes within the Canyons Far South development there are three distinct water pressure zones. To adequately support the Canyons Far South development, two connections to the red zone will be required in Founders Parkway at

the northwest portion of the site. A connection to the blue zone will be required to the east of the project in Castle Oaks Drive. To the north, a connection to the red zone in the Macanta Development is required to complete the loop per the Water Master Plan to connect Crowfoot to Crimson Sky. Finally, an offsite extension of the purple zone water main to the north will be required to connect to the transmission main in old Tower Road, adjacent to the existing purple zone tank. All internal water mains will be required of the developer to deliver the necessary flows and pressures to any point within the development.

Sanitary Sewer

The elevation changes within this site will require two gravity sanitary sewer systems. The north and west portion of the site will require a gravity sewer system to tie into the sanitary sewer in the realigned Castle Oaks Drive and conveyed to the Castle Oaks Lift Station. The second gravity sewer system will be required on the southeastern portion of the site that will convey to the McMurdo Gulch Sanitary Sewer interceptor, where flows will be conveyed to the Castle Oaks Lift Station. An analysis will be required to determine if the existing lift station will require to be upsized to serve this site. All sanitary flows from this site will be conveyed to the Plum Creek Water Reclamation Authority for treatment.

Drainage/Floodplain

There is a Town designated major drainageway that extends west to east across the full width of the Canyons Far South development. This drainageway is the extension of the McMurdo Gulch Tributary 3 and outfalls into FEMA designated special flood hazard floodway, McMurdo Gulch. The developer will be required to preserve and fully stabilize this natural drainageway, in accordance with Town regulations, to ensure flood risk is mitigated, and the natural resources are protected.

This property is located within the Cherry Creek watershed basin, and will be required to provide water quality and full spectrum detention for the 100-percent of the site. The developer will be required to provide storm sewers, inlets, and extended detention basins for water quality and storage, in accordance with Town regulations.

Water Efficiency Plan

The WEP is a model of water efficiency for the Town of Castle Rock utilizing both exterior and interior efficiency programs while still providing an attractive landscaped environment. As of November 17, 2022, the Castle Rock Municipal Code was updated to remove the requirement of a Water Efficiency Plan (WEP) for annexation, however the Canyons Far South development team opted to keep the water efficiency plan as a part of their proposal. The Town approved WEP is an attachment to the DA.

The Canyons Far South WEP provides specifications required for indoor water-saving fixtures and outdoor landscaping that prohibits irrigated turf on commercial properties and residential front yards. Coloradoscape landscaping may be installed in residential front yards. A maximum of 500 square feet of irrigated turf will be allowed in residential backyards. No turf grass will be used within the streetscape. Only drought tolerant plants consistent with the Town of Castle Rock Landscape and Irrigation standards will be utilized throughout the development.

Common area parks may utilize approved irrigated turf, in areas created for high-demand, high-traffic recreation purposes. In-ground pools will not be allowed on private residential lots. Homes are to have water efficient indoor fixtures, and each home will also need provide additional optional fixtures, or opt for no turf in backyard to meet a landscape design point system.

Groundwater Rights and Dedication

All groundwater rights associated with the Canyons Far South PD property must be dedicated to the Town upon annexation. It is anticipated that the Canyons Far South owners will convey to the Town approximately 465 acre-feet of groundwater rights. A review of the Water Rights Title Opinion was completed and accepted by staff. Based on the review approximately 6 acre-feet of groundwater needs additional curative action to receive credit.

Renewable Water Resources

The Canyons Far South property is located outside of the Castle Rock Water inclusion area, which means that the applicant is required to dedicate renewable water to meet the planned community's water demand (Attachment J). The estimated wet water demand is 153 acre-feet. As a condition to the issuance of any Plat, the owner shall provide Renewable Water Resources to the Town in an amount sufficient to serve the equivalent number of residential, commercial, or irrigation uses authorized by the Plat.

Canyons Far South Water Bank

The Canyons Far South Development Agreement contains details on the Canyons Far South Water Bank, including the amount of Single Family Equivalent (SFE) Credits, allowances for future deposits of water credits, requirements for water conservation through implementation of the Water Efficiency Plan, limitation on any development until water rights are approved by the Town, and consequences of exhausting the Water Bank.

Transportation and Traffic Impacts

The site is projected to generate about 7,300 vehicle-trips on the average weekday, with

about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 125 vehicles would enter and about 277 vehicles would exit the site. During the afternoon peak-hour, about 407 vehicles would enter and about 309 vehicles would exit. The project proposes three access points to the existing road network:

Founders Parkway (State Highway 86) & Internal Collector Roadway: This is the primary access to the site. The traffic analysis anticipates this intersection to operate within the Town's standard for level of service through 2041 (Attachment K). The intersection will require intersection traffic control when necessary. The development agreement obligates the developer to construct a roundabout or a signal at this location when warranted. The development agreement also provides for the Town to recoup 50% of the cost for the developer from the Pioneer Ranch property, if developed.

Castle Oaks Drive & Internal Collector Roadway: This collector-collector class intersection is proposed to be a roundabout. The traffic analysis anticipates this intersection to operate very well with roundabout control. The roundabout and the internal collector roadway are required to be constructed with the first phase of the project. Castle Oaks Drive is planned to be realigned with the North Basin project in Terrain. The roundabout will be constructed on the ultimate alignment of Castle Oaks Drive with interim street connections to the existing alignment.

Internal Collector Roadway & Macanta Blvd: This collector-collector class intersection is also proposed to be a roundabout. The traffic analysis anticipates this intersection to operate very well with roundabout control. Macanta Boulevard provides a connection to and through the Macanta Subdivision, providing access to a future school site and also access to Crowfoot Valley Road. The developer agreement provides an obligation to the developer to construct this connection, in the event it is not timely constructed by the Macanta project.

Town staff concurs with the conclusion of the traffic analysis in that the proposed project can be accommodated by the existing and planned roadway improvements along with the recommended improvements.

Sidewalk Variance: A variance has been requested for the collector class street connecting Founders Parkway to Castle Oaks Drive. To minimize impacts on existing vegetation and topography, the applicant is proposing to omit the standard 8-foot wide concrete sidewalk along the southerly and westerly side of the street. In lieu of the concrete sidewalk,

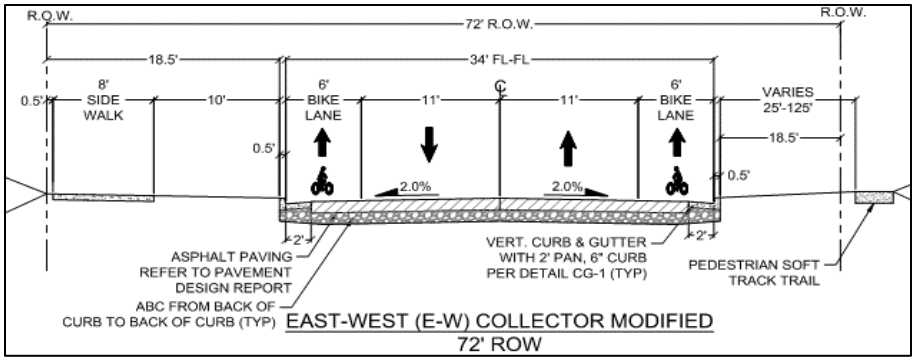


Figure 5: Proposed Collector Profile

the applicant is proposing to construct a natural soft surface trail paralleling the street. The section where the concrete sidewalk is omitted and the soft surface trail is proposed is approximately 2,350 feet in length and will not have adjacent development.

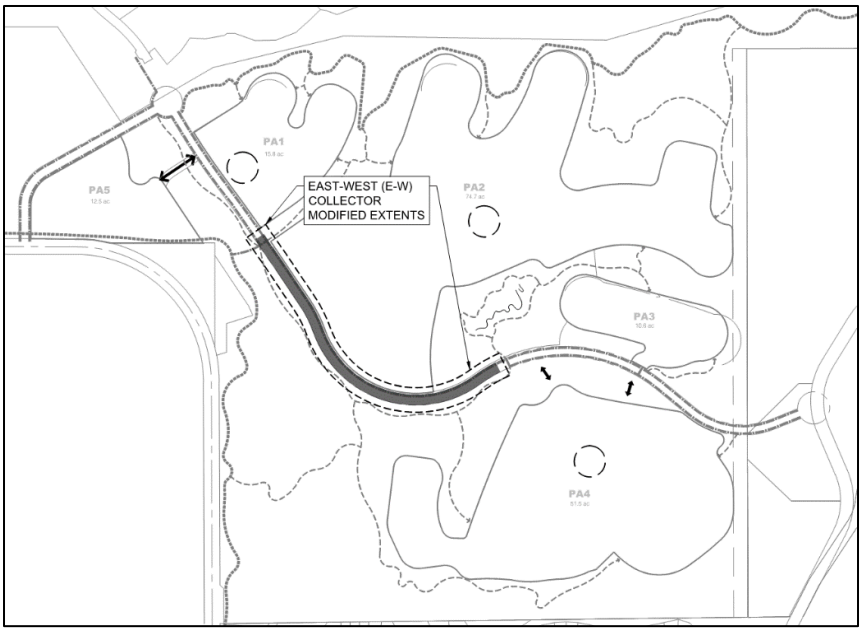


Figure 6: Section of Roadway subject to Variance

Where development is proposed on both sides of the street, concrete sidewalks will be available on both sides. Considering the property on the street frontage without the formal sidewalk will not be developed and therefore will not generate pedestrian trips to or from that area, staff concurs with the applicant that there should not be adverse impact to the public resulting from the omission of the sidewalk. Town staff supports the variance with the condition that the pedestrian crossings where the street transitions from two sidewalks to one sidewalk are provided with self-actuated flashing beacons and signage.

Parks and Recreation

The Canyons Far South Planned Development Plan enhances parks, trails and open space opportunities in the Town of Castle Rock. Currently the property is private and inaccessible to Town residents. The PDP designates approximately 59% of the property or nearly 240 acres to be set aside for Open Space and Park purposes available to all residents. A planned 13.8-acre neighborhood park will expand the Town's recreation offerings with off-street parking, trails and picnic areas. The park development will be funded through the by the developer, with planning oversight by Town staff. Park construction will occur in the first phase and a large public open space area will be dedicated with the first plat.

Public and private open space will provide buffers between existing and proposed residential neighborhoods and protect wildlife corridors. The open space will be linked through a network of off-street natural surface trails connecting internal parks, neighborhoods, transportation corridors and open spaces. Trails will also link to Town park and open space properties within adjacent neighborhoods, expanding recreational opportunities for existing Town residents. The plan preserves historic structures installed by the Civilian Conservation Corps (CCC) in the 1930's.

The Canyons Far South Planned Development Plan includes a new 10' concrete trail connecting Founders Parkway to the Front-Range Trail along McMurdo Gulch, improving the multimodal trail network within Castle Rock. The Front-Range Trail provides access throughout Castle Rock linking Denver and Colorado Springs. The trail will also provide access to the historic CCC camp located in the adjacent Terrain neighborhood. The Developer will be responsible for trail planning and construction as well as any required wildland fire mitigation on open spaces.

Police and Fire Service

Upon annexation, the property will be served by Castle Rock Police, rather than the Douglas County Sheriff. The property will also be disconnected from the Castle Rock Fire District, and will be served by the Castle Rock Fire Department.

The PD Plan requires that a Wildland/Urban Interface Wildfire Vegetation Management Plan (Plan), or compliance letter, be submitted for each phase of the development. The Plan shall be developed by a design professional familiar with wildfire mitigation techniques and standards. The Plan must be reviewed and approved by the Town Fire Department and comply with the Castle Rock Community Wildfire Protection Plan.

Fiscal Impact Analysis

The Castle Rock Municipal Code, Section 17.32.100, provides that the Town may require an evaluation of the fiscal impacts of any new Planned Development that involves significant changes to uses and densities. The analysis shall generally consist of a comparison of the project's projected direct revenues (property, sales and use tax generation) to projected costs of providing urban services to the development. The analysis shall examine the revenue/cost comparison not only at full build-out, but at appropriate phases of development as the project builds out over time. The Town of Castle Rock hired Economic & Planning Systems, Inc. (EPS), a third party financial consultant, to conduct this Fiscal Impact Study. The conclusions of the Fiscal Impact Analysis of the Canyons Far South proposed annexation and zoning are summarized as follows (Attachment L).

The proposed Canyons Far South development, which is anticipated to deliver predominantly single family detached housing and retail development, will result in a modest positive fiscal balance for the Town. The ongoing annual net fiscal impact of the Canyons Far South development on the Town's General Fund, Transportation Fund, and Community Center Fund is estimated at a positive $262,121, $18,783, and $1,450 per year at full stabilization, respectively.
The total annual net fiscal impact at full stabilization is estimated at $282,354, which is a modest positive fiscal balance. The inclusion of a requirement for the development's metropolitan district to impose a 5-mill regional improvement levy, accounts for $151,141 in revenues to the General Fund annually at buildout, which is 59% of its positive fiscal balance.

At full stabilization of the project, retail development has the highest net fiscal impact for the Town, followed by medium lot single family housing units. The ongoing net fiscal impact of the retail and medium lot housing land uses totals $115,187 and $78,872, respectively. The quad/cluster units and cottage lots generate the lowest fiscal impact, with ongoing net fiscal impacts of negative $7,337 and negative $1,589, respectively.

The positive fiscal impact of the development is contingent upon the relatively high average household incomes required to afford the higher value medium density and estate lot single family product types, and that support the capture of higher levels of retail sales generating local sales tax revenue.

The land uses with the lowest ongoing net fiscal impacts—paired homes, quad/cluster homes, cottage lots, and small lots—also have the lowest household income assumptions. If the assumed household incomes do not materialize, the development may fail to generate sufficient net new retail sales tax to cover the estimated costs of serving the project.

It should be noted that a fiscal impact analysis only provides an order of magnitude estimate of project revenues and expenses based on the current Town budget. As with any fiscal projection, there should be an assumed margin of error associated with the estimates. Results are best interpreted as an estimate of fiscal impacts based on the Town's current budget. To the extent that the Town is providing services at a level below desired levels based on budget constraints, the analysis may underrepresent the future costs of providing services to the project.

Given that all fiscal models rely on prospective assumptions and there are margins of error in these assumptions, in this case the fiscal model's very slight positive fiscal balance in favor of the Town, it is reasonable to conclude that as a generalized statement the fiscal benefits and costs for the Town from the proposed development are roughly equal.

Development Agreement Summary

A development agreement is a contract between the Town of Castle Rock and the property owner (Owner) that addresses required infrastructure improvements, development phasing, open space conveyances, water rights conveyances, Town service obligations, developer obligations and other relevant items. The development agreement is considered and acted upon by Town Council. The following is a brief summary of the key elements of the Canyons Far South DA.

The major provisions of the Canyons Far South Development Agreement (DA) are listed below.

- Owner shall convey all 465 acre feet of groundwater rights to the Town upon annexation.

- The issuance of any Plat is dependent on the Owner's provision of Renewable Water Resources to Town in an amount sufficient to serve the equivalent number of residential, commercial, or irrigation uses authorized by said Plat.
- A Water Efficiency Plan shall apply to all development within the PD.
- Owner shall design and construct water and wastewater system improvements necessary to serve the development.
- Owner shall be responsible for preserving and fully stabilizing all major drainageways with the project boundaries having a watershed greater than 130 acres.
- Owner shall design and construct a new intersection on Founders Parkway for furture access to the site.
- Owner shall design and construct a roadway connection between the property and Castle Oaks Drive.
- Owner shall design and construct a 10-foot concrete sidewalk adjacent to Founders Parkway from Crowfoot Valley Road to Crimson Sky Drive.
- If the Macanta Boulevard connection has not been extended to the property prior to the issuance of th first buildng permit, the Owner shall, at their expense, design and construct the connection.
- The public lands to be dedicated to the Town are identified on the Planned Development Plan as OSD-1, OSD-2, OSD-3, OSD-4, OSD-5 and PLD-1.
- Owner shall be responsible for the design and construction of required parking, picnic tables and shade structures for the Town park PLD-1 and the soft surface trail network.
- Owner shall be responsible for constructing, installing and maintaining the berms and landscaping in OSD-3.

Vesting

Vested Property Rights are a major provision established in the DA. The Owner has requested and demonstrated that the PD Plan, inclusive of the PD Zoning Regulations, meets the criteria under Chapter 17.08 of the Municipal Code and the Vested Property Rights of the Colorado Revised Statutes for vesting of property rights by agreement for a term in excess of three years. Therefore, as a site specific development plan, vested property rights are established and shall extend through December 31, 2037, allowing the Owner to undertake and complete the development and use of the property in accordance with this Planned Development Plan and Zoning Regulations.

Public Notification and Outreach

Public Hearing Notice

Public hearing notice signs were posted on the property on Friday, November 18th. Written notice letters were sent to property owners within 500 feet of the property, at least 15 days prior to the public hearing. In addition, a public notice of the Annexation

and Zoning hearing was published in the Douglas County News-Press on November 17, 2022, in accordance with Section 20.02.020 of the Municipal Code.

Town staff published notice of the Planning Commission and Town Council public hearings on the Town's website and provided information about the proposal on the Town's *Development Activity* interactive map.

External Referrals

Requests for external referral comments were sent to local service providers and Douglas County agencies, as well as the Cherry Creek Basin Water Quality Authority, Plum Creek Water Reclamation Authority, Colorado Geological Survey, Colorado Parks and Wildlife, and the Douglas County School District (DCSD).

DCSD had no objections noting that the elementary and middle school sites in the Macanta development satisfied the land dedication requirement for the Canyons Far South PD proposal.

Douglas County Community Development provided comments suggesting more than one point of access, coordinating future trail alignments connections with Douglas County, and providing a buffer to the Macanta neighborhood. The road and buffer comments have been addressed. As the Town finalizes the trail alignments, connections to the Douglas County trails will be addressed.

Comments from Colorado Parks and Wildlife urged that fragmentation and loss of habitat be kept to a minimum through clustering of development, reduced densities and provision of open space. Trails were encouraged to be placed near the edges of open space and not wider than 8 feet. Education of future residents in living with wildlife was suggested. The comments have been addressed through the clustering of development and dedication of over half of the site as natural open space. The proposed density is an appropriate transition from the urban neighborhoods to the south and the lower density County development to the north.

CORE Electric required that a note be added to the PD Plan stating that monuments, ornamental columns, window wells, counterforts, patios, decks, retaining walls and their components are not permitted to encroach into the utility easements. This note was added.

Colorado Geological Survey suggested that debris deposition/inundation hazard in Planning Area 3 be evaluated with a qualified professional, and that updated geologic/geotechnical reports should be submitted at the time of site design. This evaluation and reports will be provided with the applicable Site Development Plan and Plats.

The remainder of the agencies contacted for external comments either did not respond or responded indicating “No Comment.” There are no outstanding external referral comments.

Neighborhood Meetings and Public Outreach

The applicant has conducted three hybrid neighborhood meetings. The first meeting was held on June 14, 2021 and attended by approximately 18 residents. Concerns were raised about cut-through traffic in Castle Oaks/Terrain, increased traffic on Castle Oaks Drive, impacts of the new intersection at Founders Parkway, and the proximity of the road alignment to the neighborhood to the south. Neighbors wanted to see a landscape buffer along the southern boundary, were concerned about impacts to wildlife and what kinds of commercial uses would be allowed.

The second neighborhood meeting was held on December 13, 2021. Approximately 11 residents attended the meeting. The applicant summarized the changes to the plan based on previous input, and highlighted the road connection from Founders Parkway to Castle Oaks Drive, the sidewalk extension from Crowfoot Valley Road to Crimson Sky Drive, and the minimum 200-foot landscape buffer along the southern boundary adjacent to the Terrain neighborhood and indicated that berms would be constructed and vegetation installed.

Residents questioned why the buffer was reduced to 200-feet and where the berms would be located. There was concern over the proximity of the trail in the buffer being too close to existing lots, the proximity of Planning Area 4 to Terrain and the type of residential development it would allow, and how quality development would be ensured.

The third and final neighborhood meeting was held on October 11, 2022 and approximately 12 people attended the meeting. The applicant described revisions to the plan based on feedback at the previous meeting, including a widened, 300-foot, berms and landscaped buffer along the southern boundary, connected trails, and public access to the extensive open space. In addition, the restrictive water conservation plan was discussed with the front yard turf prohibition and back yard 500 square foot limitation. Architectural and development standards were refined to promote quality development with attention to form, massing, articulations, colors, materials and architectural enhancements.

Additional questions were asked and answered concerning what schools the new residents would attend, who the homebuilder would be, how zoning controls the type of uses allowed, what will happen to the prairie dogs to prevent them from moving to Terrain residential lots, and why is any development being proposed on the site.

Analysis

Staff has completed a full analysis of the proposed annexation and proposed Planned Development zoning, taking into account the representations made in the application for

annexation and zoning, and the goals and principles of the Town's 2030 Vision and Comprehensive Master Plan, the criterion of the Town's Municipal Code and the requirements of the Town's technical criteria. The remainder of this report focuses on how the annexation and zoning proposals are consistent with the Town's guiding documents and meet the Town criterion for approval, beginning with the request for annexation.

Annexation Analysis

The Town has complied with the process prescribed by the Municipal Annexation Act of 1965 (the Act). On June 15,2021, Town Council found the Canyons Far South Annexation Petition to be in substantial compliance with the prescribed form and content required by the Colorado Revised Statutes and set the date of the Eligibility Hearing for August 17, 2021. After proper public noticing, Town Council held the Eligibility Hearing as scheduled, reviewed the statutory allegations made in the Annexation Petition (Attachment B) and found that the property is eligible to be considered for annexation into the Town of Castle Rock.

The third phase of the process is the Annexation Hearing, the purpose of which is to determine whether the property should be annexed to the Town. Section 20.02.040 of the Municipal Code states that Town Council shall consider the policies, guidelines and criteria in the Town Comprehensive Master Plan, as amended, along with any other relevant information in determining whether it is in the best interests of the Town to grant or deny the petition for annexation. The following section identifies the applicable principles of the Comprehensive Master Plan and summarizes how the proposed Canyons Far South annexations achieves those principles.

2030 Vision and Comprehensive Master Plan

The principles set forth in the Town's Comprehensive Master Plan are based on four cornerstones identified through a Town-wide visioning effort as the characteristics most important to the community. The four cornerstones are Distinct Town Identity, Responsible Growth, Community Services and Thriving Economy. The following is an analysis of the specific principles applicable to this proposed annexation.
Distinct Town Identity

- *ID-1.1: Historic Preservation*

  Encourage the adaptive reuse of historic structures, the preservation and enhancement of key historic and archaeological resources and community education and awareness of Castle Rock's heritage.

  Analysis: The Civilian Conservation Corps (CCC) was a work relief program that provided young men with employment during the Great Depression. It is understood that a CCC camp was located in the area of the Canyons Far South property and existing on the site within the drainage channels are dams and drop structures. A

stacked block water well was recently discovered on the site. All of the structures are in areas to be dedicated as public open space. To the extent possible, the dams and drop structures will be preserved and incorporated in the channel stabilization measures. The Town Parks department is assessing the value of retaining the well. Interpretive signage on the internal trail system will identify the structures and educate the public on their origin and purpose.

- *ID-2.1 Master Planned Developments*

  Master Planned communities that offer diverse housing options, mixed use development, transition zones, trail connections, open space buffers and community services and amenities are encourage. Regional and local transportation networks serve to ensure safe and reliable commuter routes.

  Analysis: The Canyons is a master planned development and will offer a variety of housing types, neighborhood commercial uses, a transition from urban to county development, trail and road extensions and connections and a well-defined open space buffer to the existing Town neighborhood to the south of the property.

- *ID-4.1: Physical Separation*

  Create and retain defined edges of the Town and maintain Castle Rock's community character by promoting physical separation from nearby development, including buffering areas of unincorporated Douglas County and other municipalities.

  Analysis: Annexation of the Canyons Far South property will create a defined northern boundary to the Town providing a clear separation from the Douglas County Macanta development and the City of Castle Pines to the north. The extensive open space dedication will provide a physical separation for the County development of Macanta.

- ID-6.1 Natural Environment Protection

  Identify and preserve important properties that offer unique natural and scenic vistas or other characteristics that distinguish Castle rock from other communities.

  Analysis: Annexation to the Town will give the Town the ability to determine zoning and to preserve the unique natural features of this property. Specifically, approximately 59% of the property will be set aside as open space and public land preserving rock outcroppings, historic structures, slopes and channels and established vegetation.

- ID-7.1 Parks and Recreation Facilities

Provide a variety of indoor and outdoor spaces, well distributed throughout the Town, that encourage active community recreation.

Analysis: Extensive internal trails and links to surrounding trails will enhance the trail connections and access to open space in the northeast portion of the Town.

- ID-7.2 Open Space

  Establish permanent open space and natural buffers to preserve fragile ecosystems, habitats and corridors. Provide opportunities for passive recreation.

  Analysis: As described above, the Canyons Far South PD preserves 59% of the site as open space and will include passive use parks.

- ID-7.3 Trails

  Continue to build a connected municipal trails system that meets the needs of a wide diversity of users, connects Castle Rock's neighborhoods and activity centers, and provides linkages to the regional trails system.

  Analysis: Canyons Far South PD will enhance the Town's extensive trail system by linking neighborhoods and providing connection to the Front Range Trail.

Responsible Growth

The Comprehensive Master Plan specifically states that annexation requests must take into consideration the following items.

- *RG 2.1 - Castle Rock Annexation Areas*

  A. Is a logical extension or infill of the Town boundaries.

  Analysis: The Comprehensive Plan, Future Land Use Plan represents future Town buildout boundaries and anticipated land uses. The Canyons Far South property is well within the anticipated Town boundaries (see Figure 7). The property is anticipated to be an area of residential development.

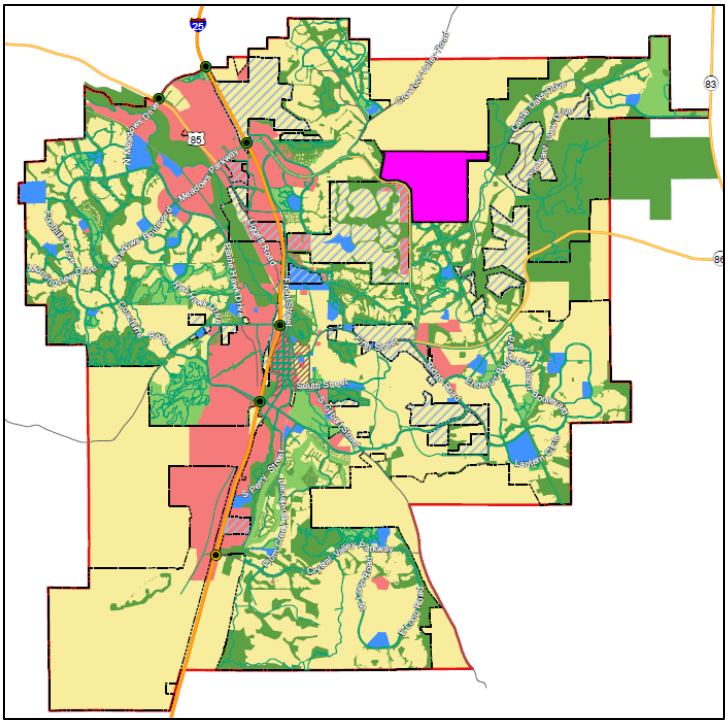


Figure 7: Future Land Use Map

Annexation of the property will effectively close and define the Town's northern boundary.

B. Has demonstrated a significant benefit to the Town.

Analysis: Annexation and zoning of the Canyons Far South property is a step toward closing the Town boundaries and providing for continuity of Fire and Police services. Approximately 59% of the property will be dedicated at open space and public land, preserving areas of mature vegetation, deep channels and wildlife habitat. The trail system will benefit the entire community and provide important links to the Front Range Trail. Historic CCC dams and drop structures will be preserved and identified. Road extensions north through Macanta to Crowfoot Valley Road and east/west from Founders Parkway to Castle Oaks Drive will provide important transportation connections.

C. Will be provided with adequate urban services.

Analysis: The property is able to be served with appropriate and adequate municipal services.

D. Is fiscally responsible.

Analysis: The owner will be required to pay for all infrastructure improvements necessary for development of the property such as water, wastewater, storm water and/or drainage, and transportation improvements. Additionally, the owner will convey all groundwater rights to the Town and will participate in the acquisition of renewable water rights for the Town, which will be a cost savings to the Town.

The conclusions of the Fiscal Impact Analysis, summarized earlier in this report, estimate a modest positive fiscal balance for the Town at full buildout.

E. Conveys to the Town all water rights appurtenant to the ground at time of annexation.

Analysis: The owner will dedicate all appurtenant ground water rights, determined to be 465 acre feet, to the Town. As note previously, the owner will also participate in the purchase and acquisition of renewable water rights to be dedicated to the Town.

F. Secures renewable water to 100 percent of the expected development on the annexed area.

Analysis: As note previously, the owner will also participate with the Town in the purchase and acquisition of renewable water rights capable of providing renewable water for 100% of the expected development. The DA limits the issuance of any Plat to the Owner's provision of Renewable Water Resources to Town in an amount

sufficient to serve the equivalent number of residential, commercial, or irrigation uses authorized by said Plat.

- *RG2.2 - Annexation of Infill Areas*

  Consider the annexation and development of areas surrounded, or partially surrounded, by the Town boundary that can demonstrate a benefit to the Town, connect to Town water and sewer and create a contiguous municipal boundary.

  Analysis: The property lies within the Town's future boundary as anticipated by Comprehensive Master Plan. The property is partially surrounded by the Town, with approximately 40% of the peripheral boundary contiguous with the Town. In addition, the Macanta development on the northern boundary of the property is developing in Douglas County, however is served water by the Town. This property is able to connect to Town services and annexation will create a contiguous municipal boundary.

Planned Development Plan Approval Criteria and Analysis, CRMC 17.34.030:

This staff report primarily addresses the proposed annexation, however assessment of the proposed zoning has been included to give context to the proposed annexation.

Staff analysis of the proposed Canyons Far South Planned Development Plan and Zoning regulations has taken into account the representations made in the land use application and supporting reports and analyses. Per Section 17.34.030 PD Plan Approval Criteria, the proposed PD zoning shall be evaluated under the following criteria.

A. Community Vision/Land Use Entitlements

The proposed Canyons Far South PD meets this criterion. The development proposal conforms to the Town of Castle Rock Vision and Comprehensive Master plan by

- *Planning for and accommodating the needs of existing and future residents,*
- *Offering cohesive neighborhoods, with a mix of land uses that support a variety of lifestyle options for Castle Rock residents,*
- *Including a phasing plan that advances orderly, cost-effective and fiscally responsible growth,*
- *Including buffers and a transition Zone that recognizes, and is sensitive to, the scale and character of the surrounding neighborhoods,*
- *Protecting and preserving sensitive drainage corridors and wildlife habitat,*
- *Providing large areas of scenic open space, well-connected trail system, and passive park space,*
- *Preserving historic structures and striving for their adaptive reuse,*

- *Providing all groundwater rights to the Town, and partnering with the Town to acquire renewable water rights to serve the development, and*
- *Providing physical separation from County and City of Castle Pines development to the north and defining the Town's northern boundary.*

B. Relationship to surrounding area.

Open space buffers will exist on the periphery of the PD. In addition, the prescriptive buffer along the boundary with Castle Oaks/Terrain to the south provides a sensitive transition between the existing neighborhood to the south and new neighborhoods that will develop in Canyons Far South. The development plan is designed so that a majority of the lots within the PD will abut or have direct access to public open space. A variety of lot sizes, densities and housing types will meet the different needs of the new residents.

C. Circulation and connectivity.

The proposed PD plan complies with this criterion by providing appropriate internal pedestrian and vehicle circulation, capacity and connectivity, and the DA obligates the developer to required offsite improvements. The road improvements will be phased to correspond to development within the PD. Internal trails will provide pedestrian and bicycles with safe and convenient links to the internal commercial area and parks, as well as offsite trails and amenities.

D. Service, phasing and off-site impacts.

The proposed PD amendment complies with this criterion. The PD plan, phasing plan and DA establish the necessary onsite and offsite improvements to serve the Canyons Far South development with adequate municipal water, wastewater and sewer services. The developer is responsible for the cost and construction of the infrastructure improvements to serve the property.
The major drainageways must be preserved and stabilized as required by the Town's technical requirements. The groundwater rights will be dedicated to the Town and the owner is required to bring renewable water rights to satisfy the Town's Renewable Water Code.

The Canyons Far South Water Efficiency Plan will reduce the overall water demand of the development by prohibiting turf in residential front yards and limiting the rear yard turf to 500 square feet. Residential amenities such as pools and water features, will further reduce the irrigable turf allowed.

E. Open space, public lands and recreation amenities.

Planned Developments are required to dedicate a minimum of 20% of the property as open space. The Canyons Far South PD includes 217.6 of public open space, approximately 8.5 acres of private open space and 13.8 acres of PLD for public use

as a park, for a cumulative total of 59% open space and public land. The public open space and PLD will be dedicated to the Town in phases as development occurs. The areas of private open space will be developed as community amenities such as pocket parks or pools within the Planning Areas and will be owned and maintained by the HOA or Metropolitan District.

Public and private open space will also provide buffers and density relief, preserve natural features such as mature vegetation, rock outcroppings and drainageways. Hard and soft surface trails will connect open space, parks, recreation facilities and link to the commercial use area.

F. Preservation of natural features.

The PD plan complies with this criterion. As previously notes, the PD Plan preserves areas of natural drainage and slopes, mature vegetation, rock outcroppings and areas of wildlife habitat and corridors.

Development on the site will comply with state and federal regulations such as the Migratory Bird Act.

Budget Impact

The proposed annexation and zoning will generate review fees. In addition, there are DA obligations and impact fees required at the time of annexation and with future site plans, plats and subdivision improvement obligations that will offset Town costs.

The 5-mill Regional Mill Levy to be remitted to the Town on an annual basis will defray costs incurred by the Town in providing public services and improvements related to the development.

Recommendation

The Planning Commission voted 7 – 0 to recommend approval to Town Council of the Canyons Far South Annexation at a public hearing held on December 8, 2022.

Proposed Motions

Approval

"I move to approve Ordinance 2023 - __, as introduced by title."

Approval with Conditions

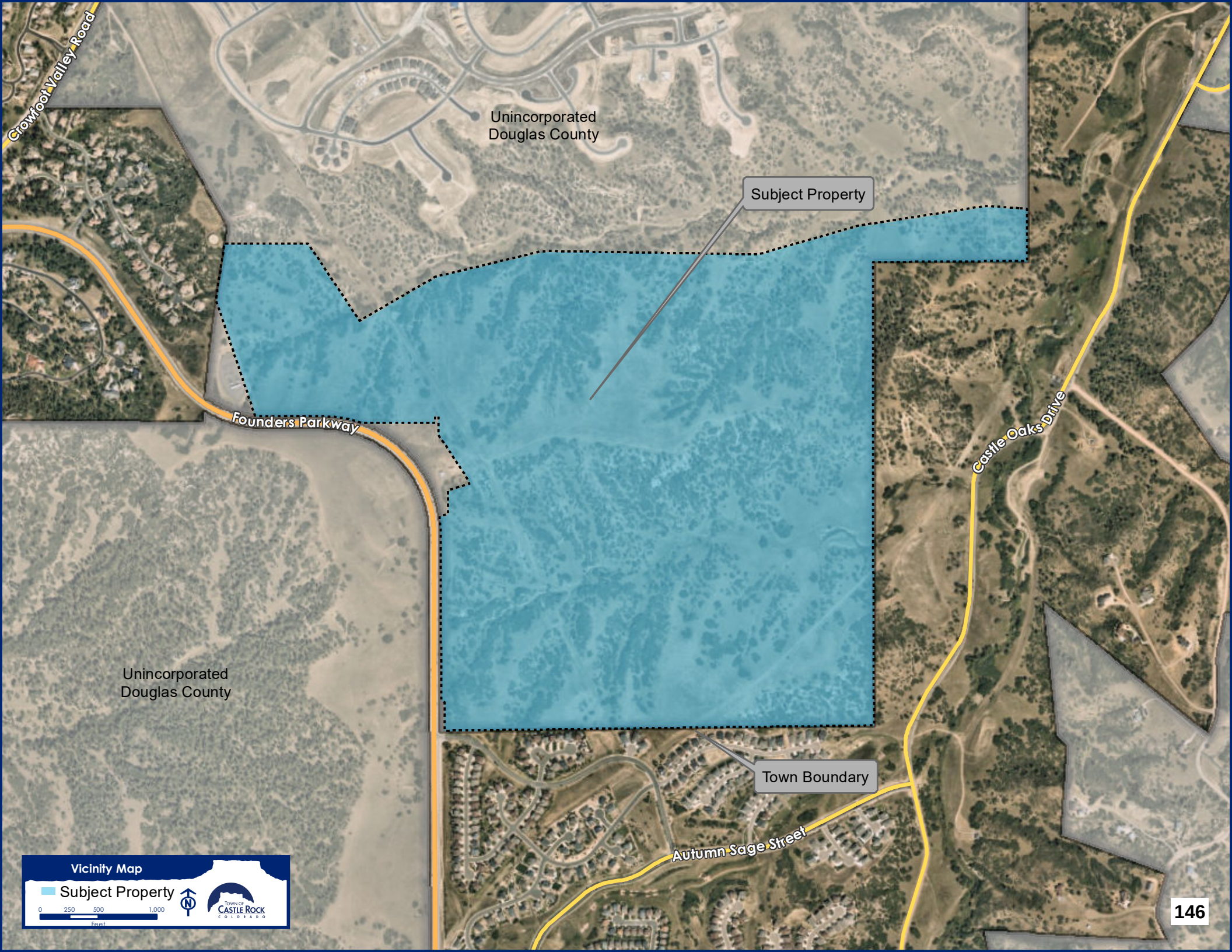
"I move to approve Ordinance 2023 - __, as introduced by title, with the following conditions." (list conditions)

Continue item to next hearing (need more information)

"I move to continue this item to the Town Council meeting on [date], 2023, at [time]."

Attachments

Attachment A: Vicinity Map
Attachment B: Ordinance No. 2023 - __
Attachment C: Canyons Far South Annexation Petition and Plat
Attachment D: Planned Development Plan and Zoning Regulations
Attachment E: Canyons South Planned Development, 7th Amendment
Attachment F: LSAR – Surrounding Densities
Attachment G: LSAR Developable Areas
Attachment H: LSAR Vegetative Cover
Attachment I: LSAR Cultural Resources Map
Attachment J: Castle Rock Water Resources Inclusion Area Map
Attachment K: Traffic Impact Analysis
Attachment L: Fiscal Impact Analysis – December 5, 2022


Crowfoot Valley Road
Unincorporated
Douglas County
Subject Property
Founders Parkway
Castle Oaks Drive
Unincorporated
Douglas County
Town Boundary
Autumn Sage Street
Vicinity Map
Subject Property
0 250 500 1,000
Feet
Town of Castle Rock Colorado

ORDINANCE NO. 2023-___

AN ORDINANCE ANNEXING TO THE TOWN OF CASTLE ROCK, COLORADO, 409.008 ACRES OF LAND LOCATED IN THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST, AND THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, DOUGLAS COUNTY, COLORADO, PURSUANT TO AN ANNEXATION PETITION SUBMITTED BY CANYONS SOUTH, LLC (Canyons Far South Annexation)

WHEREAS, on April 15, 2021, a petition (the "Petition") was filed with the Town Clerk by Canyons South, LLC (the "Petitioner") for the annexation of 409.008 acres of land located south of Crowfoot Road, east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive, as more particularly described on the attached Exhibit 1 (the "Property"); and

WHEREAS, the Petition requests that the Town of Castle Rock (the "Town") annex the Property; and

WHEREAS, on June 15, 2021, the Town Council adopted Resolution No. 2021-059, finding that the Petition is in substantial compliance with the requirements set forth in Article II, Section 30(1)(b) of the Colorado Constitution and §31-12-107(1), C.R.S.; and

WHEREAS, on August 17, 2021, the Town Council adopted Resolution No. 2021-079 finding that the Property is eligible for annexation to the Town in accordance with the requirements of Article II, Section 30 of the Colorado Constitution and §§31-12-104 and 31-12-105, C.R.S.; and

WHEREAS, Section 20.02.020 of the Castle Rock Municipal Code provides that, within 180 days from the date the Town Council determines the Property is eligible for annexation, the Town Council shall conduct a separate hearing regarding the advisability of annexing of the Property to the Town, unless the hearing is deferred with the consent of the petitioner (the "Annexation Hearing"); and

WHEREAS, in addition, at least ten days prior to the date set for the Annexation Hearing, the Petitioner's request to annex the Property shall be reviewed in a public hearing by the Planning Commission; and

WHEREAS, the Petitioner has consented to a deferral of the Annexation Hearing by the Town Council until tonight's meeting; and

WHEREAS, the Planning Commission and Town Council have conducted the public hearings required by Section 20.02.020 the Act and Chapter 20.02 of the Castle Rock Municipal Code.

NOW, THEREFORE, IT IS ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO:

Section 1. **Notice.** The Town Council takes notice of the following findings regarding the annexation of the Property made in Resolution No. 2021-079:

A. The applicable provisions of Article II, Section 30 of the Colorado Constitution and §§ 31-12-104 and 31-12-105, C.R.S., have been met;

B. An election is not required under §31-12-107(2), C.R.S.; and

C. No additional terms and conditions are to be imposed.

Section 2. **Findings.** Based upon the testimony and evidence presented at the Annexation Hearing, the Town Council makes the following additional findings:

A. The annexation of the Property is consistent with the Town Master Plan; and

B. The Property is otherwise a desirable addition to the Town.

Section 3. **Annexation of Property.** Annexation of the Property to the Town is hereby approved.

Section 4. **Required Filings.** The Town Clerk is hereby directed to file with the Douglas County Clerk and Recorder those documents required by § 31-12-113, C.R.S.

Section 5. **Effective Date.** Subject to the filings required to be made pursuant to Section 4, above, the Property shall be subject to the Town Charter and all ordinances, resolutions, rules and regulations of the Town upon the effective date of this Ordinance.

Section 6. **Severability.** If any clause, sentence, paragraph, or part of this ordinance or the application thereof to any person or circumstances shall for any reason be adjudged by a court of competent jurisdiction invalid, such judgment shall not affect the remaining provisions of this ordinance.

Section 7. **Safety Clause.** The Town Council finds and declares that this Ordinance is promulgated and adopted for the public health, safety and welfare and this Ordinance bears a rational relationship to the legislative object sought to be obtained.

APPROVED ON FIRST READING this 3rd day of January, 2023, by the Town Council of the Town of Castle Rock, Colorado by a vote of ___ for and ___ against, after publication; and

PASSED, APPROVED AND ADOPTED ON SECOND AND FINAL READING this ___ day of _____, 2023, by the Town Council of the Town of Castle Rock, Colorado by a vote of ___ for and ___ against.

ATTEST:

_____

Lisa Anderson, Town Clerk

TOWN OF CASTLE ROCK

_____

Jason Gray, Mayor

Approved as to form:

_____

Michael J. Hyman, Town Attorney

Approved as to content:

_____

Tara Vargish, Development Services Director

CANYONS SOUTH ANNEXATION BOUNDARY

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:

1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:

1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;

2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:

1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:

1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;

2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:

1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:

1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:

1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

PETITION FOR ANNEXATION

CANYONS SOUTH

TO THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO

The undersigned ("**Petitioner**"), in accordance with Section 30(1)(b) of Article II of the Constitution of the State of Colorado (the "**State Constitution**") and the Municipal Annexation Act of 1965 as set forth in Article 12, Title 31, Colorado Revised Statutes, as amended and as in effect on the submission date set forth below (the "**Annexation Act**"), hereby petitions the Town Council (the "**Council**") of the Town of Castle Rock, Colorado (the "**Town**") to annex to the Town the unincorporated territory located in the County of Douglas, State of Colorado, which property is more particularly described in Exhibit A attached hereto and incorporated herein by reference (the "**Annexation Property**"). In support of this petition ("**Petition**"), Petitioner alleges that:

1. It is desirable and necessary that the Annexation Property be annexed to the Town.

2. The requirements of Section 30(1)(b) of Article II of the State Constitution and Sections 31-12-104 and 31-12-105 of the Annexation Act exist or have been met.

3. The Petitioner comprises more than fifty percent (50%) of the landowners in the area of the Annexation Property and owns more than fifty percent (50%) of the Annexation Property, excluding public streets and alleys and any land owned by the Town.

4. The signer of this Petition is the owner of one hundred percent (100%) of the area of the Annexation Property exclusive of public streets and alleys and any land owned by the Town.

5. Not less than one-sixth (1/6) of the perimeter of the Annexation Property is contiguous with the Town's current municipal boundaries.

6. A community of interest exists between the Annexation Property and the Town.

7. The Annexation Property is urban or will be urbanized in the near future.

8. The Annexation Property is integrated with or is capable of being integrated with the Town.

9. The Annexation Property is not presently a part of any incorporated city, city and county, or town; nor have any proceedings been commenced for annexation of part or all of the Annexation Property to any other municipality; nor has any election for annexation of the Annexation Property or substantially the same territory to the Town been held within the twelve (12) months immediately preceding the filing of this Petition.

10. The proposed annexation will not result in the detachment of area from any school district and attachment of the same to another school district.

11. Except to the extent necessary to avoid dividing parcels within the Annexation Property held in identical ownership, at least fifty percent (50%) of which are within the three (3) mile limit, the proposed annexation will not extend the municipal boundary of the Town more than three (3) miles in any direction from any point of the current municipal boundary in one (1) year.

12. In establishing the boundaries of the Annexation Property, if a portion of a platted street or alley is annexed, the entire width of said street or alley shall be included within the area annexed; and, reasonable access shall not be denied to landowners, owners of easements, or the owners of franchises, adjoining any platted street or alley to be annexed that will not be bounded on both sides by the Town.

13. In establishing the boundaries of the Annexation Property, no land which is held in identical ownership, whether consisting of a single tract or parcel of real estate or two or more contiguous tracts or parcels of real estate:

    (a) is being divided into separate parts or parcels without the written consent of the landowner thereof unless such tracts or parcels are separated by a dedicated street, road or other public way; or

    (b) comprising twenty (20) acres or more (which, together with buildings and improvements situate thereon having a valuation for assessment in excess of two hundred thousand dollars ($200,000) for ad valorem tax purposes for the year next preceding the proposed annexation) is included in the Annexation Property without the written consent of the landowner.

14. The legal description of the lands owned by the signer of this Petition is set forth underneath the name of such Petitioner on Exhibit B, attached hereto and incorporated herein by this reference.

15. The Petitioner signed this Petition no more than one hundred eighty (180) days prior to the date of filing.

16. Attached to this Petition as Exhibit C is the Affidavit of Circulator of this Petition that the signature hereon is the signature of the person whose name it purports to be.

17. This Petition is accompanied by four (4) prints of an annexation map containing, among other things, the following information;

    (a) a written legal description of the boundaries of the Annexation Property;

    (b) a map showing the boundaries of the Annexation Property;

(c) within the annexation map, a showing of the location of each ownership tract in unplatted land and, if part or all of the area is platted, the boundaries and the plat numbers of the plots or of lots and blocks; and

(d) next to the boundary of the Annexation Property, a drawing of the contiguous boundary of the Town and the contiguous boundary of any other municipality abutting the Annexation Property, if any.

18. In connection with the processing of this Petition, the Petitioner requests that the Town:

(a) institute the process to establish planned development ("**PD**") zoning for the Annexation Property in accordance with applicable provisions of the Town's Municipal Code (the "**Code**") and in accordance with any applicable provisions of Section 31-12-115 of the Annexation Act; and

(b) approve and execute a development agreement acceptable to Petitioner and the Town (the "**Development Agreement**") which establishes vested Annexation Property rights for the Annexation Property for an agreed upon term, pursuant to Chapter 17.08 of the Code and Article 68, Title 24, Colorado Revised Statutes, and which, in conjunction with the PD zoning, will establish the development plan for the Annexation Property.

19. Petitioner has filed this Petition subject to the following conditions:

(a) Unless otherwise agreed in writing by Petitioner, the annexation of the Annexation Property into the Town shall not be effective unless concurrently with the Council's final approval of an ordinance annexing the Annexation Property into the Town, the Council gives its final approval to (A) zoning regulations for the Annexation Property in form and substance satisfactory to the Petitioner, and (B) the Development Agreement in form and substance satisfactory to Petitioner which among other things creates vested rights for the Annexation Property pursuant to existing Town ordinances or resolution and Section 24-68-101, C.R.S., et seq.; and

(b) Petitioner hereby reserves the right to withdraw this Petition, and thereby prevent the Annexation Property from being annexed into the Town, by so notifying the Town Clerk in writing prior to the later to occur of:

(i) the occurrence of the conditions to effectiveness of the annexation as set forth in Section 31-12-113(2)(b) of the Annexation Act;

(ii) a later date, if any, set forth in the Development Agreement.

20. Upon the annexation of the Annexation Property becoming effective, and subject to the conditions set forth in this Petition, and to be set forth in the Development Agreement and the documents constituting the terms of the PD zoning for the Annexation Property (the "**PD Documents**"), the Annexation Property shall be subject to the regulations of the Town, except as otherwise set forth in the

Development Agreement and the PD Documents, and except for general taxation purposes in which case the annexation shall be deemed effective on January 1 of the next succeeding year following adoption of the annexation ordinance.

21. This Petition is filed on the condition that the zoning requested by Petitioner under paragraph 18 (a), above, is granted by the Town as provided in the Development Agreement, and the Town agrees that no filing of the annexation ordinance and annexation maps as provided under Section 31-12-113, subsection (2)(a)(II)(A) of the Annexation Act shall be made until, and unless the requested zoning is granted and no longer subject to appeal.

22. Except for the terms and conditions of this Petition, the Development Agreement and the PD Documents, which terms and conditions Petitioner has approved or shall expressly approve, and therefore do not constitute an imposition of additional terms and conditions within the meaning of Section 31-12-112(1) of the Annexation Act, Petitioner requests that no additional terms and conditions be imposed upon annexation of the Annexation Property to the Town.

THEREFORE, Petitioner requests that the Town Council of the Town of Castle Rock, Colorado, complete and approve the annexation of the Annexation Property pursuant and subject to the provisions of the Municipal Annexation Act of 1965, as amended, and the terms and conditions of this Petition.

Respectfully submitted this 15 day of APRIL, 2021

Signature of Landowner/Petitioner:

CANYONS SOUTH, LLC

By: Erik Clore Authorized Representative
(Name) (Title)

Date of Signature: 4/15/21

Mailing Address: 5299 DTC Boulevard, Suite 1260
Greenwood Village, CO 80111

EXHIBIT A
TO PETITION FOR ANNEXATION

Legal Description of Annexation Property

CANYONS SOUTH ANNEXATION BOUNDARY

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:

1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:

1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;

2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:

1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:

1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;

2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:

1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:

1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:

1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

EXHIBIT B
TO PETITION FOR ANNEXATION

LEGAL DESCRIPTION OF LAND OWNED BY THE LAND OWNER

Name of Owner: Canyons South, L.L.C.

Address of Owner: 5299 DTC Boulevard, Suite 1260
Greenwood Village, CO 80111

Legal description and address of land owned by Owner in area proposed for annexation:

- (See legal descriptions on annexation maps attached as part of Exhibit A.)
- Address of Land:

Percentage owned by Owner: 100%

EXHIBIT C
TO PETITION FOR ANNEXATION

AFFIDAVIT OF CIRCULATOR

STATE OF COLORADO)
) SS.
COUNTY OF)

The undersigned, Erik Clore, being duly sworn upon his oath, deposes and states:

1. That the affiant circulated the Petition for Annexation of lands known as Canyons South to the Town of Castle Rock, Colorado, for the purpose of obtaining the signature of the petitioner.

2. That the signature thereon is the signature of the person or party whose name it purports to be.

Date: APRIL 16, 2021

Subscribed and sworn to before me this 16 day of APRIL, 2021.

My commission expires August 5, 2023.

TAYLOR NICOLE WELSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20194029504
MY COMMISSION EXPIRES AUGUST 5, 2023

Taylor Nicole Welsh
Notary Public

WITNESS my hand and official seal.

CANYONS SOUTH ANNEXATION MAP

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

LEGAL DESCRIPTION

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:
1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:
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2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:
1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:
1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;
2. N 19°2'106" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°53'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:
1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:
1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:
1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°59'00" E, A DISTANCE OF 166.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

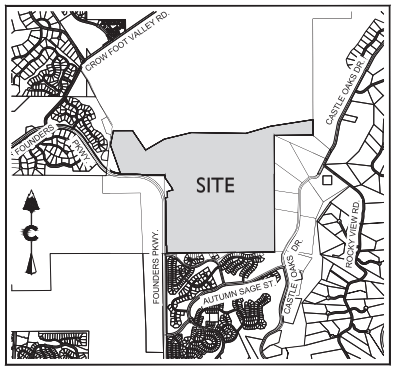
CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

CONTIGUITY STATEMENT

TOTAL ACREAGE OF ANNEXATION BOUNDARY	= 409.008 ACRES
PERIMETER OF BOUNDARY	= 23,578 FEET
1/6 OF PERIMETER BOUNDARY	= 3,930 FEET
CONTIGUITY WITH TOWN BOUNDARY	= 9,495 FEET

VICINITY MAP

1" = 2000'



SHEET INDEX

TOWN COUNCIL APPROVAL

THIS ANNEXATION MAP WAS APPROVED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO,

ON THE ___ DAY OF _____, 20___.

_____ _____
MAYOR DATE

ATTEST:

_____ _____
TOWN CLERK DATE

SURVEYOR'S CERTIFICATE

I, THOMAS M. GIRARD, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT MORE THAN ONE SIXTH (1/6) OF THE EXTERNAL BOUNDARY OF THE AREA PROPOSED TO BE ANNEXED TO THE TOWN OF CASTLE ROCK, COLORADO, IS CONTIGUOUS WITH THE BOUNDARIES OF THE ANNEXING MUNICIPALITY, AND THAT THIS ANNEXATION PLAT COMPLIES WITH THE COLORADO STATE STATUTES AND THE TOWN OF CASTLE ROCK, COLORADO CODES PERTAINING THERETO

_____
THOMAS M. GIRARD
PROFESSIONAL LAND SURVEYOR COLORADO REG. NO. 38151
FOR AND ON BEHALF OF CORE CONSULTANTS, INC.

NOTE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE (3) YEARS AFTER YOU FIRST DISCOVERED SUCH DEFECT. IN NO EVENT MAY ACTION BE TAKEN BASED UPON ANY DEFECT IN THIS SURVEY MORE THAN TEN (10) YEARS AFTER THE DATE OF THE SURVEY CERTIFICATION SHOWN HEREON.

DOUGLAS COUNTY CLERK AND RECORDER'S CERTIFICATE

THIS ANNEXATION MAP WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF DOUGLAS COUNTY AT _____, __.M.,
ON THE ____ DAY OF _____, 20 ___ AT RECEPTION NO. _____
DOUGLAS COUNTY CLERK AND RECORDER
BY:

_____
DEPUTY

OWNER
CANYONS SOUTH, LLC
5299 DTC BLVD. SUITE #1260
GREENWOOD VILLAGE, CO 80111

DEVELOPER
LOWE ENTERPRISES
CANYONS SOUTH, LLC
5299 DTC BLVD. SUITE #1260
GREENWOOD VILLAGE, CO 80111
CONTACT: ERIK CLORE

ENGINEER, SURVEYOR & PLAN PREPARER
CORE CONSULTANTS
3473 SOUTH BROADWAY
ENGLEWOOD, CO 80113
PHONE: 303-703-4444
CONTACT: KEVIN ROHRBOUGH

CORE CONSULTANTS, INC.
3473 SOUTH BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVE.TO.CORE.COM

LAND DEVELOPMENT
ENERGY
PUBLIC INFRASTRUCTURE

CANYONS SOUTH ANNEXATION MAP
NORTH 1/2 SEC. 31 & SOUTH 1/2 SEC. 30, T7S, R66W OF THE 6TH P.M.
SOUTHEAST 1/4 SEC. 25, T7S, R67W OF THE 6TH P.M.
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

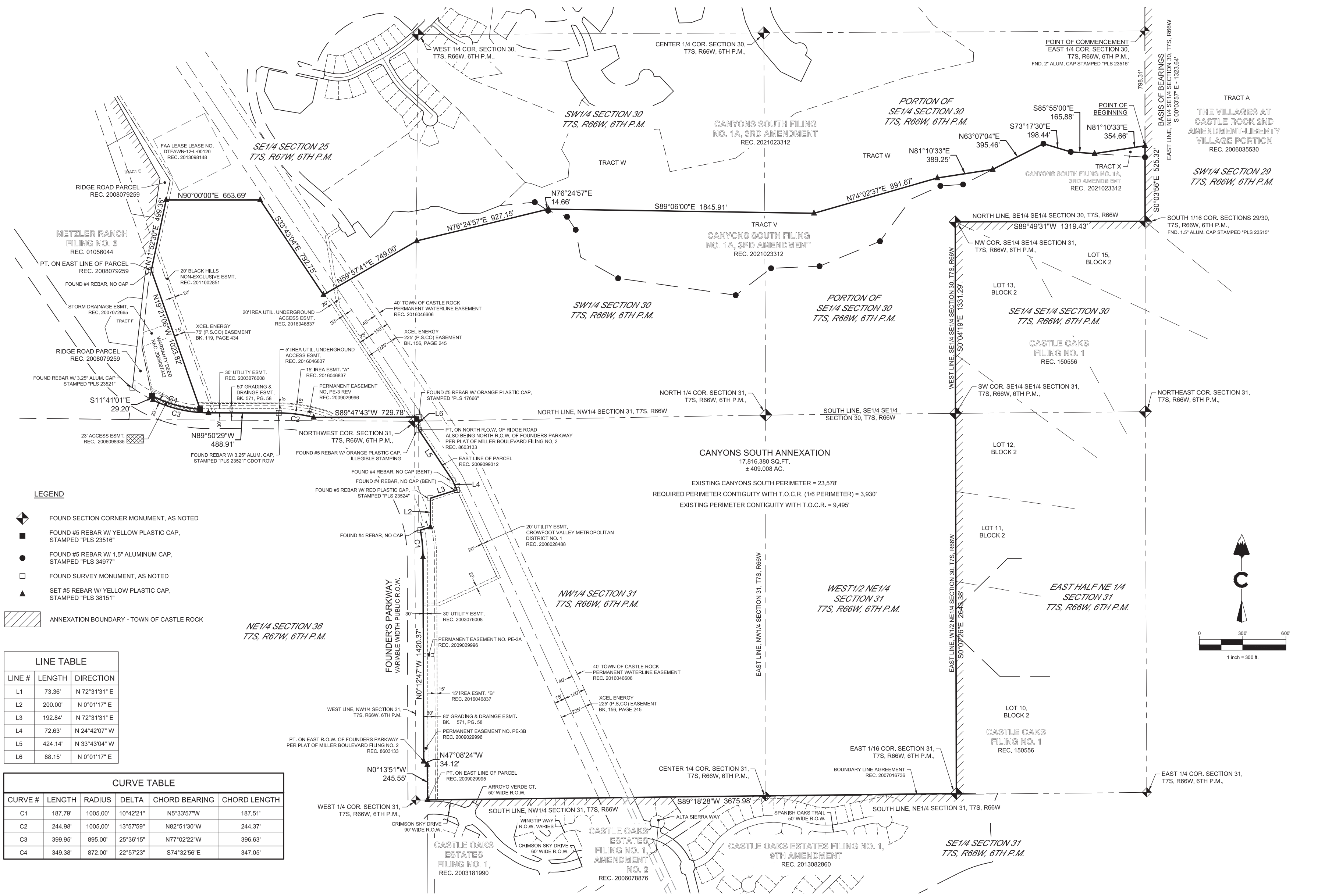
RELEASE: 05/17/2021
DESIGNED: _____
CAD: JCA
QA/QC: TMG

JOB NO. 20-245

SHEET 1 OF 2

CANYONS SOUTH ANNEXATION MAP

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- FOUND SECTION CORNER MONUMENT, AS NOTED
- FOUND #5 REBAR W/ YELLOW PLASTIC CAP, STAMPED "PLS 23516"
- FOUND #5 REBAR W/ 1.5" ALUMINUM CAP, STAMPED "PLS 34977"
- FOUND SURVEY MONUMENT, AS NOTED
- SET #5 REBAR W/ YELLOW PLASTIC CAP, STAMPED "PLS 38151"
- ANNEXATION BOUNDARY - TOWN OF CASTLE ROCK

LINE TABLE

LINE #	LENGTH	DIRECTION
L1	73.36'	N 72°31'31" E
L2	200.00'	N 0°01'17" E
L3	192.84'	N 72°31'31" E
L4	72.63'	N 24°42'07" W
L5	424.14'	N 33°43'04" W
L6	88.15'	N 0°01'17" E

CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	187.79'	1005.00'	10°42'21"	N5°33'57"W	187.51'
C2	244.98'	1005.00'	13°57'59"	N82°51'30"W	244.37'
C3	399.95'	895.00'	25°36'15"	N77°02'22"W	396.63'
C4	349.38'	872.00'	22°57'23"	S74°32'56"E	347.05'

CORE CONSULTANTS, INC.
3473 SOUTH BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVEYOURCORE.COM
LAND DEVELOPMENT
ENERGY
PUBLIC INFRASTRUCTURE

CANYONS SOUTH ANNEXATION MAP
NORTH 1/2 SEC. 31 & SOUTH 1/2 SEC. 30, T7S, R66W OF THE 6TH P.M,
SOUTHEAST 1/4 SEC. 25, T7S, R67W OF THE 6TH P.M.
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

RELEASE: 05/17/2021
DESIGNED:
CAD: JCA
QA/QC: TMG

JOB NO. 20-245

SHEET 2 OF 2

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP STANDARD NOTES

1. MINERAL RIGHTS ASSOCIATED WITH THIS DEVELOPMENT HAVE NOT BEEN SEVERED. NOTIFICATION OF DEVELOPMENT HEARINGS BEFORE PLANNING COMMISSION AND TOWN COUNCIL SHALL BE PROVIDED TO OWNERS OF MINERAL ESTATES PURSUANT TO ARTICLE 65.5 OF TITLE 24, C.R.S.
2. A PORTION OF THIS SITE LIES WITHIN FEMA FLOOD ZONE X & A PER MAP DATED March 16, 2016. NO STRUCTURES SHALL BE PERMITTED IN THE APPROVED 100-YEAR FLOOD PLAIN.
3. THIS DEVELOPMENT PLAN IS NOT IMPACTED BY THE TOWN OF CASTLE ROCK SKYLINE/RIDGELINE PROTECTION REGULATIONS.
4. THIS SITE IS WITHIN THE TOWN OF CASTLE ROCK PURPLE & RED WATER PRESSURE ZONE.
5. ALL-WEATHER (CONCRETE OR ASPHALT) SURFACED ACCESS ROADS CAPABLE OF WITHSTANDING THE IMPOSED LOADS OF FIRE APPARATUS (75,000 LBS.) AND ALL REQUIRED FIRE HYDRANTS SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING ALL CONSTRUCTION.
6. RIGHT-OF-WAY INGRESS AND EGRESS ACCESS FOR EMERGENCY VEHICLES AND PERSONAL IS GRANTED OVER, ACROSS, ON AND THROUGH ANY AND ALL PRIVATE ROADS, DRIVES, TRAILS AND WALKWAYS.
7. A WILDLAND/URBAN INTERFACE WILDFIRE VEGETATION MANAGEMENT PLAN (PLAN), OR COMPLIANCE LETTER, IS REQUIRED TO BE SUBMITTED FOR EACH PHASE OF THE PLANNED DEVELOPMENT, WITH THE FIRST SITE DEVELOPMENT PLAN OR CONSTRUCTION DRAWINGS FOR EVALUATION AND APPROVAL BY THE TOWN OF CASTLE ROCK FIRE DEPARTMENT. THE PLAN SHALL BE DEVELOPED BY A DESIGN PROFESSIONAL FAMILIAR WITH WILDFIRE MITIGATION TECHNIQUES AND STANDARDS. REFER TO THE TOWN OF CASTLE ROCK COMMUNITY WILDFIRE PROTECTION PLAN.
8. MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS, AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
9. THE EASTERN AREA OF PLANNING AREA 3 IS WITHIN A MAPPED DEBRIS-FLOW SUSCEPTIBLE AREA (DEBRIS FLOW SUSCEPTIBILITY MAP OF DOUGLAS COUNTY, COLORADO: MCCOY ET AL, CGS OPEN FILE REPORT OF-18-08). THE DEBRIS DEPOSITION/INUNDATION HAZARD AND ANY NEED FOR MITIGATION OR AVOIDANCE WILL BE EVALUATED BY A QUALIFIED PROFESSIONAL, AND THE CONCLUSIONS SUBMITTED TO THE TOWN WITH THE SUBMITTAL OF THE SITE DEVELOPMENT PLAN FOR THE SUBJECT AREA.
10. AN UPDATED GEOLOGIC HAZARD AND GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS WILL BE PROVIDED WITH THE RESPECTIVE SITE DEVELOPMENT PLANS AND PLATS.

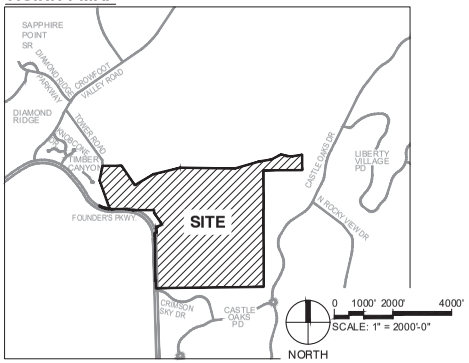
UTILIZATION TABLE

	Site Totals	Private Open Space Areas	Percentage of Site
Acreage	409 ac		100.0%
Planning Areas	165.1ac		40.4%
Open Space Private (OSP)		+/- 8.5ac	2.1% (part of PA)
Open Space Dedicated (PL-2)	217.6 ac		53.2%
Public Land Dedicated (PL-1)	13.8ac		3.4%
Right-of-Way*	12.5 ac		3.1%

* Actual acreage To Be Determined at Site Plan

SHEET INDEX

VICINITY MAP



LEGAL DESCRIPTION

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:
1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:
1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;
2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:
1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:
1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;
2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:
1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:
1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:
1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

PROJECT BENCHMARK

PROJECT BENCHMARK IS A REBAR WITH A 2.5" ALUMINUM CAP STAMPED "DOUGLAS COUNTY SECONDARY CONTROL 4.004007", SET FLUSH TO THE GROUND. LOCATED ON THE SOUTH SIDE OF CASTLE OAKS DRIVE, APPROXIMATELY 700 FEET NORTHEAST FROM THE INTERSECTION OF CASTLE OAKS DRIVE AND AUTUMN SAGE DRIVE. CASTLE ROCK, COLORADO. PUBLISHED ELEVATION = 1979.760 METERS (6495.20 FEET) NAVD88.

BASIS OF BEARING

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515".

VESTING STATEMENT

THIS CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN AND ZONING REGULATIONS CONSTITUTES A SITE SPECIFIC DEVELOPMENT PLAN PURSUANT TO CHAPTER 17.08 OF THE CASTLE ROCK MUNICIPAL CODE AND SECTION 24-68-101, ET SEQ., C.R.S., AND ESTABLISHES VESTED PROPERTY RIGHTS FOR 15 YEARS FROM ITS EFFECTIVE DATE TO UNDERTAKE AND COMPLETE THE DEVELOPMENT AND USE OF THE PROPERTY IN ACCORDANCE WITH THIS PLAN.

CERTIFICATION OF OWNERSHIP

THE UNDERSIGNED ARE ALL OF THE OWNERS OF THE ABOVE DESCRIBED PROPERTY IN THE TOWN OF CASTLE ROCK.

_____
CANYONS SOUTH, LLC, A DELAWARE LIMITED LIABILITY COMPANY

SIGNED THIS_____DAY OF_____, 20____

COUNTY OF _____)
STATE OF _____)

NOTARY BLOCK

SUBSCRIBED AND SWORN TO BEFORE ME THIS_____DAY OF_____, 20____

BY_____AS_____OF
CANYONS SOUTH, LLC.

_____
WITNESS MY HAND AND OFFICIAL SEAL

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

CONTACTS

APPLICANT:
LOWE, INC.
11777 SAN VICENTE BLVD #900
LOS ANGELES, CA 90049
310.820.6661
LOWE-RE.COM
CONTACT: ERIK CLORE

ENGINEERING:
CORE CONSULTANTS, INC.
3473 S. BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVEYOURCORE.COM
CONTACT: KEVIN ROHBBOUGH

PLANNER/LANDSCAPE ARCHITECT:
DIG STUDIO, INC.
1521 15TH ST
DENVER, CO 80202
720.328.1986
DIGSTUDIO.COM
CONTACT: BILL VITEK

TITLE CERTIFICATION

I, _____, AN AUTHORIZED REPRESENTATIVE OF_____A TITLE INSURANCE COMPANY LICENSED TO DO BUSINESS IN THE STATE OF COLORADO, HAVE MADE AN EXAMINATION OF THE PUBLIC RECORDS AND STATE THAT ALL OWNERS, MORTGAGES AND LIENHOLDERS OF THE PROPERTY ARE LISTED IN THE CERTIFICATE OF OWNERSHIP AND LIENHOLDER SUBORDINATION CERTIFICATE. 20____. SIGNED THIS_____DAY OF_____, 20____.

_____
AUTHORIZED REPRESENTATIVE

_____
TITLE INSURANCE COMPANY

COUNTY OF _____)
STATE OF _____)

NOTARY BLOCK

SUBSCRIBED AND SWORN TO BEFORE ME THIS_____DAY OF_____, 20____

BY_____AS AUTHORIZED REPRESENTATIVE
OF_____.

_____
WITNESS MY HAND AND OFFICIAL SEAL

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

SURVEYOR'S CERTIFICATION

I, _____, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY ATTEST THAT THE LEGAL DESCRIPTION AS DESCRIBED HEREON WAS MADE UNDER MY DIRECT SUPERVISION.

_____ _____
MILES M. SMALL DATE
PROFESSIONAL LAND SURVEYOR
COLORADO PLS NO. 38534
FOR AND BEHALF OF CORE CONSULTANT, INC.

PLANNING COMMISSION RECOMMENDATION

THIS PLANNED DEVELOPMENT PLAN WAS RECOMMENDED FOR APPROVAL BY THE PLANNING COMMISSION OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE_____ DAY OF_____, 20____.

_____ _____
CHAIR DATE

ATTEST:

_____ _____
DIRECTOR OF DEVELOPMENT SERVICES DATE

TOWN COUNCIL APPROVAL

THIS PLANNED DEVELOPMENT PLAN WAS APPROVED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE_____DAY OF_____, 20____.

_____ _____
MAYOR DATE

ATTEST:

_____ _____
TOWN CLERK DATE

DOUGLAS COUNTY CLERK AND RECORDER'S CERTIFICATE

THIS PLANNED DEVELOPMENT PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF DOUGLAS COUNTY AT _____ON THE_____DAY OF_____, 20_____AT RECEPTION NO. _____.

DOUGLAS COUNTY CLERK AND RECORDER

BY: _____ _____
DEPUTY DATE

CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN TOWN OF CASTLE ROCK PROJECT NO. PDP21-0003

LOWE
CORE CONSULTANTS, INC.
3473 S. BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
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CORE
DIG STUDIO, INC.
1521 15TH ST
DENVER, CO 80202
720.328.1986
DIGSTUDIO.COM
Dig Studio

CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
LANNED DEVELOPMENT PLAN (PDP)
COVER SHEET

ATTACHMENT D

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1 OF 12

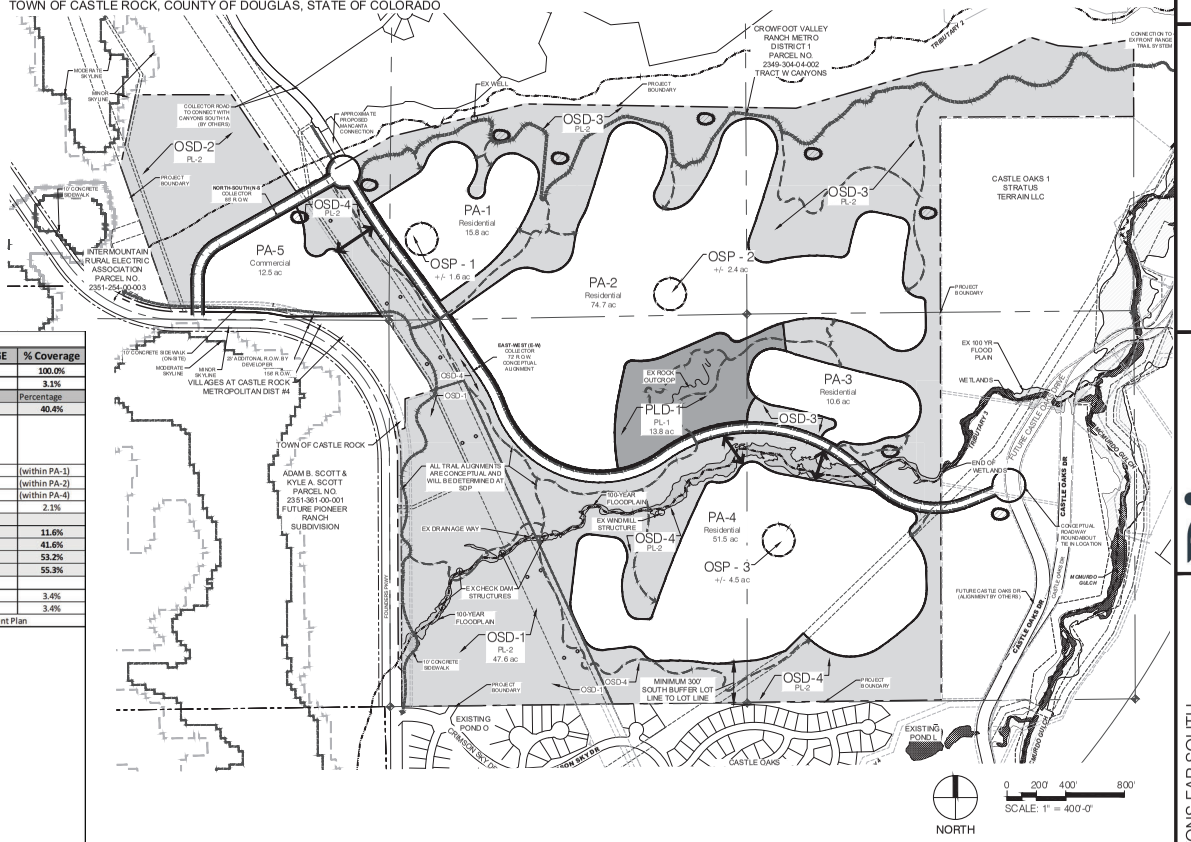
CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

LEGEND

- PROPERTY BOUNDARY
- DRAINAGEWAY
- PROPOSED OSD
- PROPOSED PLD
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS
- ACCESS POINT
- PROPOSED POND
- EASEMENTS
- 10' CONCRETE TRAIL
- 8' SIDEWALK
- 4' SOFT SURFACE TRAIL



Canyons Far South Zoning Summary Table and Development Standards

AREAS						Zoning	ACREAGE	% Coverage
SITE AREA							409	100.0%
SPINE ROAD ROW							12.5	3.1%
PLANNING AREAS	PA-1	PA-2	PA-3	PA-4	PA-5			
Acreage	15.8	74.7	10.6	51.5	12.5			
Allowable Uses	Single-family with attached or detached garages	Single-family with attached or detached garages	Single-family with attached or detached garages	Single-family with attached or detached garages	Commercial			
Minimum Lot Size	4,250	4,000	4,250	4,000				
Maximum Lot Size	11,700	11,700	11,700	11,700				
Dwelling Unit per PA	40 - 55	190 - 225	25 - 32	190	N/A			
Dwelling units per acre	2.5 - 3.5	2.5 - 3.0	2.4 - 3.0	3.7				
Total Dwelling Units	474							
Gross DU per Acre	1.16							
Maximum Building SF	N/A	N/A	N/A	N/A	60,000sf			
Maximum Building Height	35'	35'	35'	35'	35'*			
Lot Size and Setbacks								
Commercial Buildings								
Minimum Lot Size					2,000sf			
Front					0'			
Rear					10'			
Side					0'			
Side to Street					10',25'at collector and above			
Paired Homes								
Minimum Lot Size (per Unit)	4,000	4,000	4,000	4,000				
Front	10'	10'	10'	10'				
Rear	10'	10'	10'	10'				
Side	5'	5'	5'	5'				
Side at Shared Wall	0'	0'	0'	0'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Cluster Homes								
Minimum Lot Size	4,875	4,875	4,875	4,875				
Front	10'	10'	10'	10'				
Rear	5'	5'	5'	5'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Cottage Lots								
Minimum Lot Size	4,250	4,250	4,250	4,250				
Front	10'	10'	10'	10'				
Rear	5'	5'	5'	5'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Small Lot								
Minimum Lot Size	5,500	5,500	5,500	5,500				
Front	10'	10'	10'	10'				
Rear	25'	25'	25'	25'				
Side	5'	5'	5'	5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Medium Lot								
Minimum Lot Size	6,000	6,000	6,000	6,000				
Front	15'	15'	15'	15'				
Rear	30'	30'	30'	30'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	10'	10'	10'	10'				
Large Lot								
Minimum Lot Size	7,000	7,000	7,000	7,000				
Front	15'	15'	15'	15'				
Rear	30'	30'	30'	30'				
Side	10'	10'	10'	10'				
Side to Street	12.5'	12.5'	12.5'	12.5'				
Minimum Buffer	N/A	N/A	N/A	300-foot buffer property line to property line	N/A			
Minimum Parking	2-car garage	2-car garage	2-car garage	2-car garage				
Maximum Parking	4-car garage	4-car garage	4-car garage	4-car garage				

*See Design Guidelines.

PAs/OSP/PL-1/PL-2		Acreage	Percentage
Planning Areas		**165.1**	**40.4%**
Open Space Private (OSP)*			
OSP - 1	OSP	1.6	(within PA-1)
OSP - 2	OSP	2.4	(within PA-2)
OSP - 3	OSP	4.5	(within PA-4)
Total OSP		8.5	2.1%
Open Space Dedicated (OSD)			
OSD - 1	**PL - 2**	**47.6**	**11.6%**
OSD-2, OSD-3, OSD-4	**PL - 2**	**170**	**41.6%**
Total OSD		**217.6**	**53.2%**
Total OSP & OSD		**226.1**	**55.3%**
Public Land Dedication (PLD)			
PLD - 1	PL - 1	13.8	3.4%
Total PLD		13.8	3.4%

* Actual acreage to be determined at Site Development Plan

LOWE

CORE CONSULTANTS, INC.
3473 S. BROADWAY
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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
SITE CHARTS AND NOTES

NOT FOR CONSTRUCTION

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DRAWN BY:
CHECKED BY:

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2 OF 12

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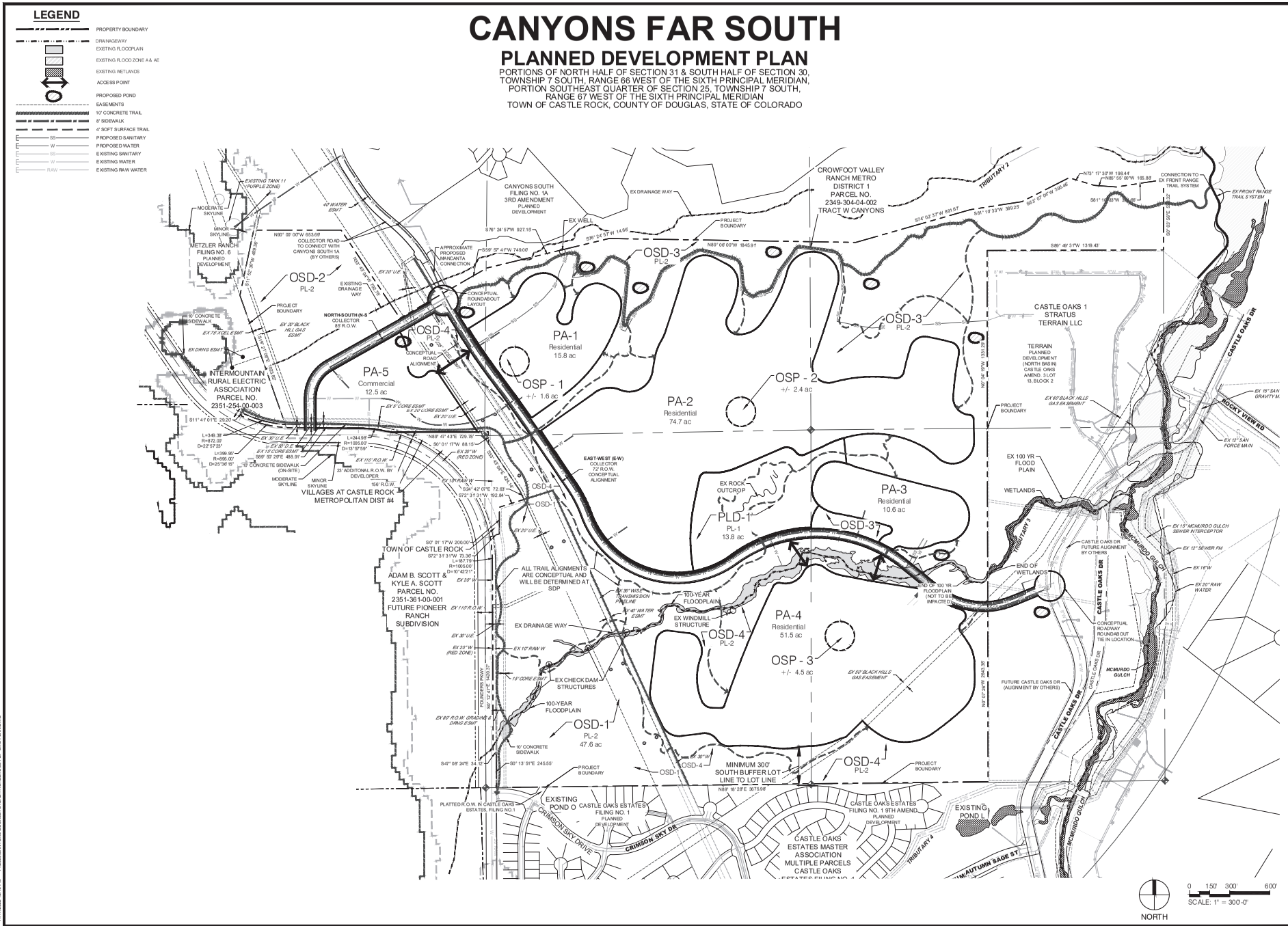
CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP SITE PLAN

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3 OF 12

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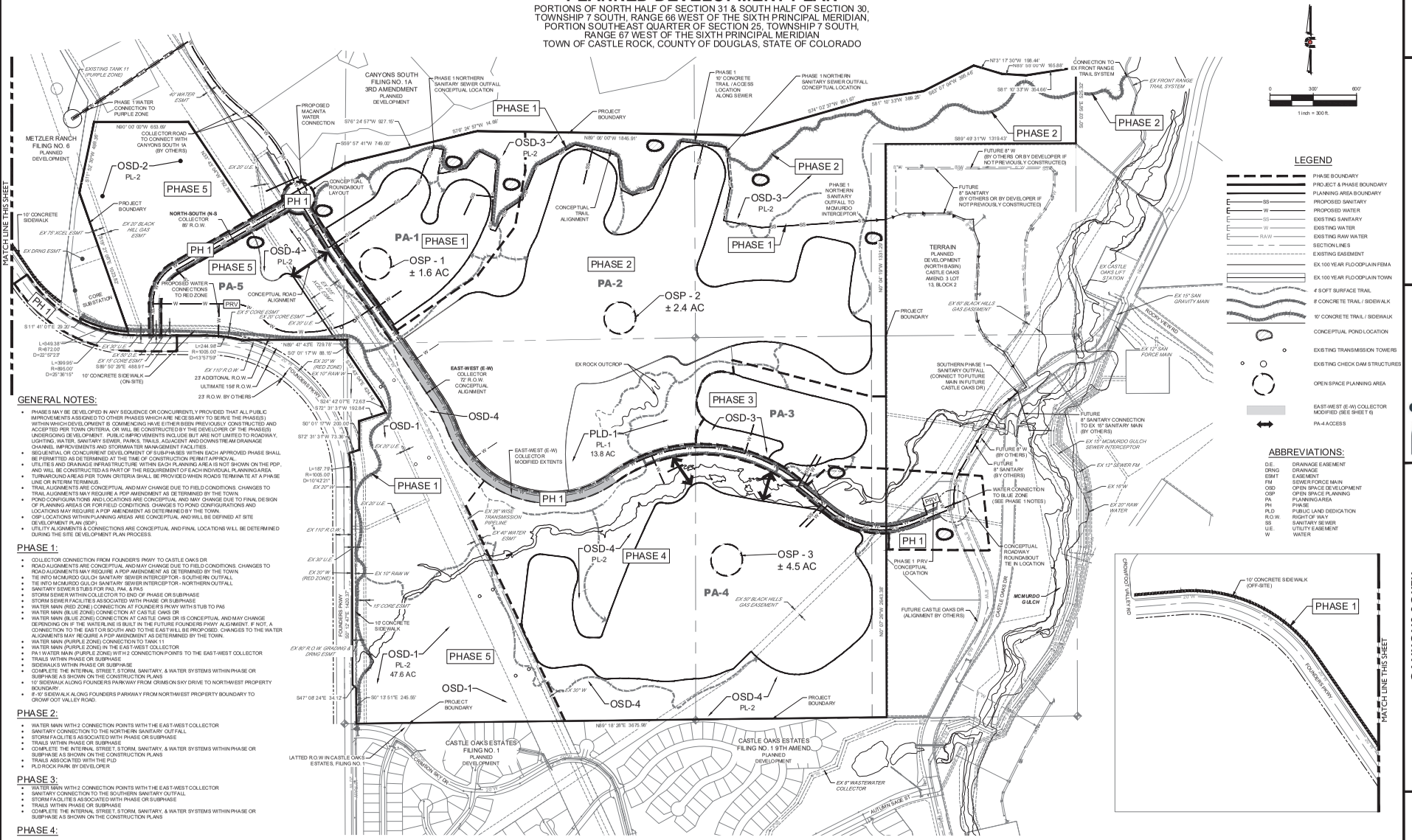
CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN TOWN OF CASTLE ROCK PROJECT NO. PDP21-0003

CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- PHASE BOUNDARY
- PROJECT & PHASE BOUNDARY
- PLANNING AREA BOUNDARY
- SS — PROPOSED SANITARY
- W — PROPOSED WATER
- SS — EXISTING SANITARY
- W — EXISTING WATER
- RAW — EXISTING RAW WATER
- SECTION LINES
- EXISTING EASEMENT
- EX 100 YEAR FLO ODPLAIN FEMA
- EX 100 YEAR FLO ODPLAIN TOWN
- 4' SOFT SURFACE TRAIL
- 8' CONCRETE TRAIL / SIDEWALK
- 10' CONCRETE TRAIL / SIDEWALK
- CONCEPTUAL POND LOCATION
- EXISTING TRANSMISSION TOWERS
- EXISTING CHECK DAM STRUCTURES
- OPEN SPACE PLANNING AREA
- EAST-WEST (E-W) COLLECTOR MODIFIED (SEE SHEET 6)
- PA-4 ACCESS

GENERAL NOTES:

- PHASES MAY BE DEVELOPED IN ANY SEQUENCE OR CONCURRENTLY PROVIDED THAT ALL PUBLIC IMPROVEMENTS ASSIGNED TO OTHER PHASES WHICH ARE NECESSARY TO SERVE THE PHASE(S) WITHIN WHICH DEVELOPMENT IS COMMENCING HAVE EITHER BEEN PREVIOUSLY CONSTRUCTED AND ACCEPTED PER TOWN CRITERIA, OR WILL BE CONSTRUCTED BY THE DEVELOPER OF THE PHASE(S) UNDERGOING DEVELOPMENT. PUBLIC IMPROVEMENTS INCLUDE BUT ARE NOT LIMITED TO ROADWAY, LIGHTING, WATER, SANITARY SEWER, PARKS, TRAILS, ADJACENT AND DOWNSTREAM DRAINAGE CHANNEL IMPROVEMENTS AND STORMWATER MANAGEMENT FACILITIES.
- SEQUENTIAL OR CONCURRENT DEVELOPMENT OF SUB-PHASES WITHIN EACH APPROVED PHASE SHALL BE PERMITTED AS DETERMINED AT THE TIME OF CONSTRUCTION PERMIT APPROVAL.
- UTILITIES AND DRAINAGE INFRASTRUCTURE WITHIN EACH PLANNING AREA IS NOT SHOWN ON THE PDP, AND WILL BE CONSTRUCTED AS PART OF THE REQUIREMENT OF EACH INDIVIDUAL PLANNING AREA.
- TURNAROUND AREAS PER TOWN CRITERIA SHALL BE PROVIDED WHEN ROADS TERMINATE AT A PHASE LINE OR INTERIM TERMINUS.
- TRAIL ALIGNMENTS ARE CONCEPTUAL AND MAY CHANGE DUE TO FIELD CONDITIONS. CHANGES TO TRAIL ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- POND CONFIGURATIONS AND LOCATIONS ARE CONCEPTUAL AND MAY CHANGE DUE TO FINAL DESIGN OF PLANNING AREAS OR FOR FIELD CONDITIONS. CHANGES TO POND CONFIGURATIONS AND LOCATIONS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- OSP LOCATIONS WITHIN PLANNING AREAS ARE CONCEPTUAL AND WILL BE DEFINED AT SITE DEVELOPMENT PLAN (SDP).
- UTILITY ALIGNMENTS & CONNECTIONS ARE CONCEPTUAL AND FINAL LOCATIONS WILL BE DETERMINED DURING THE SITE DEVELOPMENT PLAN PROCESS.

PHASE 1:

- COLLECTOR CONNECTION FROM FOUNDER'S PKWY TO CASTLE OAKS DR
- ROAD ALIGNMENTS ARE CONCEPTUAL, AND MAY CHANGE DUE TO FIELD CONDITIONS. CHANGES TO ROAD ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- TIE INTO MCMURDO GULCH SANITARY SEWER INTERCEPTOR - SOUTHERN OUTFALL
- TIE INTO MCMURDO GULCH SANITARY SEWER INTERCEPTOR - NORTHERN OUTFALL
- SANITARY SEWER STUBS FOR PA3, PA4, & PA5
- STORM SEWER WITHIN COLLECTOR TO END OF PHASE OR SUBPHASE
- STORM SEWER FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- WATER MAIN (RED ZONE) CONNECTION AT FOUNDER'S PKWY WITH STUB TO PA5
- WATER MAIN (BLUE ZONE) CONNECTION AT CASTLE OAKS DR
- WATER MAIN (BLUE ZONE) CONNECTION AT CASTLE OAKS DR IS CONCEPTUAL AND MAY CHANGE DEPENDING ON IF THE WATERLINE IS BUILT IN THE FUTURE FOUNDERS PKWY ALIGNMENT. IF NOT, A CONNECTION TO THE EAST OR SOUTH AND TO THE EAST WILL BE PROPOSED. CHANGES TO THE WATER ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- WATER MAIN (PURPLE ZONE) CONNECTION TO TANK 11
- WATER MAIN (PURPLE ZONE) IN THE EAST-WEST COLLECTOR
- PA1 WATER MAIN (PURPLE ZONE) WITH 2 CONNECTION POINTS TO THE EAST-WEST COLLECTOR
- TRAILS WITHIN PHASE OR SUBPHASE
- SIDEWALKS WITHIN PHASE OR SUBPHASE.
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS
- 10' SIDEWALK ALONG FOUNDERS PARKWAY FROM CRIMSON SKY DRIVE TO NORTHWEST PROPERTY BOUNDARY.
- 6'-10' SIDEWALK ALONG FOUNDERS PARKWAY FROM NORTHWEST PROPERTY BOUNDARY TO CROWFOOT VALLEY ROAD.

PHASE 2:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE NORTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS
- TRAILS ASSOCIATED WITH THE PLD
- PLD ROCK PARK BY DEVELOPER

PHASE 3:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE SOUTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

PHASE 4:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE SOUTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

PHASE 5:

- WATER MAIN (RED ZONE) CONNECTION TO FOUNDERS PKWY
- SANITARY CONNECTION TO THE NORTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

ABBREVIATIONS:

D.E.	DRAINAGE EASEMENT
DRNG	DRAINAGE
ESMT	EASEMENT
FM	SEWER FORCE MAIN
OSD	OPEN SPACE DEVELOPMENT
OSP	OPEN SPACE PLANNING
PA	PLANNING AREA
PH	PHASE
PLD	PUBLIC LAND DEDICATION
R.O.W.	RIGHT OF WAY
SS	SANITARY SEWER
U.E.	UTILITY EASEMENT
W	WATER

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CANYONS SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PHASING PLAN

NOT FOR CONSTRUCTION

DESIGNED BY: CGV
DRAWN BY: CGV
CHECKED BY: KJK

JOB NO. 20-245

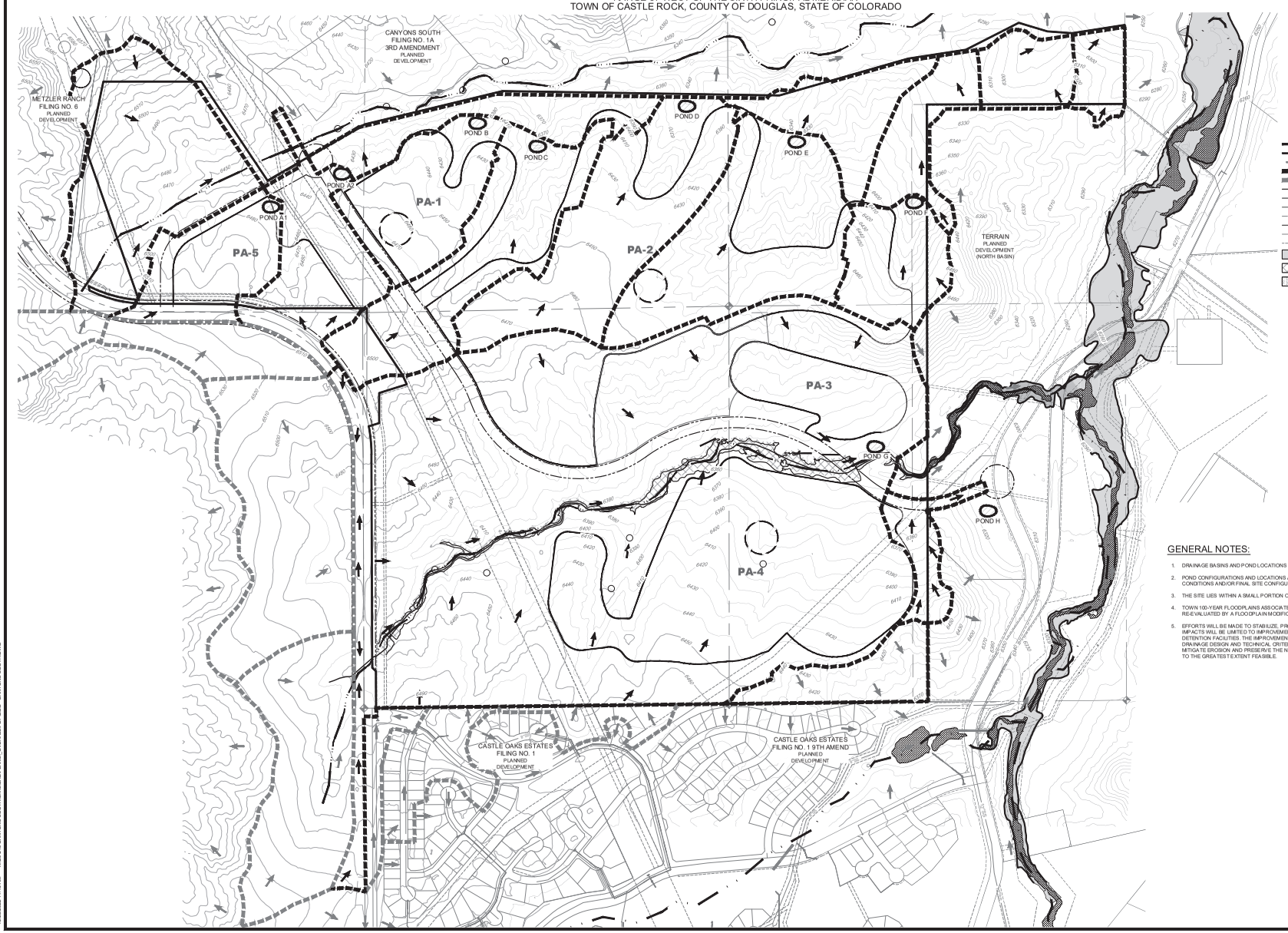
SHEET 4 OF 12

10/25/2022 11:40 AM X:\20-245 CANYONS SOUTH\CIVIL\CAD\PLANS_OVERALL\PDP\PHASING PLAN - CANYONS SOUTH.DWG

CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



0 300' 600'
1 inch = 300 ft.

LEGEND

- PHASE BOUNDARY
- PLANNING AREA BOUNDARY
- DIRECTIONAL FLOW ARROW
- PROPOSED DRAINAGE BASIN
- EXISTING DRAINAGE BASIN
- 5280 PROPOSED MAJOR CONTOUR
- 5279 PROPOSED MINOR CONTOUR
- 5280 EXISTING MAJOR CONTOUR
- 5279 EXISTING MINOR CONTOUR
- EX DRAINAGE WAY
- SECTION LINES
- EXISTING EASEMENT
- EX 100 YEAR FLOODPLAIN FEMA
- EX 100 YEAR FLOODPLAIN TOWN
- WETLANDS
- CONCEPTUAL POND LOCATION
- EXISTING CHECK DAM STRUCTURES

ABBREVIATIONS:

D.E.	DRAINAGE EASEMENT
DRNG	DRAINAGE
ESMT	EASEMENT
FM	SEWER FORCE MAIN
OSD	OPEN SPACE DEVELOPMENT
OSP	OPEN SPACE PLANNING
PA	PLANNING AREA
PH	PHASE
PLD	PUBLIC LAND DEDICATION
R.O.W.	RIGHT OF WAY
SS	SANITARY SEWER
U.E.	UTILITY EASEMENT
W	WATER

GENERAL NOTES:

1. DRAINAGE BASINS AND POND LOCATIONS ARE APPROXIMATE.
2. POND CONFIGURATIONS AND LOCATIONS ARE CONCEPTUAL AND MAY CHANGE DUE TO FIELD CONDITIONS AND/OR FINAL SITE CONFIGURATIONS.
3. THE SITE LIES WITHIN A SMALL PORTION OF ZONE A OF THE FEMA 100-YEAR FLOODPLAIN.
4. TOWN 100-YEAR FLOODPLAINS ASSOCIATED WITH THE MCMURDO GULCH TRIBUTARY 3 WILL BE RE-EVALUATED BY A FLOODPLAIN MODIFICATION STUDY.
5. EFFORTS WILL BE MADE TO STABILIZE, PROTECT, AND PRESERVE THE MAJOR DRAINAGEWAYS ON-SITE. IMPACTS WILL BE LIMITED TO IMPROVEMENTS IN THE AREAS OF DISCHARGES FROM THE PROPOSED DETENTION FACILITIES. THE IMPROVEMENTS WILL CONFORM TO THE TOWN OF CASTLE ROCK STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA MANUAL. THESE IMPROVEMENTS WILL BE DESIGNED TO MITIGATE EROSION AND PRESERVE THE NATURAL CHARACTER AND HISTORICAL DRAINAGE PATTERNS TO THE GREATEST EXTENT FEASIBLE.

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CANYONS SOUTH
CASTLE ROCK, COLORADO

PLANNED DEVELOPMENT PLAN (PDP)
GRADING & DRAINAGE

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DESIGNED BY: CGV
DRAWN BY: CGV
CHECKED BY: KJK

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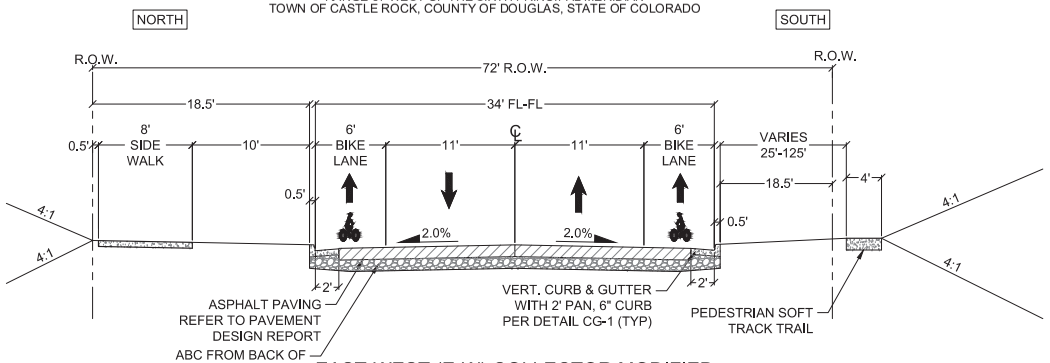
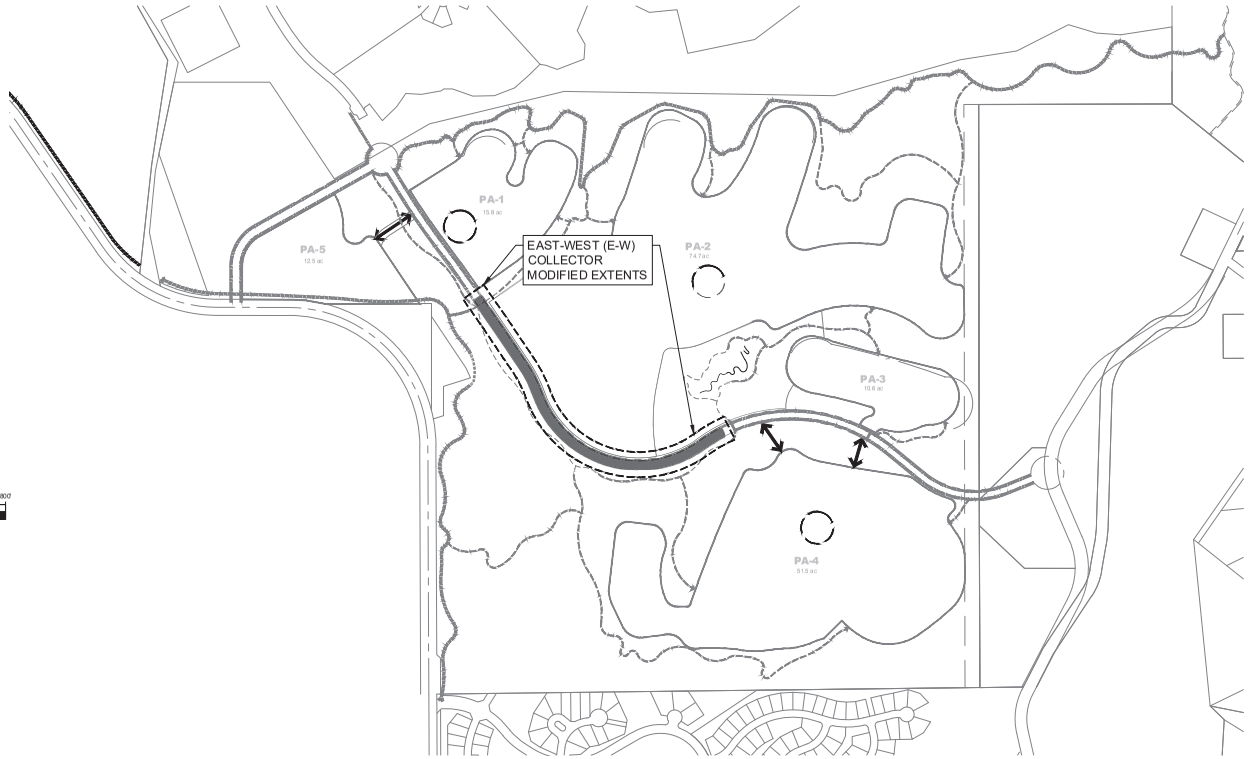
CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



EAST-WEST (E-W) COLLECTOR MODIFIED
72' ROW
1" = 5'



NOTE:

1. A MODIFICATION TO THE TOWNS COLLECTOR RESIDENTIAL TYPICAL SECTION IS PROPOSED FOR AN 8 FT WIDE SIDEWALK ON THE NORTH SIDE ONLY FOR THE EAST-WEST (E-W) COLLECTOR. SEE SECTION THIS SHEET & TCV22-0115.
2. ALL PROPOSED STREET SECTIONS OTHER THAN THE E-W COLLECTOR MEET TOWN STANDARDS FOUND IN THE TOWNS TRANSPORTATION DESIGN CRITERIA MANUAL.
3. SEE LEFT & PHASING PLAN FOR LOCATION

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CANYONS SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
ROAD SECTIONS

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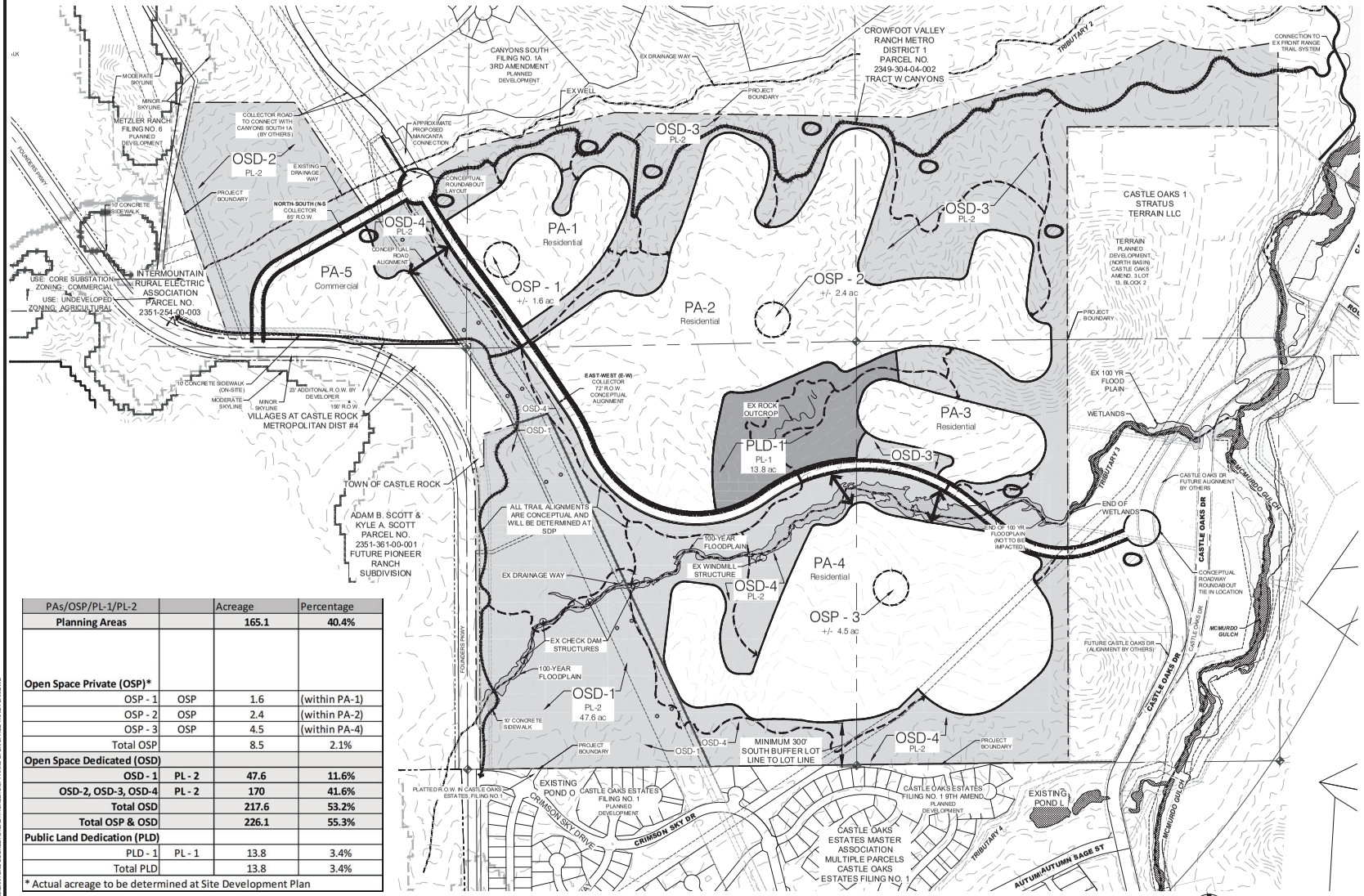
CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- PROPERTY BOUNDARY
- EASEMENTS
- DRAINAGEWAY
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS
- PLD (PARK LAND DEDICATION)
- OSD (OPEN SPACE DEDICATION)
- OSP (OPEN SPACE PRIVATE)
- 10' CONCRETE TRAIL
- 8' SIDEWALK
- 4' SOFT SURFACE TRAIL
- ACCESS POINT
- PROPOSED POND

NOTE:
OPEN SPACE AREAS ARE CONCEPTUAL. FINAL AREAS AND ACREAGES WILL BE DEFINED AT SITE PLAN.

PAs/OSP/PL-1/PL-2		Acreage	Percentage
Planning Areas		**165.1**	**40.4%**
Open Space Private (OSP)*			
OSP - 1	OSP	1.6	(within PA-1)
OSP - 2	OSP	2.4	(within PA-2)
OSP - 3	OSP	4.5	(within PA-4)
Total OSP		8.5	2.1%
Open Space Dedicated (OSD)			
OSD - 1	**PL - 2**	**47.6**	**11.6%**
OSD-2, OSD-3, OSD-4	**PL - 2**	**170**	**41.6%**
Total OSD		**217.6**	**53.2%**
Total OSP & OSD		**226.1**	**55.3%**
Public Land Dedication (PLD)			
PLD - 1	PL - 1	13.8	3.4%
Total PLD		13.8	3.4%

* Actual acreage to be determined at Site Development Plan

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PARKS, OPEN SPACE AND TRAILS PLAN

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CHECKED BY:

JOB NO. 20-245

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CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
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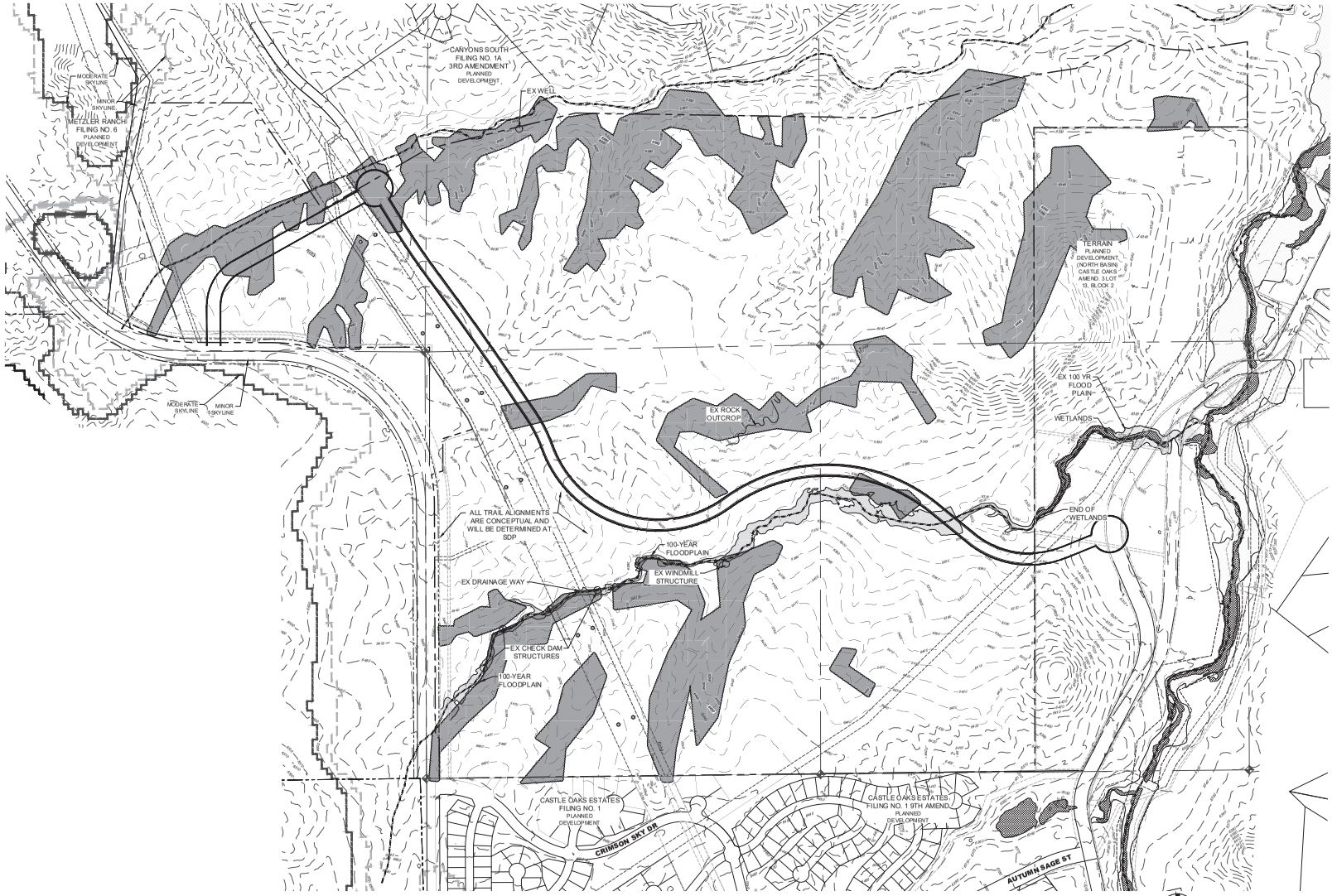
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- PROPERTY BOUNDARY
- EASEMENTS
- DRAINAGEWAY
- EXISTING PONDEROSA PINE VEGETATION STANDS
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
NATURAL FEATURES

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CHECKED BY:

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CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP ZONING REGULATIONS

SECTION 1 GENERAL PROVISIONS

1.1 PURPOSE

A. Statement of Purpose

The purpose of the Planned Development Plan Zoning Regulations (PDP Zoning Regulations) is to establish standards for the development and improvement of the Canyons Far South property (Property). The standards contained in these PDP Zoning Regulations are intended to carry out the goals of the Canyons Far South Planned Development Plan (PDP).

B. Application

These standards and development controls shall apply to the Property as shown on the PDP. These PDP Zoning Regulations run with the land and shall bind the Owner and its successors or assigns of the Property.

C. Development Phasing

The development phasing order indicated on the PDP is only advisory in nature as set forth in the General Notes thereon, and is not obligatory upon the Owner pursuant to the provisions of the Development Agreement described below.

D. Severability of Provisions

In the event any provision herein shall be determined to be illegal or void by the final order of any court of competent jurisdiction, the remaining provisions shall remain in full force and effect.

E. Annexation and Development Agreement

In addition to these regulations, certain provisions of the development of the PDP are controlled by the Annexation and Development Agreement ("Development Agreement") between the Town of Castle Rock and the Owner as approved by the Town Council on the _____ day of_____, 2022, by Resolution No. _____.

1.2 AUTHORITY

A. Authority

The authority of these PDP Zoning Regulations is Chapter 17.32 (PDP-Planned Development District) of the Castle Rock Municipal Code, as amended (Code).

B. Adoption

The Town Council approved the PDP and PDP Zoning Regulations pursuant to Section 17.34 of Title 17 (Zoning) of the Code after appropriate public notice and hearing on _____, 2022 by Ordinance No. _____.

C. Relationship of Town of Castle Rock Regulations

All Town ordinances and regulations, as the same are amended from time to time, shall apply to and be enforceable in a Planned Development. Accordingly, such Town ordinances and regulations shall govern and control over any conflicting provisions in the PDP Zoning Regulations unless such conflicting provision is vested as an express property development right under the Development Agreement pursuant to Chapter 17.34, Section 17.30.040, A.3. of the Code.

D. Maximum Level of Development

The total number of dwelling units approved for development within each established Planning Area pursuant to the PDP is the maximum allowed for platting and development within that Planning Area. The actual number of dwelling units approved within a Planning Area will be determined at the Site Development Plan (SDP)/Subdivision Plat stage of review. However, in no event shall the total count of all residential dwelling units under the PDP Plan exceed 474.

1.3. CONTROL PROVISIONS

A. Incorporation of the PDP

The PDP includes the type and intensity of permitted uses, and the location and boundaries of Planning Areas, and is hereby incorporated by reference into these PDP Zoning Regulations.

B. Planning Area Boundaries

The boundaries and acreage of all Planning Areas within the Property are shown on the PDP. Where a Planning Area abuts an internal local street or drive, the boundary shall be the centerline of the street. Where a Planning Area abuts an arterial or collector street, the boundary shall be the right-of-way of that street as indicated on the PDP.

C. Administrative Amendments to the PDP Acreage and Dwelling Unit Count per Planning Area

There shall be limited flexibility in determining the exact location of the Planning Area boundaries and Dwelling Unit count within designated Planning Areas. A maximum of twenty percent (20%) change or adjustment to the Planning Area boundaries, as measured by acreage, and in Dwelling Unit count between and among Planning areas is permitted. The boundary change or adjustment must be supported by an analysis which shows that no more than twenty percent (20%) of permitted contiguous acreage is in a different location from the Planning Area boundary depicted on the PDP.

D. Road Alignments

The PDP is intended to depict general locations of roadways. Final road alignments are subject to adjustment and changes resulting from Owner's engineering studies. Minor changes to road alignments can be accomplished by the Owner through the platting process without any amendment to the PDP or PDP Zoning Regulations. Major road alignments, as determined by the Town of Castle Rock Development Services Director, shall follow the PDP Amendment procedure as provided in the Code.

SECTION 2 DEFINITIONS

In addition to the standard definitions found in the Town Code, the following definitions of terms shall apply to this PDP:

2.1 Paired Homes

Dwelling Units sharing one common building wall, a maximum total of 2 dwelling units per structure.

2.2 Cluster Home

Detached single-family dwelling unit sharing one common auto court access way.

2.3 Detached Accessory Structures

Accessory Structures which are not physically connected to the main dwelling unit on the lot. As used herein, the term detached accessory structure shall include, but not be limited to a pool house, outdoor kitchen structure, and a greenhouse or garden shed. These structures shall not count toward the total number of all residential dwelling units permitted under the PDP.

2.4 Owner

Canyons South LLC, or its successors or assigns.

2.5 Open Space Private - OSP

Open Space that is to remain in private common ownership and use and is maintained by an HOA or Metropolitan District which is suitable for a clubhouse as well as indoor or outdoor recreation facilities, pocket parks, landscaping, passive and/or active recreation, gardens, view protections and enhancement, buffers and/or other appropriate uses.

2.6 Open Space Dedicated (OSD) – PL-2

Open Space that will be dedicated to and owned and maintained by the Town. Land use will follow the Town of Castle Rock Municipal Code 17.30.030.

2.7 Public Land Dedication (PLD) – PL-1

Park land that will be dedicated to and owned and maintained by the Town. Land use will follow the Town of Castle Rock Municipal Code 17.30.020.

SECTION 3 PA-1, PA-2, PA-3, and PA-4 | RESIDENTIAL

3.1. Intent

The residential PA neighborhoods will include residential lots and accessory structures and uses, open space, streets, landscape tracts and trail corridors which will connect the residences to the Property's amenities and extensive trail networks.

3.2 Uses Permitted by Right

A. Detached single family dwellings with attached or detached private garages.
B. Paired Homes
C. Cluster Homes
D. Public and private open space, parks, and recreational uses, trails and facilities.
E. Recreation or clubhouse facilities and associated parking.
F. Public and Private Utilities and appurtenant facilities.
G. Drainage and detention facilities.

3.3 Accessory Uses and Structures

A. Community information kiosks
B. Community mailbox kiosks
C. Detached garages
D. Storage shed, 120 sq. ft. maximum and subject to architectural and maintenance controls/covenants
E. Private swimming pools and spas
E. Private tennis courts
F. Outdoor kitchen or kitchen/BBQ structures
G. A detached subordinate use of which is customarily incidental to that of the main building or to the main use of the land and which is located on the same lot with the main building or use.

3.4 Temporary Uses

A. Construction offices and material storage shall be permitted for a maximum period of sixty (60) consecutive days after completion of actual construction in those areas being served by such construction office or material storage area.
B. Temporary sales trailers, model homes with parking area, show home complexes, temporary sales signage and associated uses.

3.5 Residential Development Standards

A. Minimum standard lot Sizes:

Lot Type	Minimum Lot Size	Maximum Lot Size
Paired Home Lots	4,000 SF	5,500 SF
Cluster Homes Lots	4,875 SF (with shared access)	6,000 SF (with shared access)
Cottage Lots	4,250 SF	5,500 SF
Small Lots	5,500 SF	7,000 SF
Medium Lots	6,000 SF	8,500 SF
Large Lots	7,000 SF	11,700 SF

B. Maximum Building height: 35 feet for primary structures

C. Minimum standard lot width:
- At the street: 50 feet
- At building setback: 50 feet
- At a cul-de-sac, knuckle or similarly curved frontage at the street: 35 feet
- Flag lot width at street: 25 feet

D. Primary structure minimum setbacks:

	Front	Rear	Side	Side to Street	Notes
Paired Homes	10*	10*	5*	7.5	* Paired Home Front and Rear Setbacks must be offset 5ft from adjacent structure
Cluster Homes	10	5	7.5	7.5	
Cottage Lots	10	5**	7.5	7.5	** Rear 5 ft for garage, 25ft for house
Small Lots	10	25	5	7.5	
Medium Lots	15	30	7.5	10	
Large Lots	15	30	10	12.5	

E. Accessory structure maximum height: 25 feet

F. The PA 4 southern boundary with Castle Oaks Estates shall maintain a minimum rear lot line to rear lot line buffer of 300' separation.

G. Garage accessory structure minimum front setback (from local street right-of-way):
- 20 feet to the face of a garage for front loaded detached garage
- 15 feet to the side of a side loaded detached garage
- Accessory structures other than detached garages are not permitted forward of the front facade of the primary structure including the attached garage

H. Accessory structure minimum rear setback: 25 feet

I. Accessory structure minimum side setback: 10 feet

J. Accessory structure minimum side to street setback: 15 feet; 20 feet to the face of a side loaded detached garage

K. Encroachments

1. Uncovered decks and uncovered patios 30 inches or less above grade may encroach the rear or side setback provided they are no closer than five (5) feet to the rear or side property line.
2. Uncovered decks and patios greater than 30 inches in height above grade may encroach the rear or side setback provided they are no closer than 5 feet to a side lot line and 15 feet to the rear lot line.
3. Window Wells, Counterforts, Bay Windows and Roof Overhangs are permitted to encroach a maximum of 30" into primary structure setbacks.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP ZONING REGULATIONS

NOT FOR CONSTRUCTION

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____

JOB NO. 20-245

SHEET 9 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP ZONING REGULATIONS (CONTINUED)

SECTION 4 PA-5 | COMMERCIAL

4.1. Intent

The commercial use Planning Area is intended to provide neighborhood level commercial and retail. It will be accessed via the main entry road into the Property. Direct access from the project's main spine road, providing internal access from the residential planning areas interior to the project, may also be utilized. Open space, streets, landscape tracts and multi-modal trail corridors will connect the residences to this planning area's amenities and commercial uses. Individual lots within the commercial Planning Area will be defined at the SDP and Plat submittal.

4.2 Uses Permitted by Right

A. Retail
B. Restaurants
C. Office space
D. Personal Services
E. Public and private open space, plazas, parks, and recreational uses, trails and incidental related facilities
F. Utilities and appurtenant facilities
G. Drainage and detention facilities

4.3 Accessory Uses

A. Community information kiosks
B. Accessory structures
C. Outdoor merchandise displays, 120 sq. ft. maximum and subject to architectural and maintenance controls/ covenants

4.4 Uses by Special Review

A. Schools: day care centers, pre-school facilities, and learning facilities.
B. Food Service with Drive-Thru

4.5 Prohibited Uses

A. Automobile service/fuel station/wash/rental.
B. Auto body and vehicle/RV/boat storage, equipment, repair, sales and leasing.
C. Marijuana Establishments
D. Tattoo Parlors
E. Convenience Store with Gas Station
F. Outdoor Storage

4.6 Temporary Uses

A. Construction offices and material storage shall be permitted in all use areas during and for a maximum period of sixty (60) consecutive days after cessation of actual construction in those areas being served by such construction office or material storage area.
B. Temporary sales trailers, model homes with parking area, show home complexes, temporary sales signage and associated uses.

4.7 Development Standards

A. Minimum standard lot area: 2,000 square feet
B. Maximum Building size: 25,000 square feet
C. Maximum height (Buildings and Structures): 35 feet for buildings and structures. Signature architectural elements such as a clock tower, windmill, or entry/landscape feature are limited to a maximum height of 45 feet.
D. Setbacks
  i. Primary Structure
    a. ROW
      1. Front
        (a) From Founders: 30 feet
        (b) From Spine Road: 30 feet
        (c) From Internal Road: 0 feet
      2. Rear setback: 10 feet
      3. Side setback
        (a) From Founders: 25 feet
        (b) From Spine Road: 25 feet
        (c) From Internal Road: 10 feet
    b. Lot Line
      1. Front: 0 feet
      2. Rear: 10 feet
      3. Side: 0 feet
  ii. Accessory Structure
    a. ROW
      1. Front: 45 feet
      2. Rear: 20 feet
      3. Side: 10 feet
    b. Lot Line
      1. Front: 30 feet
      2. Rear: 10 feet
      3. Side: 10 feet
  iii. Encroachment of Patios and Uncovered Decks
    a. Setback from ROW
      1. Front: 5 feet
      2. Side: 5 feet
    b. Setback from Lot Line
      1. Rear: 5 feet
      2. Side: 5 feet
  iv. Encroachment of Canopies & Overhangs
    a. Into ROW setback
      1. Front: 5 feet
    b. Into Lot Line setback
      1. Front: 5 feet

SECTION 5 Public Land Dedication | PLD-1

5.1 Intent

Public Land Dedication (PLD) is intended to be municipally-owned land, used for public purposes and satisfies the PLD requirements of the Town of Castle Rock Subdivisons Regulations of the Municipal Code Title 16. The PLD in this PD Plan is zoned PL-1 which allows active and developed parks. All permitted uses and development standards for PL-1 are established in the Town of Castle Rock Municipal Code Title 17.

SECTION 6 Dedicated Open Space | OSD-1, OSD-2, OSD-3, OSD-4

6.1 Intent

Dedicated Open Space (OSD) is intended to be municipally-owned, used for public purposes and counts toward the minimum 20% PD Open Space requirement. The OSD shown in this PD Plan is zoned PL-2 which allows passive recreation uses such as trails and open space. All permitted uses and development standards for PL-2 are established in the Town of Castle Rock Municipal Code Title 17.

SECTION 7 OSP-1, OSP-2, OSP-3 | OPEN SPACE PRIVATE (OSP)

7.1 Intent

Open Space Private (OSP) includes clubhouse, park, and recreational amenities accessible only to residents living within the property and their guests and will be owned and maintained by an HOA or Metropolitan District. All other land designated as Open Space Private (OSP) on the PDP (subject to adjustment of the boundaries thereof as provided below in the Development Standards), will be dedicated to a Metropolitan District, homeowners' association, or other entity designated by the Owner at such time as adjacent property is platted. Such open space shall thereafter be owned and maintained by the Metropolitan District, homeowners' association, or other entity to which the dedication is made.

7.2 Uses and Structures Permitted by Right in OSP

A. Recreation or Clubhouse facilities and associated Parking
B. Swimming Pools and Spas and support facilities
C. Active Parks and recreational elements including playgrounds and sports courts
D. Natural/unpaved or paved pedestrian and bicycle trails.
E. Interpretive and Directional Signage
F. Community entry and other typical community signage
G. Picnic areas including shelters
H. Seating nodes and lookouts including open air shelters
I. Grading and drainage improvements
J. Public utility improvements and associated structures
K. Neighborhood parks and playgrounds
L. Irrigation, water storage, distribution and well facilities
M. Water, Wastewater, Utility Service Facilities, Drainage Facilities
N. Parking Areas
O. Windmills and other existing structures on the property
P. Landscape Improvements

7.3 Development Standards. Development standards for the OSP are as follows:

A. Maximum Height: Fifty (50) feet;
B. Minimum Front Yard Setback: A minimum of fifteen (15) feet from the property line; twenty-five (25) feet if abutting an arterial street.

SECTION 8 OVERALL PROJECT STANDARDS

These PDP Regulations shall not preclude the application of Town ordinances, including Code revisions, which are of general application and uniformly applied throughout the Town, unless such application would conflict with an express vested property right established pursuant to the Development Agreement. The standard zoning requirements of the Town of Castle Rock Zoning Ordinance including off-street parking, development standards, landscaping, site development, accessory and temporary uses, and use by special review and variance processes shall apply to this Planned Development, except as otherwise modified herein and by the following;

8.1 General Project Description

The PDP consists of approximately 409 acres with an approved maximum of 474 single family detached or paired dwelling units. The overall gross residential density for the property is 1.16 units per acre. The general character and layout of the development includes preservation of major drainageways, vegetation and topographic features which act as buffers between Planning Areas within the project and at project edges with the Macanta community to the north and the Castle Oaks Estates community to the south. An approximate 13-acre parcel, PA 5, will provide neighborhood serving retail services and be accessible off of the main entry road into the project near Founders Parkway.

8.2 Fencing

All existing perimeter fencing is permitted to remain as is or can be modified and maintained by the Owner and or HOA. If the existing fence is intentionally removed, the new fencing requirements shall apply. The existing fence type may be replaced with similar fencing if the fence is damaged. The following requirements apply to any new fencing.

A. For Lots adjacent to open space perimeter fences are limited to a maximum height of four (4) feet and shall be split rail or open rail.
B. Fences taller than 30 inches in height above the street flowline are prohibited in sight distance easements.
C. Solid wood privacy fences are not permitted for lots that abut Open Space or are immediately adjacent to a road ROW. A 2" x 4" wire mesh grid is permitted on the lot side of the open rail fence for pet enclosure. Solid wood property fences are allowed for back-to-back lots along the back property line and up to 10 feet from the most setback element of the front building façade.
D. Barbed wire and chain link are not permitted fencing types within any Planning Areas.
E. The existing typical agricultural wire fence is permitted to define the Property boundary along Castle Oaks Estates to the south, Founders Parkway ROW, Macanta to the north and along the eastern property edge.
F. Additional fencing guidelines will be provided in future design guidelines/covenants provided in guidelines and managed as part of the covenants established and managed by the HOA or Metro District.

8.3 Landscaping

A. Landscape design regulations will be provided in future design guidelines/covenants established by the HOA, contracts and/or easements as established with the adjacent neighbors and HOA.
B. All landscaping shall be in conformance with Town of Castle Rock Landscape and Irrigation Performance Standards and Specifications, as amended.
C. The provisions and restrictions of the Property's Water Efficiency Plan (WEP) are applicable to all developed property within the Canyons Far South PDP.

8.4 Grading/Drainage

The grading/drainage of an individual lot or open space tract shall not vary from the Final Plat Grading Plan without the written approval of Canyons Far South and its Engineer(s) and review and approval by the Town. Any unauthorized work performed will be required to be returned to the specified grade by the individual(s) or organization(s) that authorized the change without proper approval.

8.5 Retaining Walls

All retaining walls adjacent to Public Street Right-of-Way are to be constructed, or faced, with natural stone material (or equal as identified in the Architectural Design Guidelines). Walls greater than 4-feet in height shall be approved for material and color per the Architectural Design Guidelines. Retaining wall height shall not exceed 8 feet. Any walls over 8 feet in height shall be tiered with a minimum 4 ft planting zone between wall segments to accommodate the structural geogrid, healthy plantings, drainage, and to reduce visual impact. Walls shall not impair traffic visibility.

All retaining walls are to be constructed, or faced, with natural stone material or Allan Block to be further defined within the Architectural Design Guidelines.

8.6 Existing Vegetation

Areas of significant scrub oak or mature ponderosa pine trees located in the natural open space outside of the Planning Areas will be left undeveloped, wherever practical, to provide habitat for wildlife, erosion protection and visual buffering.

8.7 Planning and Design

A. Design and construction of any lot or structure shall consider the relationship of roads and buildings to existing slope grades and drainage-ways and shall strive to achieve a fit with the existing landscape and topography that will attempt to minimize disturbance.
B. Structures in sloping areas shall be designed to conform to the slope by means of walk out lower levels, stepped foundations, retaining walls or similar methods that will seek to minimize grading, site preparation and site disturbance.
C. Grading shall be shaped to compliment the natural land forms and areas outside the limits of construction will be fence protected during construction.
D. Roads in steeply sloping or heavily vegetated areas shall be designed to minimize the area of disturbance. Where practical, clearing of vegetation within the right-of-way shall be feathered to create more natural appearing edges.

8.8 OSD-4 BUFFER AND BERM

A 300' open space buffer, within OSD-4, shall serve as a transition from the existing neighborhoods in Castle Oaks/Terrain. The buffer will have the following design considerations. See Conceptual Buffer Landscape Rendering on Sheet 12.

A. The buffer area will extend from the east side of the existing Xcel easement for approximately 1,000' east along the southern property boundary of the Property.
B. The buffer area will measure 300' between the Terrain community and residential lot lines in the Property, measured by lot line to lot line.
C. Berms of varying height, not to exceed a maximum height of 10', shall be added east of the Xcel easement and west of the Black Hills Energy easement to add visual interest from the properties to the south. No single berm shall extend longer than 500'.
D. Vegetation shall include low-water use native plantings and trees and will be arranged in a manner to enhance screening while also blending with the natural landscape character. Trees shall be a minimum of 8 feet in height at the time of planting.
E. A 4' (four-foot) natural surface trail may be added in this buffer area.

SECTION 9 TRANSITIONAL USE

9.1 After approval of the PDP, incorporated herein by reference, any portion or portions of the property described as the PDP, which has not been subjected to an SDP, may be used for agricultural purposes until approval of an SDP for those area or areas in question. Agricultural uses, for the purposes of this section shall mean farming or ranching or support structures pertaining thereto.
9.2 Any activity permitted by this section shall be considered to be a valid pre-existing non-conforming use within the area described above until an SDP for such area or areas has been approved.
9.3 Areas or agricultural activities shall be closed to vehicular traffic and off- road recreation motor biking excepting agricultural vehicles and implements, emergency vehicles, vehicles engaged in utility and other maintenance work, and designees of the Owner.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP ZONING REGULATIONS

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

SHEET
10 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
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TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP DESIGN GUIDELINES

Section 10 - RESIDENTIAL ARCHITECTURAL DESIGN GUIDELINES

Architectural Design Guidelines for primary and accessory structures within the PDP will be prepared by the Owner. The purpose of the Architectural Design Guidelines is to ensure that primary and accessory structures are consistent with this Section 10 and the design vision and objectives of the PDP. Builders must submit completed architectural plans to the Canyons Far South Architectural Design Control Committee (ACC) created pursuant to the Architectural Design Guidelines for review and adherence to the architectural guidelines prior to submitting an application for building permit to the Town of Castle Rock.

A. Design Guidelines

The Owner shall prepare written Architectural Design Guidelines at the time of each respective Site Development Plan submittal which shall govern the design requirements for each respective Residential Planning Area (PA1, PA 2, PA 3, and PA 4). Such guidelines will include architecture styles, materials and colors, general lot layouts and general landscaping requirements. Changes and/or amendments to the Architectural Design Guidelines may be made by the ACC.

B. Architectural Design Control Committee

All development within the PDP shall be subject to recorded private Covenants, Conditions and Restrictions ("CC&Rs") which will establish one or more ACC committees that will utilize written design standards and architectural guidelines ("Architectural Design Guidelines") in the review of all development within the PDP. The Architectural Design Guidelines will define specific site and building requirements such as colors, materials, landscaping and other items that will enable the Canyons Far South ACC to assure the design integrity and intent of the PDP. The CC&Rs are intended to achieve a consistent quality image for the development of the Property.

C. Architectural Design Approval

Final architectural plans must be consistent with the Architectural Design Guidelines for each respective planning area, and must be submitted to the Canyons Far South ACC for review and approval. Plans not approved shall be modified in accordance with the requirements of the Owner and Architectural Design Guidelines and resubmitted for review and approval. Application for a building permit may not be submitted if the Owner has not approved the architectural plans for the respective planning area.

D. Amendments to Residential Architectural Guidelines

Amendments to this Section 10 (Residential Architectural Guidelines) may be submitted by the Owner, or successor, to the Town and subject to an administrative review and approval. The Towns standard level of service review timelines shall apply.

E. Architectural Variety

1. A variety of product types and building forms shall be used throughout the PDP. A diversity of architectural styles is encouraged to differentiate between the planning areas and to bring architectural interest into the community.
2. Single-story elements, such as porches, covered entries, and living space or garages, are strongly encouraged to establish pedestrian scale.
3. To maintain architectural variety along residential streets, adjacent or directly opposing homes shall not have the same building plan and elevation or the same exterior color package. Each floor plan or model shall have a minimum of two distinctly different building elevations.
4. The same building plan and elevation shall not be repeated directly across any street from the same model elevation.
5. The same building plan and elevation shall not be repeated more than once every 4 lots on the same side of the street except for the cluster product which will accomplish elevation changes with color and material.
6. Plot buildings to achieve interest by varying front setbacks where feasible, providing varied setbacks to different parts of the building to encourage massing breaks, using different plan forms and elevations on adjacent buildings, and utilizing different garage placements.

F. Design Standards

1. Each dwelling unit front elevation shall include a minimum of 2 windows or 1 window and door per floor, excluding the garage door.
2. Each dwelling unit front elevation shall include 2 or more wall plane changes with no less than 2 feet offset between the wall planes or covered front porch. Articulation that adds shadow and elevation plane variation is encouraged.
3. Columns or posts extending more than 36 inches above the ground which support structural elements such as porches, decks, or roofs should appear to be of adequate mass to support the structure above and shall be a minimum of 6 inches x 6 inches finished and complementary to the architectural style with appropriate detailing.
4. Side and rear dwelling unit elevations shall include but are not limited to the following.
   a. Window grids, if window grids are provided on the front elevation. The window grids shall be of the same style or otherwise in general conformity as the front elevation.
      i. Window grids are not required on picture windows.
   b. Decorative window trim shall be on all windows and should match the style on the front elevation.
   c. The inclusion of architectural detail elements such as: shutters, eave brackets, exposed rafter tails, corbels, lintels, gable end treatments, or other approved architectural features that match the front elevation.
   d. The use of a minimum of 2 styles of siding or 2 exterior cladding materials where the second material must have a substantial impact on the elevation. Approved materials include, masonry (cultured stone, stone, brick, stucco, or tile), lap siding, shingles, board and batten, or other decorative siding treatment.
   e. Rear elevations only: A wall plane change, including a covered porch or covered deck, with a minimum of 8 feet in width and at least a 2-foot offset between wall planes.
   f. Walkout plans only: A covered deck exposed to the public facing direction that is at least 80 square feet in size.
5. Buildings located on corner lots should be designed for the two-sides that face the public street with a higher level of architectural treatment. The corner lots generally include additional setback areas from adjacent public rights-of-way or open space to accommodate additional landscaping or architectural elements such as porches, balconies, and pop-outs

G. Roofing

1. A variety of roof forms should be used, and each dwelling unit model elevation shall have a differing mass than the other elevations for the same model.
2. The main roof should extend beyond any facade by a minimum of 12 inches unless appropriate to the architectural style.
3. Roof Pitch & Material:
   a. Roof pitches shall be complementary to the architectural style.
   b. 30-year composition asphalt shingle (minimum).

H. Exterior Materials

1. All exterior building materials shall be of high quality and shall be used in applications and treated appropriately to provide an over-all harmonious and long-lasting design appearance.
2. When siding or masonry cladding is used, it should be used in a location where its mass is logical and appropriate. In instances where siding or masonry wraps the exterior corner of the home, the siding or masonry should continue to a natural transition point such as an inside corner of a projecting wall, a column, a door or window or other logical point. In cases where no such feature exists near the corner, the siding or masonry wrap shall extend at least 2 feet from the outside corner or end at a natural break in architecture or wing fence.

I. Front Porch

1. The minimum size of a non-recessed front porch shall be 60 square feet of floor area, with a minimum depth of 6 feet.

J. Decks

1. Decks must be redwood, treated lumber or composite material (e.g. Trex Decking). Railings may be painted or stained in a color that is compatible with the color scheme of the home. Composite materials must also be a color compatible with the color scheme of the home.
2. Deck railing must also match that of the deck, existing railing on the house or the general scheme within the community.

K. Garages

1. Detached garages and all other outbuildings shall be subject to the same architectural design treatment and shall be constructed of the same or similar materials as the dwelling until on the same lot.
2. All garage doors must have composite or cedar clad facing, wood grain simulated metal facing equivalent, or equal, as approved by the Canyons Far South ACC.

L. Exterior Colors

1. All exterior color schemes shall be approved by the Canyons Far South ACC.
2. Color schemes should be natural in tones and complement the style of architecture. Accent and "punch" colors, such as front doors, shutters, etc. may be more pronounced.
3. A minimum of 3 color schemes options shall be offered for each dwelling unit elevation style.

Section 11 - COMMERCIAL DESIGN STANDARDS

Architectural design review of primary and accessory structures within PA5 of the PDP will be conducted by the Owner and the ACC. The purpose of the design review is to ensure that primary and accessory structures are consistent with the design vision and objectives of the PDP. Builders must submit completed architectural plans to the Owner and the Canyons Far South ACC for review and approval prior to submitting for an application for Site Development Plan to the Town of Castle Rock.

A. Building Design Standards:

1. Free standing buildings shall incorporate compatible four-sided design. All sides of a building open to view shall display a similar level of material quality and architectural interest.
2. Pedestrian oriented façade design shall be required, including variation in the building facade by using vertical or horizontal articulation, window and entry variations as well as patios, plazas or other landscaped pedestrian areas is encouraged. Strong vertical design elements such as windows, pilasters, columns, stairs, and towers should be used to identify individual commercial spaces.
3. Variations in roofline and building parapet walls shall be utilized to effectively break up massing, provide visual interest, and develop a 'neighborhood feel' characteristic.
4. Building design shall incorporate textured surfaces, projections, recesses, shadow lines, color, window patterns, overhangs, reveals, changes in parapet height to avoid monolithic shapes and surfaces.
5. Building materials and colors shall be selected to create exterior surface distinction and may be augmented with tenant selected materials provided that they maintain the overall quality and style of the project and are deemed appropriate by the Canyons Far South ACC.
6. Buildings shall be designed using high quality, durable and low maintenance materials.
7. Buildings that utilize CMU walls shall use integrally colored units. Painted CMU is not permitted.
8. Buildings that utilize tilt wall concrete wall panels for distinctive articulation, color patterning and elevation plane variation shall be incorporated to add a variety of texture and visual interest.
9. The style and placement of exterior accent lighting shall enhance the building's architectural elements such as entry features, pilasters, columns, and landscaping.
10. Each building should have distinctive base, middle and top. Architectural detailing or a change of materials or color at the ground level may be used to create the base. The elevation plane variations of a building's facade should be emphasized by use of color, arrangement of facade elements, or a change of exterior materials.
11. Large façade volumes or planes should be broken up into smaller elements in order to reduce the visual scale of a building. The mass of a building should be varied in form or divided to emphasize the various interior building functions. Building design should reinforce structural grid with pilasters and or colonnades.
12. A variety of building roof lines and parapet heights incorporating changes or elements should be provided.
13. Variations in rooflines can include gables, dormers, flat roofs, and well-defined parapets. Offsets in the roofline break up the mass of the roof and are encouraged.
14. Roof overhangs at pedestrian entries provide protection for shoppers and are encouraged.
15. Roofing materials should be of a color and material consistent with the architectural character of the building and should convey a sense of permanence and quality. Roofing color and material specifications are to be provided at the site development plan.
16. A mix of building detailing and accent materials is encouraged to add creativity and variety. Specific materials and colors are to be provided at with the site development plan. An example of these accent materials includes granite, wrought iron, slate, glass, tile, and others as appropriate. Light to medium intensity colors with low reflectivity are preferred as the background building color.
17. Brighter colors may be used for accents, trim or highlighting architectural features. The warm, subdued hues of natural, earth colors are encouraged.
18. Color can be used to impact the scale and form of a building by highlighting various architectural elements.
19. Integration of fabric/canvas awnings, flat metal awnings, and trellises is encouraged.
20. A variety of wall mounted exterior light fixtures are encouraged, which fit the period or architectural style proposed. Unshielded exterior lighting and wall packs are prohibited.
21. Delivery, loading, trash, and other service areas must be screened on two sides or integrated into the building.
22. Screening must be accomplished by a wall constructed of integrally colored CMU, architectural metal screening, stone, stucco, textured stained concrete, or brick to match the primary structure.
23. All roof top or pad mounted mechanical units must be screened from general public view and integrated into the over-all building design.
24. Parking shall incorporate a mix of on-street parking and smaller lots spread throughout the development to encourage a walkable commercial core. Final parking configuration will be determined at Site Development Plan.

B. Building Placement and Orientation:

1. Buildings adjacent to a sidewalk shall be situated to provide a strong visual and physical connection between the sidewalk and the first floor.
2. Development shall relate to the site's aesthetic setting and context considering impacts and enhancements to natural features and important pedestrian view corridors.
3. The importance of spaces between buildings should be recognized in over-all building design, and these spaces should be planned and useful in shape and not simply be left over areas.
4. A sense of entry shall be created into the development by using signage and landscaping.
5. The arrangement of buildings, parking, and outdoor areas should recognize the site characteristics and relate to the surroundings in pattern, function, scale, character and materials.
6. Trash storage areas, mechanical equipment and similar areas should be screened from the Founders Parkway view corridor.

D. Amendments to Commercial Design Standards

Amendments to this Section may be submitted by the Owner, or successor, to the Town and subject to an administrative review and approval. Amendments must meet the intent of the Canyons Far South design vision. The Towns standard level of service review timelines shall apply.

LOWE
CORE CONSULTANTS, INC.
3473 S. BROADWAY
ENGLEWOOD, CO 80113
303.703.4406
LOWECOREE.COM
CORE
DIG STUDIO, INC.
1521 15TH ST
DENVER, CO 80202
720.328.1986
DIGSTUDIO.COM
Dig Studio

CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP DESIGN GUIDELINES

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

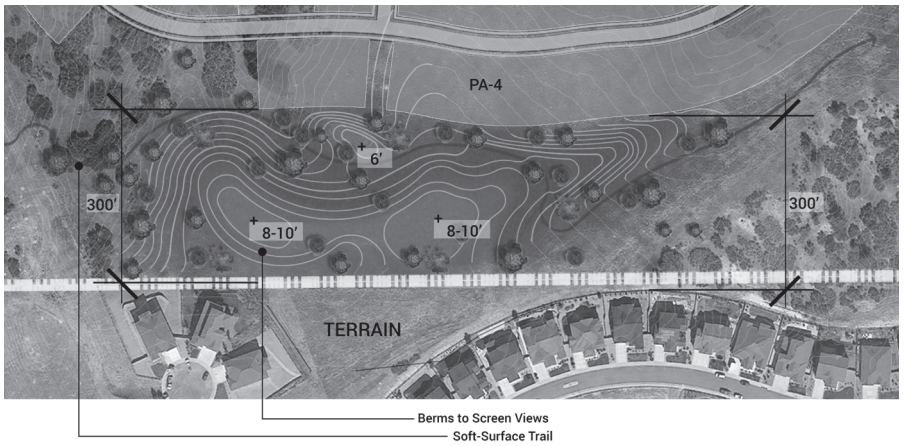
SHEET
11 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

CHARACTER OF SOUTHERN BUFFER



CONCEPTUAL PLAN FOR BUFFER AREA

CONCEPTUAL RENDERING OF BUFFER AREA

CHARACTER OF COMMERCIAL AREA

TYPICAL PEDESTRAIN ORIENTED STREETSCAPE

TYPICAL CENTRALIZED AREA FOR GATHERING, RETAIL, AND MULTI-MODAL TRAFFIC

NOTE:

IMAGES SHOWN FOR INTENDED CHARACTER OF BUFFER AND DEVELOPMENT.
ACTUAL LAYOUT AND BUILDING DESIGN WILL BE DETERMINED AT SITE DEVELOPMENT PLAN.

LOWE
CORE CONSULTANTS, INC.
3473 S. BROADWAY
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303.703.4444
LOWE@COREDE.COM
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1521 15TH ST
DENVER, CO 80202
720.328.1986
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Dig Studio

CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
COMMERCIAL AREA AND SOUTHERN BUFFER CHARACTER

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

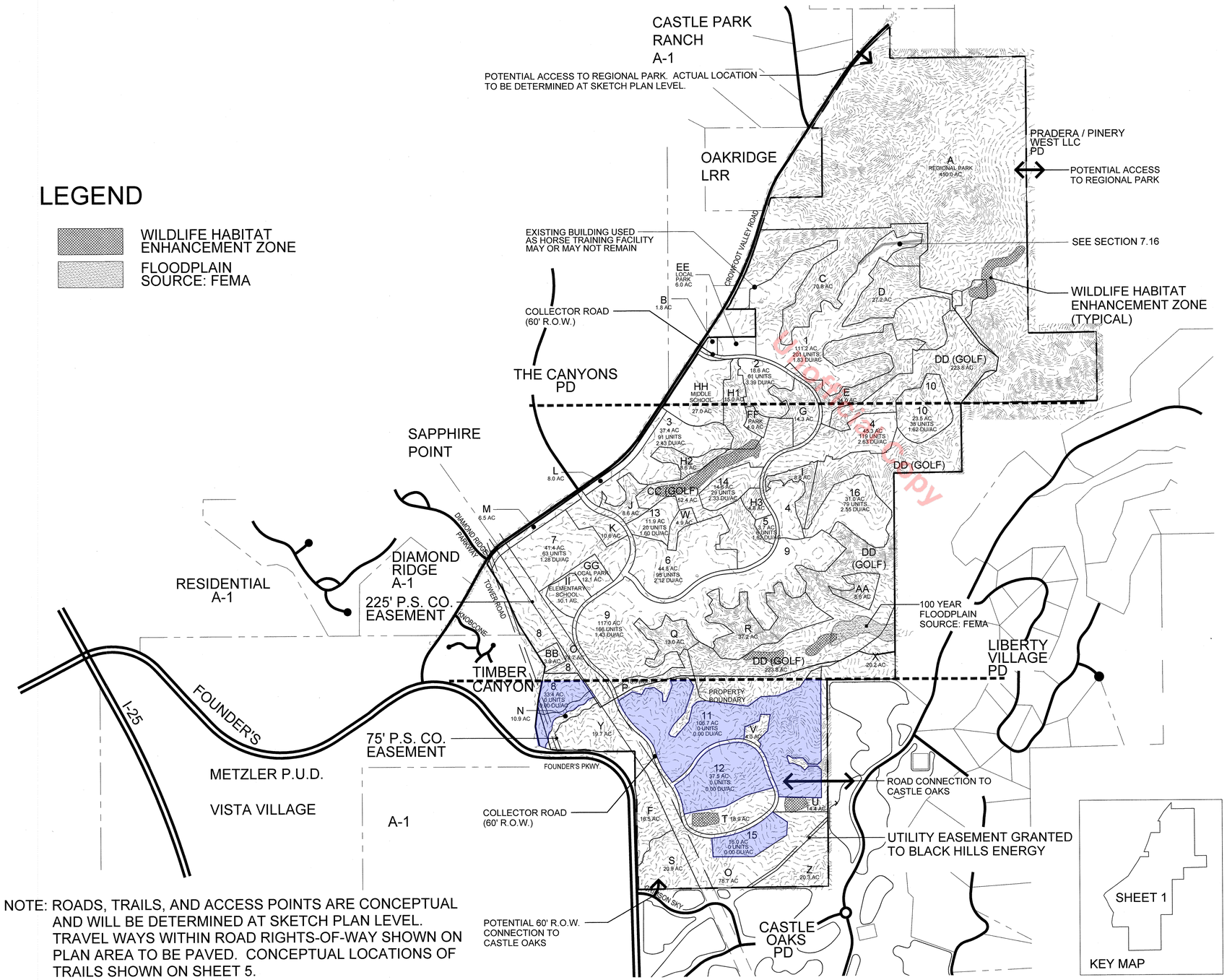
SHEET
12 OF 12

CANYONS SOUTH PLANNED DEVELOPMENT (PD) 7th AMENDMENT

A MAJOR AMENDMENT TO AMEND PLANNING AREA DENSITY
FOR PLANNING AREAS 1, 2, 3, 4, 7, 10, 11, 12, 13, 14, 15, 16
A PARCEL OF LAND BEING A PORTION OF SECTIONS 17, 18, 19, 20, 30, & 31, T7S, R66W OF THE 6TH PRINCIPAL MERIDIAN
AND SECTIONS 24 & 25, T7S, R67W OF THE 6TH PRINCIPAL MERIDIAN, DOUGLAS COUNTY, COLORADO.
2,043 ACRES - 968 RESIDENTIAL UNITS - ZR2022-003

LEGEND

- WILDLIFE HABITAT ENHANCEMENT ZONE
- FLOODPLAIN SOURCE: FEMA



NOTE: ROADS, TRAILS, AND ACCESS POINTS ARE CONCEPTUAL AND WILL BE DETERMINED AT SKETCH PLAN LEVEL. TRAVEL WAYS WITHIN ROAD RIGHTS-OF-WAY SHOWN ON PLAN AREA TO BE PAVED. CONCEPTUAL LOCATIONS OF TRAILS SHOWN ON SHEET 5.

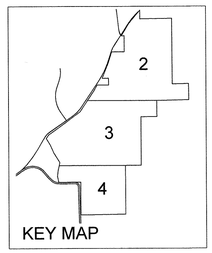
THE CANYONS SOUTH PD PLAN

PA	LAND USE	PD7 AC	PD7 UNITS	PD7 DENSITY
RESIDENTIAL				
1	PD RESIDENTIAL	111.2	201	1.81
2	PD RESIDENTIAL	18.6	61	3.28
3	PD RESIDENTIAL	37.4	91	2.43
4	PD RESIDENTIAL	45.3	119	2.63
5	PD RESIDENTIAL	3.7	6	1.62
6	PD RESIDENTIAL	44.8	95	2.12
7	PD RESIDENTIAL	41.4	63	1.52
8	PD RESIDENTIAL	33.4	0	0.00
9	PD RESIDENTIAL	117	166	1.42
10	PD RESIDENTIAL	23.5	38	1.62
11	PD RESIDENTIAL	106.7	0	0.00
12	PD RESIDENTIAL	37.5	0	0.00
13	PD RESIDENTIAL	11.9	20	1.68
14	PD RESIDENTIAL	14.6	29	1.99
15	PD RESIDENTIAL	16	0	0.00
16	PD RESIDENTIAL	31	79	2.55
SUBTOTAL		694	968	
B	NAT. OPEN SPACE	1.8		
C	NAT. OPEN SPACE	70.8		
D	NAT. OPEN SPACE	27.2		
E	NAT. OPEN SPACE	34		
F	NAT. OPEN SPACE	16.5		
G	NAT. OPEN SPACE	14.3		
H1	NAT. OPEN SPACE	15		
H2	NAT. OPEN SPACE	8.6		
H3	NAT. OPEN SPACE	4.8		
I	NAT. OPEN SPACE	8.8		
J	NAT. OPEN SPACE	8.6		
K	NAT. OPEN SPACE	10.6		
L	NAT. OPEN SPACE	8		
M	NAT. OPEN SPACE	6.5		
N	NAT. OPEN SPACE	10.9		
O	NAT. OPEN SPACE	78.7		
P	NAT. OPEN SPACE	15.3		
Q	NAT. OPEN SPACE	13		
R	NAT. OPEN SPACE	37.2		
S	NAT. OPEN SPACE	20.9		
T	NAT. OPEN SPACE	18.9		
U	NAT. OPEN SPACE	14.4		
V	NAT. OPEN SPACE	4		
W	NAT. OPEN SPACE	4.9		
X	NAT. OPEN SPACE	20.2		
Y	NAT. OPEN SPACE	19.7		
Z	NAT. OPEN SPACE	20.3		
AA	NAT. OPEN SPACE	8.6		
BB	NAT. OPEN SPACE	3.9		
SUBTOTAL		526.4		
A	Regional Park	450		
SUBTOTAL		450		
EE	Local Parks	6		
FF	Local Parks	4		
GG	Local Parks	12.1		
SUBTOTAL		22.1		
HH	Schools	27		
II	Schools	10.1		
SUBTOTAL		37.1		
CC	Golf Course	52.4		
DD	Golf Course	223.8		
SUBTOTAL		276.2		
	Road R.O.W.	37.2		
TOTAL		2043		

LAND USE	ACRES	UNITS	%OF SITE
PD RESIDENTIAL	694	968	34.0%
NAT. OPEN SPACE	526.4		25.8%
REGIONAL PARK	450		22.0%
LOCAL PARKS	22.1		1.1%
SCHOOLS	37.1		1.8%
GOLF COURSE	276.2		13.5%
ROAD R.O.W.	37.2		1.8%
TOTAL	2043	968	100.0%

PD Amendment Chart

Amendment #	Date
7 - Minor	In process
6 - Minor	4/27/2021
5 - Minor	4/7/2017
4 -Major	2/6/2008
3 - Minor	7/2/2007
2 - Major	3/30/2007
1 - Minor	9/8/2006

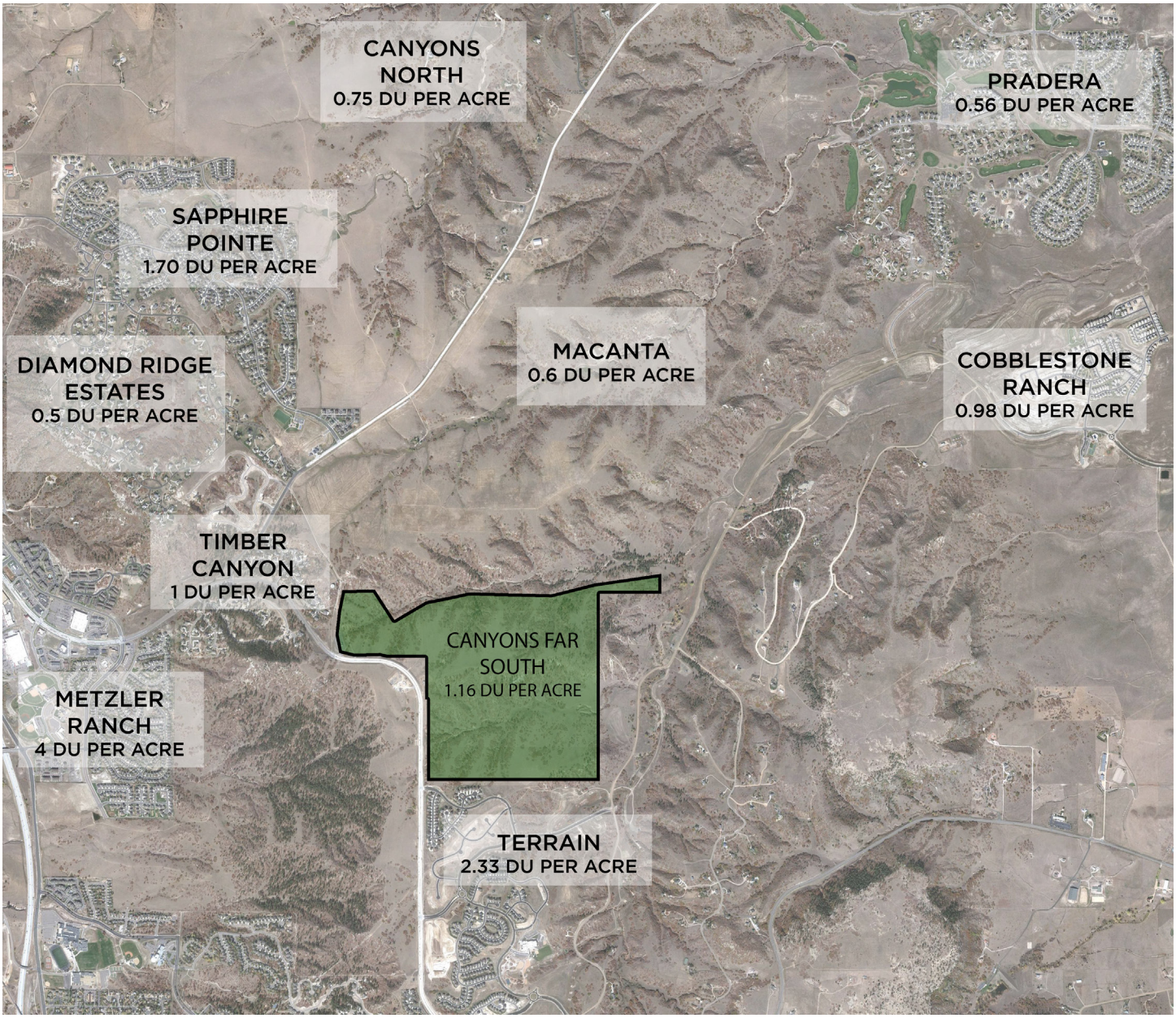


NORTH

0 1000' 2000' 3000'
SCALE: 1"=1000'-0"

DEVELOPER / APPLICANT:
HT CANYONS SOUTH DEVELOPMENT LP
1144 15TH ST., SUITE 3675
DENVER, CO 80202

LAND PLANNERS:
PCS GROUP
PO BOX 18287
DENVER, CO 80218
PREPARATION DATE: 03.22.2022

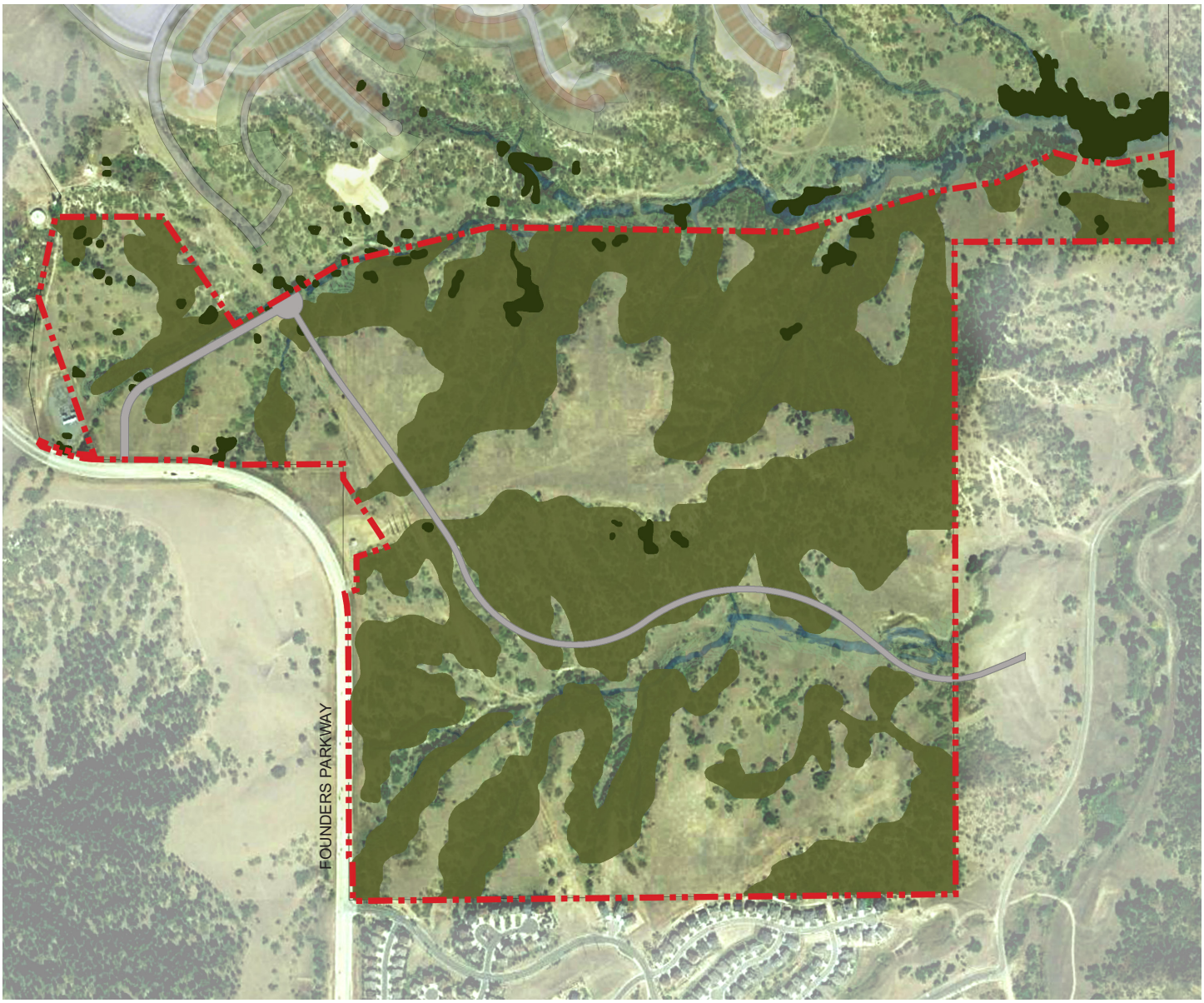


ADJACENT DENSITY
CANYONS FAR SOUTH

LEGEND:

- Developable Area
- Power Line Poles
- Main Road
- Easement
- Site Boundary

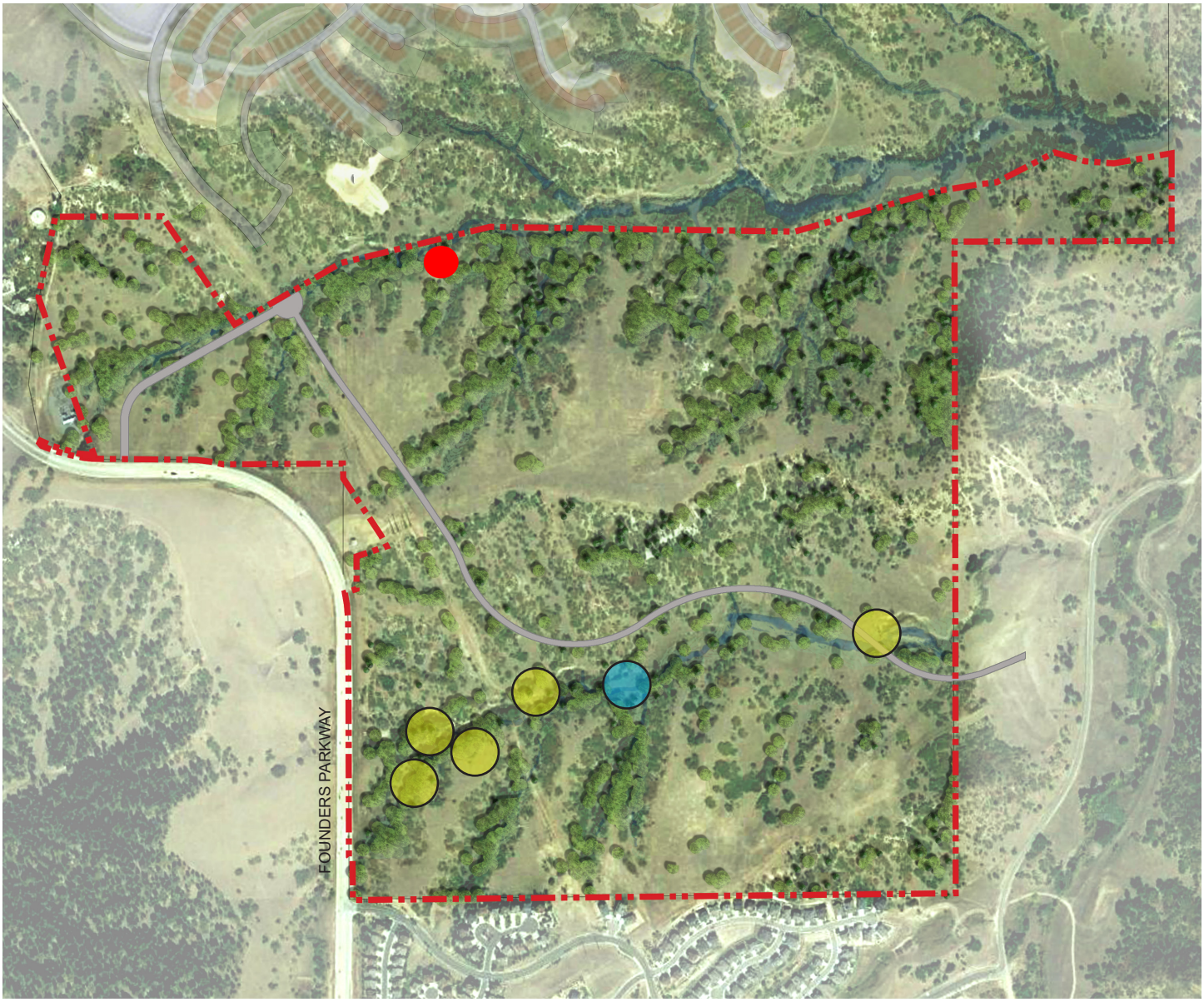
DEVELOPABLE AREA
CANYONS FAR



VEGETATION:

- Oak Shrubland
- Ponderosa Pine Forest
- Grasslands
- Main Road
- Site Boundary

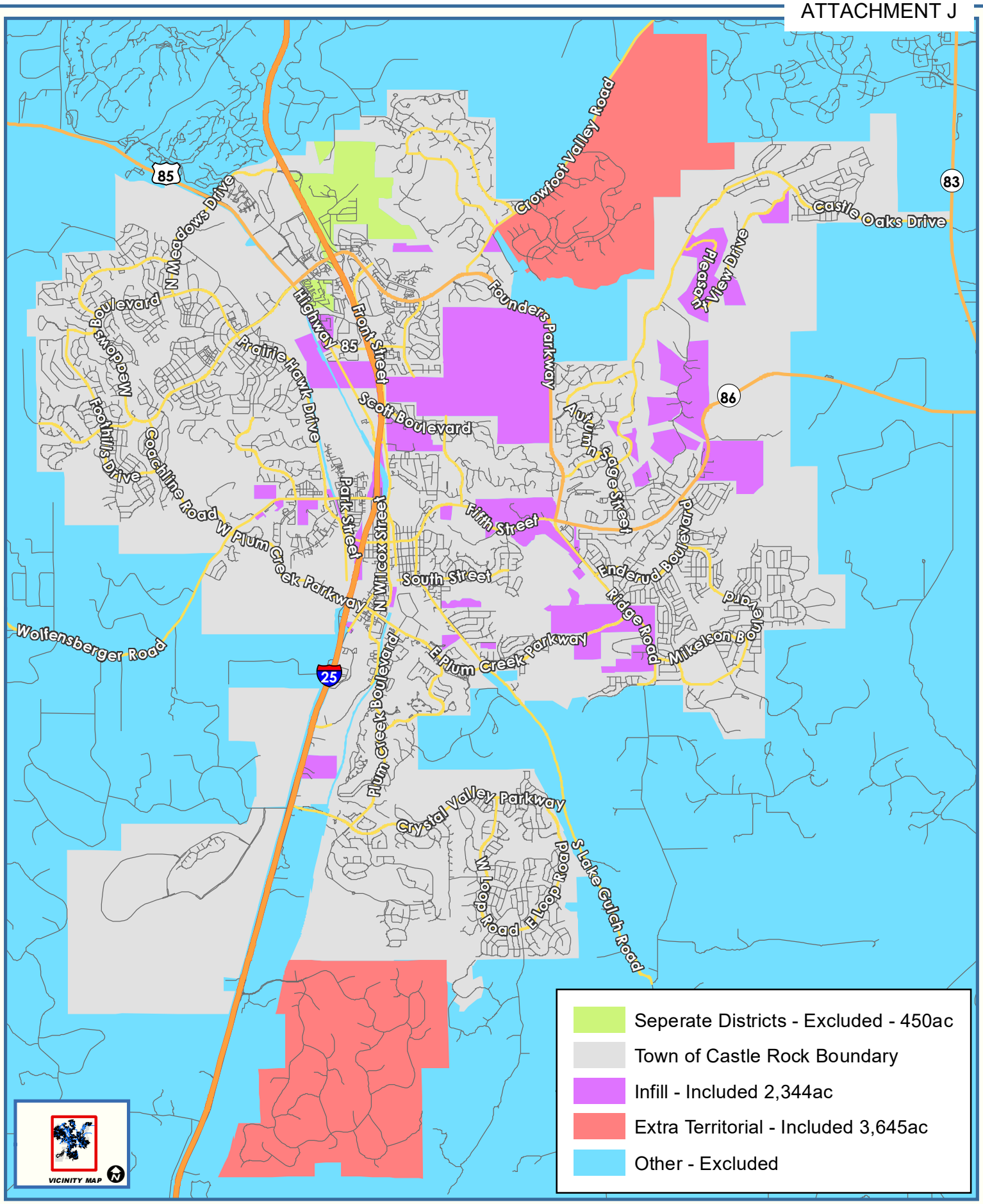
VEGETATIVE COVER
CANYONS FAR



LEGEND:

- Check Dam Structures
- Windmill
- Main Road
- Site Boundary
- Stone Water Well

ATTACHMENT J



CASTLE ROCK Qwater
Securing our future drop by drop

Castle Rock Water
Renewable Water
Inclusion Area

Date: 1/26/2022

Document Path: J:\GIS\Map Requests\2022\Internal_Requests\Inclusion_Map\InclusionMap.mxd

LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
Denver, CO 80206
(303) 333-1105
FAX (303) 333-1107
E-mail: lsc@lscdenver.com

TRANSPORTATION CONSULTANTS, INC.

December 6, 2021

Mr. Eric Clore
Lowe
5299 DTC Boulevard, Suite 1260
Greenwood Village, CO 80111

Re: Canyons South
Castle Rock, CO
LSC #210310

Dear Mr. Clore:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Canyons South development to address Town comments and to evaluate the local access points to the proposed collector streets. As shown on Figure 1, the site is located northeast of Founders Parkway (SH 86) and is proposed for annexation into the Town of Castle Rock, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; an adjustment to account for the ongoing pandemic; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the growth in background traffic or the impact of the site.

LAND USE AND ACCESS

The site is proposed to include about 474 single-family detached dwelling units, about 30,000 square feet of retail space, and about 20,000 square feet of office space. Access is proposed from several locations as shown in the conceptual site plan in Figure 2. The proposed collector street system will provide connectivity between Founders Parkway (SH 86), Crowfoot Valley Road, and Castle Oaks Drive.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **Founders Parkway (SH 86)** is a four-lane arterial roadway southwest of the site. The intersections with Allen Way, Front Street, Woodlands Boulevard, Crowfoot Valley Road, and 5th Street/SH 86 are signalized with auxiliary turn lanes. The posted speed limit is 50 mph in the vicinity of the site. It is classified by CDOT as RA (Regional Highway). The CDOT Straight Line Diagram is attached.

- **Crowfoot Valley Road** is a north-south, four-lane major arterial north of the site. The intersection with Founders Parkway (SH 86) is signalized with auxiliary turn lanes. The posted speed limit is 40 mph in the vicinity of Founders Parkway but increases to 45 mph to the north. It is planned to be a four-lane roadway from Castle Rock to Parker over time.

- **Castle Oaks Drive** is a two-lane collector roadway east of the site with a 40 mph posted speed limit. The proposed Community Collector roadway (Minor Collector) is planned to connect east to Castle Oaks Drive and northwest towards Crowfoot Valley Road.

Existing Traffic Conditions

Figure 3a shows the existing traffic volumes, lane geometry, and traffic control in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes and average daily traffic volumes are from the attached traffic counts conducted in April, May, and June, 2021 by Counter Measures, Inc.

Pandemic Adjustment

Figure 3b shows the existing traffic volumes adjusted for the ongoing pandemic. The traffic volumes at Intersection #8 are based on the higher of the traffic volumes in Figure 3a and the 2019 traffic volumes provided by Town staff (attached for reference) grown for two years at an annual rate of four percent. The traffic volumes at Intersection #7 were increased by five percent to maintain a conservative analysis because the traffic volumes at Intersection #8 were generally higher than the historic 2019 traffic volumes. Intersections #1, #2, #3, #4, and #6 were adjusted based on the higher of the traffic volumes in Figure 3a and the 2018 traffic volumes in Figure 3 of the *Pine Canyon TIA* by Kimley Horn grown for three years at an annual rate of three percent.

2025 and 2041 Background Traffic

Figure 4 shows the estimated 2025 background traffic and Figure 5 shows the estimated 2041 background traffic. The 2025 background traffic in Figure 4 assumes four years of growth at an annual rate of three percent plus half of the 2041 background traffic passing through the site. Little or no growth was assumed for movements serving built out developments. The 2041 background traffic in Figure 5 assumes the 2041 total traffic volumes in Figure 9 less the total site-generated trips in Figure 7d with the following exception: Intersection #8 is based on the 2040 traffic projections provided by Town staff (attached) grown for one year at an annual rate of three percent. This was done because the Canyons South development was not included in the modeling that resulted in the 2040 traffic volumes provided. The volumes on the south leg of Intersection #6 are based on the traffic volumes in Figure 7a from the 2017 *Pine Canyon TIA*

by LSC. The buildout lane geometry at Intersection #8 is based on the figure provided by Town staff (attached). The side road volumes at Intersections #1, #2, #3, and #4 are based on the 2040 total traffic volumes from Figure 12 of the 2020 *Pine Canyon TIA* by Kimley Horn with some adjustments based on the recent traffic counts.

About 30 percent of Castle Oaks Drive traffic at Intersection #7 is expected to divert to the proposed minor collector roadway through the site.

Existing, 2025, and 2041 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in Figures 3b, 4, and 5 were analyzed to determine the existing, 2025, and 2041 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached. CDOT and the Town plan to implement adaptive traffic signal control between I-25 and Crowfoot Valley Road so those intersections were optimized with a 120-second cycle length per coordination with CDOT and Town staff.

1. **Founders Parkway (SH 86)/Allen Way:** This signalized intersection currently operates at an overall LOS "C" during both morning and afternoon peak-hours and is expected to do so through 2025. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour.

2. **Founders Parkway (SH 86)/Front Street:** This signalized intersection currently operates at an overall LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour. By 2025, it is expected to operate at LOS "B" during the morning peak-hour and LOS "D" during the afternoon peak-hour. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour.

3. **Founders Parkway (SH 86)/Woodlands Boulevard:** This signalized intersection currently operates at an overall LOS "B" during both morning and afternoon peak-hours. By 2025, it is expected to operate at LOS "B" during the morning peak-hour and LOS "C" during the afternoon peak-hour. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "E" during the afternoon peak-hour. With implementation of the recommended mitigation the afternoon peak-hour can be improved to LOS "C".

4. **Founders Parkway (SH 86)/Crowfoot Valley Road:** This signalized intersection currently operates at an overall LOS "C" during the morning peak-hour and LOS "B" during the afternoon peak-hour and is expected to operate at LOS "C" through 2041.

5. **Connector Collector Road/Internal Collector Roadway:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

6. **Founders Parkway/Pioneer Ranch Access/Connector Collector Roadway:** This future signalized intersection is expected to operate at an overall LOS "B" or better through 2041.

7. **Castle Oaks Drive/Internal Community Collector:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

8. **Founders Parkway (SH 86)/Ridge Road/5th Street/SH 86:** This signalized intersection currently operates at an overall LOS "C" during both morning and afternoon peak-hours and is expected operate at LOS "D" or better through 2041.

9. **Connector Collector Roadway/Commercial Access:** This intersection was only analyzed in the total traffic scenarios.

10. **Internal Collector Roadway/Site Access #10:** This intersection was only analyzed in the total traffic scenarios.

11. **Internal Collector Roadway/Site Access #11:** This intersection was only analyzed in the total traffic scenarios.

12. **Internal Collector Roadway/Site Access #12:** This intersection was only analyzed in the total traffic scenarios.

13. **Internal Collector Roadway/Site Access #13:** This intersection was only analyzed in the total traffic scenarios.

14. **Internal Collector Roadway/Site Access #14:** This intersection was only analyzed in the total traffic scenarios.

15. **Internal Collector Roadway/Site Access #15:** This intersection was only analyzed in the total traffic scenarios.

TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed site based on the rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE).

The site is projected to generate about 7,321 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 125 vehicles would enter and about 277 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 407 vehicles would enter and about 309 vehicles would exit. Table 2 also shows the estimated pass-by trips.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the primary site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; and the site's proposed land use.

TRIP ASSIGNMENT

Figures 7a and 7b show the estimated assignment of the residential site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the residential trip generation estimate (from Table 2).

Figures 7c and 7d show the assignment of primary non-residential site-generated traffic based on the directional distribution percentages (from Figure 6) and the non-residential trip generation estimate (from Table 2).

Figure 7e shows the assignment of the passby site-generated traffic.

Figure 7f shows the assignment of the total site-generated traffic which is the sum of the volumes in Figures 7a through 7e.

2025 AND 2041 TOTAL TRAFFIC

Figures 8a and 8b show the 2025 total traffic which is the sum of the 2025 background traffic volumes (from Figure 4) and the total site-generated traffic volumes (from Figure 7f). Figures 8a and 8b also shows the recommended 2025 lane geometry and traffic control.

Figures 9a and 9b shows the 2041 total traffic which is the sum of the 2041 background traffic volumes (from Figure 5) and the total site-generated traffic volumes (from Figure 7f). Figures 9a and 9b also shows the recommended 2041 lane geometry and traffic control.

PROJECTED LEVELS OF SERVICE

The intersections in Figures 8a through 9b were analyzed to determine the 2025 and 2041 total traffic levels of service. Table 1 shows the level of service analysis results.

1. **Founders Parkway (SH 86)/Allen Way:** This signalized intersection is expected to operate at an overall LOS "D" or better during both morning and afternoon peak-hours through 2041.

2. **Founders Parkway (SH 86)/Front Street:** This signalized intersection is expected to operate at an overall LOS "D" or better during both morning and afternoon peak-hours through 2041.

3. **Founders Parkway (SH 86)/Woodlands Boulevard:** This signalized intersection is expected to operate at an overall LOS "B" during the morning peak-hour and LOS "C" during the

afternoon peak-hour through 2025. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour.

4. **Founders Parkway (SH 86)/Crowfoot Valley Road:** This signalized intersection is expected to operate at an overall LOS "C" during both morning and afternoon peak-hours through 2025. By 2041, this intersection is expected to operate at LOS "D" during the morning peak-hour and LOS "C" during the afternoon peak-hour.

5. **Connector Collector Road/Internal Collector Roadway:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

6. **Founders Parkway (SH 86)/Pioneer Ranch Access/Connector Collector Roadway:** This future signalized intersection is expected to operate at an overall LOS "C" or better through 2041.

7. **Castle Oaks Drive/Internal Community Collector:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

8. **Founders Parkway (SH 86)/Ridge Road/5th Street/SH 86:** This signalized intersection is expected to operate at an overall LOS "D" or better during both morning and afternoon peak-hours through 2041.

9. **Connector Collector Roadway/Commercial Access:** All movements at this future stop-sign controlled intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2041.

10. **Internal Collector Roadway/Site Access #10:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

11. **Internal Collector Roadway/Site Access #11:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

12. **Internal Collector Roadway/Site Access #12:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

13. **Internal Collector Roadway/Site Access #13:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

14. **Internal Collector Roadway/Site Access #14:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

15. **Internal Collector Roadway/Site Access #15:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

TRAFFIC SIGNAL WARRANT ANALYSIS

The projected traffic volumes at Intersection #6 (Founders Parkway (SH 86)/Pioneer Ranch Access/Connector Collector Roadway) shown in Figure 8a (2025 Total Traffic) and Figure 9a (2041 Total Traffic) are sufficient to warrant traffic signal control over time based on the 70 percent reduced criteria due to the posted speed limit being over 40 mph on Founders Parkway (SH 86).

95th PERCENTILE QUEUING ANALYSIS

The estimated 2025 and 2041 95th percentile queue lengths for the signalized intersections in the study area are shown in Table 3 along with the recommended turn lane lengths.

PEDESTRIAN AND BICYCLE ACCOMMODATION

The site plan will include an east-west multi-use path through the site along the prominent drainage as well as a multi-use path along the site's frontage to Founders Parkway.

RECOMMENDED IMPROVEMENTS

Table 4 shows the 2025 and 2041 recommended improvements to the public street network.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The site is projected to generate about 7,321 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 125 vehicles would enter and about 277 vehicles would exit the site. During the afternoon peak-hour, about 407 vehicles would enter and about 309 vehicles would exit. Table 2 also shows the estimated pass-by trips.

Projected Levels of Service

2. The two future roundabout controlled intersections are expected to operate at an overall LOS "A" through 2041.

3. All movements at the unsignalized intersections are expected to operate at LOS "C" or better through 2041.

4. All of the signalized intersections are expected to operate at an overall LOS "D" or better with implementation of the recommended improvements shown in Figures 8a through 9b and in Tables 3 and 4.

Conclusions

5. The impact of the site can be accommodated by the existing and planned roadway improvements with the recommended improvements.

Recommendations

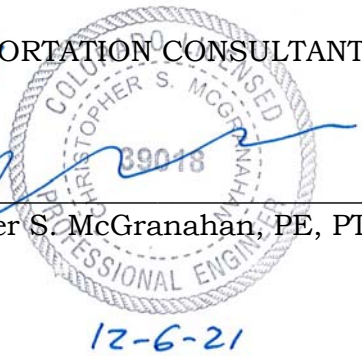
6. The recommended improvements are shown in Figures 8a through 9b and in Tables 3 and 4.

* * * * *

We trust our findings will assist you in gaining approval of the Canyons South development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.



By _____
Christopher S. McGranahan, PE, PTOE
Principal

CSM/wc

Enclosures: Tables 1 - 4
Figures 1 - 9b
CDOT Straight Line Diagram
Traffic Counts
2019 Traffic Volumes provided by Town Staff
Figure 3 from 2020 *Pine Canyon TIA* by Kimley Horn
2040 Traffic Projections provided by Town Staff
Figure 7a from 2017 *Pine Canyon TIA* by LSC
Buildout Lane Geometry of Founders Parkway/Ridge Road/5th Street/SH 86 provided by Town Staff
Figure 12 from 2020 *Pine Canyon TIA* by Kimley Horn
Level of Service Definitions
Level of Service Reports
Queuing Reports

W:\LSC\Projects\2021\210310-CanyonsSouth\Report\Nov-2021\Canyons_South-120621.wpd

Table 1 (Page 1 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic		2025 Background Traffic		2025 Total Traffic		2041 Background Traffic		2041 Background Mitigated [1]		2041 Total Traffic	
		Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM
1) Founders Parkway/Allen Way	Signalized												
EB Left		E	E	D	E	E	E	E	E			E	E
EB Through/Right		A	B	A	C	B	C	B	E			B	E
WB Left		A	A	A	B	A	B	A	B			A	B
WB Through		C	B	C	C	B	C	D	C			D	C
WB Right		A	A	A	A	A	A	A	A			A	A
NB Left		D	E	D	D	E	E	E	E			E	E
NB Through/Right		C	D	C	C	C	C	C	D			C	D
SB Left		D	D	D	D	D	E	D	E			D	E
SB Through		D	E	D	D	D	D	D	D			D	D
SB Right		E	E	B	C	C	D	D	D			D	D
Entire Intersection Delay (sec /veh)		26.3	30.0	19.9	32.2	20.1	33.4	31.5	46.2			39.6	49.7
Entire Intersection LOS		C	C	B	C	C	D	C	D			D	D
2) Founders Parkway/Front Street	Signalized												
SEB Left		B	B	C	D	C	D	C	E			C	E
SEB Through/Right		B	B	B	D	B	D	B	E			C	E
NWB Left		A	E	A	D	A	D	A	E			B	E
NWB Through/Right		B	B	B	C	B	B	C	B			C	B
NEB Left		E	F	D	E	D	E	D	E			D	E
NEB Through		D	E	D	D	D	D	D	D			D	D
NEB Right		A	D	A	C	A	C	A	C			A	C
SWB Left		D	D	D	C	C	D	C	D			C	D
SWB Right or Through/Right		C	D	C	D	C	D	C	D			C	D
Entire Intersection Delay (sec /veh)		20.0	47.4	19.1	41.2	20.2	42.9	26.6	51.0			30.4	54.1
Entire Intersection LOS		C	D	B	D	C	D	C	D			C	D
3) Founders Parkway/Woodlands Boulevard	Signalized												
EB Left		A	A	A	A	A	A	A	A	A	A	A	A
EB Through		B	B	B	C	B	D	--	--	--	--	--	--
EB Through/Right or Right		A	A	A	A	A	A	C	D	C	D	C	D
WB Left		B	D	B	D	B	D	D	E	D	D	D	D
WB Through		B	A	B	B	B	B	--	--	--	--	--	--
WB Through/Right or Right		A	A	A	A	A	A	B	B	B	A	B	A
NB Left		D	D	D	D	D	D	D	D	E	E	E	E
NB Through or Through/Right		D	E	D	D	D	E	B	F	D	E	D	E
NB Right		B	A	A	A	A	D	--	--	A	E	A	E
SB Left		D	E	D	E	D	D	D	E	D	E	D	E
SB Through/Right		D	D	D	D	D	D	D	D	D	D	D	D
Entire Intersection Delay (sec /veh)		14.2	16.4	15.1	23.5	15.7	32.6	24.3	66.4	22.8	34.2	23.7	41.7
Entire Intersection LOS		B	B	B	C	B	C	C	E	C	C	C	D

(1) Recommended mitigation is a short 75-foot northbound right-turn lane with overlap phasing with the westbound left-turn movement.

Table 1 (Page 2 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2025 Background Traffic Level of Service AM	2025 Background Traffic Level of Service PM	2025 Total Traffic Level of Service AM	2025 Total Traffic Level of Service PM	2041 Background Traffic Level of Service AM	2041 Background Traffic Level of Service PM	2041 Background Mitigated [1] Level of Service AM	2041 Background Mitigated [1] Level of Service PM	2041 Total Traffic Level of Service AM	2041 Total Traffic Level of Service PM
4) Founders Parkway/Crowfoot Valley Road	Signalized												
EB Left		D	D	D	D	E	D	E	D			E	D
EB Through		A	A	A	A	A	A	A	A			A	A
WB Through		B	C	C	C	C	C	D	D			D	D
WB Right		A	A	A	A	A	A	A	A			A	A
SB Left		E	C	C	C	C	C	D	C			D	C
SB Right		A	A	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		20.7	18.4	21.3	20.6	22.3	20.4	31.0	24.5			36.1	27.4
Entire Intersection LOS		C	B	C	C	C	C	C	C			D	C
5) Connector Collector Roadway/Internal Collector Roadway	Roundabout												
EB Approach		--	--	A	A	A	A	A	A			A	A
WB Approach		--	--	A	A	A	A	A	A			A	A
NB Approach		--	--	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		--	--	3.2	3.3	4.4	4.6	3.5	3.8			4.8	5.2
Entire Intersection LOS		--	--	A	A	A	A	A	A			A	A
6) Founders Parkway/Pioneer Ranch Access/ Connector Collector Roadway	Signalized												
EB Left		--	--	A	A	A	B	B	A			D	D
EB Through		--	--	A	A	A	A	A	A			B	B
EB Right		--	--	--	--	--	--	A	A			A	A
WB Left		--	--	--	--	--	--	A	A			A	A
WB Through		--	--	A	A	B	B	B	B			D	C
WB Right		--	--	A	A	A	A	A	A			A	A
NB Left		--	--	--	--	--	--	E	E			D	D
NB Through/Right		--	--	--	--	--	--	A	A			C	D
SB Left		--	--	E	E	D	E	D	D			C	D
SB Right or Through/Right		--	--	A	A	D	B	B	A			D	C
Entire Intersection Delay (sec /veh)		--	--	4.9	4.0	15.2	11.6	16.5	10.3			32.0	21.0
Entire Intersection LOS		--	--	A	A	B	B	B	B			C	C
7) Castle Oaks Drive/Internal Community Collector	Roundabout												
EB Approach		--	--	A	A	A	A	A	A			A	A
NB Approach		--	--	A	A	A	A	A	A			A	A
SB Approach		--	--	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		--	--	4.1	4.1	4.2	4.2	5.1	5.1			5.2	5.2
Entire Intersection LOS		--	--	A	A	A	A	A	A			A	A

Table 1 (Page 3 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2025 Background Traffic Level of Service AM	2025 Background Traffic Level of Service PM	2025 Total Traffic Level of Service AM	2025 Total Traffic Level of Service PM	2041 Background Traffic Level of Service AM	2041 Background Traffic Level of Service PM	2041 Background Mitigated [1] Level of Service AM	2041 Background Mitigated [1] Level of Service PM	2041 Total Traffic Level of Service AM	2041 Total Traffic Level of Service PM
8) Founders Parkway/Ridge Road/5th Street/SH 86	Signalized												
EB Left		B	C	C	C	C	C	B	C			B	C
EB Through		C	D	C	E	C	E	C	D			C	D
EB Right		A	A	A	A	A	A	A	A			A	A
WB Left		B	C	B	E	B	E	B	C			B	D
WB Through		C	D	C	D	D	D	C	C			C	C
WB Right		A	A	A	A	A	A	A	A			A	A
NB Left		C	C	C	C	C	C	E	D			E	D
NB Through		D	D	D	E	D	E	D	D			D	D
NB Right		A	A	A	A	A	A	A	A			A	A
SB Left		C	E	D	E	D	E	E	D			E	D
SB Through		D	D	D	C	D	C	D	C			D	C
SB Right		A	A	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		24.3	31.9	26.0	37.9	26.8	38.4	27.4	30.9			27.6	31.1
Entire Intersection LOS		C	C	C	D	C	D	C	C			C	C
9) Connector Collector Roadway/Commercial Access	TWSC												
WB Left		--	--	--	--	B	B	--	--			B	C
WB Right		--	--	--	--	A	A	--	--			A	B
SB Left		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	11.5	14.0	--	--			12.4	15.8
10) Internal Collector Roadway/Site Access #10	TWSC												
WB Approach		--	--	--	--	A	A	--	--			B	A
SB Left/Through		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	9.9	9.3	--	--			10.3	9.5
11) Internal Collector Roadway/Site Access #11	TWSC												
NB Left		--	--	--	--	A	A	--	--			A	A
EB Approach		--	--	--	--	A	B	--	--			A	B
WB Approach		--	--	--	--	B	B	--	--			B	B
SB Left		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	11.2	11.8	--	--			11.7	12.6
12) Internal Collector Roadway/Site Access #12	TWSC												
WB Approach		--	--	--	--	B	A	--	--			B	A
SB Left		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	10.2	9.6	--	--			10.6	9.9

Table 1 (Page 4 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2025 Background Traffic Level of Service AM	2025 Background Traffic Level of Service PM	2025 Total Traffic Level of Service AM	2025 Total Traffic Level of Service PM	2041 Background Traffic Level of Service AM	2041 Background Traffic Level of Service PM	2041 Background Mitigated [1] Level of Service AM	2041 Background Mitigated [1] Level of Service PM	2041 Total Traffic Level of Service AM	2041 Total Traffic Level of Service PM
13) Internal Collector Roadway/Site Access #13	TWSC												
EB Left		--	--	--	--	A	A	--	--			A	A
SB Approach		--	--	--	--	A	A	--	--			B	A
Critical Movement Delay (sec/veh)		--	--	--	--	9.9	9.4	--	--			10.3	9.7
14) Internal Collector Roadway/Site Access #14	TWSC												
NB Approach		--	--	--	--	B	B	--	--			B	B
WB Left/Through		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	10.1	10.4	--	--			10.7	11.2
15) Internal Collector Roadway/Site Access #15	TWSC												
NB Approach		--	--	--	--	A	A	--	--			A	A
EB Approach		--	--	--	--	A	B	--	--			B	B
WB Approach		--	--	--	--	B	A	--	--			B	A
SB Approach		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	10.3	10.2	--	--			10.8	10.6

Table 2
ESTIMATED TRAFFIC GENERATION
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

		Trip Generation Rates [1]					Total Trips Generated				
		Average	AM Peak-Hour		PM Peak-Hour		Average	AM Peak-Hour		PM Peak-Hour	
Trip Generating Category	Quantity	Weekday	In	Out	In	Out	Weekday	In	Out	In	Out
CURRENTLY PROPOSED LAND USE											
Single-Family Detached [2]	474 DU [3]	9.44	0.185	0.555	0.624	0.366	4,475	88	263	296	174
Shopping Center [4]	30 KSF [5]	88.38	0.583	0.357	3.567	3.864	2,651	17	11	107	116
Office [6]	20 KSF [5]	9.74	0.998	0.162	0.184	0.966	195	20	3	4	19
						Total =	**7,321**	**125**	**277**	**407**	**309**
						Passby Trips [7] =	901	5	5	38	38
						Net External Trips =	**6,420**	**120**	**272**	**369**	**271**

Notes:
(1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.
(2) ITE Land Use No. 210 - Single-Family Detached Housing
(3) DU = Dwelling Unit
(4) ITE Land Use No. 820 - Shopping Center - formula rates for daily and afternoon peak-hour; average rates for morning peak-hour
(5) KSF = 1,000 square feet
(6) ITE Land Use No. 710 - General Office Building
(7) A passby rate of 34% was assumed for the shopping center land use.

Table 3
95th Percentile Queue Lengths
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Existing Turn Lane Lengths (feet)	2025 Queue Length AM Peak (feet)	2025 Queue Length PM Peak (feet)	2025 Queue Length Recommended Lane Length (feet)	2041 Queue Length AM Peak (feet)	2041 Queue Length PM Peak (feet)	2041 Queue Length Recommended Lane Length (feet)
1) Founders Parkway/Allen Way							
EB Left	2 @ 290	154	309		198	260	
EB Through/Right	--	263	1,146		317	1,295	
WB Left	320	m9	m15		m6	m11	
WB Through	--	910	* m712		1,107	m780	
WB Right	175	m6	m18		m1	m9	
NB Left	100	65	87	2 @100	90	139	2 @ 100
NB Through/Right	--	63	98		68	125	
SB Left	140	84	143		98	210	
SB Through	--	31	60		33	67	
SB Right	1 @ 105; 1 @ 265	83	147		143	175	
2) Founders Parkway/Front Street							
SEB Left	465	76	m132		82	m135	
SEB Through/Right	--	150	m544		357	m522	
NWB Left	195	34	207		39	195	
NWB Through/Right	--	530	411		993	464	
NEB Left	1 @ 285; 1 Continuous	210	381		258	297	
NEB Through	--	77	136		103	187	
NEB Right	Continuous	9	166		0	171	
SWB Left	225	14	52		13	59	
SWB Right or Through/Right	--	48	71		65	102	
3) Founders Parkway/Woodlands Boulevard							
EB Left	450	6	7		6	6	
EB Through or Through/Right	--	264	960		279	887	
EB Right	Continuous	17	46		--	--	
WB Left	500	192	290		564	293	
WB Through or Through/Right	--	1,066	600		629	331	
WB Right	Continuous	20	20		--	--	
NB Left	220	157	127		240	184	2 @ 250
NB Through or Through/Right	--	52	74		57	74	
NB Right	Continuous	0	0		77	582	75
SB Left	125	59	201	200	65	202	200
SB Through/Right	--	18	42		19	41	
4) Founders Parkway/Crowfoot Valley Road							
EB Left	1 @ 475; 1 Continuous	195	494		288	553	
EB Through	--	122	367		122	466	
WB Through	--	865	510		998	735	
WB Right	Continuous	56	40		62	69	
SB Left	1 @ 140; 1 Continuous	168	115		249	240	
SB Right	Continuous	0	0		0	0	
6) Founders Parkway/Pioneer Ranch Access/Connector Collector Roadway							
EB Left	--	25	247	655	143	443	655
EB Through	--	36	281		218	676	
EB Right	--	--	--		0	28	380
WB Left	--	--	--		6	9	400
WB Through	--	476	372		881	521	
WB Right	--	14	24	380	0	21	380
NB Left	--	--	--		129	92	150
NB Through/Right	--	--	--		20	24	
SB Left	--	103	131	150	94	121	150
SB Through/Right	--	0	0		252	109	
8) Founders Parkway/Ridge Road/5th Street/SH 86							
EB Left	360	74	153		52	155	300
EB Through	--	229	560		83	281	
EB Right	410	0	0		0	0	300
WB Left	600	80	154		78	146	250
WB Through	--	444	265		178	146	
WB Right	450	0	0		0	0	Continuous
NB Left	425	285	135		186	131	2 @ 250
NB Through	--	429	473		287	266	
NB Right	450	0	0		0	0	Continuous
SB Left	600	265	661	675	176	414	2 @ 600
SB Through	--	180	469		96	311	
SB Right	Continuous	0	0		0	0	600

m = metered by adjacent intersection

Table 4 (Page 1 of 2)
Recommended Improvements to Public Street Network
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Inter-section No.	Intersection Location	Recommended Improvements by 2025 (1)	Responsibility	Recommended Improvements by 2041 (1)	Responsibility
#1	Founders Parkway/Allen Way	NB LT - Add second left-turn lane (2 @ 100 feet)	Others		
#2	Founders Parkway/Front Street	None			
#3	Founders Parkway/Woodlands Boulevard	SB LT - Restripe from 125 feet to 200 feet	Others	NB LT - Add second lane (2 @ 250 feet)	Others
				NB RT - construct lane - 1 @ 75 feet + Overlap Phasing	Others
#4	Founders Parkway/Crowfoot Valley Road	None			
#5	Connector Collector Roadway/ Internal Collector Roadway	Construct single-lane modern roundabout	Applicant		
#6	Founders Parkway/Pioneer Ranch Access/Connector Collector Roadway	EB LT - construct lane - 1 @ 655 feet and 180-foot transition taper	Applicant	WB LT - construct lane - 1 @ 400 feet and 180-foot transition taper	Others
		WB RT - construct lane - 1 @ 320 feet and 180-foot transition taper	Applicant	EB RT - construct lane - 1 @ 320 feet and 180-foot transition taper	Others
		SB LT - construct lane - 1 @ 150 feet and 120-foot transition taper	Applicant	NB LT - construct lane - 1 @ 150 feet and 120-foot transition taper	Others
		SB to WB Accel Lane - 1 @ 580 feet and 180-foot transition taper	Applicant	NB to EB Accel Lane - 580 feet and 180-foot transition taper	Others
		Traffic signal installation when warranted	Applicant/Others		
#7	Castle Oaks Drive/Connector Collector	Construct single-lane modern roundabout	Applicant/Others		
#8	Founders Parkway/Ridge Road/ 5th Street/SH 86	SB LT - lengthen lane from 600' to 675'	Others	Intersection Reconstruction by Town including:	
				EB LT - construct lane - 1 @ 300 feet	Others
				EB Through - construct 2 lanes	Others
				EB RT - construct lane - 1 @ 300 feet	Others
				WB LT - construct lane - 1 @ 250 feet	Others
				WB Through - construct 2 lanes	Others
				WB RT - construct continuous lane	Others
				NB LT - construct lanes - 2 @ 250 feet	Others
				NB Through - construct 2 lanes	Others
				NB RT - construct continuous lane	Others
				SB LT - construct lanes - 2 @ 600 feet	Others
				SB Through - construct 2 lanes	Others
				SB RT - construct lane - 1 @ 600 feet	Others
				Traffic Signal Modification	Others

(1) An appropriate redirect taper for 50 mph is 50:1; for 35 mph is 20:1, and for 30 mph or less is 15:1.
(2) Percent indicate the site's percentage of the movement or intersection based on the 2041 volumes.

Table 4 (Page 2 of 2)
Recommended Improvements to Public Street Network
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Inter-section No.	Intersection Location	Recommended Improvements by 2025 (1)	Responsibility	Recommended Improvements by 2041 (1)	Responsibility
#9	Connector Collector Roadway/ Commercial Access	NB RT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
		SB LT - construct lane - 1 @ 220 feet and 120-foot transition taper	Applicant		
		WB LT - construct lane - 1 @ 150 feet and 90-foot transition taper	Applicant		
#10	Internal Connector Collector Roadway/Site Access #10	None			
#11	Internal Connector Collector Roadway/Site Access #11	EB LT - construct lane - 1 @ 205 feet and 120-foot transition taper	Applicant		
		WB LT - construct lane - 1 @ 250 feet and 120-foot transition taper	Applicant		
#12	Internal Connector Collector Roadway/Site Access #15	EB LT - construct lane - 1 @ 245 feet and 120-foot transition taper	Applicant		
#13	Internal Connector Collector Roadway/Site Access #13	EB LT - construct lane - 1 @ 265 feet and 120-foot transition taper	Applicant		
#14	Internal Connector Collector Roadway/Site Access #14	EB RT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
#15	Internal Connector Collector Roadway/Site Access #15	None			

(1) An appropriate redirect taper for 50 mph is 50:1; for 35 mph is 20:1, and for 30 mph or less is 15:1.

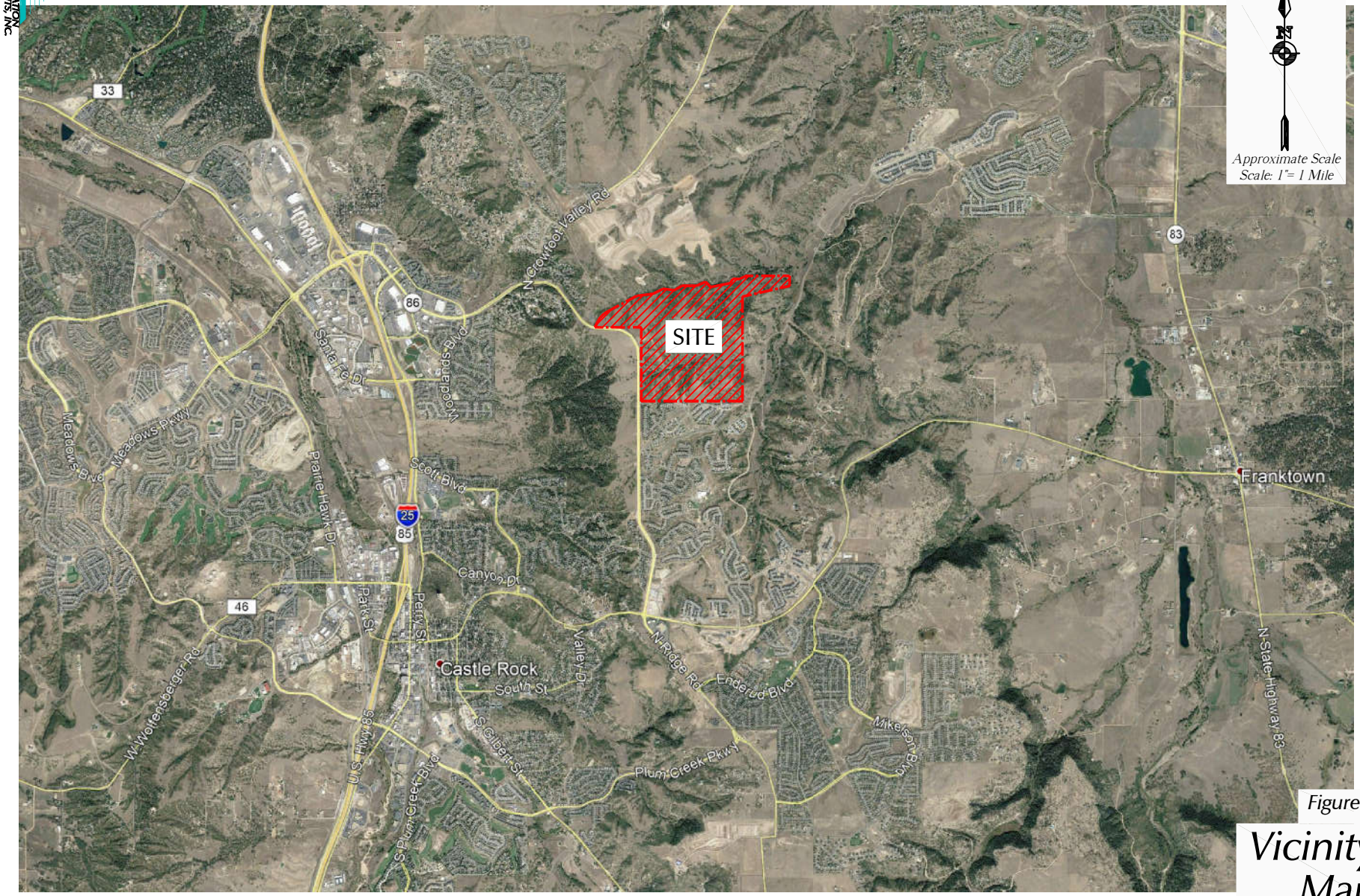
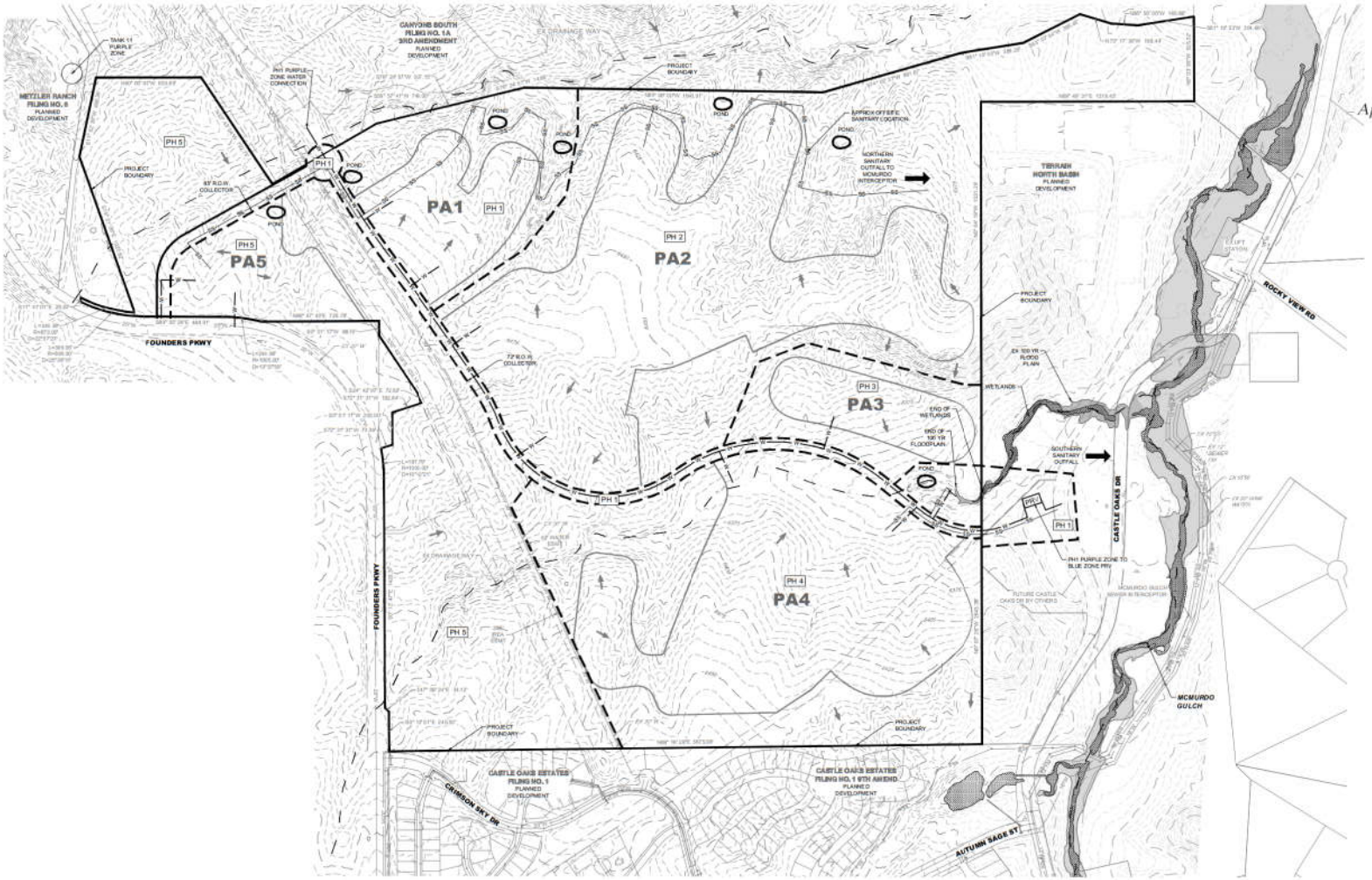


Figure 1

Vicinity Map

Canyons South (LSC #210310)

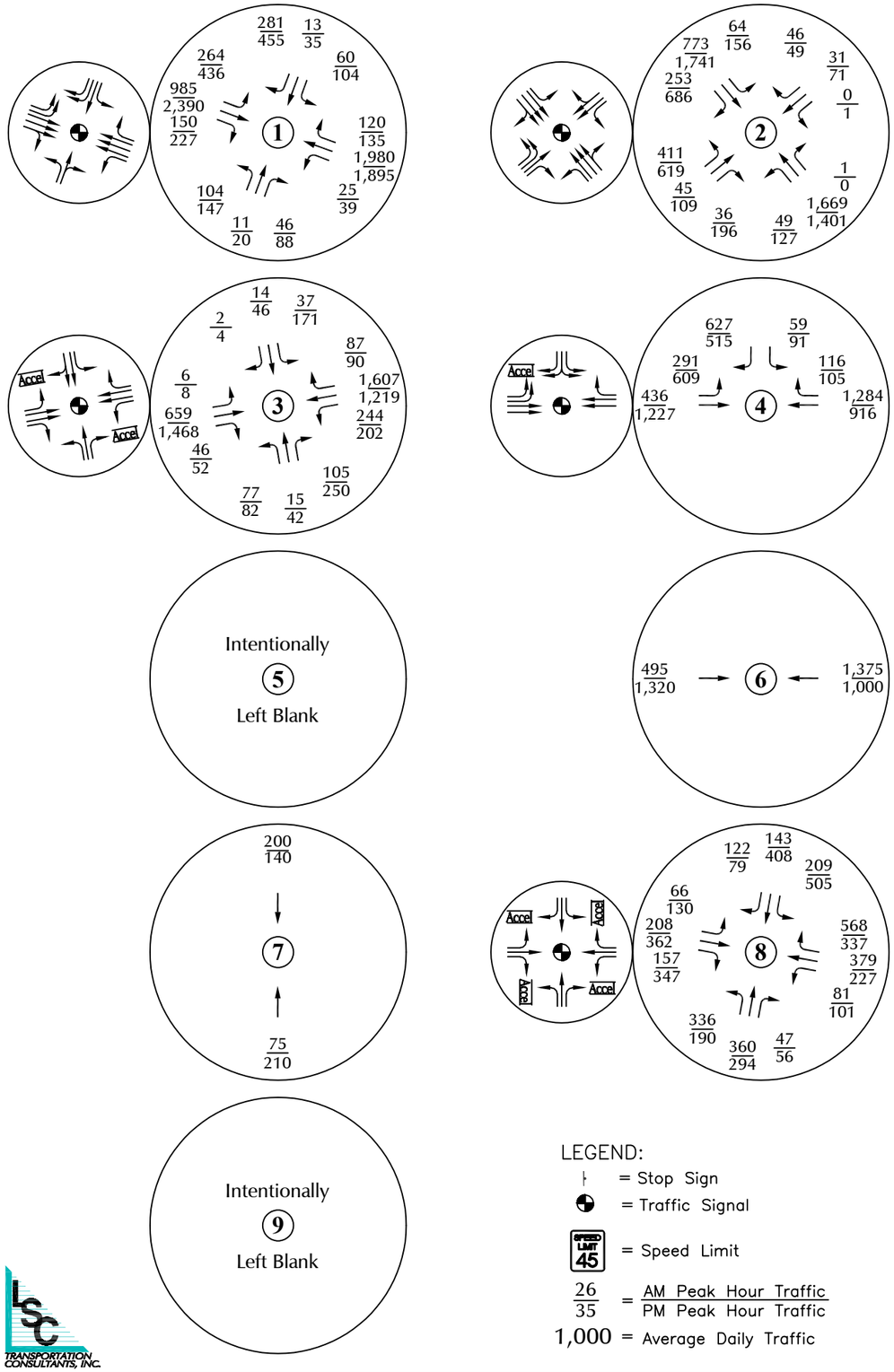


Approximate Scale
Scale: NTS

Figure 2

Site Plan

Canyons South (LSC #210310)



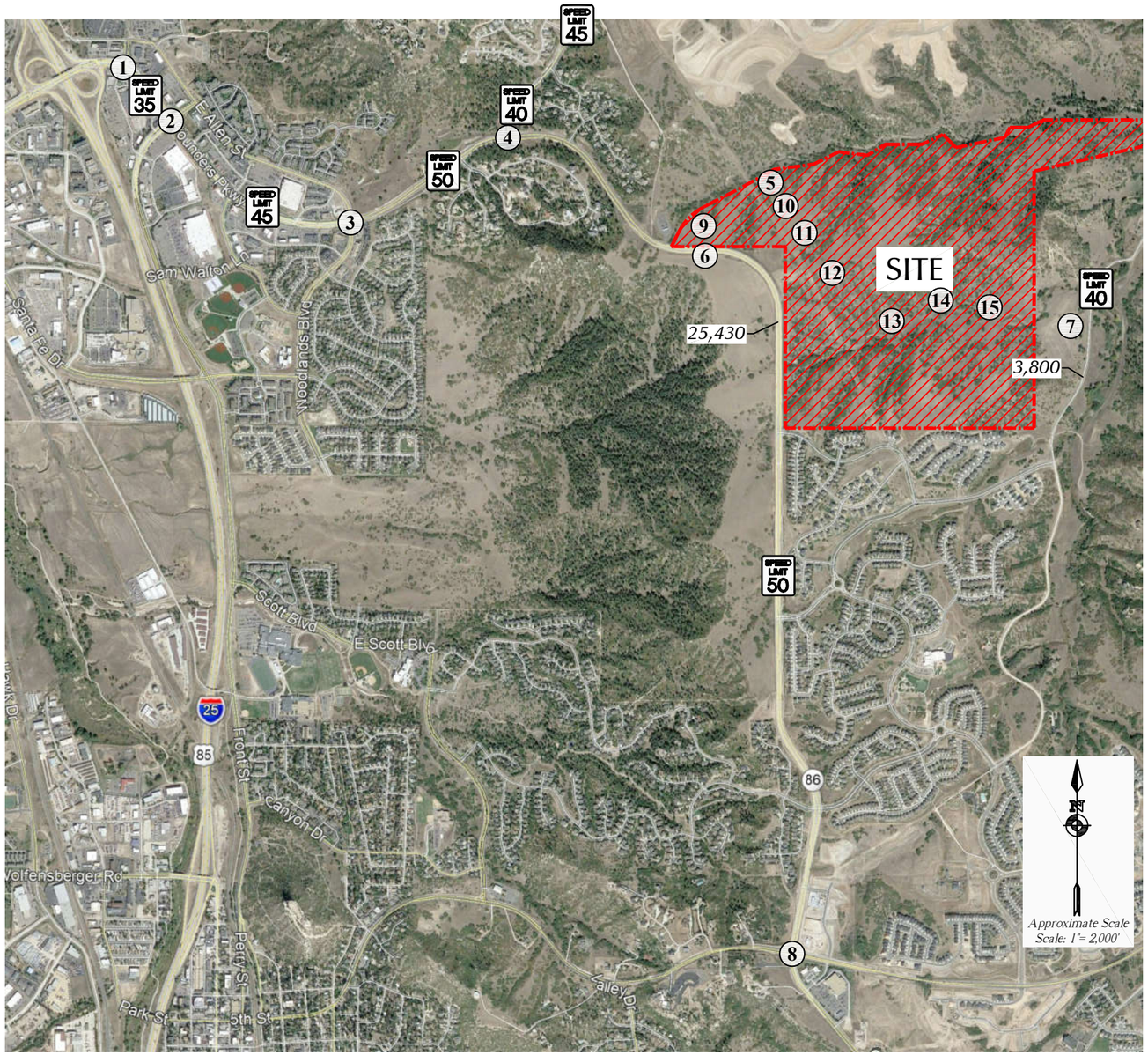
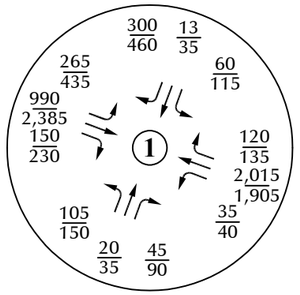


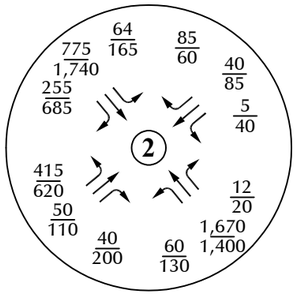
Figure 3a

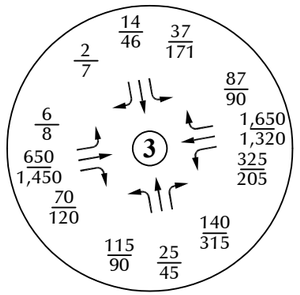
May, 2021 Existing Traffic, Lane Geometry and Traffic Control

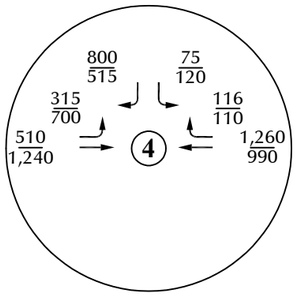
Canyons South (LSC #210310)

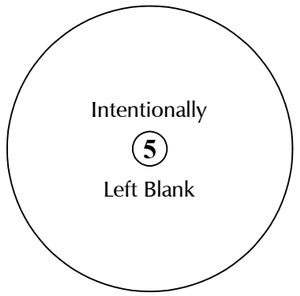
TRANSPORTATION CONSULTANTS, INC.

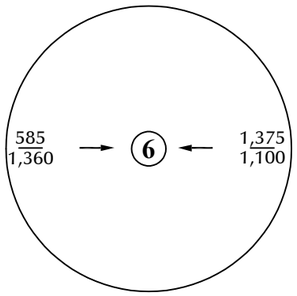


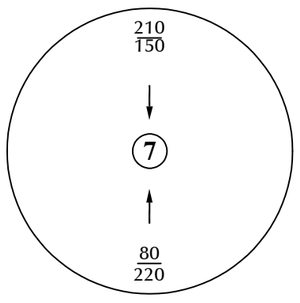


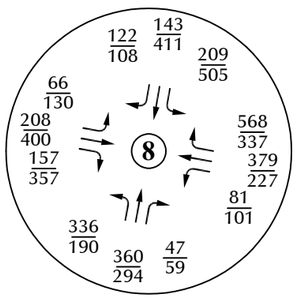


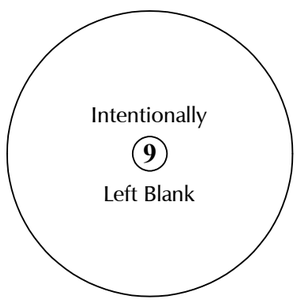








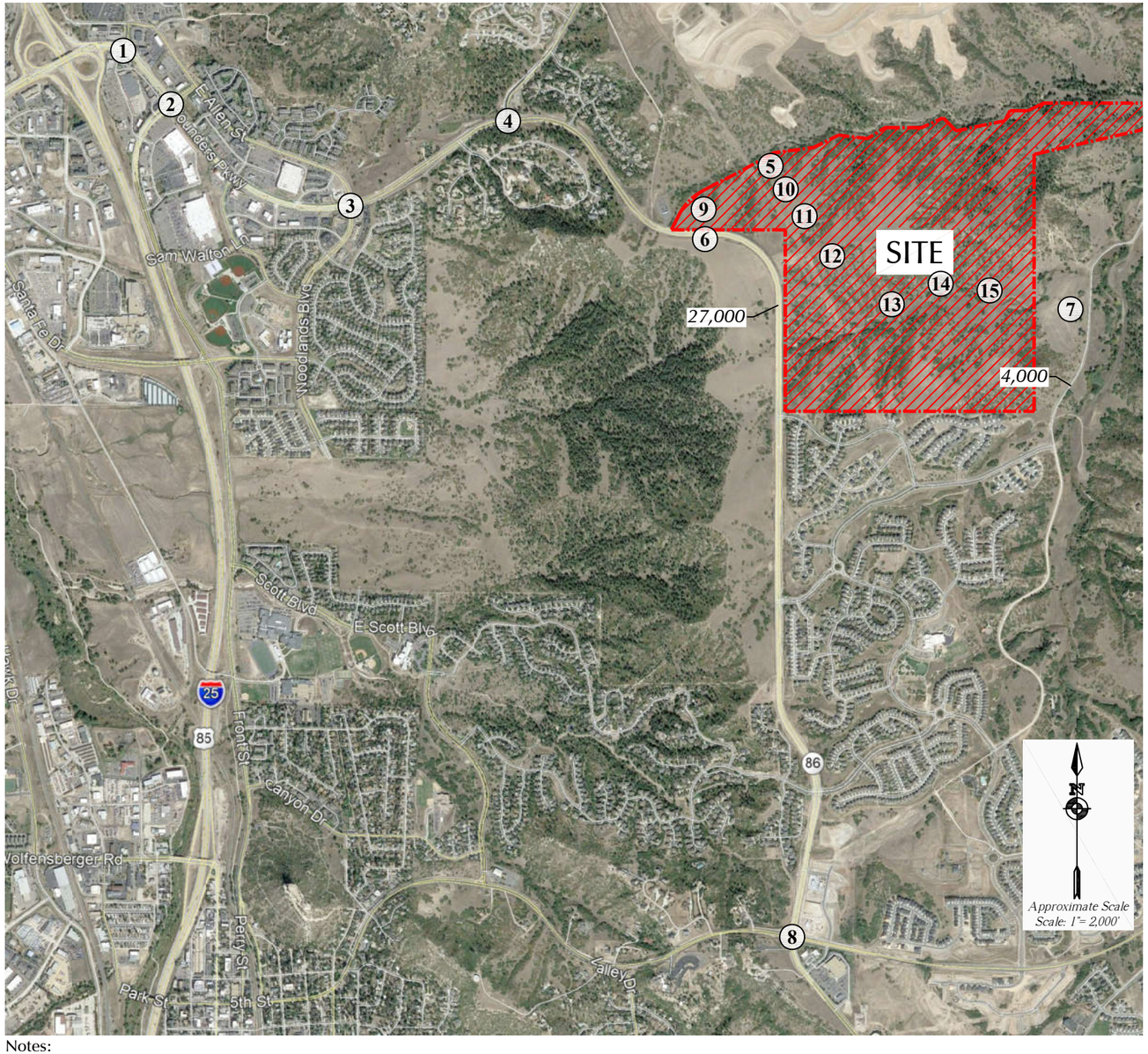




LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic



Notes:

1. Volumes at #8 are based on the higher of the volumes in Figure 3a and the 2019 volumes provided by Town staff grown for two years at an annual rate of four percent.
2. Volumes at #7 were increased by five percent to maintain a conservative analysis because the volumes at #8 were generally higher than the historic 2019 counts.
3. Intersections #1, #2, #3, #4 and #6 were adjusted based on the higher of the volumes in Figure 3a and the 2018 volumes in Figure 3 from the 2020 Pine Canyon TIA by Kimley Horn grown for three years at an annual rate of three percent.

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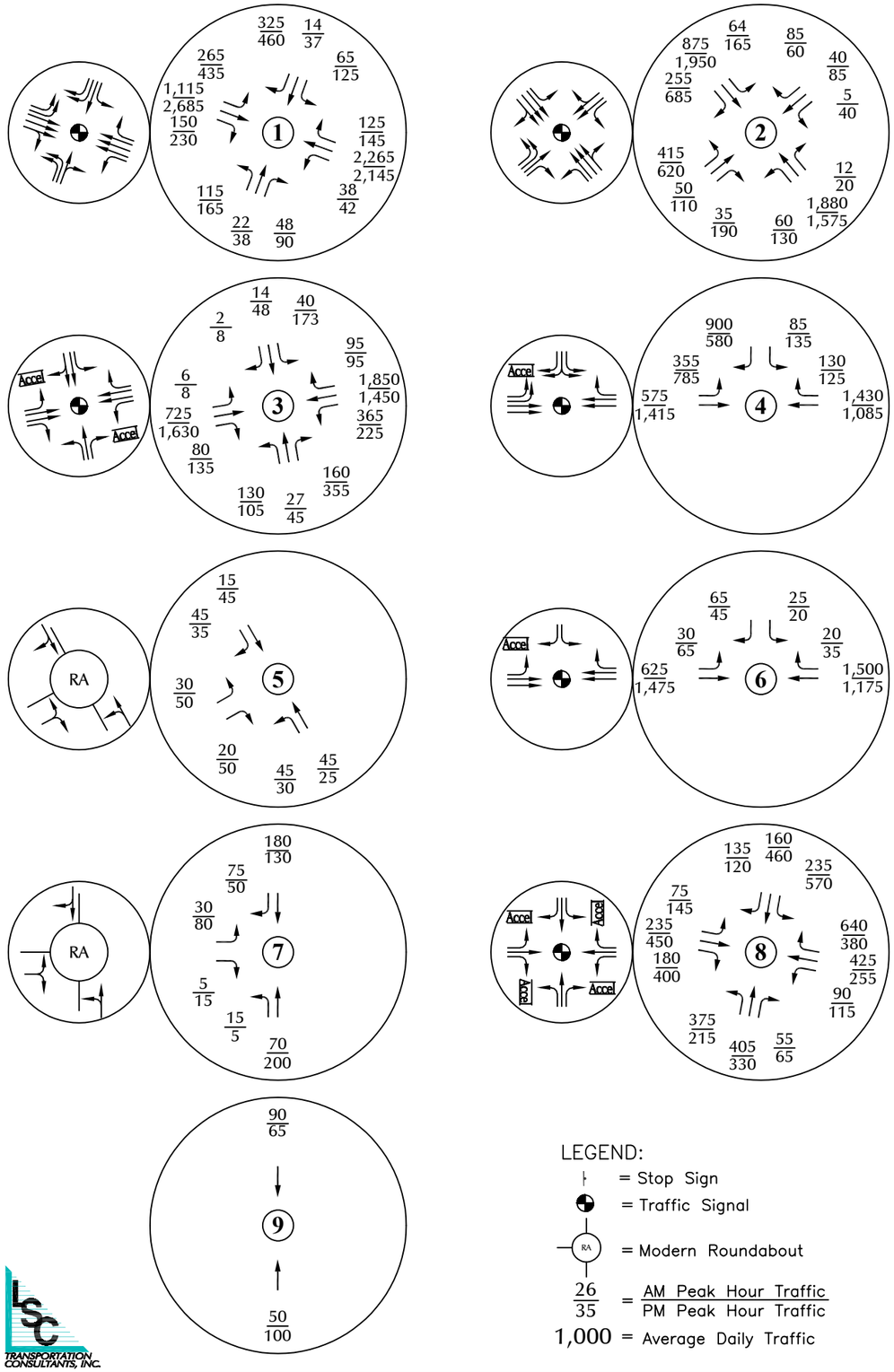
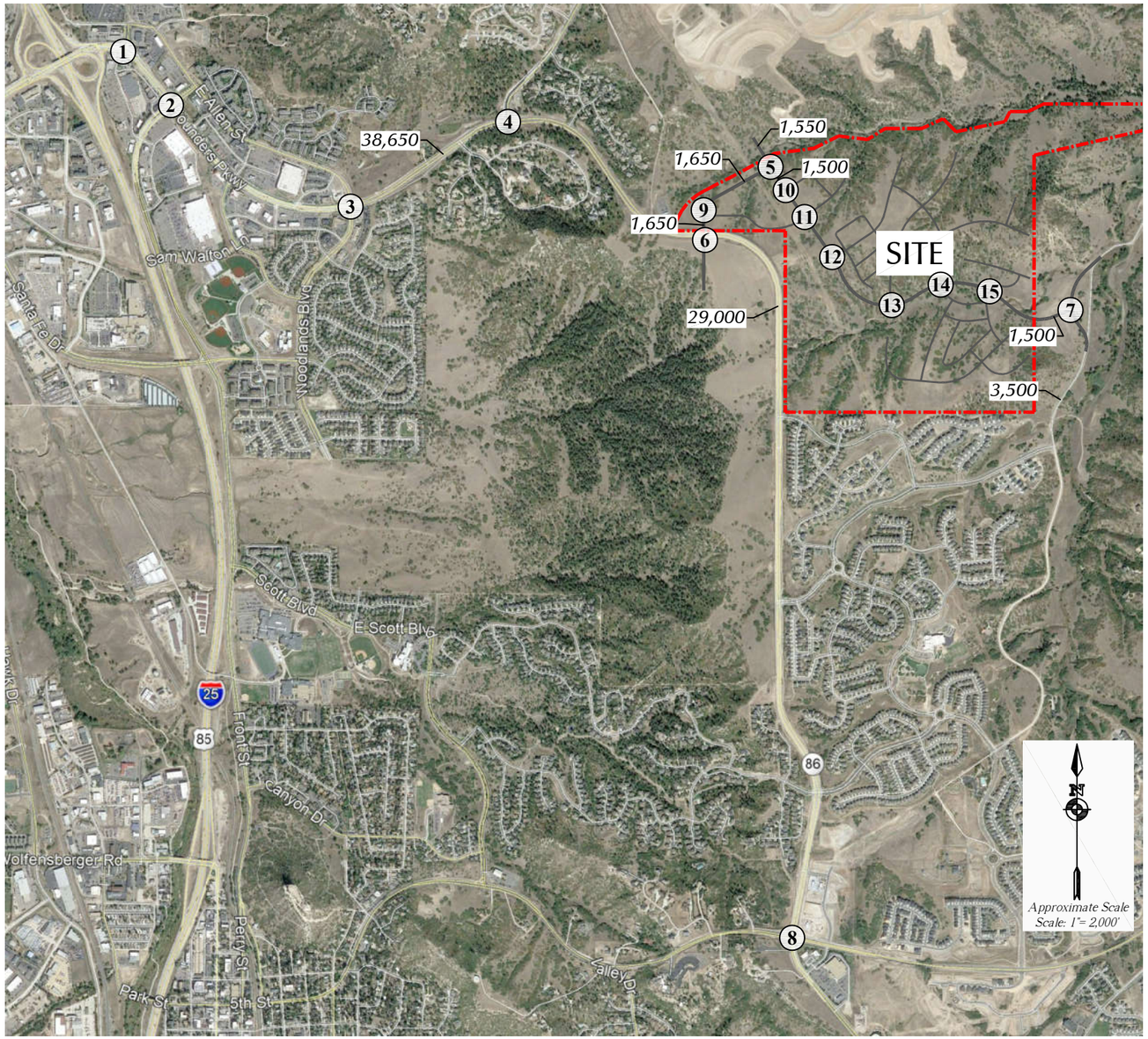
Figure 3b

Existing Traffic Adjusted for Pandemic

Canyons South (LSC #210310)



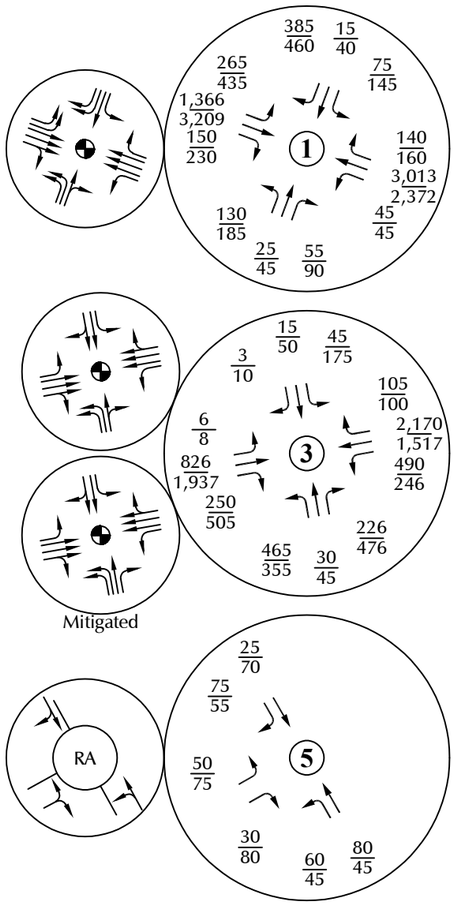


Note: Assumes four years of growth at an annual rate of three percent plus a portion of the 2041 Background traffic passing through the site. Little or no growth was assumed for movements serving built-out developments.

Figure 4

Year 2025 Background Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)



LEGEND:

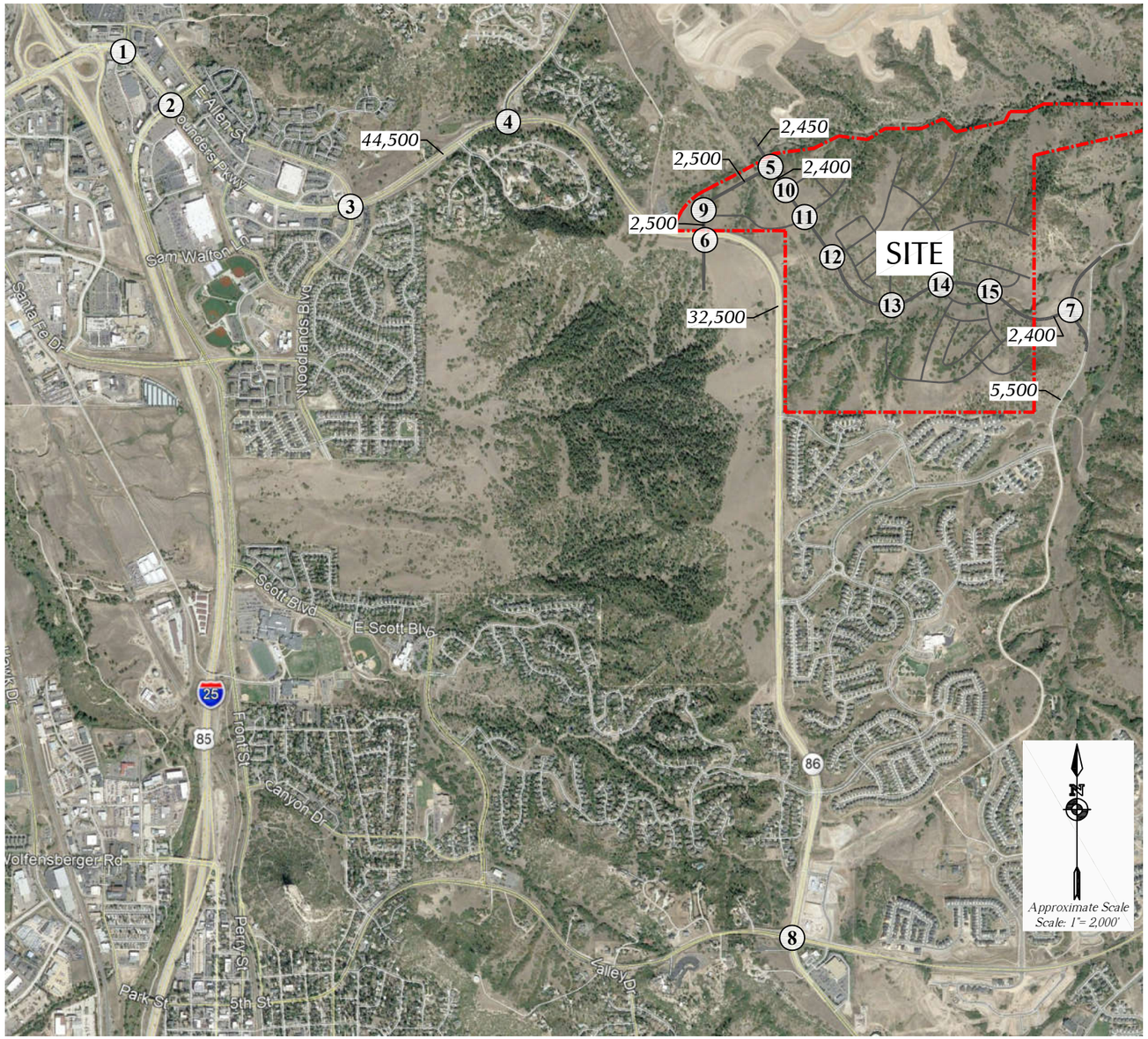
= Stop Sign

= Traffic Signal

= Modern Roundabout

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic



Notes:
1. These volumes are the 2041 total traffic volumes in Figure 9 less the total site-generated trips in Figure 7d with the exception of Note 2 below.
2. Intersection #8 is based on the 2040 projections provided by Town staff grown for one year at an annual rate of three percent.

Figure 5

Year 2041 Background Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)

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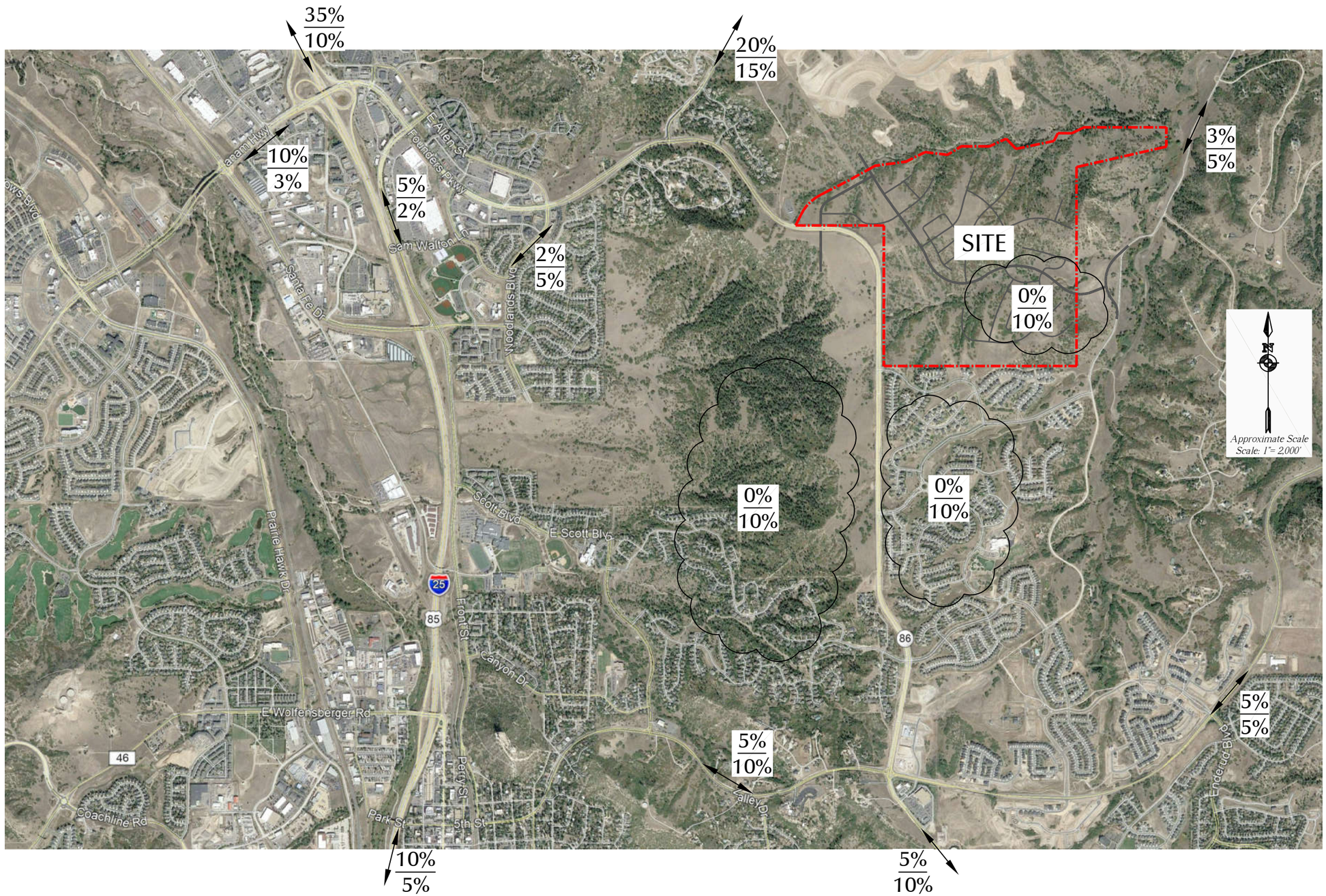

LEGEND:

5% / 5% = Residential Percent Directional Distribution / Commercial Percent Directional Distribution

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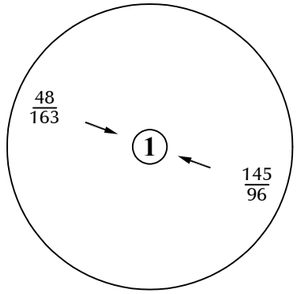
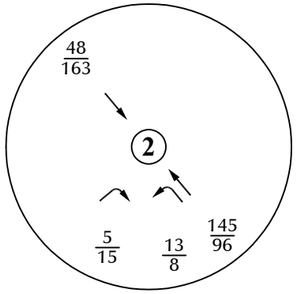
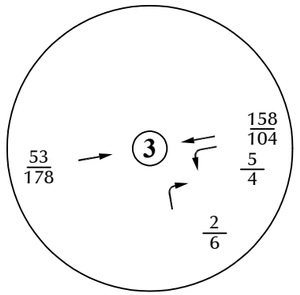
Figure 6

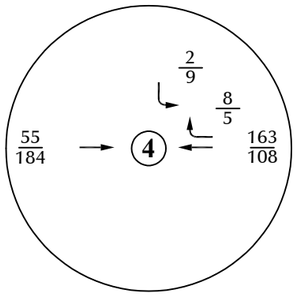
Directional Distribution of Primary Site-Generated Traffic

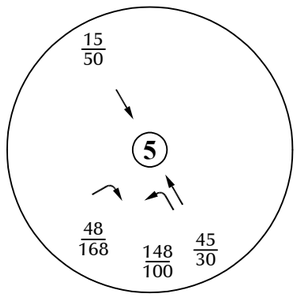
Canyons South (LSC #210310)

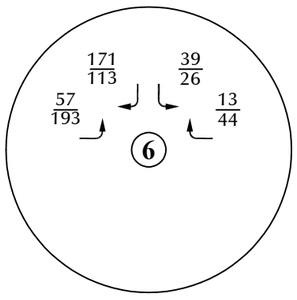


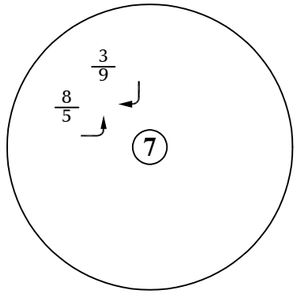


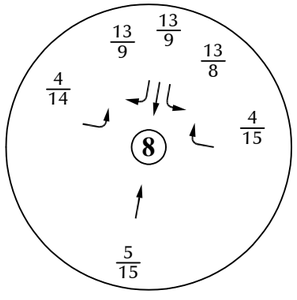


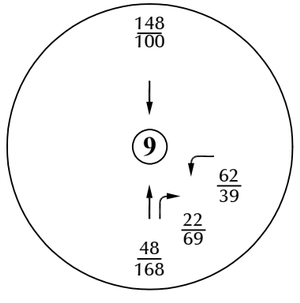


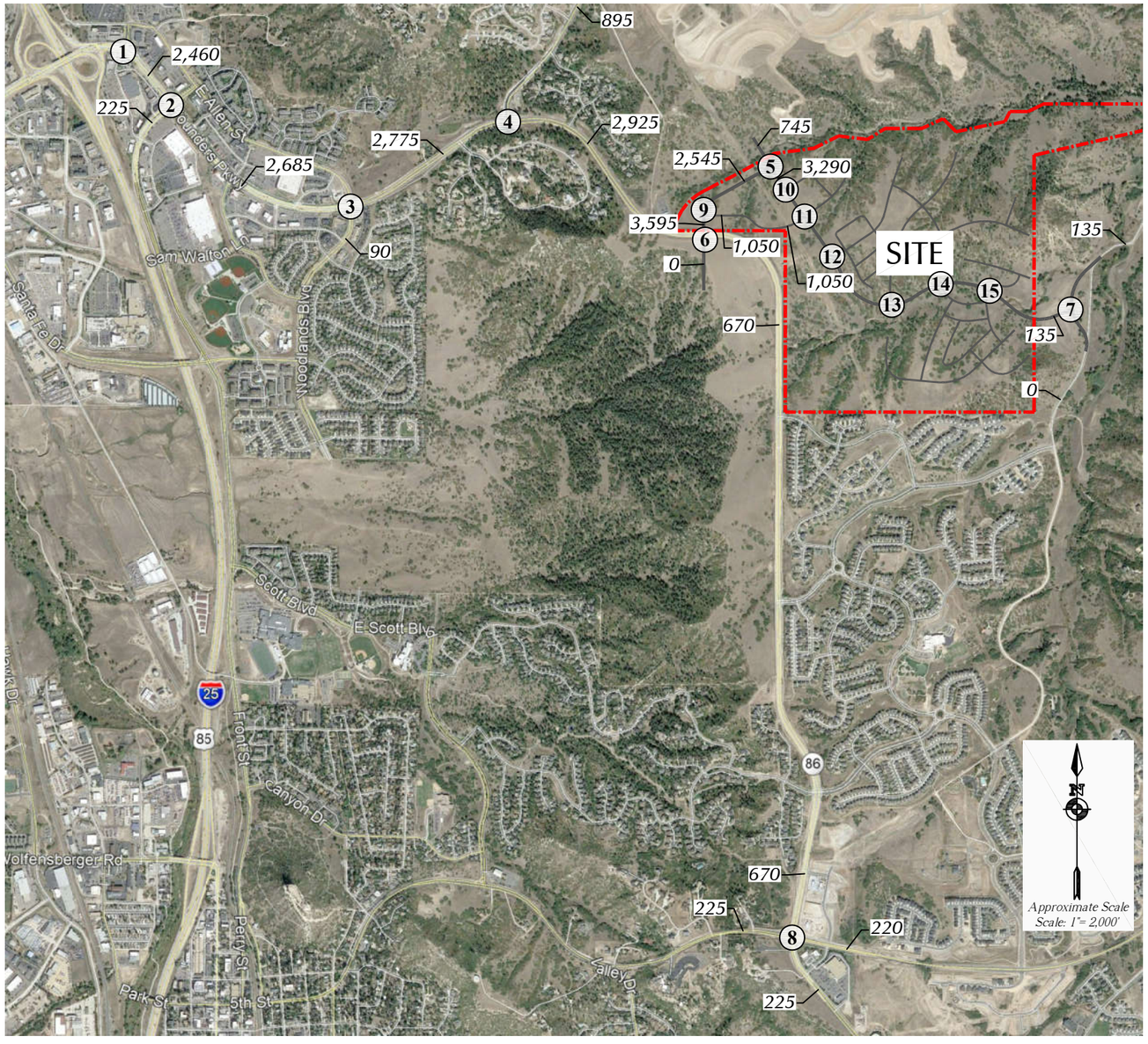












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

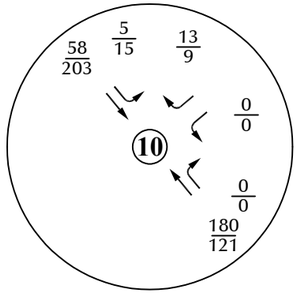
1,000 = Average Daily Traffic

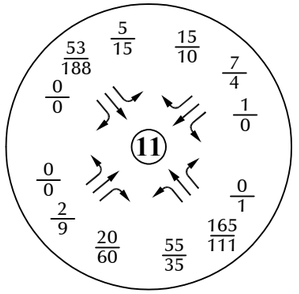
TRANSPORTATION CONSULTANTS, INC.

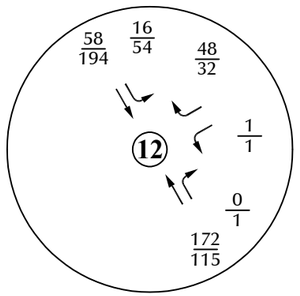
Figure 7a

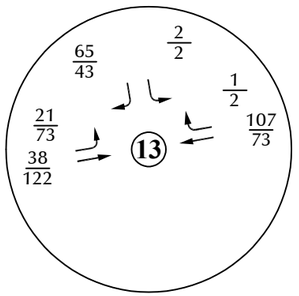
Major Intersections - Assignment of Residential Site-Generated Traffic

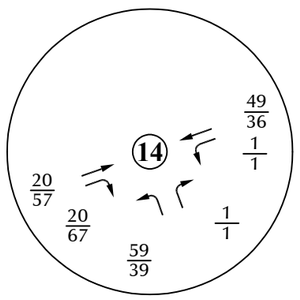
Canyons South (LSC #210310)

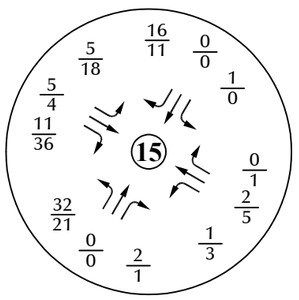


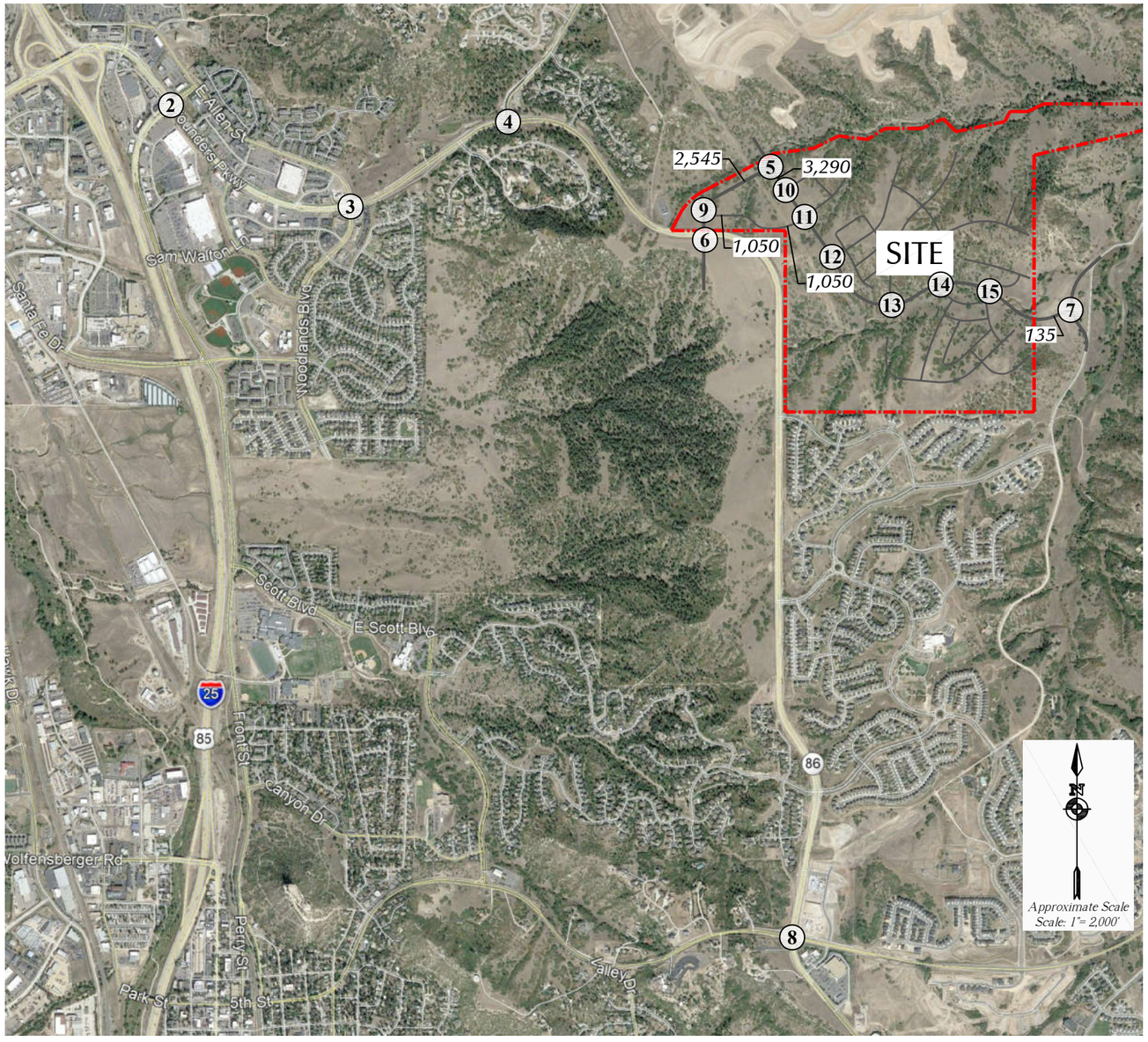












LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

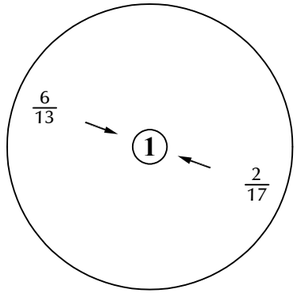
1,000 = Average Daily Traffic

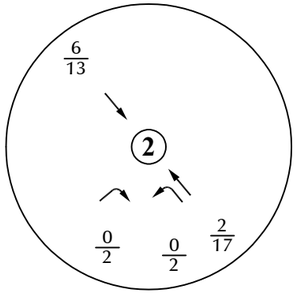
LSC TRANSPORTATION CONSULTANTS, INC.

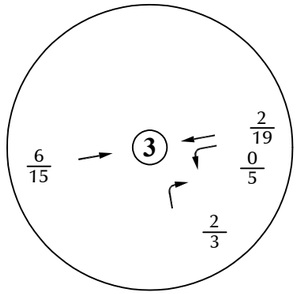
Figure 7b

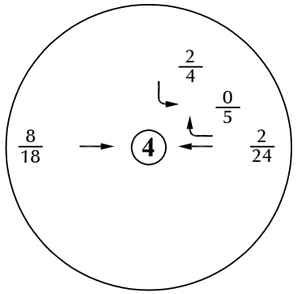
Access/Minor Intersections - Assignment of Residential Site-Generated Traffic

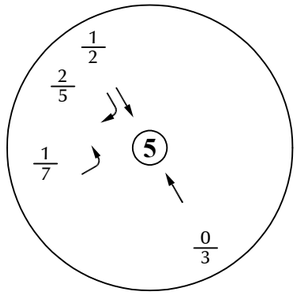
Canyons South (LSC #210310)

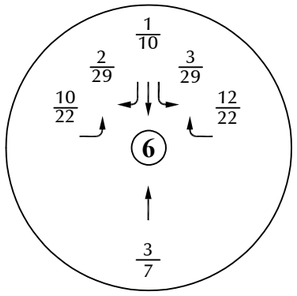


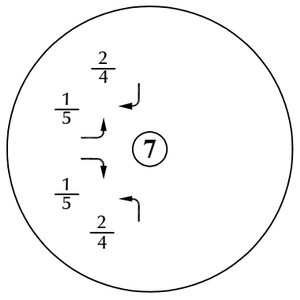


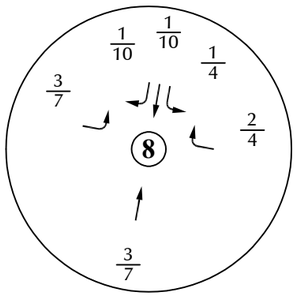


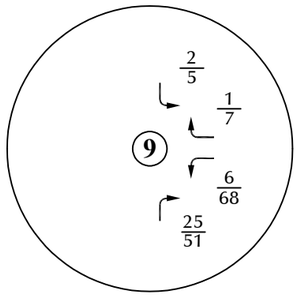


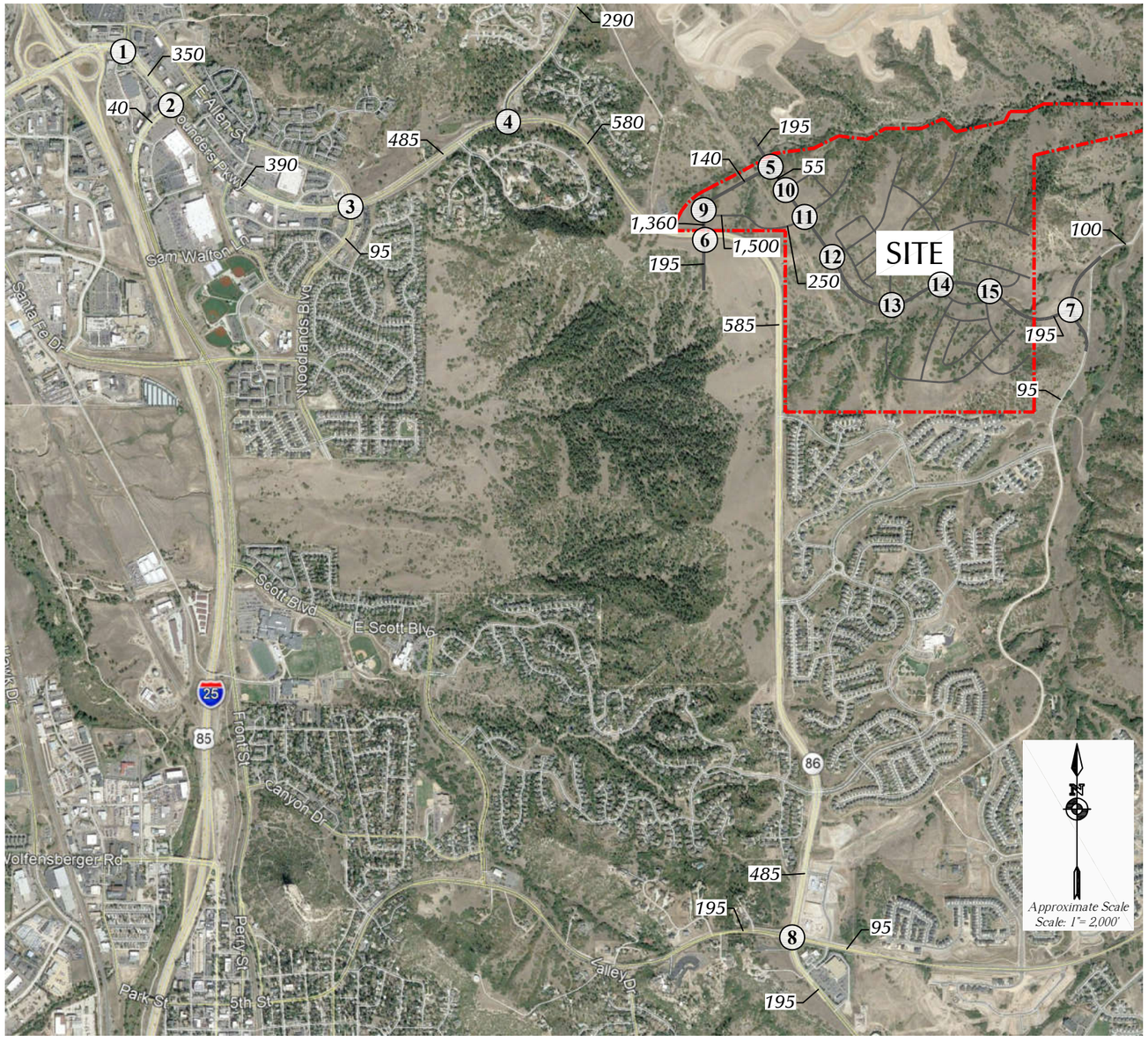












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

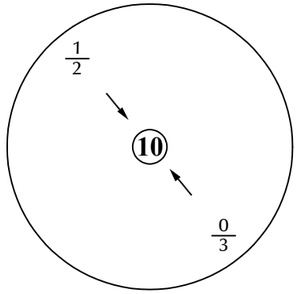
1,000 = Average Daily Traffic

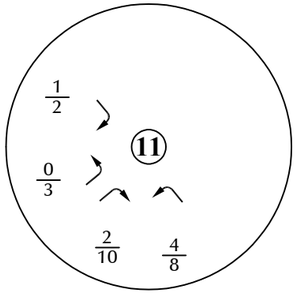
LSC TRANSPORTATION CONSULTANTS, INC.

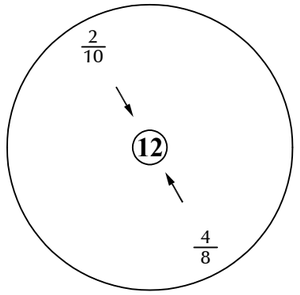
Figure 7c

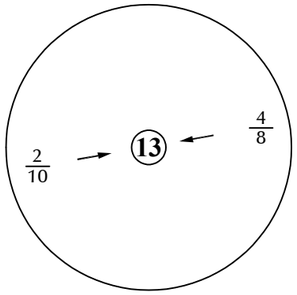
Major Intersections - Assignment of Primary Non-Residential Site-Generated Traffic

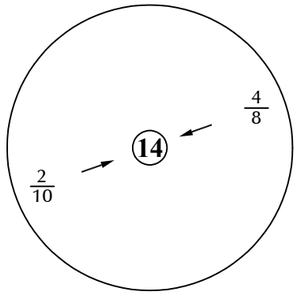
Canyons South (LSC #210310)

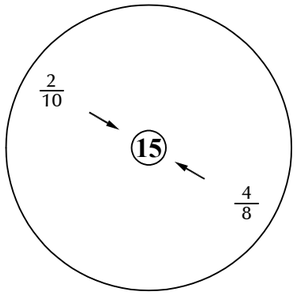


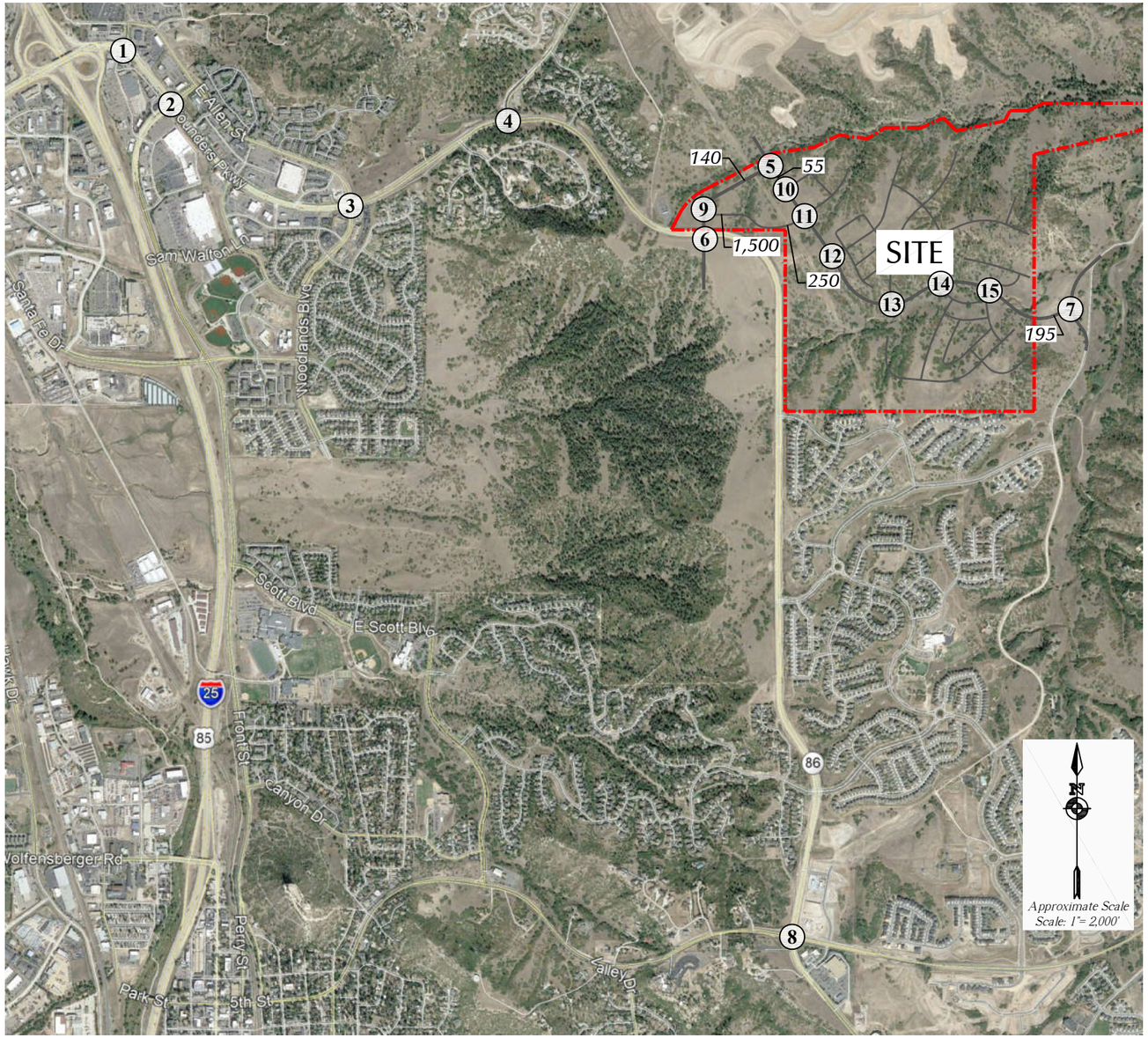












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 7d

Access/Minor Intersections - Assignment of Primary Non-Residential Site-Generated Traffic

Canyons South (LSC #210310)

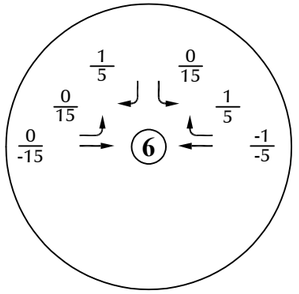
Intentionally
1
Left Blank

Intentionally
2
Left Blank

Intentionally
3
Left Blank

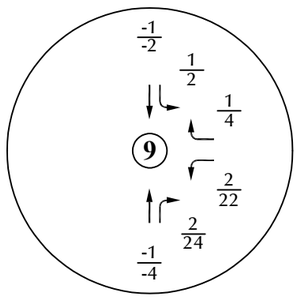
Intentionally
4
Left Blank

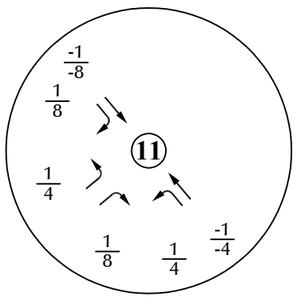
Intentionally
5
Left Blank

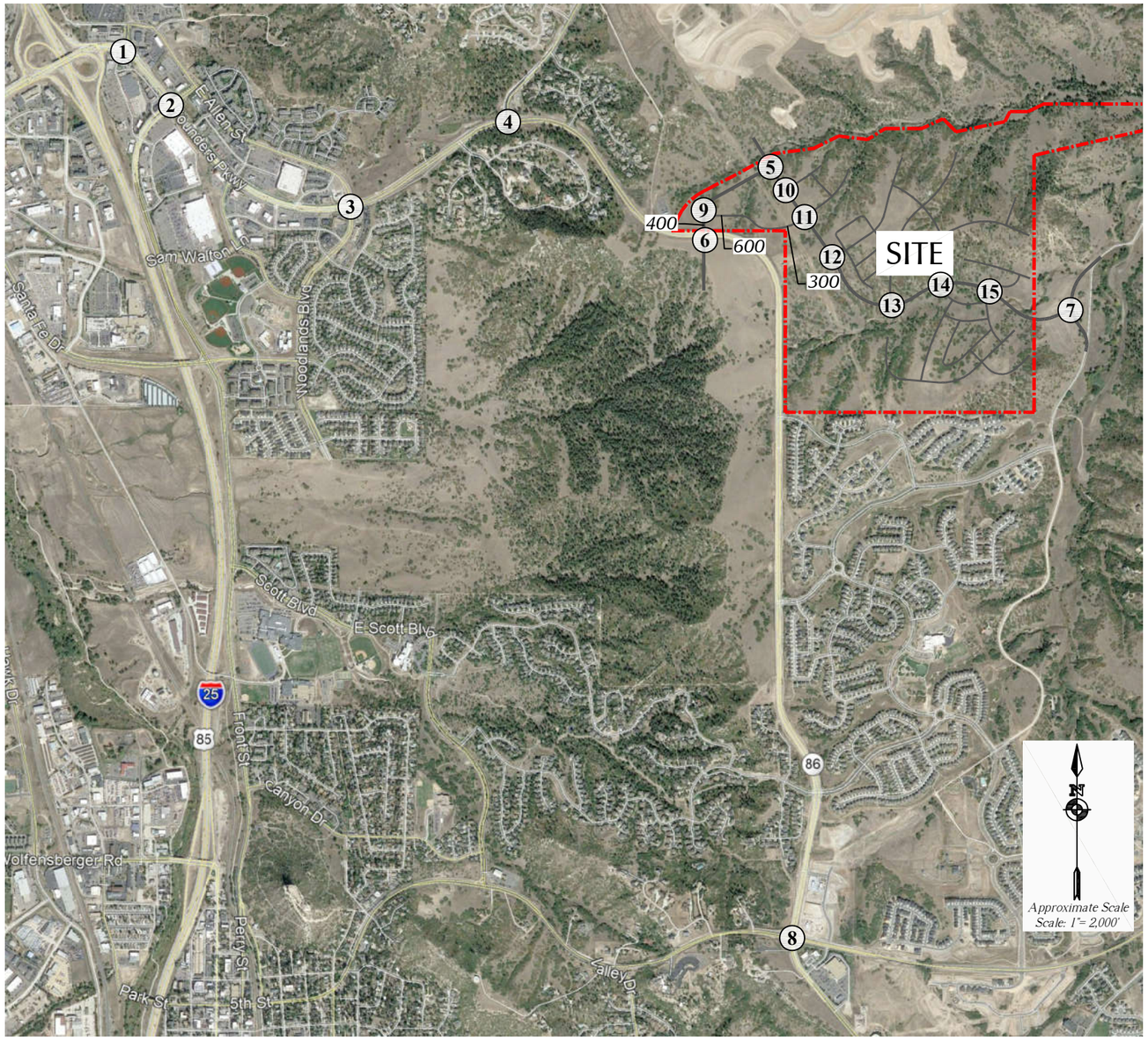


Intentionally
7
Left Blank

Intentionally
8
Left Blank







LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

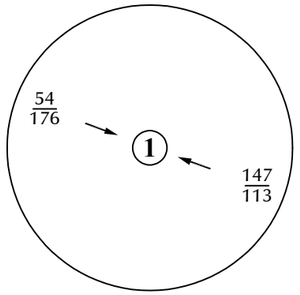
1,000 = Average Daily Traffic

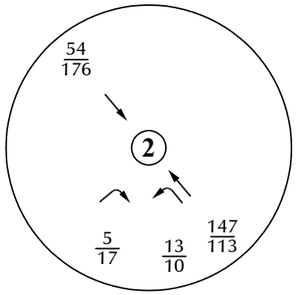
Figure 7e

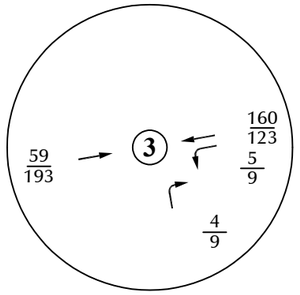
Assignment of Passby Site-Generated Traffic

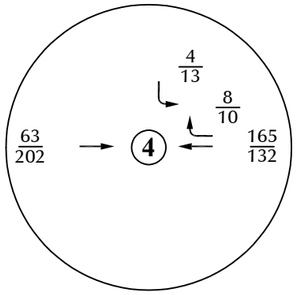
Canyons South (LSC #210310)

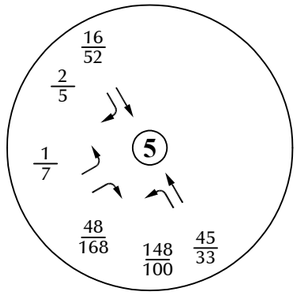
TRANSPORTATION CONSULTANTS, INC.

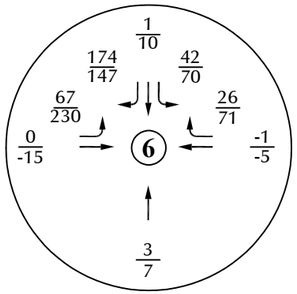


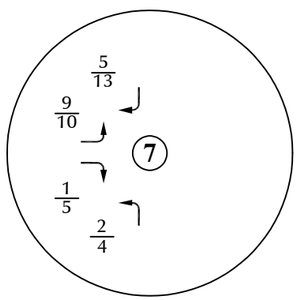


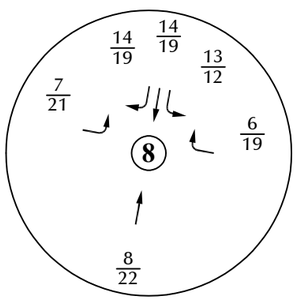


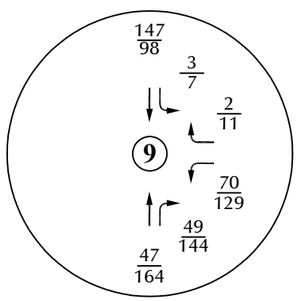


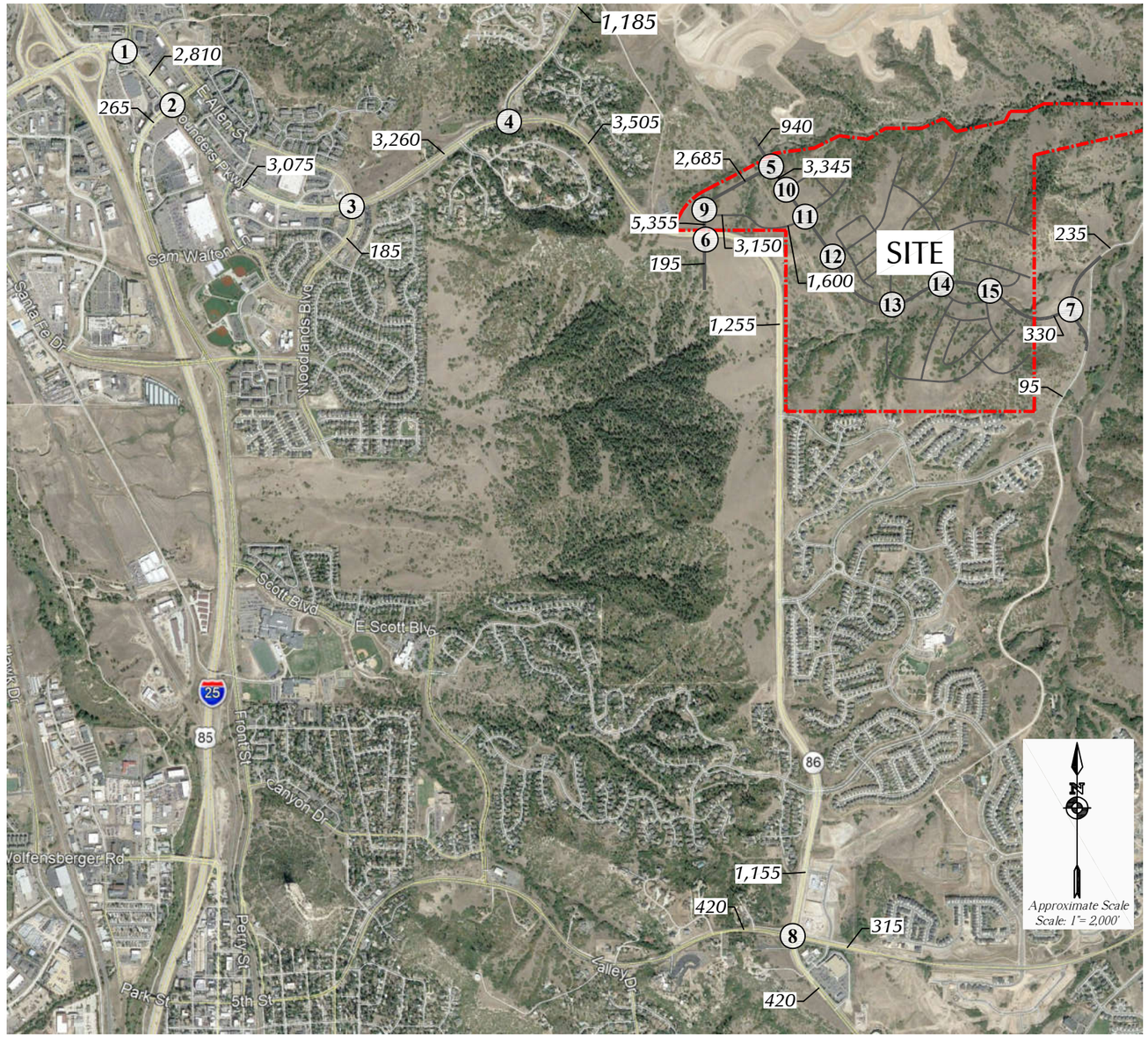












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

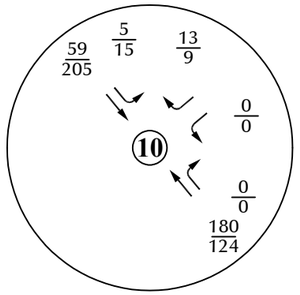
1,000 = Average Daily Traffic

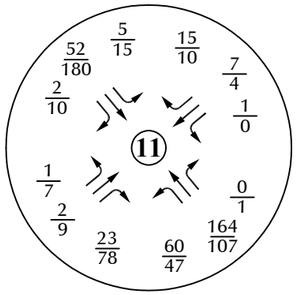
TRANSPORTATION CONSULTANTS, INC.

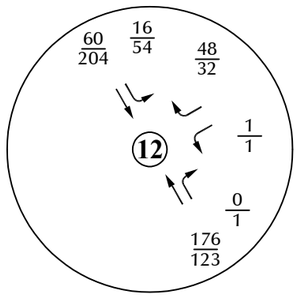
Figure 7f

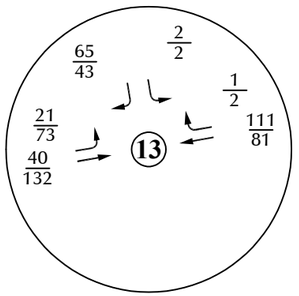
Major Intersections - Assignment of Total Site-Generated Traffic

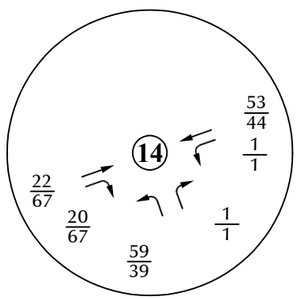
Canyons South (LSC #210310)

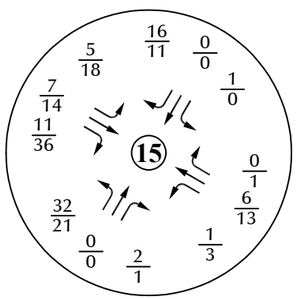


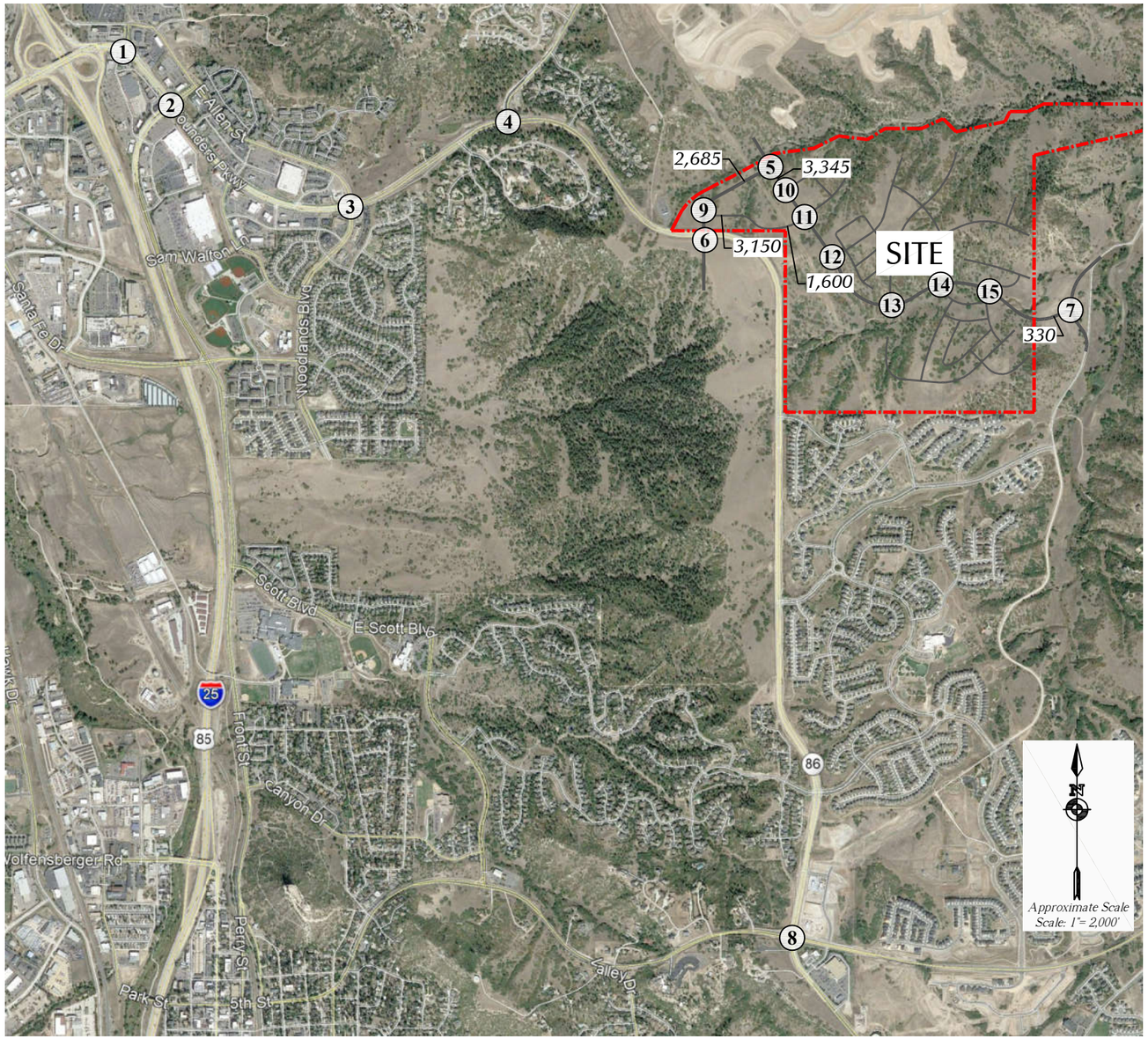












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

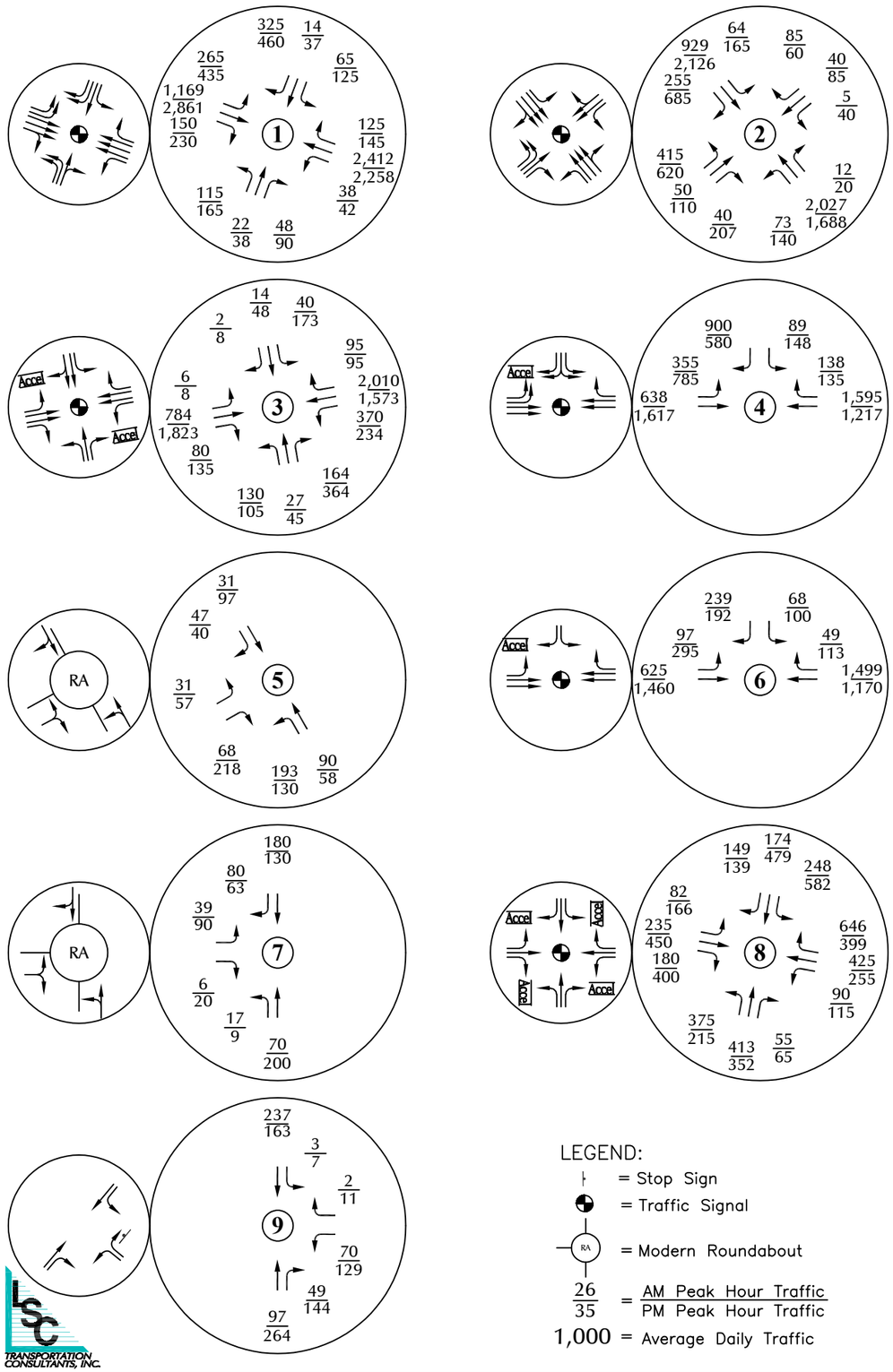
1,000 = Average Daily Traffic

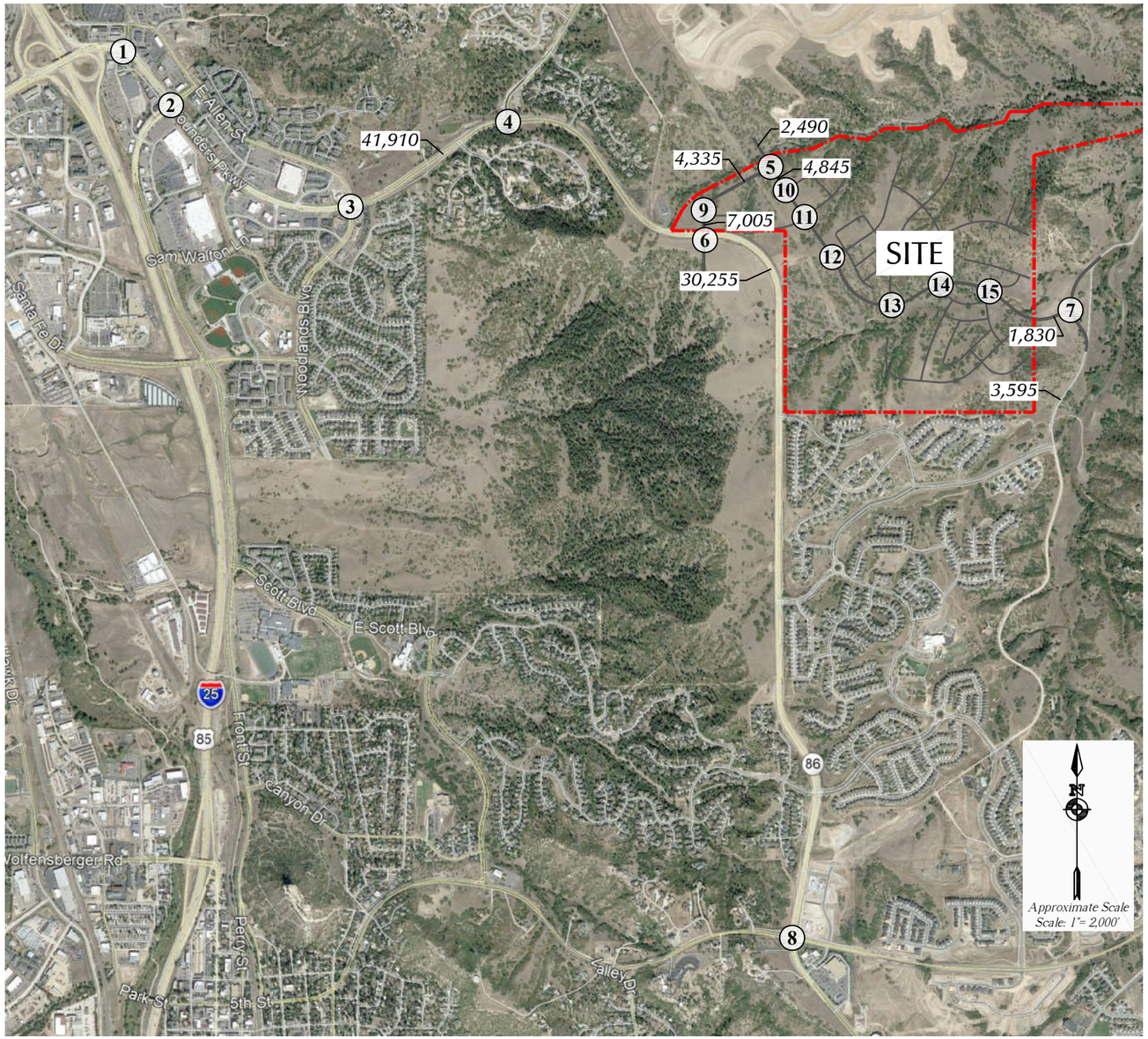
TRANSPORTATION CONSULTANTS, INC.

Figure 7g

Access/Minor Intersections - Assignment of Total Site-Generated Traffic

Canyons South (LSC #210310)



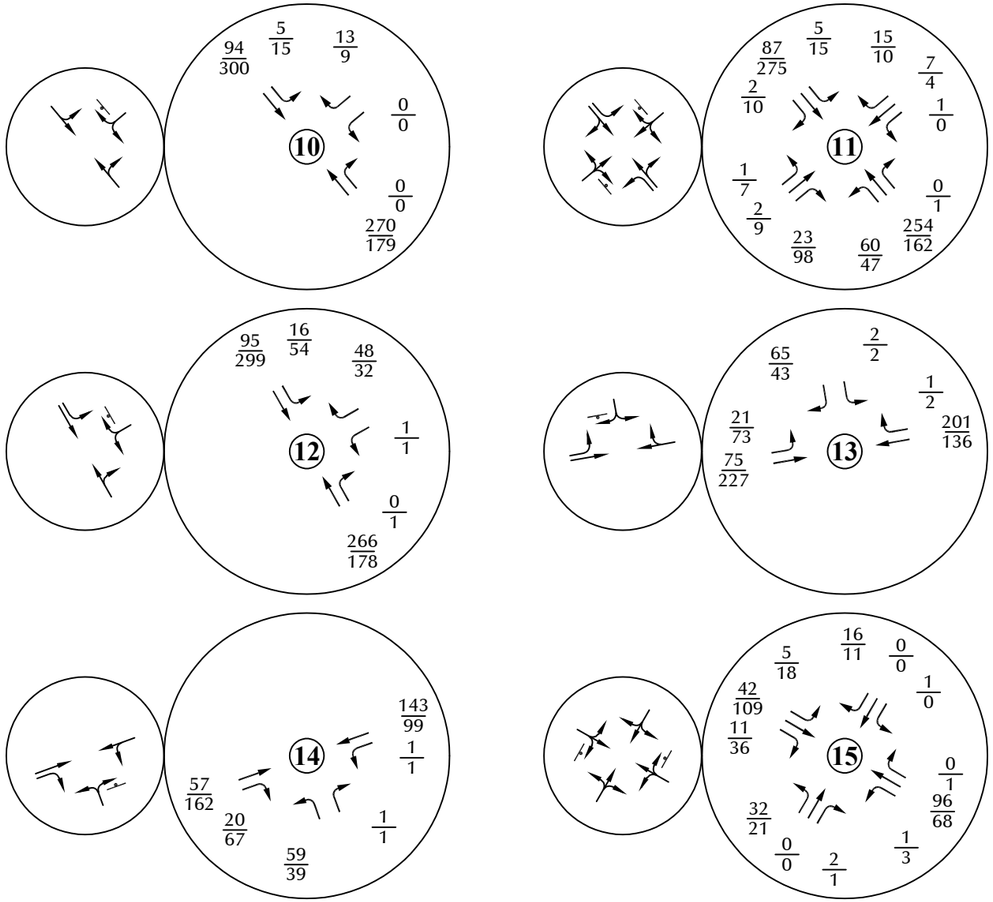


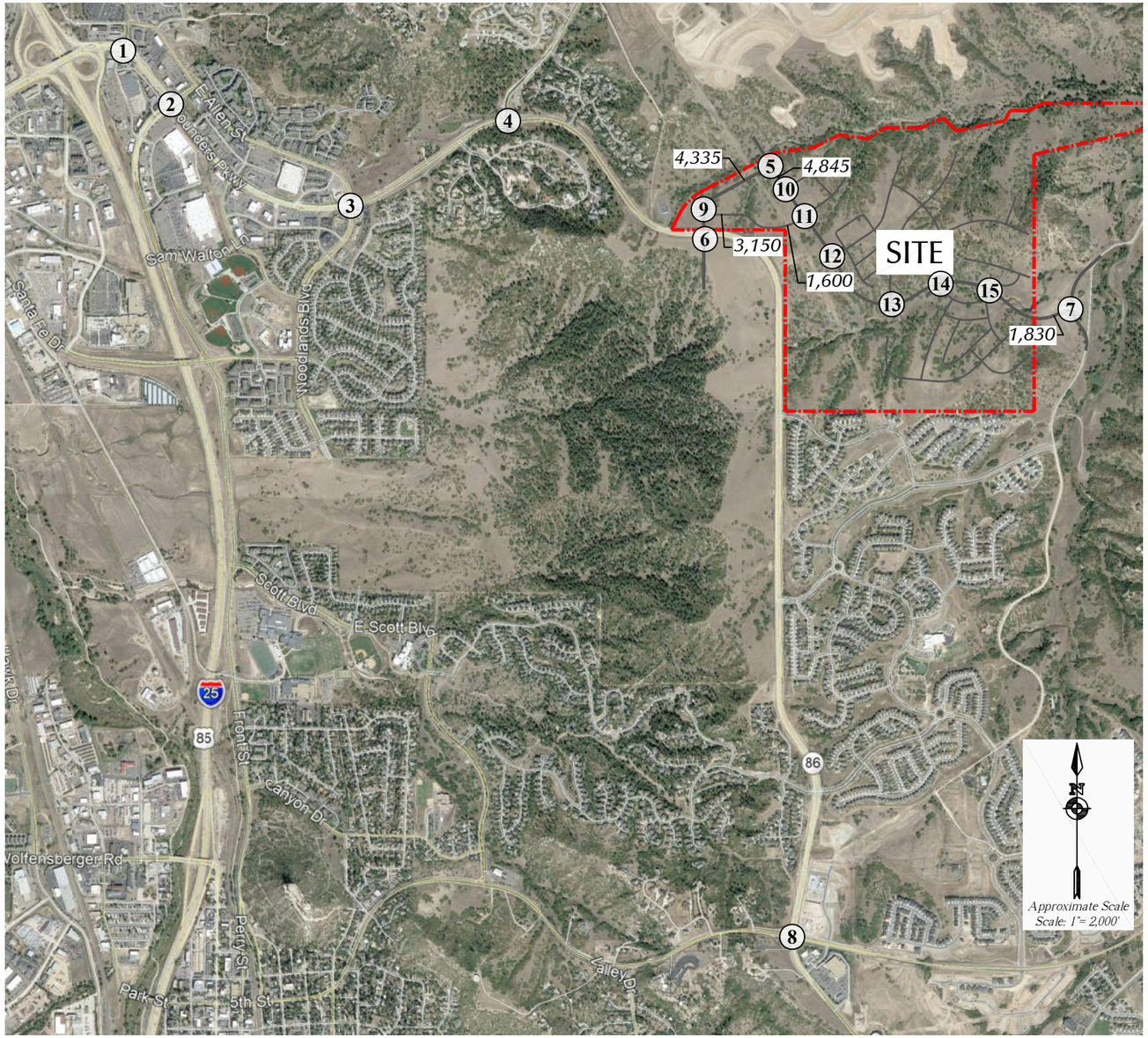
Note: These volumes are the sum of the volumes in Figure 4 and Figure 7f.

Figure 8a

Major Intersections - Year 2025 Total Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)





Note: These volumes are the sum of the volumes in Figure 4 and Figure 7g.

LEGEND:

= Stop Sign

= Traffic Signal

RA = Modern Roundabout

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

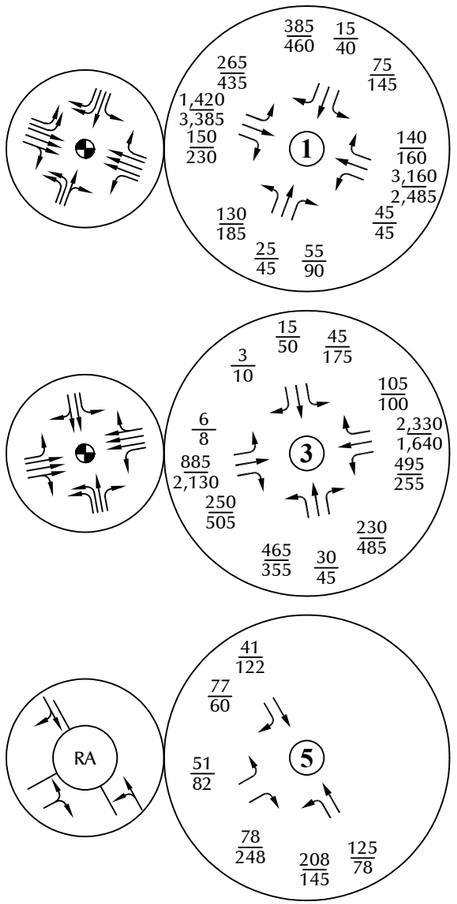
1,000 = Average Daily Traffic

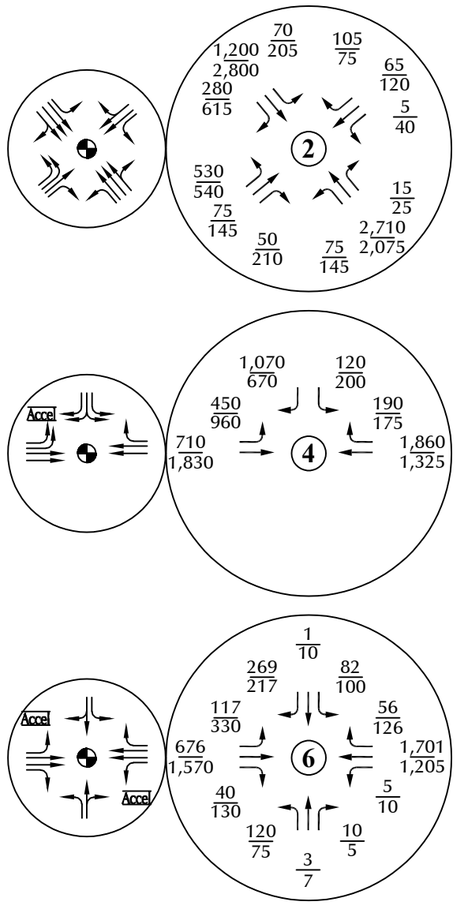
LSC TRANSPORTATION CONSULTANTS, INC.

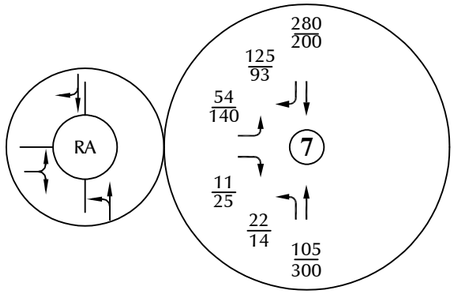
Figure 8b

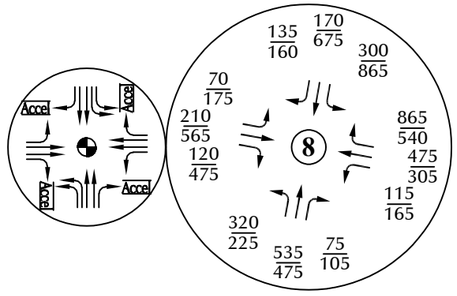
Access/Minor Intersections - Year 2025 Total Traffic, Lane Geometry and Traffic Control

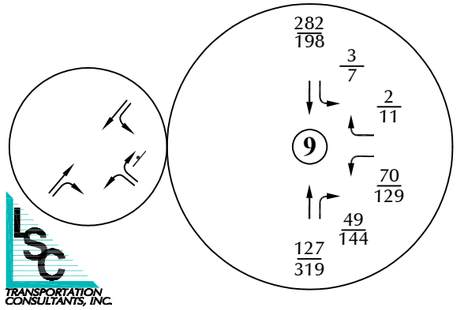
Canyons South (LSC #210310)











LSC TRANSPORTATION CONSULTANTS, INC.

LEGEND:

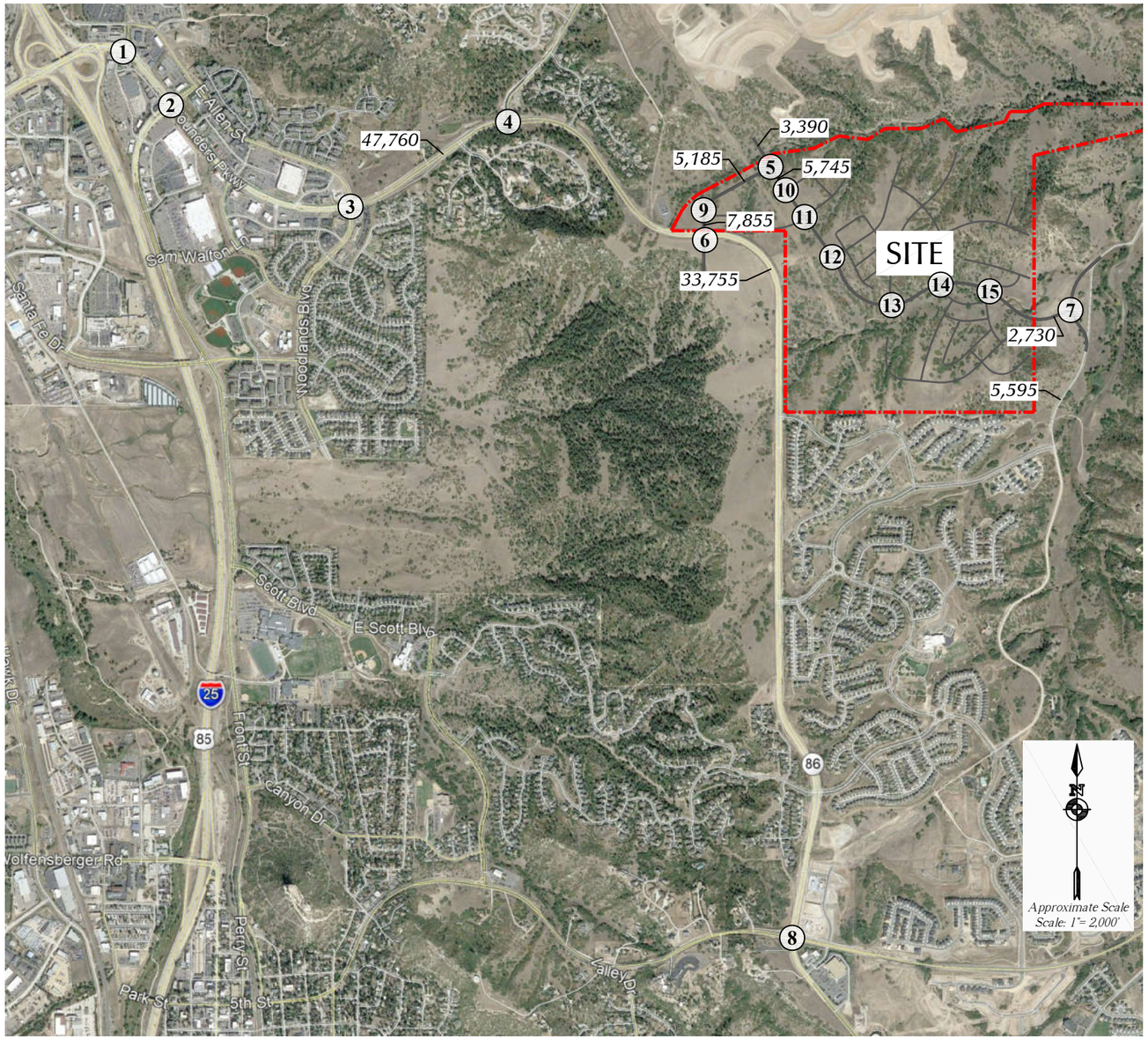
= Stop Sign

= Traffic Signal

= Modern Roundabout

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic



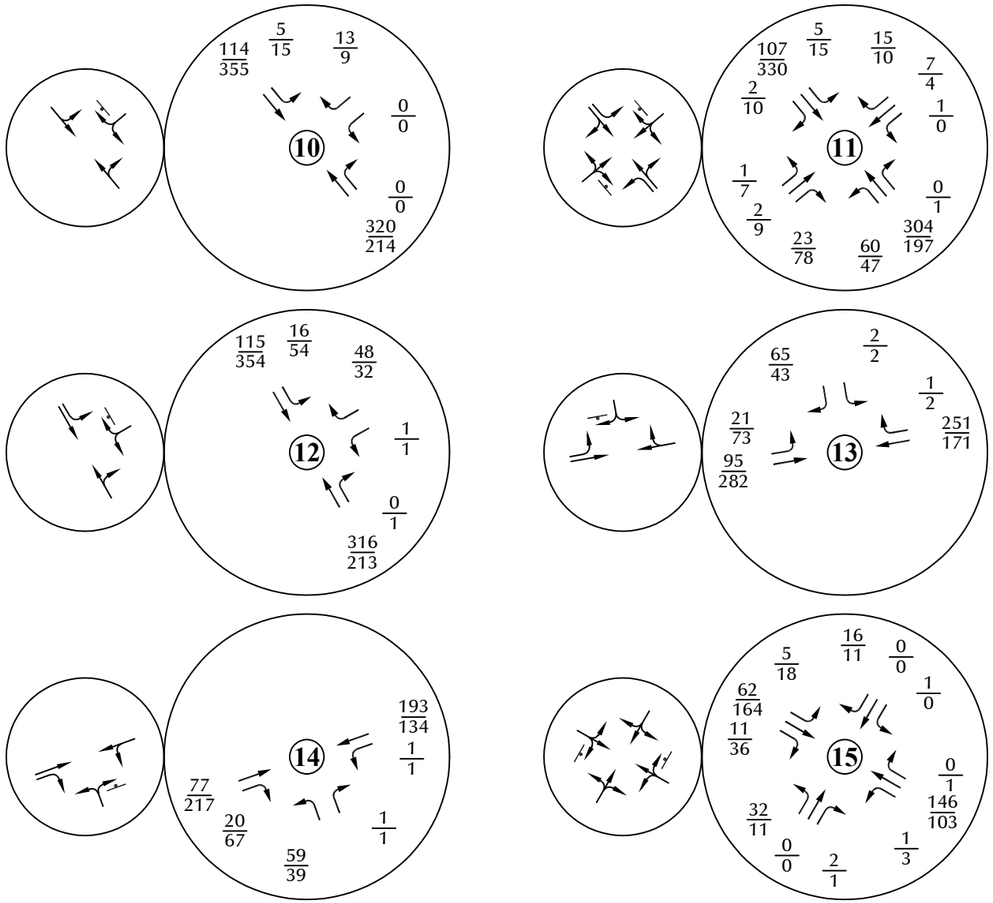
Notes:

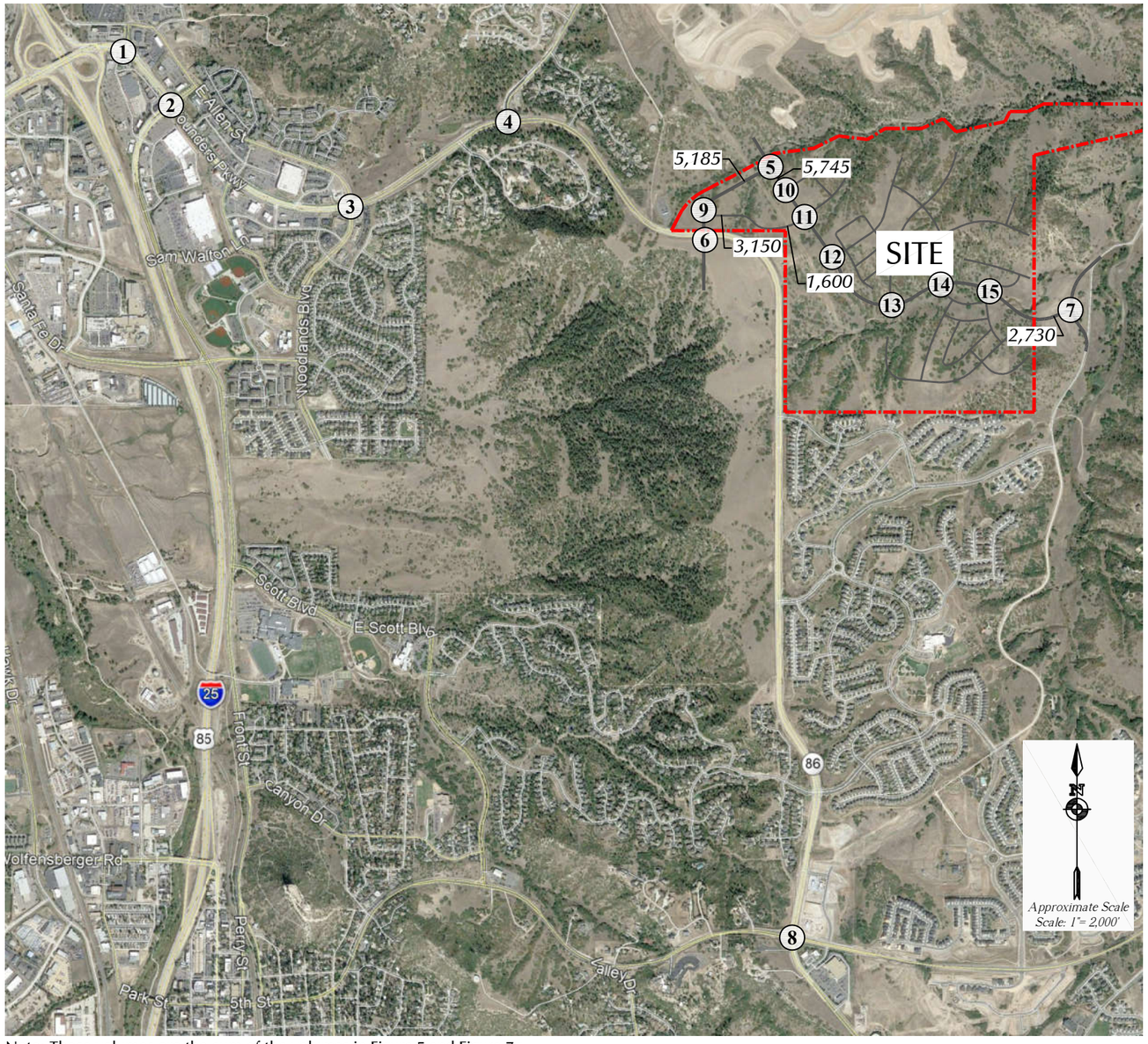
1. #8 based on 2040 projections from Town grown for one year at an annual rate of three percent plus site-generated trips.
2. South leg of #6 based on build-out volumes from Figure 7a of the 2017 Pine Canyon Update TIA by LSC.
3. Side Road volumes at #1, #2, #3 and #4 are based on the 2040 total traffic volumes from Figure 12 of the 2020 Pine Canyon TIA by Kimley Horn with some adjustments based on the recent traffic counts.
4. Through traffic at #7 based on three percent annual growth rate.
5. These volumes are the sum of the volumes in Figure 5 and Figure 7f.

Figure 9a

Major Intersections - Year 2041 Total Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)





Note: These volumes are the sum of the volumes in Figure 5 and Figure 7g.

LEGEND:

= Stop Sign

= Traffic Signal

RA = Modern Roundabout

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

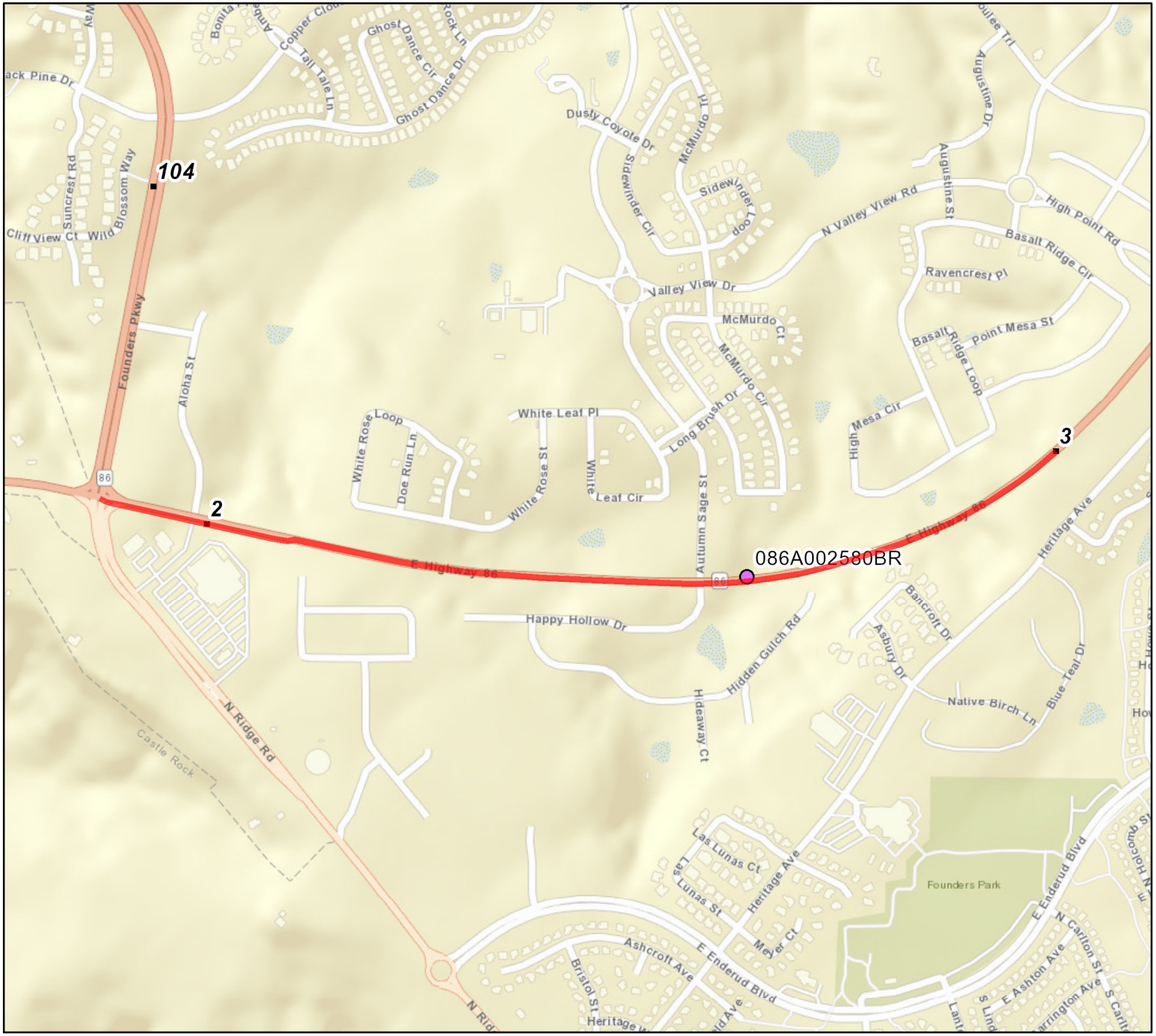
TRANSPORTATION CONSULTANTS, INC.

Figure 9b

Access/Minor Intersections - Year 2041 Total Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)

Route 086A From 1 to 3



Legend

- Route
- Milepoint

Structures

- Major Structure
- Minor Structure

Created:

Date: 6/17/2021

Time: 9:52:59 AM

0 0.08 0.16 0.24 0.32

Miles

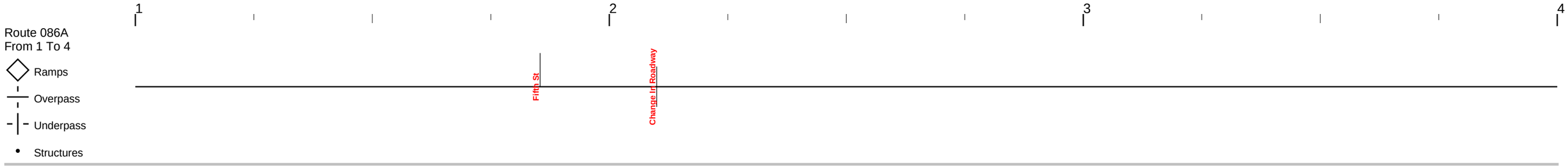
N

W E

S

CDOT

The information contained in this map is based on the most currently available data and has been checked for accuracy. CDOT does not guarantee the accuracy of any information presented, is not liable in any respect for any errors or omissions, and is not responsible for determining "fitness for use".



CLASSIFICATION

Access Control	NR-A: Non-Rural Principal Highway	

SAFETY

Primary Speed Limit	45	55

TRAFFIC

AADT	15000	9900
V/C Ratio 20	0.97	0.47
Year 20 Factor	1.17	1.14

It may appear that information is missing from the straight line diagram. If so, reduce the number of miles/page and re-submit the request.

COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN WAY
E/W STREET: FOUNDERS PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLEN WAY FOUNDERS PKWY 6-3-21
Site Code : 00000022
Start Date : 6/3/2021
Page No : 1

Groups Printed- VEHICLES

	ALLEN WAY Southbound				FOUNDERS PKWY Westbound				ALLEN WAY Northbound				FOUNDERS PKWY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	15	2	37	0	5	292	28	0	14	2	11	0	35	131	18	0	590
06:45 AM	10	3	47	0	11	344	28	0	22	0	11	0	60	155	35	0	726
Total	25	5	84	0	16	636	56	0	36	2	22	0	95	286	53	0	1316
07:00 AM	6	2	73	0	10	324	53	0	22	7	14	0	37	145	30	0	723
07:15 AM	13	5	76	0	8	352	43	1	19	1	12	0	74	167	20	0	791
07:30 AM	15	3	72	0	3	430	30	0	26	1	12	0	64	186	29	0	871
07:45 AM	17	3	63	0	7	402	26	0	20	3	14	0	71	279	55	0	960
Total	51	13	284	0	28	1508	152	1	87	12	52	0	246	777	134	0	3345
08:00 AM	17	2	80	0	5	360	33	0	30	5	12	1	64	227	36	0	872
08:15 AM	11	5	66	1	10	356	31	0	28	2	8	0	65	233	30	0	846
Total	28	7	146	1	15	716	64	0	58	7	20	1	129	460	66	0	1718
04:00 PM	35	9	122	0	7	399	45	1	39	10	19	0	111	513	74	0	1384
04:15 PM	20	11	117	0	9	449	37	0	43	3	20	0	107	440	50	0	1306
04:30 PM	23	8	107	0	7	363	34	0	40	12	22	0	112	504	54	0	1286
04:45 PM	33	7	103	0	1	458	31	0	35	2	33	0	117	517	55	0	1392
Total	111	35	449	0	24	1669	147	1	157	27	94	0	447	1974	233	0	5368
05:00 PM	22	13	137	0	14	402	31	0	34	5	19	0	111	536	65	0	1389
05:15 PM	26	7	108	0	17	439	39	0	38	1	14	0	96	549	53	0	1387
05:30 PM	19	7	121	0	10	383	45	0	39	11	11	0	89	470	47	0	1252
05:45 PM	14	13	114	0	8	391	24	0	34	10	14	0	105	424	48	1	1200
Total	81	40	480	0	49	1615	139	0	145	27	58	0	401	1979	213	1	5228
Grand Total	296	100	1443	1	132	6144	558	2	483	75	246	1	1318	5476	699	1	16975
Apprch %	16.1	5.4	78.4	0.1	1.9	89.9	8.2	0.0	60.0	9.3	30.6	0.1	17.6	73.1	9.3	0.0	
Total %	1.7	0.6	8.5	0.0	0.8	36.2	3.3	0.0	2.8	0.4	1.4	0.0	7.8	32.3	4.1	0.0	

COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN WAY
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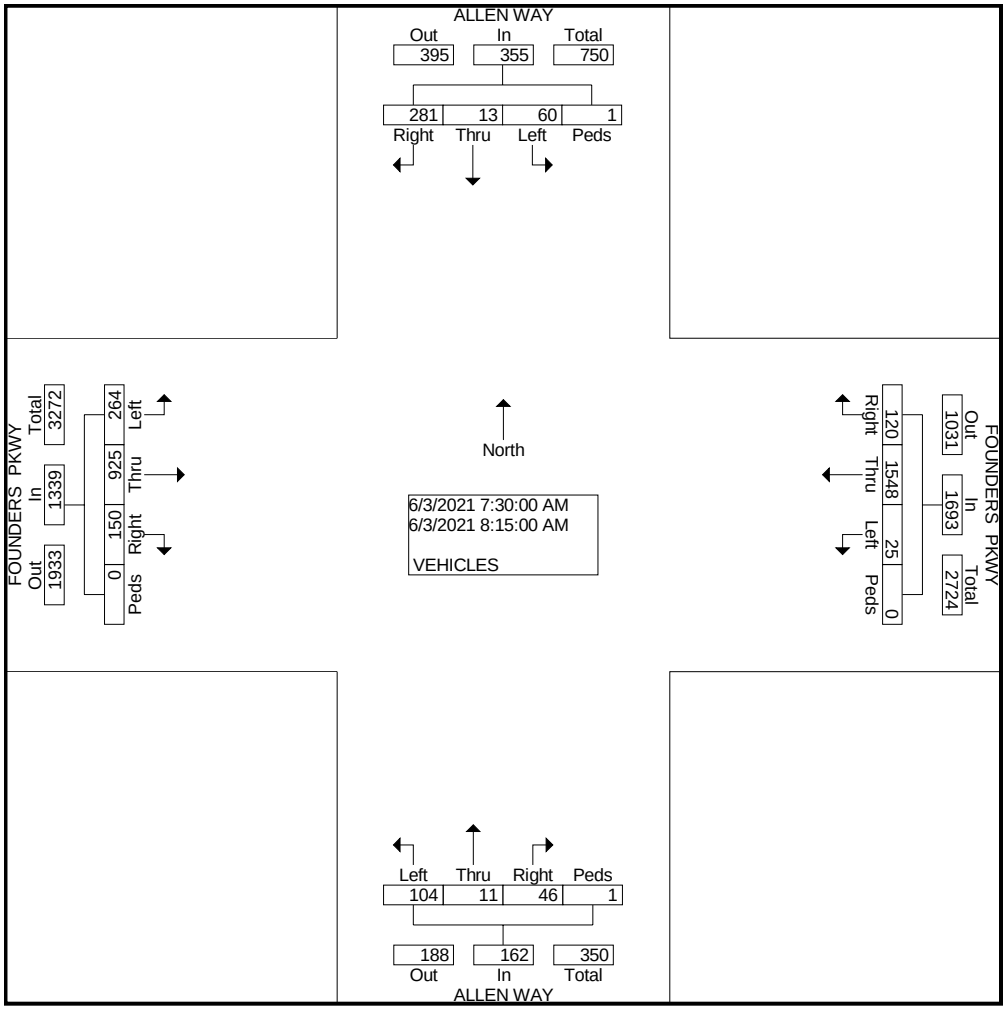
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLEN WAY FOUNDERS PKWY 6-3-21
Site Code : 00000022
Start Date : 6/3/2021
Page No : 2

	ALLEN WAY Southbound					FOUNDERS PKWY Westbound					ALLEN WAY Northbound					FOUNDERS PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	60	13	281	1	355	25	1548	120	0	1693	104	11	46	1	162	264	925	150	0	1339	3549
Percent	16.9	3.7	79.2	0.3		1.5	91.4	7.1	0.0		64.2	6.8	28.4	0.6		19.7	69.1	11.2	0.0		
07:45 Volume	17	3	63	0	83	7	402	26	0	435	20	3	14	0	37	71	279	55	0	405	960
Peak Factor																					0.924
High Int.	08:00 AM					07:30 AM					08:00 AM					07:45 AM					
Volume	17	2	80	0	99	3	430	30	0	463	30	5	12	1	48	71	279	55	0	405	
Peak Factor					0.896					0.914					0.844					0.827	



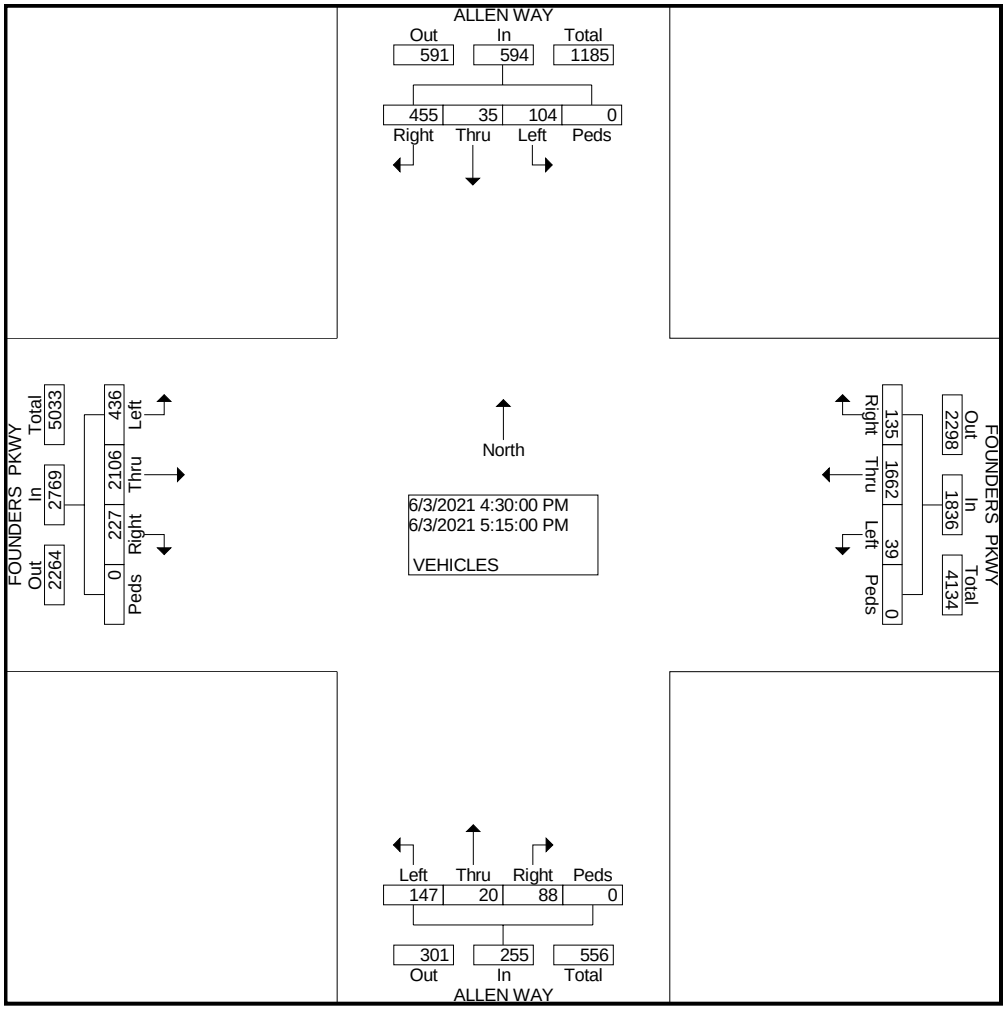
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN WAY
E/W STREET: FOUNDERS PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLEN WAY FOUNDERS PKWY 6-3-21
Site Code : 00000022
Start Date : 6/3/2021
Page No : 2

	ALLEN WAY Southbound					FOUNDERS PKWY Westbound					ALLEN WAY Northbound					FOUNDERS PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	104	35	455	0	594	39	1662	135	0	1836	147	20	88	0	255	436	2106	227	0	2769	5454
Percent	17.5	5.9	76.6	0.0		2.1	90.5	7.4	0.0		57.6	7.8	34.5	0.0		15.7	76.1	8.2	0.0		
04:45 Volume	33	7	103	0	143	1	458	31	0	490	35	2	33	0	70	117	517	55	0	689	1392
Peak Factor																					0.980
High Int.	05:00 PM					05:15 PM					04:30 PM					05:00 PM					
Volume	22	13	137	0	172	17	439	39	0	495	40	12	22	0	74	111	536	65	0	712	
Peak Factor					0.863					0.927					0.861					0.972	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: FRONT STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FRONTFOUND
Site Code : 00000020
Start Date : 5/4/2021
Page No : 1

Groups Printed- VEHICLES

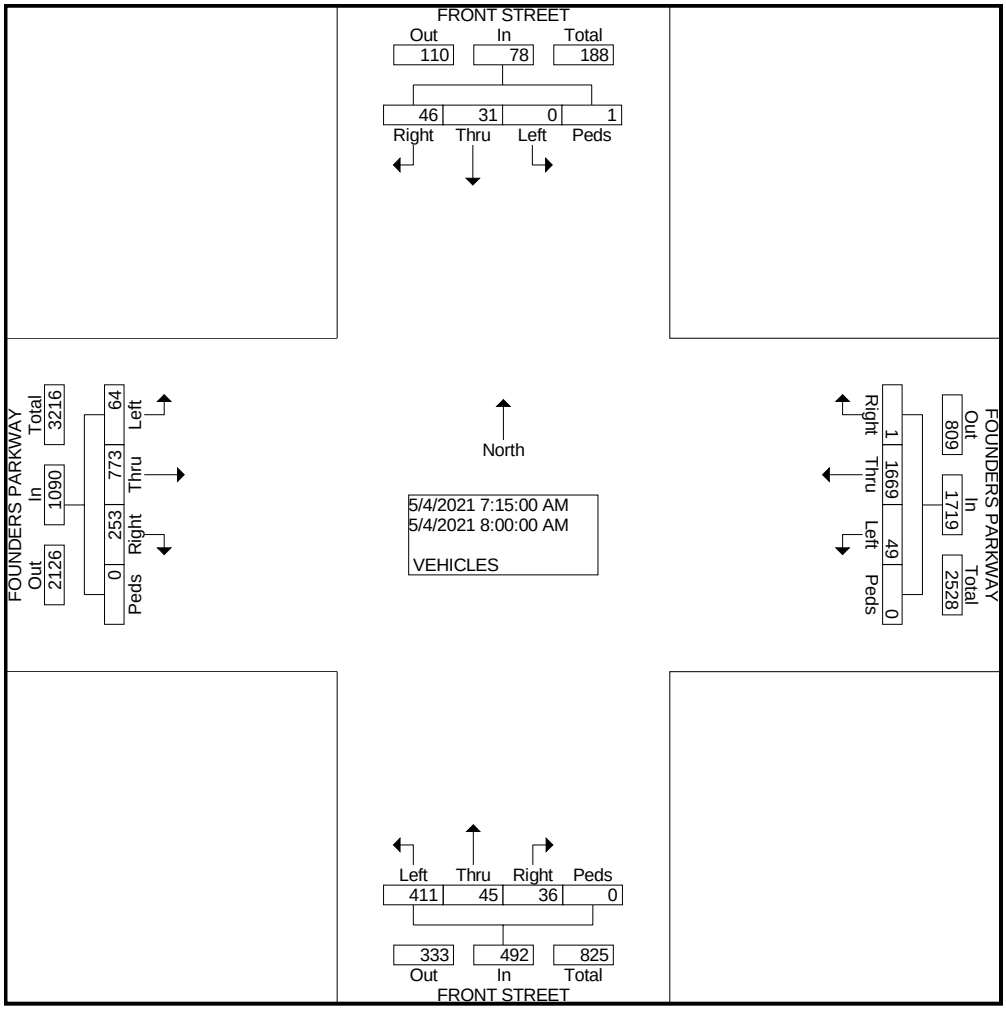
	FRONT STREET Southbound				FOUNDERS PARKWAY Westbound				FRONT STREET Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	1	2	13	0	8	282	0	0	55	3	4	0	7	105	42	0	522
06:45 AM	0	0	11	0	9	339	0	0	62	6	5	0	5	148	49	4	638
Total	1	2	24	0	17	621	0	0	117	9	9	0	12	253	91	4	1160
07:00 AM	0	0	14	0	12	343	0	0	78	8	6	0	3	126	44	0	634
07:15 AM	0	11	11	0	13	448	0	0	107	12	5	0	10	142	70	0	829
07:30 AM	0	6	12	1	10	458	1	0	106	14	13	0	8	180	51	0	860
07:45 AM	0	6	10	0	11	418	0	0	107	9	6	0	26	231	69	0	893
Total	0	23	47	1	46	1667	1	0	398	43	30	0	47	679	234	0	3216
08:00 AM	0	8	13	0	15	345	0	0	91	10	12	0	20	220	63	0	797
08:15 AM	0	9	17	0	8	331	0	0	64	9	8	0	12	230	73	4	765
Total	0	17	30	0	23	676	0	0	155	19	20	0	32	450	136	4	1562
04:00 PM	0	20	14	0	25	316	0	0	163	30	38	0	41	410	167	0	1224
04:15 PM	1	18	12	1	37	373	0	0	157	34	50	0	38	437	187	0	1345
04:30 PM	0	22	9	0	31	340	0	0	139	20	44	0	33	408	163	1	1210
04:45 PM	0	17	15	1	33	339	0	0	175	23	49	0	48	443	172	0	1315
Total	1	77	50	2	126	1368	0	0	634	107	181	0	160	1698	689	1	5094
05:00 PM	0	14	13	1	26	349	0	0	148	32	53	0	37	453	164	0	1290
05:15 PM	0	18	14	0	31	317	0	0	143	27	48	0	40	400	173	0	1211
05:30 PM	0	23	9	0	25	279	0	0	176	34	45	0	43	514	169	0	1317
05:45 PM	0	14	7	0	23	306	0	0	126	23	48	0	37	410	145	0	1139
Total	0	69	43	1	105	1251	0	0	593	116	194	0	157	1777	651	0	4957
Grand Total	2	188	194	4	317	5583	1	0	1897	294	434	0	408	4857	1801	9	15989
Apprch %	0.5	48.5	50.0	1.0	5.4	94.6	0.0	0.0	72.3	11.2	16.5	0.0	5.8	68.7	25.5	0.1	
Total %	0.0	1.2	1.2	0.0	2.0	34.9	0.0	0.0	11.9	1.8	2.7	0.0	2.6	30.4	11.3	0.1	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: FRONT STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FRONTFOUND
Site Code : 00000020
Start Date : 5/4/2021
Page No : 2

	FRONT STREET Southbound					FOUNDERS PARKWAY Westbound					FRONT STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	31	46	1	78	49	1669	1	0	1719	411	45	36	0	492	64	773	253	0	1090	3379
Percent	0.0	39.7	59.0	1.3		2.9	97.1	0.1	0.0		83.5	9.1	7.3	0.0		5.9	70.9	23.2	0.0		
07:45 Volume	0	6	10	0	16	11	418	0	0	429	107	9	6	0	122	26	231	69	0	326	893
Peak Factor																					0.946
High Int.	07:15 AM					07:30 AM					07:30 AM					07:45 AM					
Volume	0	11	11	0	22	10	458	1	0	469	106	14	13	0	133	26	231	69	0	326	
Peak Factor					0.886					0.916					0.925					0.836	

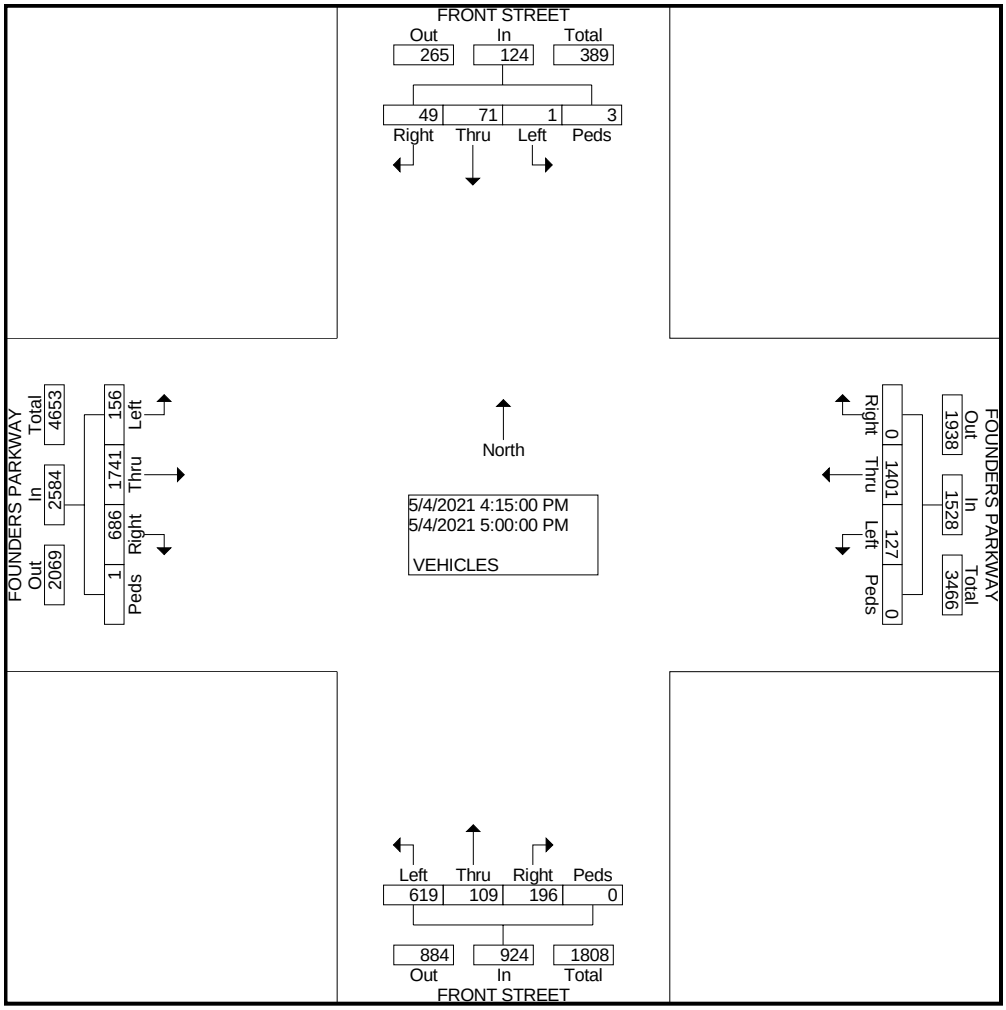


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: FRONT STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FRONTFOUND
Site Code : 00000020
Start Date : 5/4/2021
Page No : 2

	FRONT STREET Southbound					FOUNDERS PARKWAY Westbound					FRONT STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	1	71	49	3	124	127	1401	0	0	1528	619	109	196	0	924	156	1741	686	1	2584	5160
Percent	0.8	57.3	39.5	2.4		8.3	91.7	0.0	0.0		67.0	11.8	21.2	0.0		6.0	67.4	26.5	0.0		
04:15 Volume	1	18	12	1	32	37	373	0	0	410	157	34	50	0	241	38	437	187	0	662	1345
Peak Factor																					0.959
High Int.	04:45 PM					04:15 PM					04:45 PM					04:45 PM					
Volume	0	17	15	1	33	37	373	0	0	410	175	23	49	0	247	48	443	172	0	663	
Peak Factor					0.939					0.932					0.935					0.974	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021
Page No : 1

Groups Printed- 1 - VEHICLES

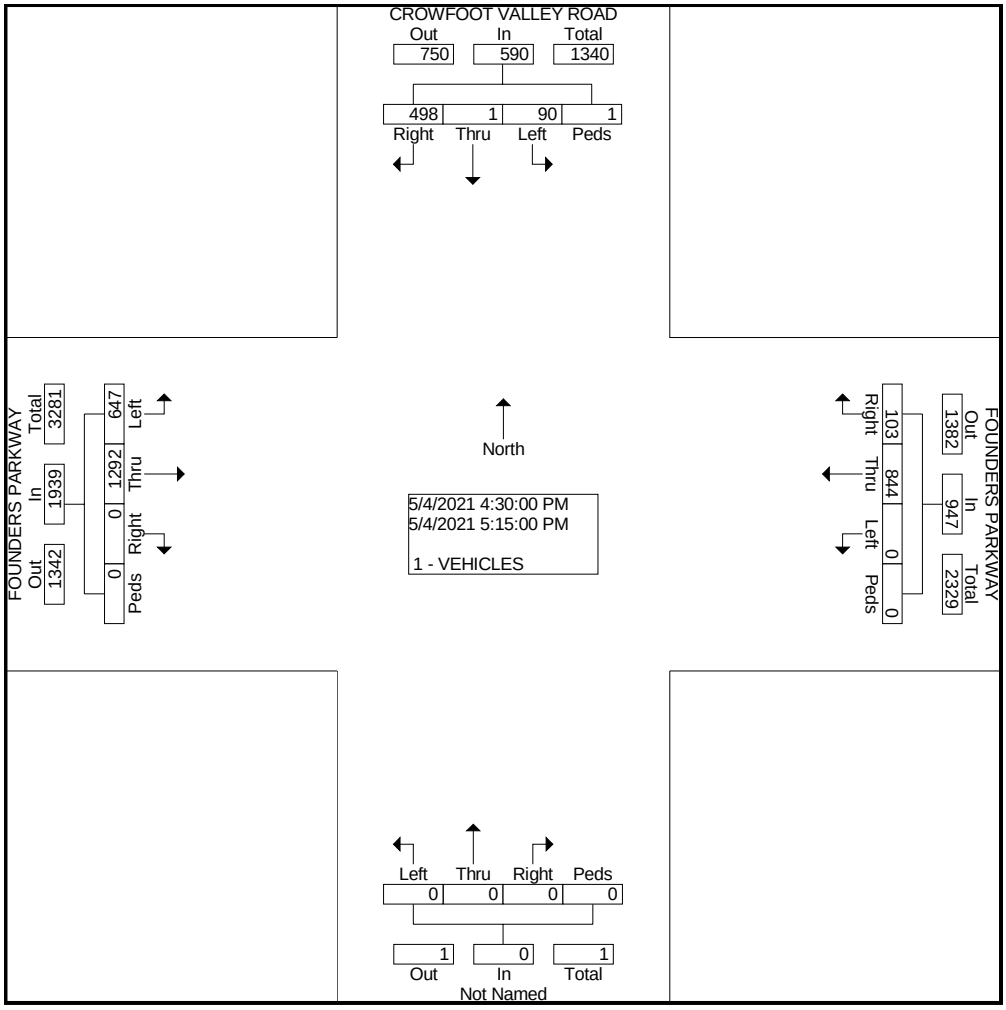
	CROWFOOT VALLEY ROAD Southbound				FOUNDERS PARKWAY Westbound				Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	8	0	71	0	0	252	11	0	0	0	0	0	50	65	0	0	457
06:45 AM	15	0	122	0	0	242	18	0	0	0	0	0	53	92	0	0	542
Total	23	0	193	0	0	494	29	0	0	0	0	0	103	157	0	0	999
07:00 AM	19	0	144	0	0	273	26	0	0	0	0	0	61	77	0	0	600
07:15 AM	10	0	187	0	0	310	31	0	0	0	0	0	48	87	0	0	673
07:30 AM	12	0	162	0	0	389	46	0	0	0	0	0	91	100	0	0	800
07:45 AM	23	0	154	1	0	284	18	0	0	0	0	0	65	121	0	0	666
Total	64	0	647	1	0	1256	121	0	0	0	0	0	265	385	0	0	2739
08:00 AM	14	0	124	0	0	301	21	0	0	0	0	0	87	128	0	0	675
08:15 AM	28	0	108	0	0	250	19	0	0	0	0	0	80	137	0	0	622
Total	42	0	232	0	0	551	40	0	0	0	0	0	167	265	0	0	1297
04:00 PM	22	0	109	0	0	217	47	0	0	0	0	0	164	286	0	0	845
04:15 PM	23	0	149	0	0	271	27	0	0	0	0	0	129	270	0	0	869
04:30 PM	20	1	130	0	0	225	27	0	0	0	0	0	167	344	0	0	914
04:45 PM	32	0	123	1	0	226	25	0	0	0	0	0	137	263	0	0	807
Total	97	1	511	1	0	939	126	0	0	0	0	0	597	1163	0	0	3435
05:00 PM	16	0	113	0	0	194	26	0	0	0	0	0	176	350	0	0	875
05:15 PM	22	0	132	0	0	199	25	0	0	0	0	0	167	335	0	0	880
05:30 PM	30	0	119	0	0	182	18	0	0	0	0	0	195	336	0	0	880
05:45 PM	18	0	125	0	0	191	21	0	0	0	0	0	132	319	0	0	806
Total	86	0	489	0	0	766	90	0	0	0	0	0	670	1340	0	0	3441
Grand Total	312	1	2072	2	0	4006	406	0	0	0	0	0	1802	3310	0	0	11911
Apprch %	13.1	0.0	86.8	0.1	0.0	90.8	9.2	0.0	0.0	0.0	0.0	0.0	35.3	64.7	0.0	0.0	
Total %	2.6	0.0	17.4	0.0	0.0	33.6	3.4	0.0	0.0	0.0	0.0	0.0	15.1	27.8	0.0	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021
Page No : 2

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	90	1	498	1	590	0	844	103	0	947	0	0	0	0	0	647	1292	0	0	1939	3476
Percent	15.3	0.2	84.4	0.2		0.0	89.1	10.9	0.0		0.0	0.0	0.0	0.0		33.4	66.6	0.0	0.0		
04:30 Volume	20	1	130	0	151	0	225	27	0	252	0	0	0	0	0	167	344	0	0	511	914
Peak Factor																					0.951
High Int. Volume	04:45 PM 32	0	123	1	156	04:30 PM 0	225	27	0	252	0	0	0	0	0	05:00 PM 176	350	0	0	526	
Peak Factor					0.946					0.939										0.922	

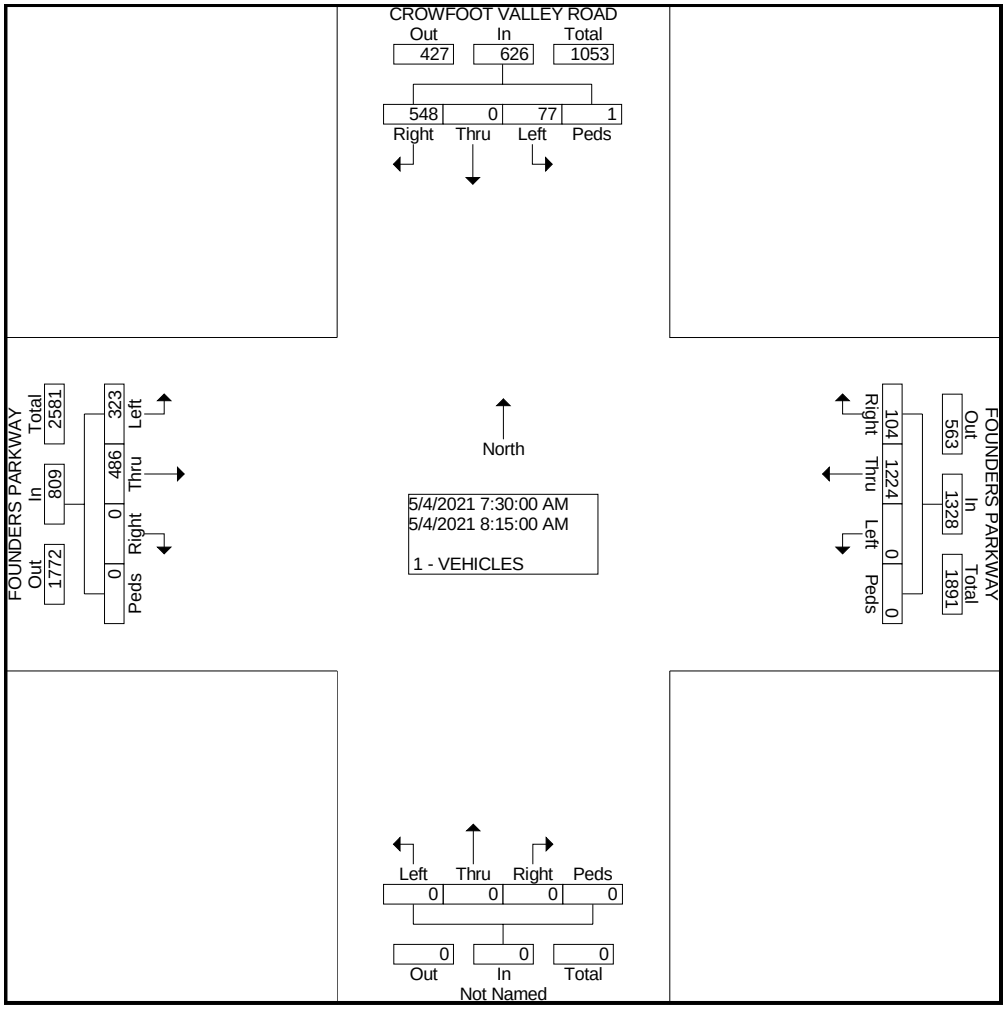


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	77	0	548	1	626	0	1224	104	0	1328	0	0	0	0	0	323	486	0	0	809	2763
Percent	12.3	0.0	87.5	0.2		0.0	92.2	7.8	0.0		0.0	0.0	0.0	0.0		39.9	60.1	0.0	0.0		
07:30 Volume	12	0	162	0	174	0	389	46	0	435	0	0	0	0	0	91	100	0	0	191	800
Peak Factor																					0.863
High Int.	07:45 AM					07:30 AM										08:15 AM					
Volume	23	0	154	1	178	0	389	46	0	435	0	0	0	0	0	80	137	0	0	217	
Peak Factor					0.879					0.763										0.932	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021
Page No : 1

Groups Printed- VEHICLES

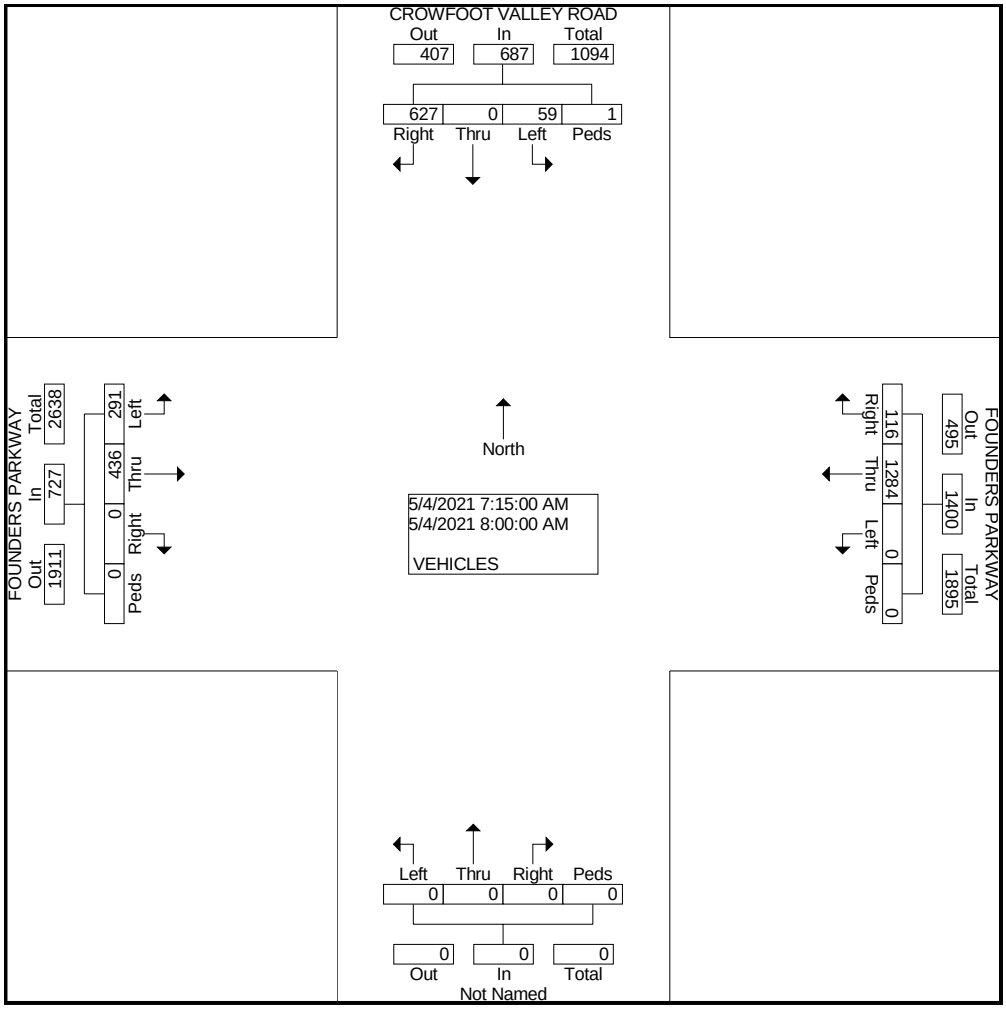
	CROWFOOT VALLEY ROAD Southbound				FOUNDERS PARKWAY Westbound				Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	8	0	71	0	0	252	11	0	0	0	0	0	50	65	0	0	457
06:45 AM	15	0	122	0	0	242	18	0	0	0	0	0	53	92	0	0	542
Total	23	0	193	0	0	494	29	0	0	0	0	0	103	157	0	0	999
07:00 AM	19	0	144	0	0	273	26	0	0	0	0	0	61	77	0	0	600
07:15 AM	10	0	187	0	0	310	31	0	0	0	0	0	48	87	0	0	673
07:30 AM	12	0	162	0	0	389	46	0	0	0	0	0	91	100	0	0	800
07:45 AM	23	0	154	1	0	284	18	0	0	0	0	0	65	121	0	0	666
Total	64	0	647	1	0	1256	121	0	0	0	0	0	265	385	0	0	2739
08:00 AM	14	0	124	0	0	301	21	0	0	0	0	0	87	128	0	0	675
08:15 AM	28	0	108	0	0	250	19	0	0	0	0	0	80	137	0	0	622
Total	42	0	232	0	0	551	40	0	0	0	0	0	167	265	0	0	1297
04:00 PM	22	0	109	0	0	217	47	0	0	0	0	0	164	286	0	0	845
04:15 PM	23	0	149	0	0	271	27	0	0	0	0	0	129	270	0	0	869
04:30 PM	20	1	130	0	0	225	27	0	0	0	0	0	167	344	0	0	914
04:45 PM	32	0	123	1	0	226	25	0	0	0	0	0	137	263	0	0	807
Total	97	1	511	1	0	939	126	0	0	0	0	0	597	1163	0	0	3435
05:00 PM	16	0	113	0	0	194	26	0	0	0	0	0	176	350	0	0	875
05:15 PM	22	0	132	0	0	199	25	0	0	0	0	0	167	335	0	0	880
05:30 PM	30	0	119	0	0	182	18	0	0	0	0	0	195	336	0	0	880
05:45 PM	18	0	125	0	0	191	21	0	0	0	0	0	132	319	0	0	806
Total	86	0	489	0	0	766	90	0	0	0	0	0	670	1340	0	0	3441
Grand Total	312	1	2072	2	0	4006	406	0	0	0	0	0	1802	3310	0	0	11911
Apprch %	13.1	0.0	86.8	0.1	0.0	90.8	9.2	0.0	0.0	0.0	0.0	0.0	35.3	64.7	0.0	0.0	
Total %	2.6	0.0	17.4	0.0	0.0	33.6	3.4	0.0	0.0	0.0	0.0	0.0	15.1	27.8	0.0	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	59	0	627	1	687	0	1284	116	0	1400	0	0	0	0	0	291	436	0	0	727	2814
Percent	8.6	0.0	91.3	0.1		0.0	91.7	8.3	0.0		0.0	0.0	0.0	0.0		40.0	60.0	0.0	0.0		
07:30 Volume	12	0	162	0	174	0	389	46	0	435	0	0	0	0	0	91	100	0	0	191	800
Peak Factor																					0.879
High Int.	07:15 AM					07:30 AM										08:00 AM					
Volume	10	0	187	0	197	0	389	46	0	435	0	0	0	0	0	87	128	0	0	215	
Peak Factor					0.872					0.805										0.845	

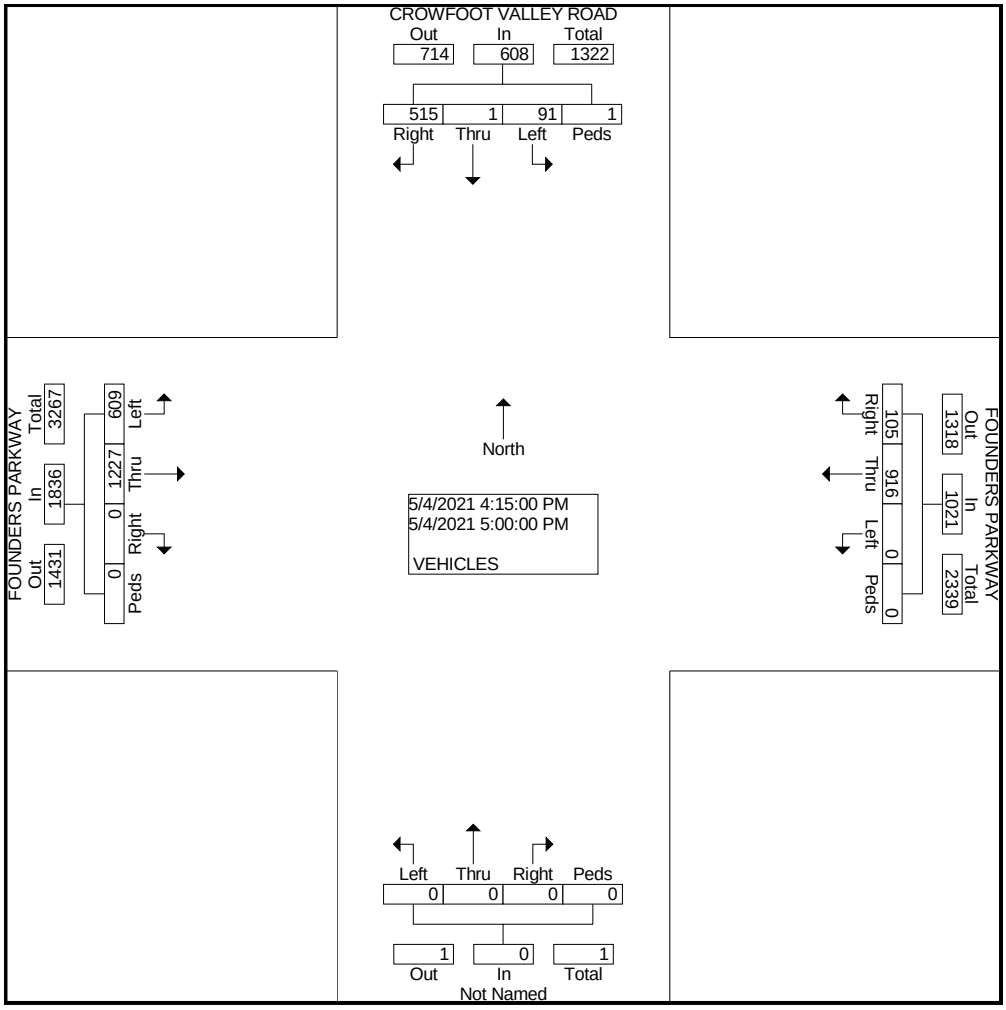


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	91	1	515	1	608	0	916	105	0	1021	0	0	0	0	0	609	1227	0	0	1836	3465
Percent	15.0	0.2	84.7	0.2		0.0	89.7	10.3	0.0		0.0	0.0	0.0	0.0		33.2	66.8	0.0	0.0		
04:30 Volume	20	1	130	0	151	0	225	27	0	252	0	0	0	0	0	167	344	0	0	511	914
Peak Factor																					0.948
High Int.	04:15 PM					04:15 PM										05:00 PM					
Volume	23	0	149	0	172	0	271	27	0	298	0	0	0	0	0	176	350	0	0	526	
Peak Factor					0.884					0.857										0.873	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLENSTFOUND
Site Code : 00000016
Start Date : 4/29/2021
Page No : 1

Groups Printed- VEHICLES

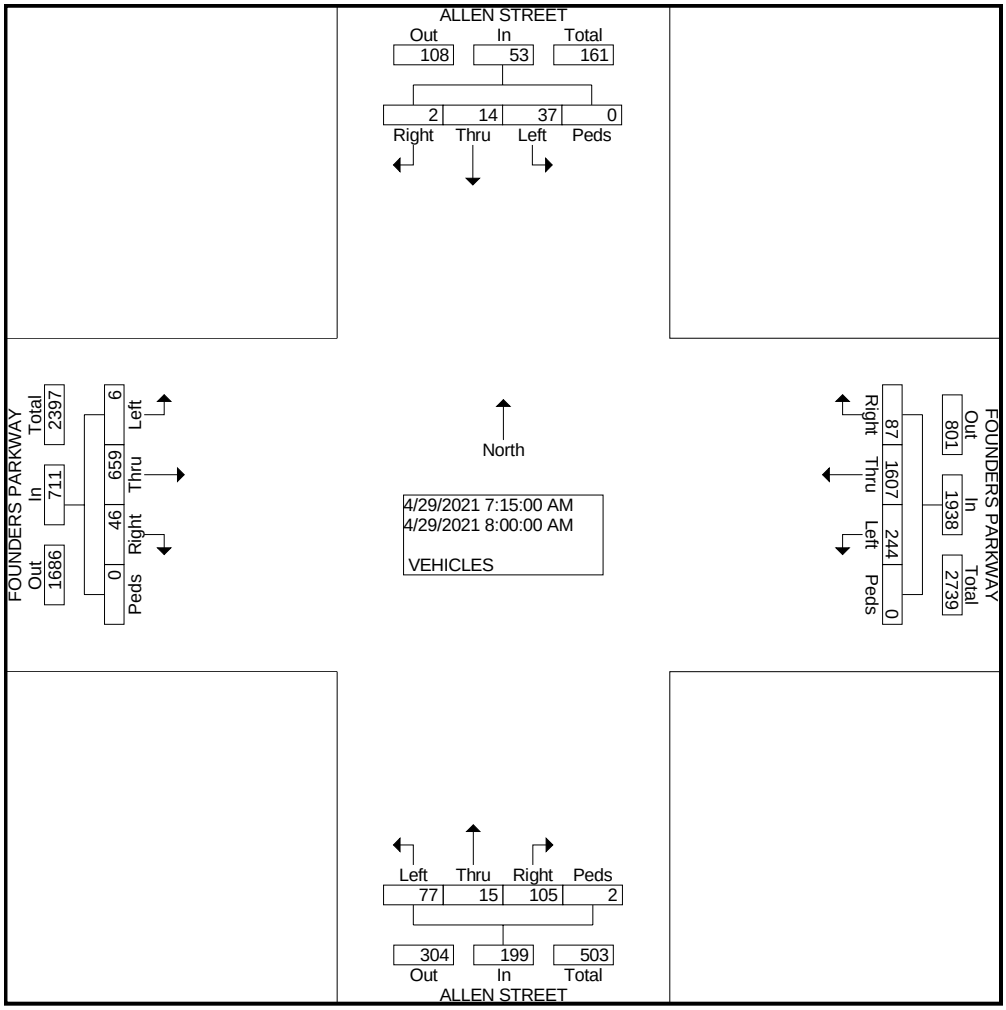
	ALLEN STREET Southbound				FOUNDERS PARKWAY Westbound				ALLEN STREET Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	7	1	1	0	17	261	8	0	12	1	19	0	1	112	2	0	442
06:45 AM	13	1	2	0	43	339	19	0	11	1	20	0	0	106	4	0	559
Total	20	2	3	0	60	600	27	0	23	2	39	0	1	218	6	0	1001
07:00 AM	8	1	0	0	49	311	15	0	13	5	23	0	0	124	6	0	555
07:15 AM	10	0	0	0	91	442	25	0	16	1	23	0	1	134	3	0	746
07:30 AM	5	5	2	0	36	434	22	0	23	5	38	0	1	165	5	0	741
07:45 AM	7	4	0	0	64	432	27	0	14	5	19	0	3	176	16	0	767
Total	30	10	2	0	240	1619	89	0	66	16	103	0	5	599	30	0	2809
08:00 AM	15	5	0	0	53	299	13	0	24	4	25	2	1	184	22	0	647
08:15 AM	8	7	1	0	71	321	24	0	13	3	41	0	1	195	20	1	706
Total	23	12	1	0	124	620	37	0	37	7	66	2	2	379	42	1	1353
04:00 PM	46	15	2	0	43	284	19	0	22	9	100	2	4	386	15	0	947
04:15 PM	45	7	2	0	57	330	23	0	16	8	38	3	0	371	5	2	907
04:30 PM	43	12	0	0	43	319	21	0	24	12	90	0	3	362	11	0	940
04:45 PM	28	10	0	0	54	302	20	0	21	9	61	0	4	363	26	0	898
Total	162	44	4	0	197	1235	83	0	83	38	289	5	11	1482	57	2	3692
05:00 PM	55	17	2	0	48	268	26	1	21	13	61	2	1	372	10	0	897
05:15 PM	46	18	0	0	38	356	23	0	27	13	51	0	2	367	16	0	957
05:30 PM	36	16	1	0	42	279	27	0	19	10	57	0	2	337	27	0	853
05:45 PM	24	7	0	0	44	248	23	0	8	4	38	0	3	367	26	0	792
Total	161	58	3	0	172	1151	99	1	75	40	207	2	8	1443	79	0	3499
Grand Total	396	126	13	0	793	5225	335	1	284	103	704	9	27	4121	214	3	12354
Apprch %	74.0	23.6	2.4	0.0	12.5	82.2	5.3	0.0	25.8	9.4	64.0	0.8	0.6	94.4	4.9	0.1	
Total %	3.2	1.0	0.1	0.0	6.4	42.3	2.7	0.0	2.3	0.8	5.7	0.1	0.2	33.4	1.7	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLENSTFOUND
Site Code : 00000016
Start Date : 4/29/2021
Page No : 2

	ALLEN STREET Southbound					FOUNDERS PARKWAY Westbound					ALLEN STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	37	14	2	0	53	244	1607	87	0	1938	77	15	105	2	199	6	659	46	0	711	2901
Percent	69.8	26.4	3.8	0.0		12.6	82.9	4.5	0.0		38.7	7.5	52.8	1.0		0.8	92.7	6.5	0.0		
07:45 Volume	7	4	0	0	11	64	432	27	0	523	14	5	19	0	38	3	176	16	0	195	767
Peak Factor																					0.946
High Int.	08:00 AM					07:15 AM					07:30 AM					08:00 AM					
Volume	15	5	0	0	20	91	442	25	0	558	23	5	38	0	66	1	184	22	0	207	
Peak Factor					0.663					0.868					0.754					0.859	

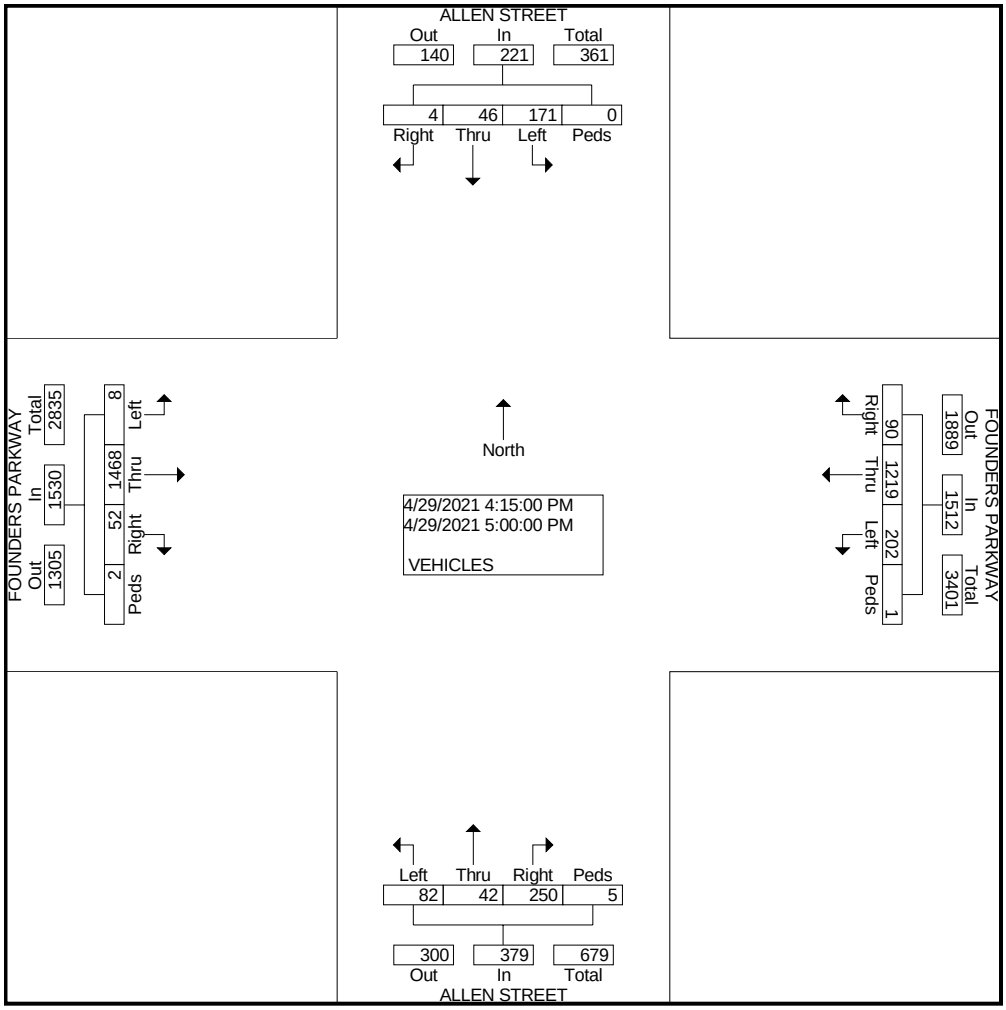


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLENSTFOUND
Site Code : 00000016
Start Date : 4/29/2021
Page No : 2

	ALLEN STREET Southbound					FOUNDERS PARKWAY Westbound					ALLEN STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	171	46	4	0	221	202	1219	90	1	1512	82	42	250	5	379	8	1468	52	2	1530	3642
Percent	77.4	20.8	1.8	0.0		13.4	80.6	6.0	0.1		21.6	11.1	66.0	1.3		0.5	95.9	3.4	0.1		
04:30 Volume	43	12	0	0	55	43	319	21	0	383	24	12	90	0	126	3	362	11	0	376	940
Peak Factor																					0.969
High Int.	05:00 PM					04:15 PM					04:30 PM					04:45 PM					
Volume	55	17	2	0	74	57	330	23	0	410	24	12	90	0	126	4	363	26	0	393	
Peak Factor					0.747					0.922					0.752					0.973	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:FOUNDERS PARKWAY
E/W STREET: 5TH ST/STATE ROAD 86
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FOUNDSR86
Site Code : 00000017
Start Date : 4/27/2021
Page No : 1

Groups Printed- VEHICLES

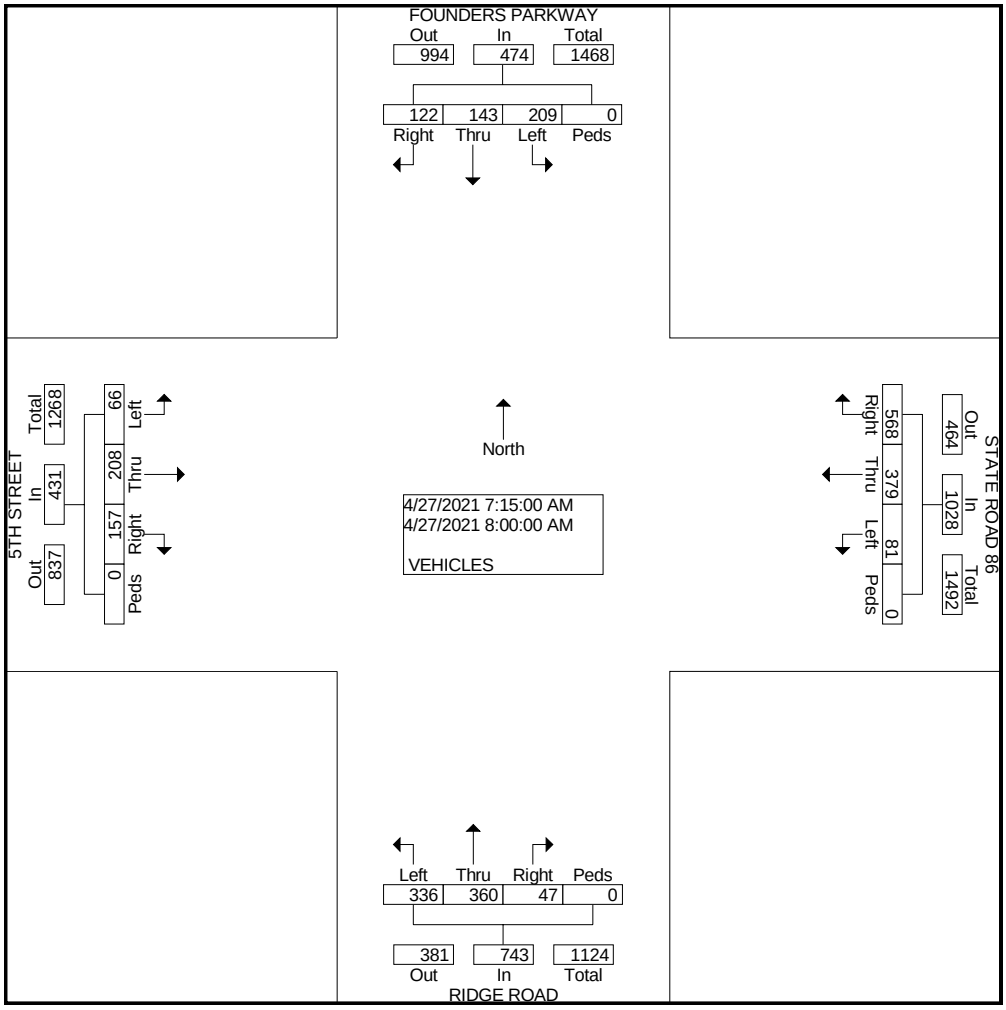
	FOUNDERS PARKWAY Southbound				STATE ROAD 86 Westbound				RIDGE ROAD Northbound				5TH STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	41	19	14	0	12	75	107	0	37	59	8	0	10	24	22	0	428
06:45 AM	59	17	18	0	11	70	103	0	46	68	7	0	14	51	10	0	474
Total	100	36	32	0	23	145	210	0	83	127	15	0	24	75	32	0	902
07:00 AM	75	19	31	0	13	86	100	0	81	95	4	0	12	37	21	0	574
07:15 AM	52	37	39	0	22	118	147	0	132	95	9	0	15	52	35	0	753
07:30 AM	60	30	41	0	13	109	167	0	87	103	10	0	19	49	51	0	739
07:45 AM	49	30	22	0	24	93	124	0	79	81	13	0	17	53	38	0	623
Total	236	116	133	0	72	406	538	0	379	374	36	0	63	191	145	0	2689
08:00 AM	48	46	20	0	22	59	130	0	38	81	15	0	15	54	33	0	561
08:15 AM	49	29	24	0	19	77	129	0	58	84	12	0	19	42	28	0	570
Total	97	75	44	0	41	136	259	0	96	165	27	0	34	96	61	0	1131
04:00 PM	123	98	30	0	18	62	98	0	39	68	4	0	32	89	76	0	737
04:15 PM	122	108	17	0	32	63	87	0	53	85	15	0	35	88	66	0	771
04:30 PM	116	92	22	0	30	56	88	0	44	74	13	0	28	91	86	0	740
04:45 PM	148	121	22	0	22	56	84	0	40	69	14	0	36	93	116	0	821
Total	509	419	91	0	102	237	357	0	176	296	46	0	131	361	344	0	3069
05:00 PM	119	87	18	0	17	52	78	0	53	66	14	0	31	90	79	1	705
05:15 PM	114	105	15	4	34	62	60	0	49	80	10	0	33	89	97	0	752
05:30 PM	138	93	11	0	19	57	76	0	33	69	16	0	25	89	82	0	708
05:45 PM	96	76	23	0	31	57	56	0	38	56	6	0	37	79	62	0	617
Total	467	361	67	4	101	228	270	0	173	271	46	0	126	347	320	1	2782
Grand Total	1409	1007	367	4	339	1152	1634	0	907	1233	170	0	378	1070	902	1	10573
Apprch %	50.6	36.1	13.2	0.1	10.8	36.9	52.3	0.0	39.3	53.4	7.4	0.0	16.1	45.5	38.4	0.0	
Total %	13.3	9.5	3.5	0.0	3.2	10.9	15.5	0.0	8.6	11.7	1.6	0.0	3.6	10.1	8.5	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:FOUNDERS PARKWAY
E/W STREET: 5TH ST/STATE ROAD 86
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FOUNDSR86
Site Code : 00000017
Start Date : 4/27/2021
Page No : 2

	FOUNDERS PARKWAY Southbound					STATE ROAD 86 Westbound					RIDGE ROAD Northbound					5TH STREET Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	209	143	122	0	474	81	379	568	0	1028	336	360	47	0	743	66	208	157	0	431	2676
Percent	44.1	30.2	25.7	0.0		7.9	36.9	55.3	0.0		45.2	48.5	6.3	0.0		15.3	48.3	36.4	0.0		
07:15 Volume	52	37	39	0	128	22	118	147	0	287	132	95	9	0	236	15	52	35	0	102	753
Peak Factor																					0.888
High Int.	07:30 AM					07:30 AM					07:15 AM					07:30 AM					
Volume	60	30	41	0	131	13	109	167	0	289	132	95	9	0	236	19	49	51	0	119	
Peak Factor					0.905					0.889					0.787					0.905	

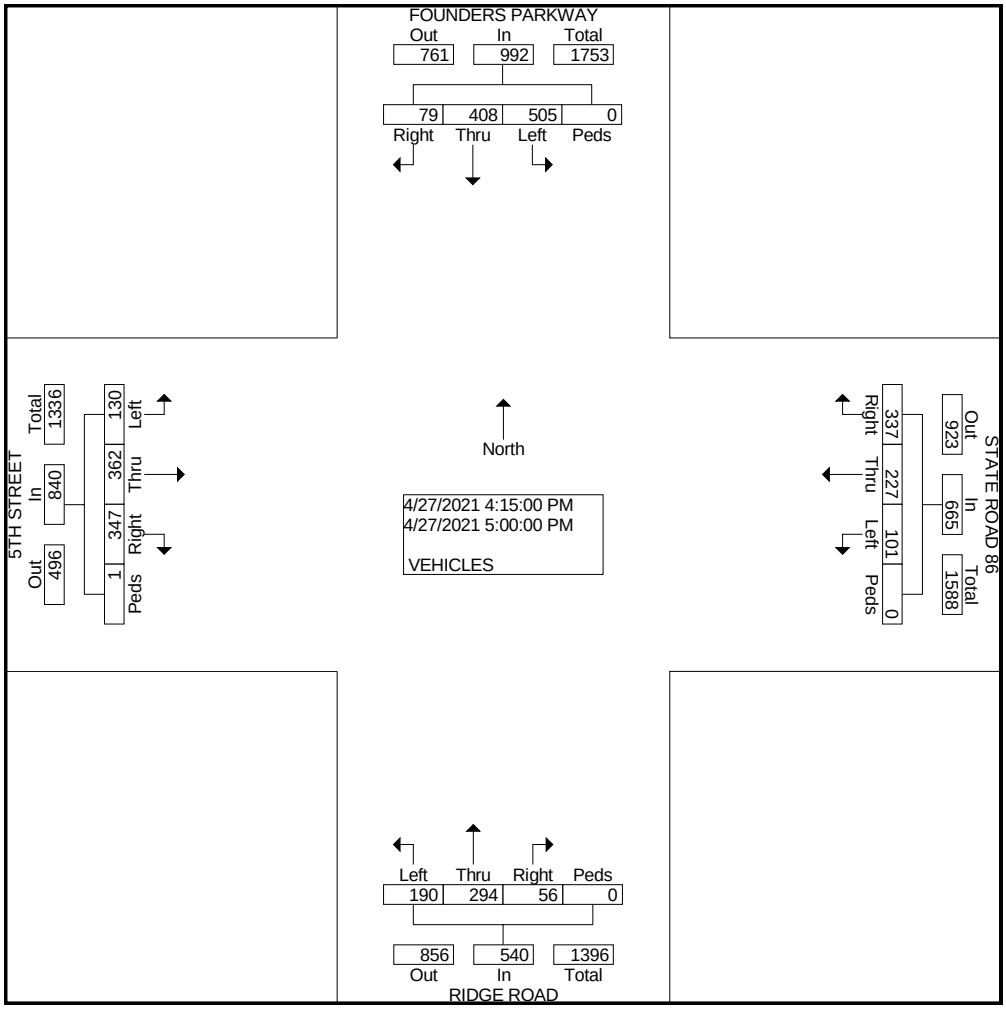


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:FOUNDERS PARKWAY
E/W STREET: 5TH ST/STATE ROAD 86
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FOUNDSR86
Site Code : 00000017
Start Date : 4/27/2021
Page No : 2

	FOUNDERS PARKWAY Southbound					STATE ROAD 86 Westbound					RIDGE ROAD Northbound					5TH STREET Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	505	408	79	0	992	101	227	337	0	665	190	294	56	0	540	130	362	347	1	840	3037
Percent	50.9	41.1	8.0	0.0		15.2	34.1	50.7	0.0		35.2	54.4	10.4	0.0		15.5	43.1	41.3	0.1		
04:45 Volume	148	121	22	0	291	22	56	84	0	162	40	69	14	0	123	36	93	116	0	245	821
Peak Factor																					0.925
High Int.	04:45 PM					04:15 PM					04:15 PM					04:45 PM					
Volume	148	121	22	0	291	32	63	87	0	182	53	85	15	0	153	36	93	116	0	245	
Peak Factor					0.852					0.913					0.882					0.857	



Location: CASTLE OAKS DR S-O ROCKY VIEW RD
City: CASTLE ROCK
County: DOUGLAS
Direction: NORTH/SOUTH

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 210314
Station ID: 210314

Start Time	04-May-21 Tue	NORTHBOU	SOUTHBOU							Total
12:00 AM		5	3							8
01:00		1	1							2
02:00		0	0							0
03:00		1	3							4
04:00		1	14							15
05:00		3	47							50
06:00		22	136							158
07:00		70	**202**							**272**
08:00		89	160							249
09:00		91	117							208
10:00		78	106							184
11:00		**105**	137							242
12:00 PM		121	120							241
01:00		104	109							213
02:00		121	116							237
03:00		167	127							294
04:00		203	132							335
05:00		**218**	**147**							**365**
06:00		177	105							282
07:00		118	69							187
08:00		97	44							141
09:00		53	18							71
10:00		23	9							32
11:00		9	8							17
Total		1877	1930							3807
Percent		49.3%	50.7%							
AM Peak	-	11:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	105	202	-	-	-	-	-	-	272
PM Peak	-	17:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	218	147	-	-	-	-	-	-	365

Location: CASTLE OAKS DR S-O ROCKY VIEW RD
City: CASTLE ROCK
County: DOUGLAS
Direction: NORTH/SOUTH

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 210314
Station ID: 210314

Start Time	05-May-21 Wed	NORTHBOU	SOUTHBOU							Total
12:00 AM		6	5							11
01:00		1	2							3
02:00		1	1							2
03:00		2	3							5
04:00		2	9							11
05:00		4	58							62
06:00		29	136							165
07:00		72	**217**							**289**
08:00		**99**	183							282
09:00		23	25							48
10:00		0	0							0
11:00		0	0							0
12:00 PM		0	0							0
01:00		0	0							0
02:00		0	0							0
03:00		0	0							0
04:00		0	0							0
05:00		0	0							0
06:00		0	0							0
07:00		0	0							0
08:00		0	0							0
09:00		0	0							0
10:00		0	0							0
11:00		0	0							0
Total		239	639							878
Percent		27.2%	72.8%							
AM Peak	-	08:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	99	217	-	-	-	-	-	-	289
PM Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
Grand Total		2116	2569							4685
Percent		45.2%	54.8%							
ADT		ADT 2,342		AADT 2,342						

Location: FOUNDERS PKWY E-O CROWFOOT VALLEY RD
City: CASTLE ROCK
County: DOUGLAS
Direction: EAST/WEST

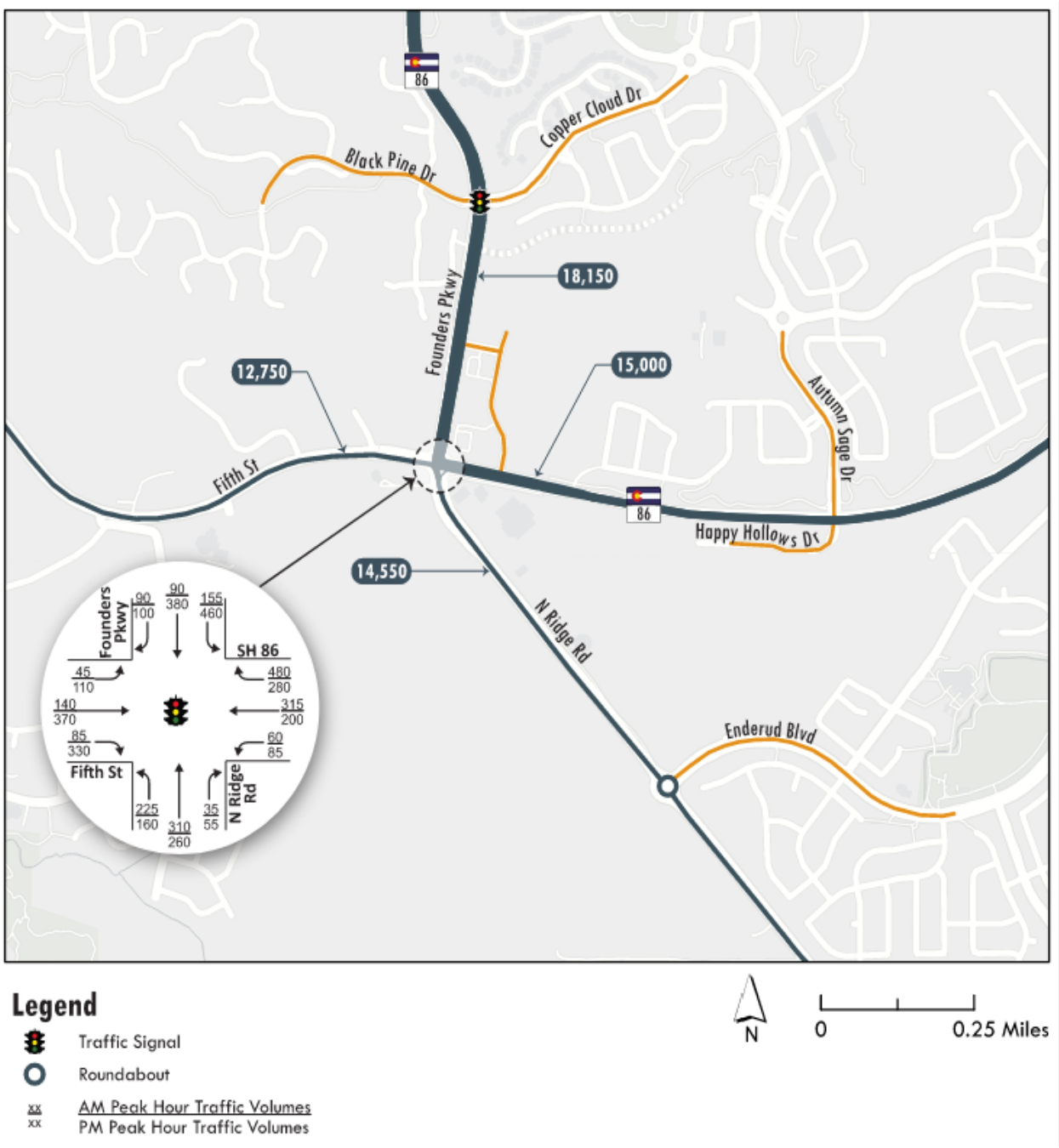
COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 210310
Station ID: 210310

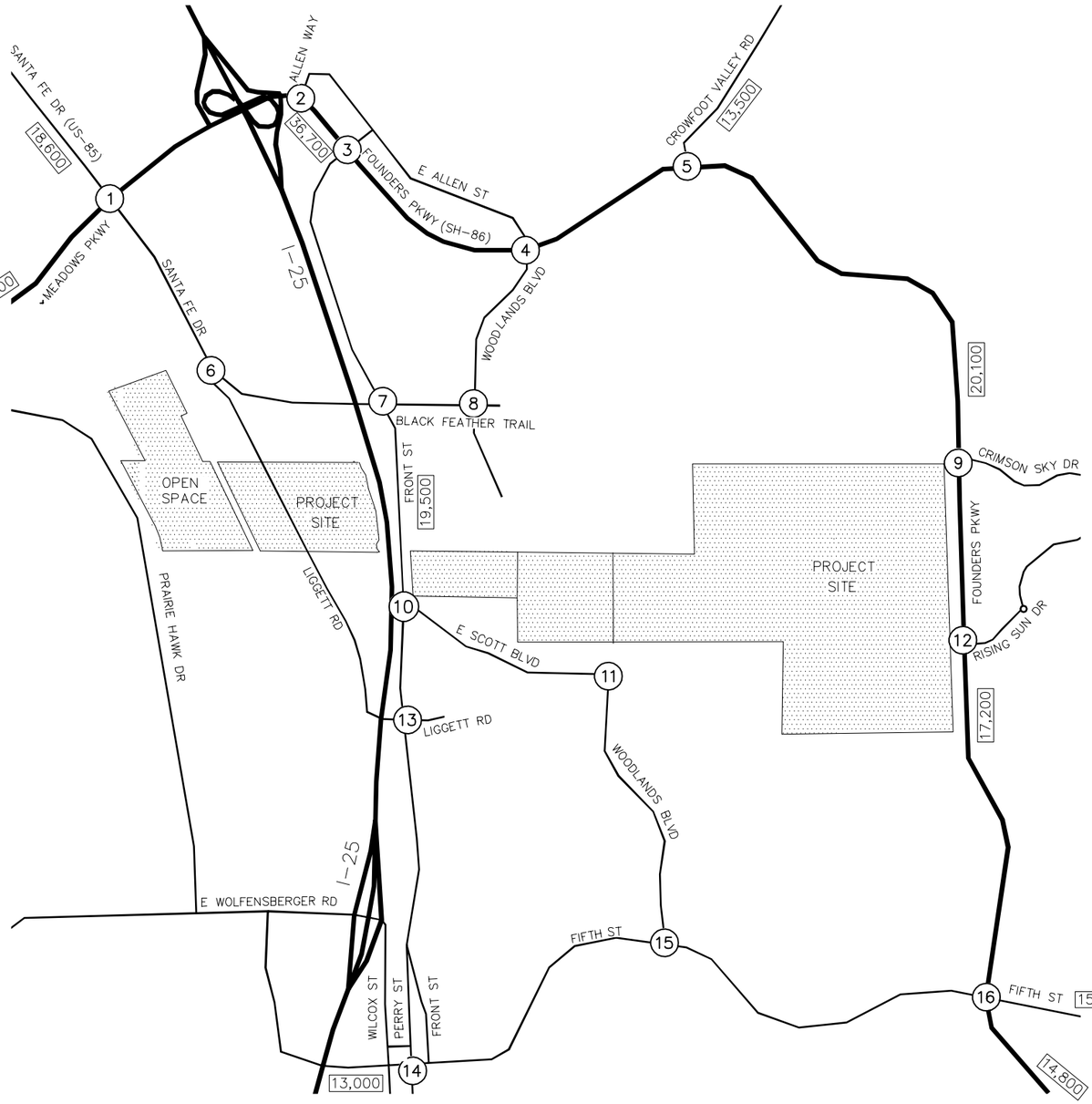
Start Time	04-May-21 Tue	EASTBOUN	WESTBOUN							Total
12:00 AM		50	23							73
01:00		15	12							27
02:00		3	18							21
03:00		12	48							60
04:00		27	130							157
05:00		46	394							440
06:00		252	885							1137
07:00		467	**1360**							**1827**
08:00		632	1126							1758
09:00		461	908							1369
10:00		564	824							1388
11:00		**682**	856							1538
12:00 PM		756	783							1539
01:00		780	802							1582
02:00		833	796							1629
03:00		1141	826							1967
04:00		1232	**1056**							**2288**
05:00		**1386**	854							2240
06:00		1002	634							1636
07:00		700	377							1077
08:00		534	279							813
09:00		360	150							510
10:00		176	61							237
11:00		79	40							119
Total		12190	13242							25432
Percent		47.9%	52.1%							
AM Peak	-	11:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	682	1360	-	-	-	-	-	-	1827
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	1386	1056	-	-	-	-	-	-	2288
Grand Total		12190	13242							25432
Percent		47.9%	52.1%							
ADT		ADT 25,432		AADT 25,432						

Traffic Data for Canyons Far South Proposal

Figure 1: Existing 2019 counts from the Town's Founders/SH-86/Ridge Rd/5th St. intersection improvement project



Kimley»Horn
NORTH
NTS 096628001



Tuesday, August 14, 2018
AM 7:15–8:15 | PM 4:15–5:15

1 — MEADOWS PKWY / HWY 85

127(193) ↓	303(350) ↓	353(372) ↖ 367(434) ← 557(961) ↙ 112(145)
202(201) ↗	845(772) →	204(177) ↘
148(217) ↑	227(305) ↑	87(100) ↑

Tuesday, August 14, 2018
AM 7:15–8:15 | PM 4:00–5:00

2 — FOUNDERS PKWY / ALLEN WAY

299(364) ↓	12(31) ↓	58(110) ↖ 105(125) ← 1833(1358) ↙ 35(34)
192(303) ↗	790(1912) →	113(184) ↘
102(149) ↑	16(35) ↑	42(66) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:15–5:15

3 — FOUNDERS PKWY / FRONT ST

82(59) ↓	38(83) ↓	3(39) ↖ 11(18) ← 1652(1239) ↙ 60(102)
54(163) ↗	657(1586) →	137(344) ↘
285(281) ↑	46(103) ↑	38(165) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

4 — FOUNDERS PKWY / WOODLANDS BLVD

2(7) ↓	10(31) ↓	35(141) ↖ 82(77) ← 1598(905) ↙ 317(147)
1(2) ↗	470(1415) →	64(114) ↘
107(87) ↑	22(35) ↑	132(305) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30 – 5:30

5 — FOUNDERS PKWY / CROWFOOT VALLEY RD

754(465) ↓	70(115) ↓	110(104) ← 1237(668)
296(665) ↗	332(1159) →	

Tuesday, August 14, 2018
AM 7:15–8:15 | PM 4:14–5:15

6 — LIGGETT RD / HWY 85

172(192) ↓	380(510) ↓	
130(144) ↗	12(18) →	26(14) ↑ 321(448) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

7 — BLACK FEATHER TRAIL / FRONT ST

39(103) ↓	191(525) ↓	10(49) ↖ 41(38) ← 170(151) ↙ 249(232)
40(95) ↗	110(221) →	179(405) ↘
294(180) ↑	378(408) ↑	169(196) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

8 — BLACK FEATHER TRAIL / WOODLANDS BLVD

257(186) ↓	13(19) ↓	5(26) ↖ 21(21) ← 77(49)
143(243) ↗	23(47) →	25(45) ↘
44(35) ↑	27(16) ↑	0(1) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

9 — FOUNDERS PKWY / CRIMSON SKY DR

375(1092) ↓	46(150) ↓	196(89) ← 9(10) ↙
		1135(676) ↑ 8(17) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

10 — E SCOTT BLVD / FRONT ST

493(786) ↓	128(391) ↓	296(169) ← 128(37) ↙
		527(607) ↑ 90(41) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

11 — E SCOTT BLVD / WOODLANDS BLVD

168(366) ↗		415(144) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

12 — RISING SUN DR / FOUNDERS PKWY

334(993) ↓	44(127) ↓	127(88) ← 61(47) ↙
		1009(614) ↑ 30(61) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

13 — LIGGETT RD / FRONT ST

7(5) ↓	356(785) ↓	94(27) ↖ 89(63) ← 14(6) ↙ 55(33)
16(4) ↗	24(6) →	96(208) ↘
134(95) ↑	541(568) ↑	184(31) ↑

Thursday, April 26, 2018
AM 7:30–8:30 | PM 4:45–5:45

14 — FIFTH ST / PERRY ST

93(131) ↓	123(250) ↓	15(58) ↖ 16(9) ← 578(384) ↙ 50(71)
47(114) ↗	234(567) →	44(49) ↘
26(45) ↑	139(257) ↑	27(119) ↑

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:30–5:30

15 — FIFTH ST / WOODLANDS BLVD

50(41) ↓	159(289) ↓	393(121) ← 607(351)
37(56) ↗	212(648) →	

Tuesday, August 14, 2018
AM 7:00–8:00 | PM 4:45–5:45

16 — FIFTH ST / FOUNDERS PKWY

136(103) ↓	115(454) ↓	191(506) ↖ 541(292) ← 411(196) ↙ 65(86)
63(121) ↗	190(372) →	146(423) ↘
407(187) ↑	406(278) ↑	41(54) ↑

LEGEND

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

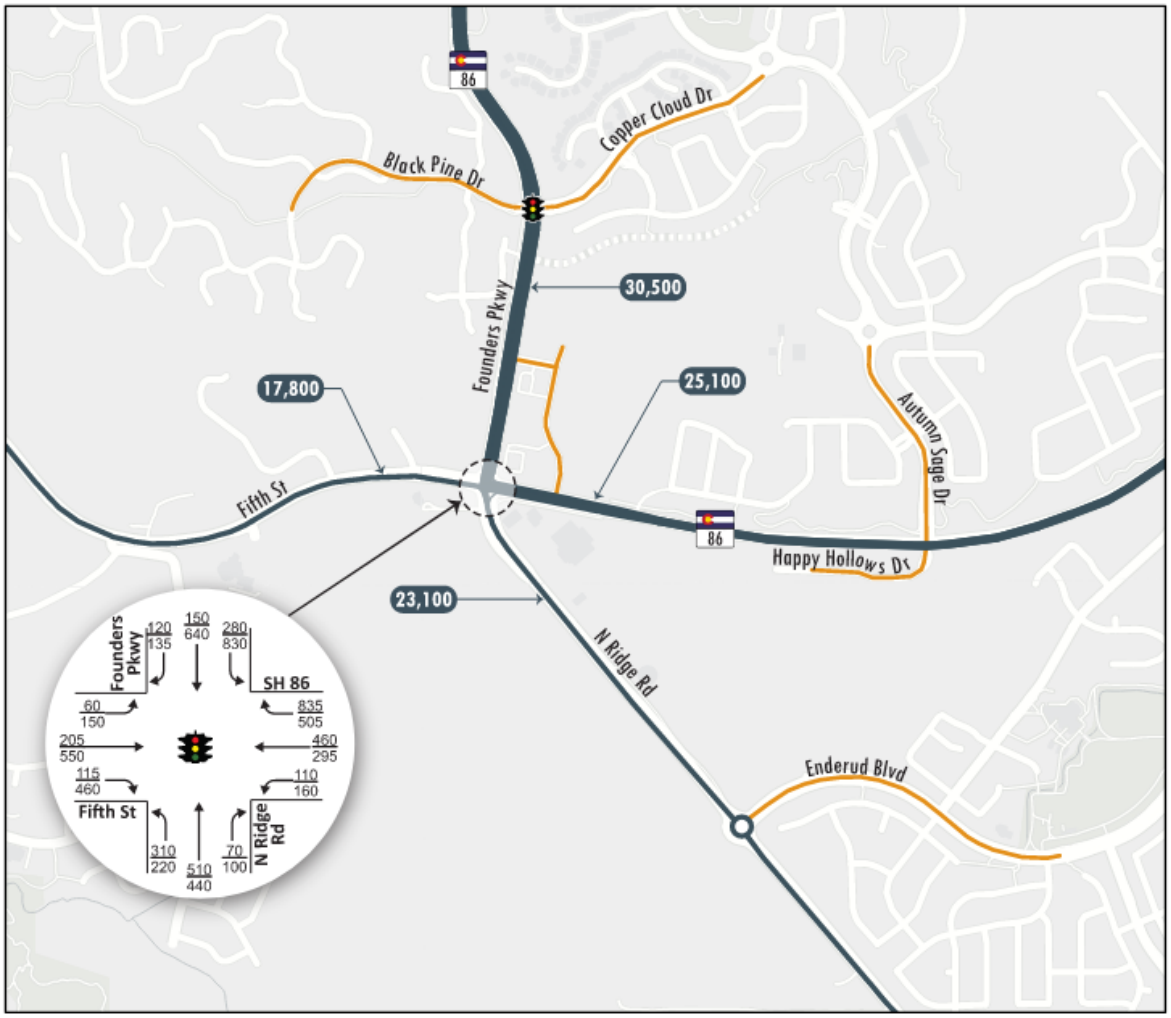
[XX,X00] Estimated Daily Traffic Volume

PINE CANYON
DOUGLAS COUNTY, CO
EXISTING TRAFFIC VOLUMES

FIGURE 3

Kimley»Horn

Figure 2: 2040 counts from the Town's Founders/SH-86/Ridge Rd/5th St. intersection improvement project

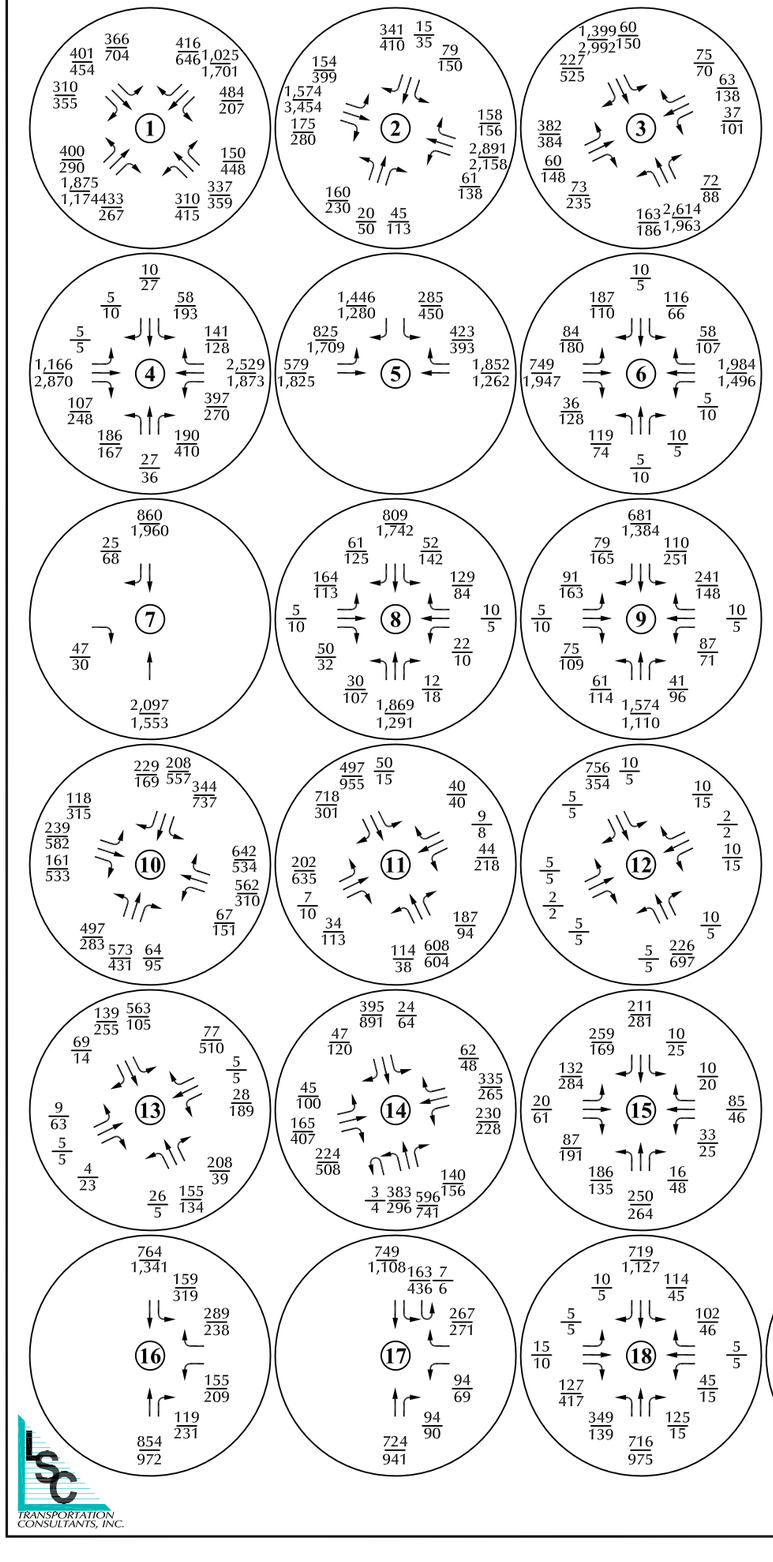


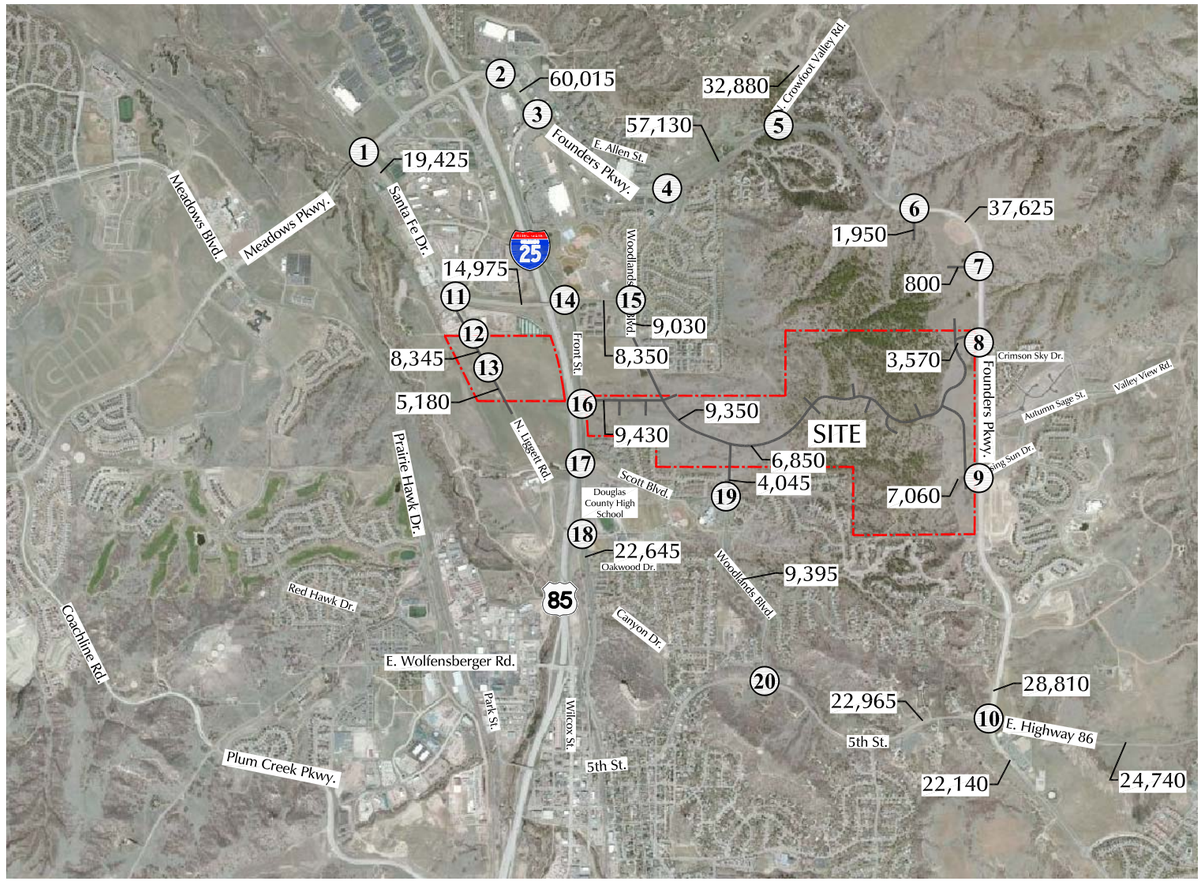
LEGEND:

(#) = Intersection Location

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

2,500 = Average Daily Traffic





Approximate Scale
Scale: 1"=3,000'

TRANSPORTATION CONSULTANTS, INC.

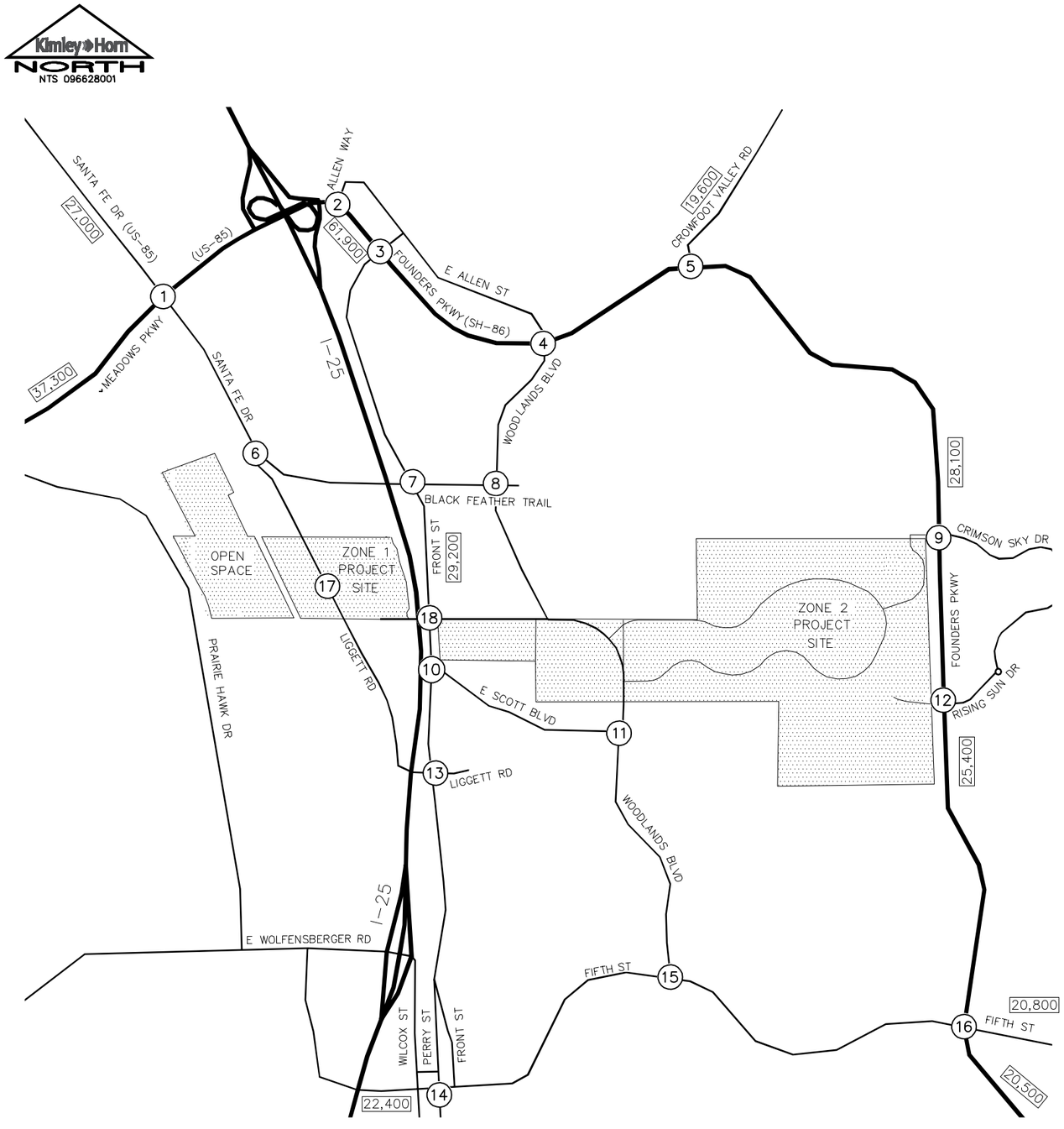
Figure 7a

Year 2035 Total Traffic Volumes

Pine Canyon Update (LSC #160590)

Ridge Rd

Founders Pkwy



1 158(240) 485(516) 482(567) ← 536(614) ← 828(1319) ← 355(260) 251(250) → 1121(1130) → 408(326) → 293(424) ↑ 364(488) ↑ 183(299) MEADOWS PKWY / HWY 85	2 387(458) 15(39) 76(144) ← 138(161) ← 3050(2418) ← 44(42) 244(391) → 1419(3229) → 141(229) → 127(185) ↑ 20(44) ↑ 52(82) FOUNDERS PKWY / ALLEN WAY	3 102(73) 63(119) 4(49) ← 14(22) ← 2615(2060) ← 75(127) 67(203) → 1151(2636) → 278(612) → 530(537) ↑ 74(144) ↑ 47(205) FOUNDERS PKWY / FRONT ST	4 2(9) 12(39) 44(176) ← 102(96) ← 2254(1372) ← 494(254) 1(2) → 716(2096) → 247(504) → 463(356) ↑ 27(44) ↑ 231(486) FOUNDERS PKWY / WOODLANDS BLVD
5 1038(650) 114(191) ← 185(161) ← 1805(1077) 435(934) → 544(1778) → FOUNDERS PKWY / CROWFOOT VALLEY RD	6 633(401) 601(918) 324(548) → 41(94) → 32(17) ↑ 639(761) ↑ LIGGETT RD / HWY 85	7 49(128) 384(807) 24(82) ← 72(61) ← 281(234) ← 387(314) 63(154) → 189(380) → 242(538) → 401(247) ↑ 593(679) ↑ 223(280) BLACK FEATHER TRAIL / FRONT ST	8 397(257) 205(432) 6(32) ← 26(26) ← 96(61) 204(374) → 29(59) → 81(145) → 1145(103) ↑ 404(300) ↑ 0(1) ↑ BLACK FEATHER TRAIL / WOODLANDS BLVD
9 57(120) 502(1406) 57(187) ← 244(111) ← 11(12) 106(80) → 98(82) → 52(118) ↑ 1451(884) ↑ 10(21) ↑ FOUNDERS PKWY / CRIMSON SKY DR	10 690(1076) 119(397) ← 258(120) ← 159(46) 740(845) ↑ 112(51) ↑ E SCOTT BLVD / FRONT ST	11 10(5) 251(316) 5(10) → 169(366) → 407(139) ↑ 282(279) ↑ E SCOTT BLVD / WOODLANDS BLVD	12 15(27) 539(1343) 55(158) ← 158(110) ← 76(59) 28(18) → 21(14) → 12(21) ↑ 1318(912) ↑ 37(76) ↑ RISING SUN DR / FOUNDERS PKWY
13 9(6) 519(1075) 117(34) ← 111(78) ← 17(7) ← 68(41) 20(5) → 30(7) → 145(331) → 244(143) ↑ 757(796) ↑ 229(39) ↑ LIGGETT RD / FRONT ST	14 204(308) 168(338) 19(72) ← 20(11) ← 895(628) ← 76(97) 194(242) → 383(916) → 55(61) → 32(56) ↑ 200(334) ↑ 42(162) ↑ FIFTH ST / PERRY ST	15 196(162) 275(476) ← 592(233) ← 807(481) 120(229) → 291(873) → FIFTH ST / WOODLANDS BLVD	16 225(177) 191(603) 279(664) ← 695(409) ← 565(288) ← 81(107) 105(217) → 278(523) → 217(583) → 556(270) ↑ 530(403) ↑ 51(67) ↑ FIFTH ST / FOUNDERS PKWY
17 38(12) 246(256) 380(150) ← 175(405) ← 21(58) 13(36) → 5(14) → 15(5) ↑ 193(132) ↑ 62(20) ↑ SITE ACCESS / LIGGETT RD	18 161(52) 750(1400) 120(252) ← 238(163) ← 112(48) ← 58(48) 42(115) → 45(106) → 18(50) → 54(17) ↑ 969(946) ↑ 30(72) ↑ SITE ACCESS / FRONT ST		

LEGEND

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

XX,X00 Estimated Daily Traffic Volume

PINE CANYON
DOUGLAS COUNTY, CO
2040 TOTAL TRAFFIC VOLUMES

FIGURE 12

Kimley»Horn

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

LOS	Average Vehicle Delay sec/vehicle	Operational Characteristics
A	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
F	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

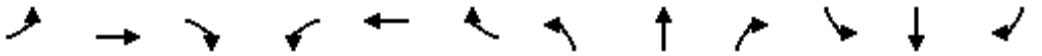
LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. The delay could be up to 15 seconds. Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.
D	25 to 35 seconds	This is the point at which a traffic signal may be warranted for this intersection. The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. There is a high probability that this intersection will meet traffic signal warrants. The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. The only remedy for these long delays is installing a traffic signal or restricting the accesses. The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	990	150	35	2015	120	105	20	45	60	13	300
Future Volume (vph)	265	990	150	35	2015	120	105	20	45	60	13	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	1		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.980				0.850		0.896				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4984	0	1770	5085	1583	1770	1669	0	1770	1863	2787
Flt Permitted	0.950			0.209			0.569			0.711		
Satd. Flow (perm)	3433	4984	0	389	5085	1583	1060	1669	0	1324	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				118		49				192
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	1076	163	38	2190	130	114	22	49	65	14	326
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1239	0	38	2190	130	114	71	0	65	14	326
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	15.0	83.0		11.0	79.0	79.0	14.0	13.0		13.0	12.0	12.0
Total Split (%)	12.5%	69.2%		9.2%	65.8%	65.8%	11.7%	10.8%		10.8%	10.0%	10.0%
Maximum Green (s)	10.0	77.0		6.0	73.0	73.0	9.0	7.0		8.0	6.0	6.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	0.0		0.0	0.0	-1.0	0.0	0.0		0.0	-2.0	-1.0
Total Lost Time (s)	3.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	4.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	12.0	81.4		79.9	73.0	74.0	17.8	9.6		14.8	8.3	7.3
Actuated g/C Ratio	0.10	0.68		0.67	0.61	0.62	0.15	0.08		0.12	0.07	0.06
v/c Ratio	0.84	0.36		0.12	0.71	0.13	0.55	0.40		0.34	0.11	0.93
Control Delay	74.6	8.7		8.6	24.3	7.1	54.6	29.7		47.9	54.8	57.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	74.6	8.7		8.6	24.3	7.1	54.6	29.7		47.9	54.8	57.6
LOS	E	A		A	C	A	D	C		D	D	E
Approach Delay		21.1			23.1			45.1			56.0	
Approach LOS		C			C			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 26.3		Intersection LOS: C	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

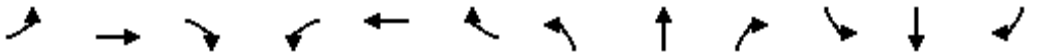
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	64	775	255	60	1670	12	415	50	40	5	40	85
Future Volume (vph)	64	775	255	60	1670	12	415	50	40	5	40	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.963			0.999				0.850		0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4897	0	1770	5080	0	3433	1863	1583	1770	3178	0
Flt Permitted	0.077			0.214			0.443			0.722		
Satd. Flow (perm)	143	4897	0	399	5080	0	1601	1863	1583	1345	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			2				73		81	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	842	277	65	1815	13	451	54	43	5	43	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1119	0	65	1828	0	451	54	43	5	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	9.0	10.0	21.0	
Total Split (s)	10.0	80.0		10.0	80.0		18.0	19.0	10.0	11.0	12.0	
Total Split (%)	8.3%	66.7%		8.3%	66.7%		15.0%	15.8%	8.3%	9.2%	10.0%	
Maximum Green (s)	5.0	74.0		5.0	74.0		13.0	13.0	5.0	6.0	6.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	81.1	76.1		81.1	76.1		24.9	21.7	32.8	12.6	5.9	
Actuated g/C Ratio	0.68	0.63		0.68	0.63		0.21	0.18	0.27	0.10	0.05	
v/c Ratio	0.42	0.36		0.20	0.57		0.85	0.16	0.09	0.03	0.58	
Control Delay	12.8	13.0		6.8	13.8		59.8	45.0	3.2	38.8	34.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	12.8	13.0		6.8	13.8		59.8	45.0	3.2	38.8	34.9	
LOS	B	B		A	B		E	D	A	D	C	
Approach Delay		13.0			13.5			53.9			35.0	
Approach LOS		B			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 42 (35%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.0		Intersection LOS: C	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

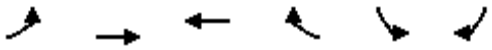


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	650	70	325	1650	87	115	25	140	37	14	2
Future Volume (vph)	6	650	70	325	1650	87	115	25	140	37	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3476	0
Flt Permitted	0.075			0.328			0.541					
Satd. Flow (perm)	140	3539	1583	611	3539	1583	1008	1863	1583	1863	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			164			152		2	
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			9.5			11.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	707	76	353	1793	95	125	27	152	40	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	707	76	353	1793	95	125	27	152	40	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		

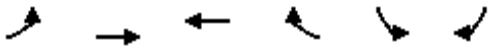
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0	
Total Split (s)	10.0	80.0	80.0	10.0	80.0	80.0	18.0	19.0	19.0	11.0	12.0	
Total Split (%)	8.3%	66.7%	66.7%	8.3%	66.7%	66.7%	15.0%	15.8%	15.8%	9.2%	10.0%	
Maximum Green (s)	5.0	74.0	74.0	5.0	74.0	74.0	13.0	13.0	13.0	6.0	6.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	83.1	76.8	76.8	89.9	87.9	87.9	19.1	9.3	10.3	8.7	5.8	
Actuated g/C Ratio	0.69	0.64	0.64	0.75	0.73	0.73	0.16	0.08	0.09	0.07	0.05	
v/c Ratio	0.04	0.31	0.07	0.66	0.69	0.08	0.50	0.19	0.55	0.31	0.10	
Control Delay	5.5	10.7	0.1	15.0	12.3	0.1	50.9	53.3	15.7	50.5	51.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.5	10.7	0.1	15.0	12.3	0.1	50.9	53.3	15.7	50.5	51.3	
LOS	A	B	A	B	B	A	D	D	B	D	D	
Approach Delay		9.6			12.2			33.5			50.8	
Approach LOS		A			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 42 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	315	510	1260	116	75	800
Future Volume (vph)	315	510	1260	116	75	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	125	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.874	0.850
Flt Protected	0.950				0.992	
Satd. Flow (prot)	3433	3539	3539	1583	3133	1441
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	3433	3539	3539	1583	3133	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				126	279	341
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	554	1370	126	82	870
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	342	554	1370	126	517	435
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

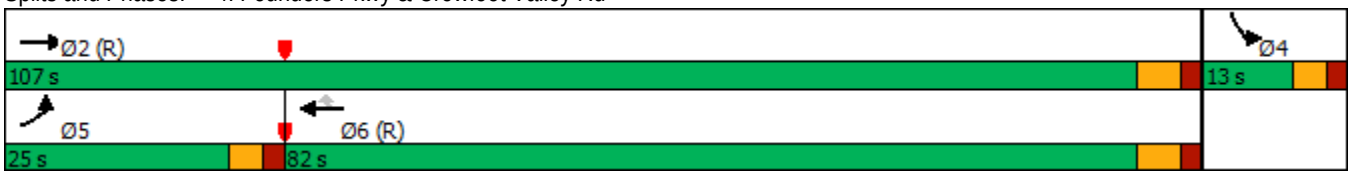


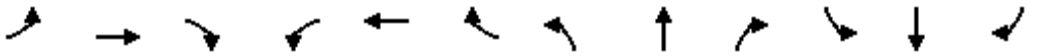
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.0	10.0	10.0	9.0	
Total Split (s)	25.0	107.0	82.0	82.0	13.0	
Total Split (%)	20.8%	89.2%	68.3%	68.3%	10.8%	
Maximum Green (s)	20.0	101.0	76.0	76.0	8.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	18.8	103.0	81.2	81.2	10.0	120.0
Actuated g/C Ratio	0.16	0.86	0.68	0.68	0.08	1.00
v/c Ratio	0.64	0.18	0.57	0.11	1.12dr	0.30
Control Delay	52.8	1.6	11.7	1.5	65.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	1.6	11.7	1.5	65.6	0.5
LOS	D	A	B	A	E	A
Approach Delay		21.1	10.9		35.9	
Approach LOS		C	B		D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 93 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



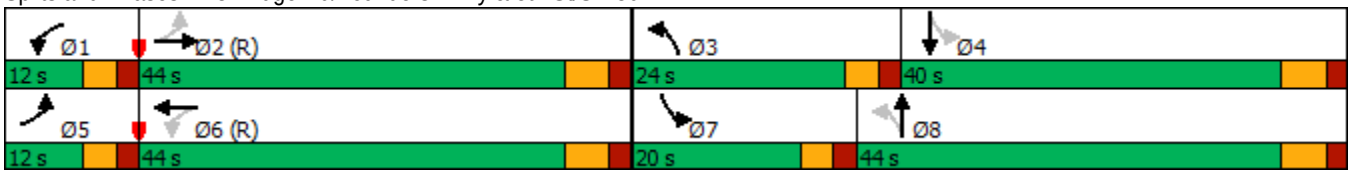


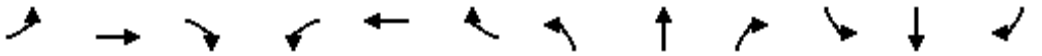
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	208	157	81	379	568	336	360	47	209	143	122
Future Volume (vph)	66	208	157	81	379	568	336	360	47	209	143	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.375			0.535			0.492			0.231		
Satd. Flow (perm)	699	1863	1583	997	1863	1583	916	1863	1583	430	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			510			173			173
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	226	171	88	399	617	365	391	51	227	155	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	226	171	88	399	617	365	391	51	227	155	133
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	44.0		20.0	40.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		20.0%	36.7%		16.7%	33.3%	
Maximum Green (s)	7.0	38.0		7.0	38.0		19.0	38.0		15.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	54.0	45.6	120.0	55.8	48.1	120.0	51.6	31.3	120.0	43.1	26.8	120.0
Actuated g/C Ratio	0.45	0.38	1.00	0.46	0.40	1.00	0.43	0.26	1.00	0.36	0.22	1.00
v/c Ratio	0.19	0.32	0.11	0.17	0.53	0.39	0.68	0.81	0.03	0.70	0.37	0.08
Control Delay	19.6	29.9	0.1	19.2	33.6	0.7	30.8	54.3	0.0	34.0	40.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	29.9	0.1	19.2	33.6	0.7	30.8	54.3	0.0	34.0	40.6	0.1
LOS	B	C	A	B	C	A	C	D	A	C	D	A
Approach Delay		17.5			14.1			40.2			27.2	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 24.3		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	2385	230	40	1905	135	150	35	90	115	35	450
Future Volume (vph)	435	2385	230	40	1905	135	150	35	90	115	35	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	1		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.986				0.850		0.892				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5014	0	1770	5085	1583	1770	1662	0	1770	1863	2787
Flt Permitted	0.950			0.059			0.732			0.444		
Satd. Flow (perm)	3433	5014	0	110	5085	1583	1364	1662	0	827	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				164		82				279
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.96	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	453	2511	250	43	1944	147	163	38	98	125	38	489
Shared Lane Traffic (%)												
Lane Group Flow (vph)	453	2761	0	43	1944	147	163	136	0	125	38	489
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	13.0		9.0	13.0	13.0
Total Split (s)	20.0	83.0		11.0	74.0	74.0	13.0	13.0		13.0	13.0	13.0
Total Split (%)	16.7%	69.2%		9.2%	61.7%	61.7%	10.8%	10.8%		10.8%	10.8%	10.8%
Maximum Green (s)	15.0	77.0		6.0	68.0	68.0	8.0	7.0		8.0	7.0	7.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	0.0		0.0	0.0	-1.0	-2.0	0.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	6.0		5.0	6.0	5.0	3.0	6.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	17.0	79.2		74.9	68.0	69.0	20.0	7.0		20.0	9.0	9.0
Actuated g/C Ratio	0.14	0.66		0.62	0.57	0.58	0.17	0.06		0.17	0.08	0.08
v/c Ratio	0.93	0.83		0.29	0.67	0.15	0.62	0.78		0.58	0.27	1.05
Control Delay	78.2	18.7		9.3	19.5	3.2	55.3	53.4		54.0	57.8	77.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	78.2	18.7		9.3	19.5	3.2	55.3	53.4		54.0	57.8	77.6
LOS	E	B		A	B	A	E	D		D	E	E
Approach Delay		27.1			18.2			54.4			72.0	
Approach LOS		C			B			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			

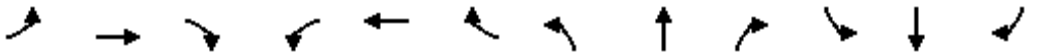
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	165	1740	685	130	1400	20	620	110	200	40	85	60
Future Volume (vph)	165	1740	685	130	1400	20	620	110	200	40	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.957			0.998				0.850		0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4867	0	1770	5075	0	3433	1863	1583	1770	3320	0
Flt Permitted	0.133			0.055			0.546			0.519		
Satd. Flow (perm)	248	4867	0	102	5075	0	1973	1863	1583	967	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		170			3				164		65	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	1832	745	141	1429	22	674	120	217	43	92	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	2577	0	141	1451	0	674	120	217	43	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	20.0	83.0		11.0	74.0		13.0	13.0	13.0	13.0	13.0	
Total Split (%)	16.7%	69.2%		9.2%	61.7%		10.8%	10.8%	10.8%	10.8%	10.8%	
Maximum Green (s)	15.0	77.0		6.0	68.0		8.0	7.0	7.0	8.0	7.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		-2.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		3.0	4.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	86.9	77.0		81.1	73.8		20.6	11.6	9.6	15.0	6.7	
Actuated g/C Ratio	0.72	0.64		0.68	0.62		0.17	0.10	0.08	0.12	0.06	
v/c Ratio	0.60	0.81		0.90	0.46		1.47	0.67	0.79	0.26	0.64	
Control Delay	19.1	12.2		78.1	13.3		256.4	72.6	36.3	46.1	44.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.1	12.2		78.1	13.3		256.4	72.6	36.3	46.1	44.4	
LOS	B	B		E	B		F	E	D	D	D	
Approach Delay		12.6			19.0			187.4			44.8	
Approach LOS		B			B			F			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 112 (93%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.47			
Intersection Signal Delay: 47.4		Intersection LOS: D	
Intersection Capacity Utilization 95.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

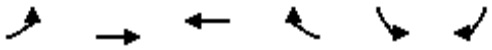


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1450	120	205	1320	90	90	45	315	171	46	7
Future Volume (vph)	8	1450	120	205	1320	90	90	45	315	171	46	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3465	0
Flt Permitted	0.170			0.106			0.717			0.725		
Satd. Flow (perm)	317	3539	1583	197	3539	1583	1336	1863	1583	1350	3465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130			164			218		8	
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			9.5			11.3	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1526	130	223	1347	98	98	49	342	186	50	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1526	130	223	1347	98	98	49	342	186	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	13.0		9.0	13.0	
Total Split (s)	20.0	83.0	83.0	11.0	74.0	74.0	13.0	13.0		13.0	13.0	
Total Split (%)	16.7%	69.2%	69.2%	9.2%	61.7%	61.7%	10.8%	10.8%		10.8%	10.8%	
Maximum Green (s)	15.0	77.0	77.0	6.0	68.0	68.0	8.0	7.0		8.0	7.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-2.0	0.0	0.0	-2.0	-1.0		-2.0	-2.0	
Total Lost Time (s)	5.0	6.0	6.0	3.0	6.0	6.0	3.0	5.0		3.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	85.7	79.0	79.0	93.0	88.4	88.4	18.0	7.7	120.0	18.0	8.7	
Actuated g/C Ratio	0.71	0.66	0.66	0.78	0.74	0.74	0.15	0.06	1.00	0.15	0.07	
v/c Ratio	0.03	0.65	0.12	0.84	0.52	0.08	0.42	0.41	0.22	0.78	0.22	
Control Delay	4.4	14.5	1.6	41.6	8.6	0.2	48.1	64.5	0.3	68.9	47.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.4	14.5	1.6	41.6	8.6	0.2	48.1	64.5	0.3	68.9	47.8	
LOS	A	B	A	D	A	A	D	E	A	E	D	
Approach Delay		13.4			12.5			16.3			63.9	
Approach LOS		B			B			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 112 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy

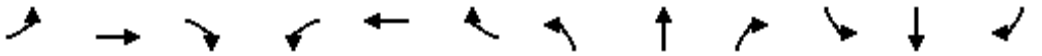


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	700	1240	990	110	120	515
Future Volume (vph)	700	1240	990	110	120	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	125	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.898	0.850
Flt Protected	0.950				0.984	
Satd. Flow (prot)	3433	3539	3539	1583	3193	1441
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	3433	3539	3539	1583	3193	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				120	280	280
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	1348	1076	120	130	560
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	761	1348	1076	120	410	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.0	10.0	10.0	9.0	
Total Split (s)	37.0	92.0	55.0	55.0	28.0	
Total Split (%)	30.8%	76.7%	45.8%	45.8%	23.3%	
Maximum Green (s)	32.0	86.0	49.0	49.0	23.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	33.8	100.2	63.3	63.3	12.8	120.0
Actuated g/C Ratio	0.28	0.84	0.53	0.53	0.11	1.00
v/c Ratio	0.79	0.46	0.58	0.13	0.69	0.19
Control Delay	45.8	3.5	22.4	3.8	22.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	3.5	22.4	3.8	22.4	0.3
LOS	D	A	C	A	C	A
Approach Delay		18.8	20.5		13.4	
Approach LOS		B	C		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 101 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

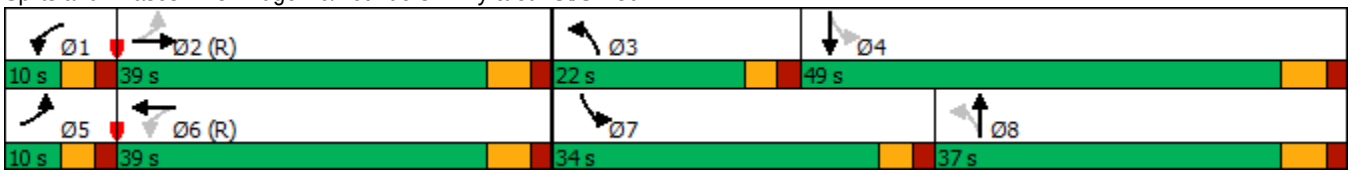


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	400	357	101	227	337	190	294	59	505	411	108
Future Volume (vph)	130	400	357	101	227	337	190	294	59	505	411	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.467			0.223			0.397			0.210		
Satd. Flow (perm)	870	1863	1583	415	1863	1583	740	1863	1583	391	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			388			366			218			218
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.92
Adj. Flow (vph)	141	435	388	110	247	366	207	320	64	532	447	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	435	388	110	247	366	207	320	64	532	447	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	10.0	39.0		10.0	39.0		22.0	37.0		34.0	49.0	
Total Split (%)	8.3%	32.5%		8.3%	32.5%		18.3%	30.8%		28.3%	40.8%	
Maximum Green (s)	5.0	33.0		5.0	33.0		17.0	31.0		29.0	43.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	47.4	37.5	120.0	46.6	37.1	120.0	41.6	27.2	120.0	62.0	41.6	120.0
Actuated g/C Ratio	0.40	0.31	1.00	0.39	0.31	1.00	0.35	0.23	1.00	0.52	0.35	1.00
v/c Ratio	0.34	0.75	0.25	0.43	0.43	0.23	0.54	0.76	0.04	0.96	0.69	0.07
Control Delay	26.4	47.4	0.4	29.3	37.0	0.3	23.4	54.8	0.1	57.1	39.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	47.4	0.4	29.3	37.0	0.3	23.4	54.8	0.1	57.1	39.8	0.1
LOS	C	D	A	C	D	A	C	D	A	E	D	A
Approach Delay		25.4			17.3			37.9			43.9	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 31.9		Intersection LOS: C	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1115	150	38	2265	125	115	22	48	65	14	325
Future Volume (vph)	265	1115	150	38	2265	125	115	22	48	65	14	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.982				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4994	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.180			0.670			0.690		
Satd. Flow (perm)	3433	4994	0	335	5085	1583	2421	1671	0	1285	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				109		52				277
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	288	1212	163	41	2384	136	125	24	52	71	15	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1375	0	41	2384	136	125	76	0	71	15	342
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	15.0	68.0		12.0	65.0	65.0	12.0	28.0		12.0	28.0	28.0
Total Split (%)	12.5%	56.7%		10.0%	54.2%	54.2%	10.0%	23.3%		10.0%	23.3%	23.3%
Maximum Green (s)	10.0	61.5		7.0	58.5	58.5	7.0	23.0		7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.5		3.0	3.5	4.5	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	17.4	81.3		78.7	70.0	69.0	20.7	13.5		20.0	11.1	11.1
Actuated g/C Ratio	0.14	0.68		0.66	0.58	0.58	0.17	0.11		0.17	0.09	0.09
v/c Ratio	0.58	0.41		0.13	0.80	0.14	0.25	0.32		0.29	0.09	0.67
Control Delay	52.4	9.7		5.3	21.4	2.0	40.9	23.6		42.5	48.3	18.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	52.4	9.7		5.3	21.4	2.0	40.9	23.6		42.5	48.3	18.1
LOS	D	A		A	C	A	D	C		D	D	B
Approach Delay		17.1			20.1			34.4			23.2	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	64	875	255	66	1880	12	415	50	35	5	40	85
Future Volume (vph)	64	875	255	66	1880	12	415	50	35	5	40	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.966			0.999				0.850		0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4912	0	1770	5080	0	3433	1863	1583	1770	3178	0
Flt Permitted	0.058			0.181			0.487			0.722		
Satd. Flow (perm)	108	4912	0	337	5080	0	1760	1863	1583	1345	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87			1				77		92	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	951	277	72	2043	13	451	54	38	5	43	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1228	0	72	2056	0	451	54	38	5	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	9.0	10.0	21.0	
Total Split (s)	12.0	65.0		12.0	65.0		18.0	31.0	12.0	12.0	25.0	
Total Split (%)	10.0%	54.2%		10.0%	54.2%		15.0%	25.8%	10.0%	10.0%	20.8%	
Maximum Green (s)	7.0	58.5		7.0	58.5		13.0	26.0	7.0	7.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.5		4.0	5.5		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	82.5	74.3		82.3	74.2		26.4	24.1	36.1	15.2	8.4	
Actuated g/C Ratio	0.69	0.62		0.69	0.62		0.22	0.20	0.30	0.13	0.07	
v/c Ratio	0.38	0.40		0.22	0.65		0.78	0.14	0.07	0.03	0.44	
Control Delay	25.1	10.2		7.2	16.9		52.0	41.9	0.9	36.2	24.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	25.1	10.2		7.2	16.9		52.0	41.9	0.9	36.2	24.1	
LOS	C	B		A	B		D	D	A	D	C	
Approach Delay		11.0			16.5			47.5			24.5	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

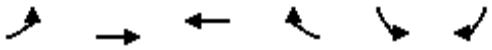
Splits and Phases: 2: Front St & Founder Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	725	80	365	1850	95	130	27	160	40	14	2
Future Volume (vph)	6	725	80	365	1850	95	130	27	160	40	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3476	0
Flt Permitted	0.061			0.278			0.513					
Satd. Flow (perm)	114	3539	1583	518	3539	1583	956	1863	1583	1863	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			174		2	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	788	87	397	2011	103	141	29	174	43	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	788	87	397	2011	103	141	29	174	43	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		

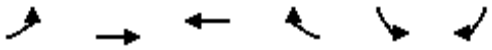
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0		9.0	20.0	
Total Split (s)	12.0	68.0	68.0	12.0	68.0	68.0	17.0	25.0		15.0	23.0	
Total Split (%)	10.0%	56.7%	56.7%	10.0%	56.7%	56.7%	14.2%	20.8%		12.5%	19.2%	
Maximum Green (s)	7.0	61.5	61.5	7.0	61.5	61.5	12.0	20.0		10.0	18.0	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	5.5	5.5	4.0	5.5	6.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	76.5	68.3	68.3	93.0	89.3	88.3	18.4	9.4	120.0	13.2	7.2	
Actuated g/C Ratio	0.64	0.57	0.57	0.78	0.74	0.74	0.15	0.08	1.00	0.11	0.06	
v/c Ratio	0.04	0.39	0.09	0.66	0.76	0.09	0.58	0.20	0.11	0.22	0.08	
Control Delay	6.3	15.9	1.8	10.8	13.9	1.6	54.6	54.9	0.1	45.5	49.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.3	15.9	1.8	10.8	13.9	1.6	54.6	54.9	0.1	45.5	49.2	
LOS	A	B	A	B	B	A	D	D	A	D	D	
Approach Delay		14.5			12.9			27.1			46.5	
Approach LOS		B			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	355	575	1430	130	85	900
Future Volume (vph)	355	575	1430	130	85	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.874	0.850
Flt Protected	0.950				0.992	
Satd. Flow (prot)	3433	3539	3539	1583	3133	1441
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	3433	3539	3539	1583	3133	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				109	303	489
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	386	625	1554	141	92	978
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	386	625	1554	141	581	489
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

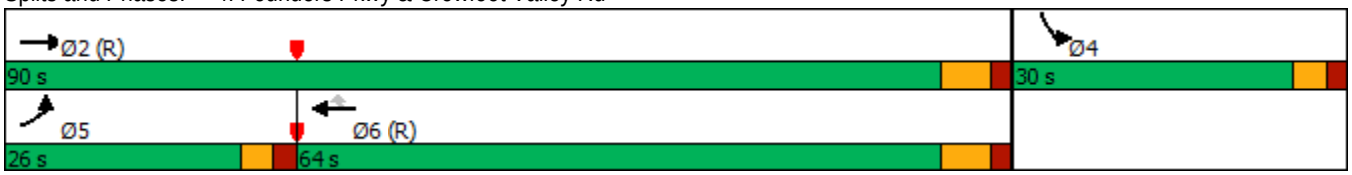


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.5	10.5	10.5	9.0	
Total Split (s)	26.0	90.0	64.0	64.0	30.0	
Total Split (%)	21.7%	75.0%	53.3%	53.3%	25.0%	
Maximum Green (s)	21.0	83.5	57.5	57.5	25.0	
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	0.0	-2.0	0.0	0.0	
Total Lost Time (s)	4.0	6.5	4.5	6.5	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.2	91.3	70.1	68.1	17.2	120.0
Actuated g/C Ratio	0.16	0.76	0.58	0.57	0.14	1.00
v/c Ratio	0.70	0.23	0.75	0.15	1.01dr	0.34
Control Delay	54.8	4.9	23.1	5.1	33.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	4.9	23.1	5.1	33.2	0.6
LOS	D	A	C	A	C	A
Approach Delay		23.9	21.6		18.3	
Approach LOS		C	C		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 21.3		Intersection LOS: C	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



Intersection	
Intersection Delay, s/veh	3.2
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	65	98	55
Demand Flow Rate, veh/h	66	100	56
Vehicles Circulating, veh/h	50	34	16
Vehicles Exiting, veh/h	84	38	100
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.2	3.4	3.0
Approach LOS	A	A	A

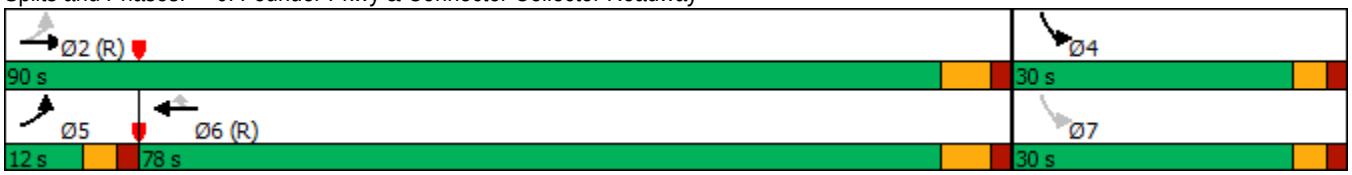
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	66	100	56
Cap Entry Lane, veh/h	1311	1333	1358
Entry HV Adj Factor	0.980	0.980	0.982
Flow Entry, veh/h	65	98	55
Cap Entry, veh/h	1285	1306	1333
V/C Ratio	0.050	0.075	0.041
Control Delay, s/veh	3.2	3.4	3.0
LOS	A	A	A
95th %tile Queue, veh	0	0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Lane Configurations							
Traffic Volume (vph)	30	625	1500	20	25	65	
Future Volume (vph)	30	625	1500	20	25	65	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.128				0.950		
Satd. Flow (perm)	238	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				22		71	
Link Speed (mph)		50	50		35		
Link Distance (ft)		483	546		1305		
Travel Time (s)		6.6	7.4		25.4		
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.92	
Adj. Flow (vph)	33	679	1579	22	27	71	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	33	679	1579	22	27	71	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Free	
Protected Phases	5	2	6		4		7
Permitted Phases	2			6	7	Free	
Detector Phase	5	2	6	6	4		
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0		20.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0		30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%		25%
Maximum Green (s)	7.0	83.5	71.5	71.5	25.0		25.0
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	6.5	6.5	6.5	5.0		
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Max	C-Max	C-Max	None		None
Act Effct Green (s)	107.0	108.1	101.5	101.5	7.3	120.0	
Actuated g/C Ratio	0.89	0.90	0.85	0.85	0.06	1.00	
v/c Ratio	0.12	0.21	0.53	0.02	0.25	0.04	
Control Delay	2.2	1.6	5.7	1.6	58.8	0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.2	1.6	5.7	1.6	58.8	0.0	
LOS	A	A	A	A	E	A	
Approach Delay		1.6	5.7		16.2		
Approach LOS		A	A		B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 4.9		Intersection LOS: A	
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

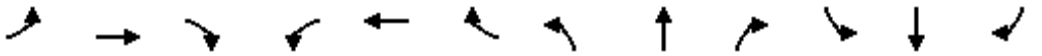
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	38	92	278
Demand Flow Rate, veh/h	39	94	284
Vehicles Circulating, veh/h	200	34	16
Vehicles Exiting, veh/h	100	205	112
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.3	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	39	94	284
Cap Entry Lane, veh/h	1125	1333	1358
Entry HV Adj Factor	0.974	0.984	0.979
Flow Entry, veh/h	38	92	278
Cap Entry, veh/h	1096	1311	1329
V/C Ratio	0.035	0.071	0.209
Control Delay, s/veh	3.6	3.3	4.5
LOS	A	A	A
95th %tile Queue, veh	0	0	1

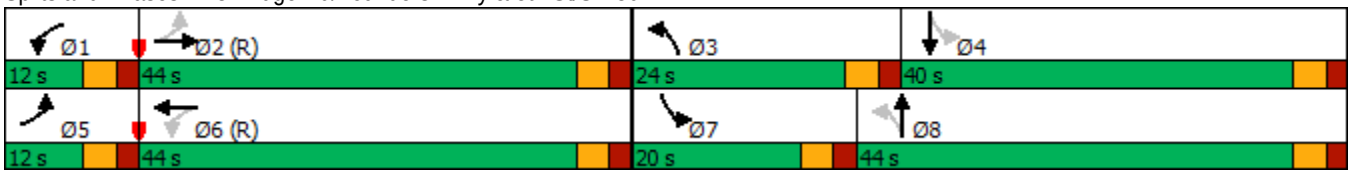


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	235	180	90	425	640	375	405	55	235	160	135
Future Volume (vph)	75	235	180	90	425	640	375	405	55	235	160	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.299			0.478			0.459			0.171		
Satd. Flow (perm)	557	1863	1583	890	1863	1583	855	1863	1583	319	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			514			155			155
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	255	196	98	447	696	408	440	60	255	174	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	255	196	98	447	696	408	440	60	255	174	147
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	44.0		20.0	40.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		20.0%	36.7%		16.7%	33.3%	
Maximum Green (s)	7.0	39.0		7.0	39.0		19.0	39.0		15.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	54.3	45.8	120.0	55.6	48.2	120.0	53.4	33.8	120.0	45.0	29.4	120.0
Actuated g/C Ratio	0.45	0.38	1.00	0.46	0.40	1.00	0.44	0.28	1.00	0.38	0.24	1.00
v/c Ratio	0.24	0.36	0.12	0.21	0.60	0.44	0.77	0.84	0.04	0.83	0.38	0.09
Control Delay	20.3	30.1	0.2	19.6	35.0	0.9	33.9	54.9	0.0	48.2	38.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	30.1	0.2	19.6	35.0	0.9	33.9	54.9	0.0	48.2	38.9	0.1
LOS	C	C	A	B	C	A	C	D	A	D	D	A
Approach Delay		17.6			14.6			41.8			33.1	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 26.0		Intersection LOS: C	
Intersection Capacity Utilization 74.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	2685	230	42	2145	145	165	38	90	125	37	460
Future Volume (vph)	435	2685	230	42	2145	145	165	38	90	125	37	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.988				0.850		0.894				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5024	0	1770	5085	1583	3433	1665	0	1770	1863	2787
Flt Permitted	0.950			0.067			0.731			0.462		
Satd. Flow (perm)	3433	5024	0	125	5085	1583	2642	1665	0	861	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				155		86				305
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	473	2826	250	46	2258	158	179	41	98	136	40	500
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3076	0	46	2258	158	179	139	0	136	40	500
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	20.0	74.0		11.0	65.0	65.0	11.0	24.0		11.0	24.0	24.0
Total Split (%)	16.7%	61.7%		9.2%	54.2%	54.2%	9.2%	20.0%		9.2%	20.0%	20.0%
Maximum Green (s)	15.0	67.5		6.0	58.5	58.5	6.0	19.0		6.0	19.0	19.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.5		4.0	4.5	5.5	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	20.0	76.1		68.6	61.1	60.1	22.4	15.4		22.4	15.4	15.4
Actuated g/C Ratio	0.17	0.63		0.57	0.51	0.50	0.19	0.13		0.19	0.13	0.13
v/c Ratio	0.83	0.96		0.28	0.87	0.18	0.33	0.48		0.64	0.17	0.80
Control Delay	62.4	31.7		12.1	28.1	3.0	39.3	25.0		53.7	45.9	29.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.4	31.7		12.1	28.1	3.0	39.3	25.0		53.7	45.9	29.4
LOS	E	C		B	C	A	D	C		D	D	C
Approach Delay		35.8			26.2			33.1			35.3	
Approach LOS		D			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 32.2		Intersection LOS: C	
Intersection Capacity Utilization 88.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	165	1950	685	130	1575	20	620	110	190	40	85	60
Future Volume (vph)	165	1950	685	130	1575	20	620	110	190	40	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.959			0.998				0.850		0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4877	0	1770	5075	0	3433	1863	1583	1770	3320	0
Flt Permitted	0.075			0.066			0.950			0.680		
Satd. Flow (perm)	140	4877	0	123	5075	0	3433	1863	1583	1267	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		121			2				91		65	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.98	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	1990	745	141	1658	22	674	120	207	43	92	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	2735	0	141	1680	0	674	120	207	43	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6					8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	9.0	10.0	14.0	
Total Split (s)	11.0	68.0		10.0	67.0		27.0	29.0	10.0	13.0	15.0	
Total Split (%)	9.2%	56.7%		8.3%	55.8%		22.5%	24.2%	8.3%	10.8%	12.5%	
Maximum Green (s)	6.0	62.0		5.0	61.0		22.0	24.0	5.0	8.0	10.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.5		-1.0	-2.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	3.5		4.0	4.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	72.6	64.5		70.6	63.0		24.0	26.4	38.0	17.5	9.4	
Actuated g/C Ratio	0.60	0.54		0.59	0.52		0.20	0.22	0.32	0.15	0.08	
v/c Ratio	0.89	1.02		0.80	0.63		0.98	0.29	0.37	0.20	0.49	
Control Delay	51.6	44.6		54.2	21.5		78.4	42.3	20.5	32.9	35.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	51.6	44.6		54.2	21.5		78.4	42.3	20.5	32.9	35.9	
LOS	D	D		D	C		E	D	C	C	D	
Approach Delay		45.1			24.1			62.1			35.2	
Approach LOS		D			C			E			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 95.5% ICU Level of Service F
Analysis Period (min) 15

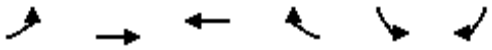
Splits and Phases: 2: Front St & Founder Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1630	135	225	1450	95	105	45	355	173	48	8
Future Volume (vph)	8	1630	135	225	1450	95	105	45	355	173	48	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3461	0
Flt Permitted	0.135			0.060			0.615			0.725		
Satd. Flow (perm)	251	3539	1583	112	3539	1583	1146	1863	1583	1350	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			114			109			198		9	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1716	147	245	1576	103	114	49	386	188	52	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1716	147	245	1576	103	114	49	386	188	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		

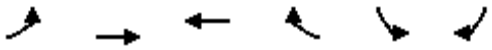
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0		9.0	20.0	
Total Split (s)	11.0	69.0	69.0	11.0	69.0	69.0	17.0	25.0		15.0	23.0	
Total Split (%)	9.2%	57.5%	57.5%	9.2%	57.5%	57.5%	14.2%	20.8%		12.5%	19.2%	
Maximum Green (s)	6.0	62.5	62.5	6.0	62.5	62.5	12.0	20.0		10.0	18.0	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0	-1.0	-1.0	-2.0	-1.0	-1.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.5	5.5	4.0	4.5	5.5	4.0	3.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	71.7	64.5	63.5	89.4	86.7	85.7	20.7	10.7	120.0	18.2	8.5	
Actuated g/C Ratio	0.60	0.54	0.53	0.74	0.72	0.71	0.17	0.09	1.00	0.15	0.07	
v/c Ratio	0.04	0.90	0.16	0.67	0.62	0.09	0.44	0.30	0.24	0.77	0.24	
Control Delay	6.2	32.9	4.6	39.3	11.2	1.7	46.1	54.9	0.4	65.6	47.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.2	32.9	4.6	39.3	11.2	1.7	46.1	54.9	0.4	65.6	47.2	
LOS	A	C	A	D	B	A	D	D	A	E	D	
Approach Delay		30.6			14.3			14.7			61.1	
Approach LOS		C			B			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 84.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	785	1415	1085	125	135	580
Future Volume (vph)	785	1415	1085	125	135	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.898	0.850
Flt Protected	0.950				0.984	
Satd. Flow (prot)	3433	3539	3539	1583	3193	1441
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	3433	3539	3539	1583	3193	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				136	315	315
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	853	1538	1179	136	147	630
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	853	1538	1179	136	462	315
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.5	10.5	10.5	9.0	
Total Split (s)	26.0	90.0	64.0	64.0	30.0	
Total Split (%)	21.7%	75.0%	53.3%	53.3%	25.0%	
Maximum Green (s)	21.0	83.5	57.5	57.5	25.0	
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	0.0	-2.0	0.0	0.0	
Total Lost Time (s)	4.0	6.5	4.5	6.5	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	35.5	97.0	59.5	57.5	11.5	120.0
Actuated g/C Ratio	0.30	0.81	0.50	0.48	0.10	1.00
v/c Ratio	0.84	0.54	0.67	0.16	0.78	0.22
Control Delay	49.1	5.2	25.3	3.3	26.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	5.2	25.3	3.3	26.0	0.3
LOS	D	A	C	A	C	A
Approach Delay		20.8	23.0		15.6	
Approach LOS		C	C		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

Intersection	
Intersection Delay, s/veh	3.3
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	87	60	108
Demand Flow Rate, veh/h	89	62	110
Vehicles Circulating, veh/h	34	55	50
Vehicles Exiting, veh/h	83	105	73
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.3	3.2	3.5
Approach LOS	A	A	A

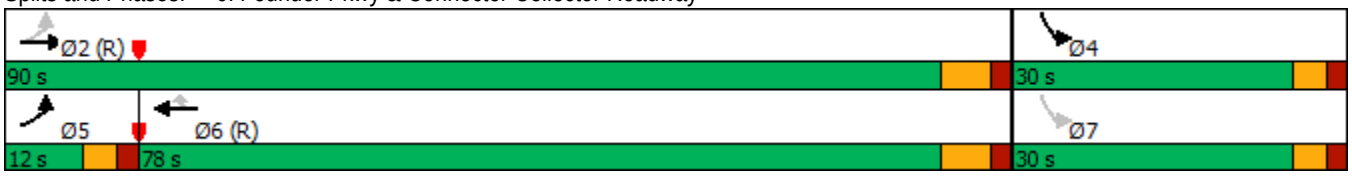
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	89	62	110
Cap Entry Lane, veh/h	1333	1305	1311
Entry HV Adj Factor	0.978	0.975	0.982
Flow Entry, veh/h	87	60	108
Cap Entry, veh/h	1303	1272	1287
V/C Ratio	0.067	0.048	0.084
Control Delay, s/veh	3.3	3.2	3.5
LOS	A	A	A
95th %tile Queue, veh	0	0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Lane Configurations							
Traffic Volume (vph)	65	1475	1175	35	20	45	
Future Volume (vph)	65	1475	1175	35	20	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.186				0.950		
Satd. Flow (perm)	346	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				38		49	
Link Speed (mph)		50	50		35		
Link Distance (ft)		483	546		1305		
Travel Time (s)		6.6	7.4		25.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	71	1603	1277	38	22	49	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	71	1603	1277	38	22	49	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Free	
Protected Phases	5	2	6		4		7
Permitted Phases	2			6	7	Free	
Detector Phase	5	2	6	6	4		
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0		20.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0		30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%		25%
Maximum Green (s)	7.0	83.5	71.5	71.5	25.0		25.0
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	6.5	6.5	6.5	5.0		
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Max	C-Max	C-Max	None		None
Act Effct Green (s)	107.3	108.4	98.0	98.0	7.0	120.0	
Actuated g/C Ratio	0.89	0.90	0.82	0.82	0.06	1.00	
v/c Ratio	0.19	0.50	0.44	0.03	0.21	0.03	
Control Delay	2.3	2.6	5.2	1.4	58.1	0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.3	2.6	5.2	1.4	58.1	0.0	
LOS	A	A	A	A	E	A	
Approach Delay		2.6	5.1		18.0		
Approach LOS		A	A		B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 4.0		Intersection LOS: A	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

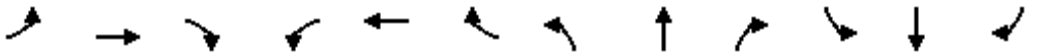
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	103	222	195
Demand Flow Rate, veh/h	105	226	199
Vehicles Circulating, veh/h	144	89	5
Vehicles Exiting, veh/h	60	160	310
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.8	4.4	3.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	105	226	199
Cap Entry Lane, veh/h	1191	1260	1373
Entry HV Adj Factor	0.981	0.981	0.981
Flow Entry, veh/h	103	222	195
Cap Entry, veh/h	1169	1236	1346
V/C Ratio	0.088	0.179	0.145
Control Delay, s/veh	3.8	4.4	3.9
LOS	A	A	A
95th %tile Queue, veh	0	1	1

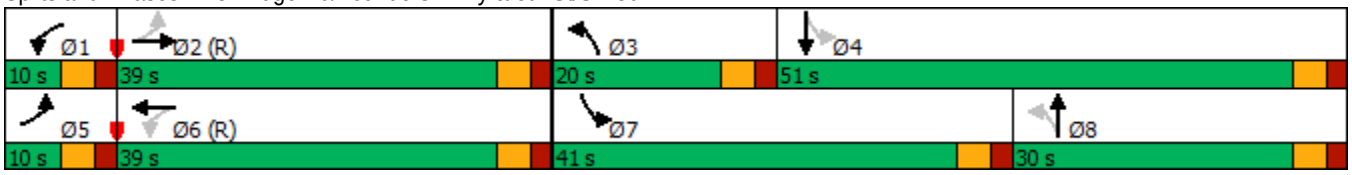


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	450	400	115	255	380	215	330	65	570	460	120
Future Volume (vph)	145	450	400	115	255	380	215	330	65	570	460	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.398			0.114			0.468			0.137		
Satd. Flow (perm)	741	1863	1583	212	1863	1583	872	1863	1583	255	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			435			413			200			200
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	489	435	125	277	413	234	359	71	620	500	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	158	489	435	125	277	413	234	359	71	620	500	130
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	10.0	39.0		10.0	39.0		20.0	30.0		41.0	51.0	
Total Split (%)	8.3%	32.5%		8.3%	32.5%		16.7%	25.0%		34.2%	42.5%	
Maximum Green (s)	5.0	34.0		5.0	34.0		15.0	25.0		36.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	41.7	35.0	120.0	41.8	35.1	120.0	39.3	26.2	120.0	67.2	48.2	120.0
Actuated g/C Ratio	0.35	0.29	1.00	0.35	0.29	1.00	0.33	0.22	1.00	0.56	0.40	1.00
v/c Ratio	0.50	0.90	0.27	0.78	0.51	0.26	0.60	0.88	0.04	1.00	0.67	0.08
Control Delay	33.5	62.1	0.4	59.3	39.3	0.4	24.7	68.8	0.0	67.9	34.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	62.1	0.4	59.3	39.3	0.4	24.7	68.8	0.0	67.9	34.9	0.1
LOS	C	E	A	E	D	A	C	E	A	E	C	A
Approach Delay		33.1			22.7			45.9			47.7	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 92.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1169	150	38	2412	125	115	22	48	65	14	325
Future Volume (vph)	265	1169	150	38	2412	125	115	22	48	65	14	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.983				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4999	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.158			0.950			0.708		
Satd. Flow (perm)	3433	4999	0	294	5085	1583	3433	1671	0	1319	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32				120		52				224
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	288	1271	163	41	2461	136	125	24	52	71	15	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1434	0	41	2461	136	125	76	0	71	15	342
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	14.0	74.0		15.0	75.0	75.0	12.0	20.0		11.0	19.0	19.0
Total Split (%)	11.7%	61.7%		12.5%	62.5%	62.5%	10.0%	16.7%		9.2%	15.8%	15.8%
Maximum Green (s)	9.0	68.0		10.0	69.0	69.0	7.0	15.0		6.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0		4.0	4.0	5.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	13.7	78.4		79.2	71.9	70.9	8.0	14.6		18.4	11.4	11.4
Actuated g/C Ratio	0.11	0.65		0.66	0.60	0.59	0.07	0.12		0.15	0.10	0.10
v/c Ratio	0.74	0.44		0.14	0.81	0.14	0.55	0.31		0.31	0.09	0.73
Control Delay	64.0	11.2		4.4	17.2	1.2	63.8	22.9		43.3	48.5	27.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	64.0	11.2		4.4	17.2	1.2	63.8	22.9		43.3	48.5	27.6
LOS	E	B		A	B	A	E	C		D	D	C
Approach Delay		20.0			16.2			48.3			31.0	
Approach LOS		C			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

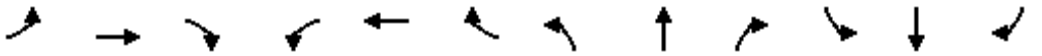
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	64	929	255	73	2027	12	415	50	40	5	40	85
Future Volume (vph)	64	929	255	73	2027	12	415	50	40	5	40	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.968			0.999				0.850		0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4923	0	1770	5080	0	3433	1863	1583	1770	3178	0
Flt Permitted	0.059			0.162			0.527			0.722		
Satd. Flow (perm)	110	4923	0	302	5080	0	1904	1863	1583	1345	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			1				118		92	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	1010	277	79	2134	13	451	54	43	5	43	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1287	0	79	2147	0	451	54	43	5	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	63.0		12.0	63.0		20.0	33.0	33.0	12.0	25.0	
Total Split (%)	10.0%	52.5%		10.0%	52.5%		16.7%	27.5%	27.5%	10.0%	20.8%	
Maximum Green (s)	7.0	57.0		7.0	57.0		15.0	28.0	28.0	7.0	20.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	80.4	72.7		80.6	72.7		29.3	26.0	26.0	15.2	8.4	
Actuated g/C Ratio	0.67	0.61		0.67	0.61		0.24	0.22	0.22	0.13	0.07	
v/c Ratio	0.38	0.43		0.26	0.70		0.66	0.13	0.10	0.03	0.44	
Control Delay	24.6	14.0		8.3	18.7		44.5	40.1	0.5	34.8	24.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	24.6	14.0		8.3	18.7		44.5	40.1	0.5	34.8	24.1	
LOS	C	B		A	B		D	D	A	C	C	
Approach Delay		14.6			18.3			40.6			24.5	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 72.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

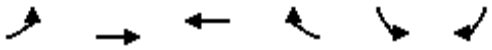


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	784	80	370	2010	95	130	27	164	40	14	2
Future Volume (vph)	6	784	80	370	2010	95	130	27	164	40	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	3476	0
Flt Permitted	0.062			0.258			0.500					
Satd. Flow (perm)	115	3539	1583	481	3539	1583	1807	1863	1583	1863	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			118			178		2	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	825	87	402	2116	103	141	29	178	43	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	825	87	402	2116	103	141	29	178	43	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6	8		8	4		

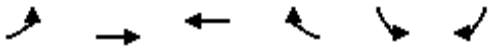
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	9.0	20.0	10.0	9.0	20.0	
Total Split (s)	15.0	57.0	57.0	21.0	63.0	63.0	19.0	25.0	21.0	17.0	23.0	
Total Split (%)	12.5%	47.5%	47.5%	17.5%	52.5%	52.5%	15.8%	20.8%	17.5%	14.2%	19.2%	
Maximum Green (s)	9.0	51.0	51.0	15.0	57.0	57.0	14.0	20.0	15.0	12.0	18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-2.0	-1.0	-1.0	-2.0	-2.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0	3.0	3.0	5.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	73.9	67.2	67.2	94.1	90.7	90.7	18.3	9.8	31.4	12.8	7.4	
Actuated g/C Ratio	0.62	0.56	0.56	0.78	0.76	0.76	0.15	0.08	0.26	0.11	0.06	
v/c Ratio	0.04	0.42	0.09	0.66	0.79	0.08	0.30	0.19	0.33	0.23	0.08	
Control Delay	8.2	18.2	1.7	11.2	14.5	1.3	44.1	54.1	5.7	46.0	48.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.2	18.2	1.7	11.2	14.5	1.3	44.1	54.1	5.7	46.0	48.9	
LOS	A	B	A	B	B	A	D	D	A	D	D	
Approach Delay		16.6			13.4			25.3			46.8	
Approach LOS		B			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 80.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	355	638	1595	138	89	900
Future Volume (vph)	355	638	1595	138	89	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.875	0.850
Flt Protected	0.950				0.992	
Satd. Flow (prot)	3433	3539	3539	1583	3137	1441
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	3433	3539	3539	1583	3137	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				120	246	443
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	386	693	1679	150	97	947
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	386	693	1679	150	571	473
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

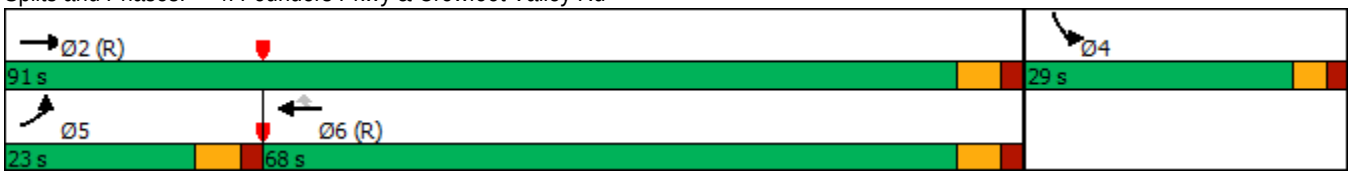


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	23.0	91.0	68.0	68.0	29.0	
Total Split (%)	19.2%	75.8%	56.7%	56.7%	24.2%	
Maximum Green (s)	17.0	85.0	62.0	62.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.1	92.6	69.5	69.5	20.4	120.0
Actuated g/C Ratio	0.16	0.77	0.58	0.58	0.17	1.00
v/c Ratio	0.71	0.25	0.82	0.16	1.00dr	0.33
Control Delay	55.3	4.5	25.7	4.2	34.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	4.5	25.7	4.2	34.0	0.6
LOS	E	A	C	A	C	A
Approach Delay		22.7	23.9		18.8	
Approach LOS		C	C		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 22.3		Intersection LOS: C	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	108	308	85
Demand Flow Rate, veh/h	110	314	87
Vehicles Circulating, veh/h	35	35	214
Vehicles Exiting, veh/h	266	110	135
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.4	4.8	4.0
Approach LOS	A	A	A

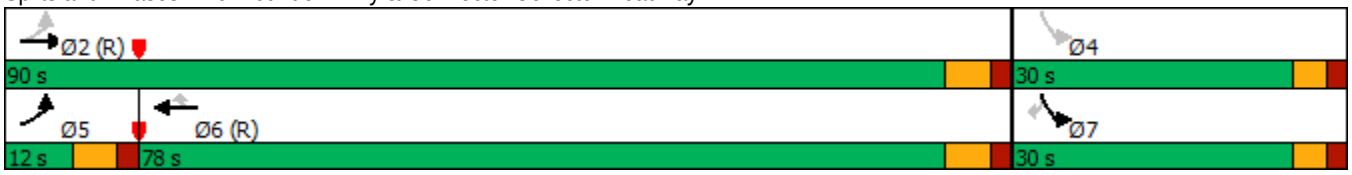
Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	110	314	87
Cap Entry Lane, veh/h	1331	1331	1109
Entry HV Adj Factor	0.982	0.981	0.981
Flow Entry, veh/h	108	308	85
Cap Entry, veh/h	1307	1306	1088
V/C Ratio	0.083	0.236	0.078
Control Delay, s/veh	3.4	4.8	4.0
LOS	A	A	A
95th %tile Queue, veh	0	1	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4
Lane Configurations							
Traffic Volume (vph)	97	625	1499	49	68	239	
Future Volume (vph)	97	625	1499	49	68	239	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	400			400	200	0	
Storage Lanes	1			1	0	1	
Taper Length (ft)	100				100		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.097				0.950		
Satd. Flow (perm)	181	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				53		114	
Link Speed (mph)		50	50		35		
Link Distance (ft)		483	546		622		
Travel Time (s)		6.6	7.4		12.1		
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.92	
Adj. Flow (vph)	105	679	1578	53	74	260	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	679	1578	53	74	260	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Perm	
Protected Phases	5	2	6		7		4
Permitted Phases	2			6	4	7	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4
Detector Phase	5	2	6	6	7	7	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	20.0	20.0	20.0	9.0	9.0	20.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0	30.0	30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%	25.0%	25%
Maximum Green (s)	6.0	84.0	72.0	72.0	25.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	93.1	93.1	80.4	80.4	17.9	17.9	
Actuated g/C Ratio	0.78	0.78	0.67	0.67	0.15	0.15	
v/c Ratio	0.43	0.25	0.67	0.05	0.28	0.78	
Control Delay	9.7	4.5	14.6	2.6	45.7	42.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.7	4.5	14.6	2.6	45.7	42.8	
LOS	A	A	B	A	D	D	
Approach Delay		5.2	14.2		43.4		
Approach LOS		A	B		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

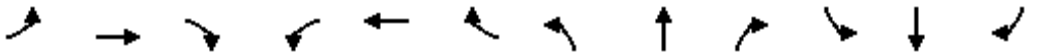
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	49	94	283
Demand Flow Rate, veh/h	50	96	289
Vehicles Circulating, veh/h	200	43	18
Vehicles Exiting, veh/h	107	207	121
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.4	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	50	96	289
Cap Entry Lane, veh/h	1125	1321	1355
Entry HV Adj Factor	0.980	0.984	0.980
Flow Entry, veh/h	49	94	283
Cap Entry, veh/h	1103	1300	1327
V/C Ratio	0.044	0.073	0.213
Control Delay, s/veh	3.6	3.4	4.5
LOS	A	A	A
95th %tile Queue, veh	0	0	1

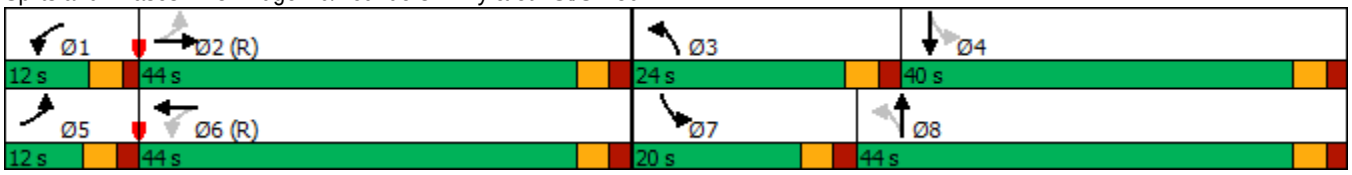


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	235	180	90	425	646	375	413	55	248	174	149
Future Volume (vph)	82	235	180	90	425	646	375	413	55	248	174	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.274			0.493			0.442			0.166		
Satd. Flow (perm)	510	1863	1583	918	1863	1583	823	1863	1583	309	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			518			155			162
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	255	196	98	447	702	408	449	60	270	189	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	255	196	98	447	702	408	449	60	270	189	162
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	44.0		20.0	40.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		20.0%	36.7%		16.7%	33.3%	
Maximum Green (s)	7.0	39.0		7.5	39.0		19.0	39.0		15.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		1.5	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	54.0	45.6	120.0	54.7	45.4	120.0	54.1	34.4	120.0	45.9	30.1	120.0
Actuated g/C Ratio	0.45	0.38	1.00	0.46	0.38	1.00	0.45	0.29	1.00	0.38	0.25	1.00
v/c Ratio	0.28	0.36	0.12	0.20	0.63	0.44	0.77	0.84	0.04	0.87	0.40	0.10
Control Delay	21.1	30.2	0.2	19.6	37.0	0.9	33.9	54.7	0.0	54.5	39.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	30.2	0.2	19.6	37.0	0.9	33.9	54.7	0.0	54.5	39.0	0.1
LOS	C	C	A	B	D	A	C	D	A	D	D	A
Approach Delay		17.8			15.3			41.9			35.6	
Approach LOS		B			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 26.8		Intersection LOS: C	
Intersection Capacity Utilization 75.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	2	97	49	3	237
Future Vol, veh/h	70	2	97	49	3	237
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	2	105	53	3	258

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	369	105	0	0	158	0
Stage 1	105	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	631	949	-	-	1422	-
Stage 1	919	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	630	949	-	-	1422	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	630	949	1422	-
HCM Lane V/C Ratio	-	-	0.121	0.002	0.002	-
HCM Control Delay (s)	-	-	11.5	8.8	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	270	0	5	94
Future Vol, veh/h	0	13	270	0	5	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	293	0	5	102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	405	293	0	0	293	0
Stage 1	293	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	602	746	-	-	1269	-
Stage 1	757	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	600	746	-	-	1269	-
Mov Cap-2 Maneuver	600	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	746	1269	-
HCM Lane V/C Ratio	-	-	0.019	0.004	-
HCM Control Delay (s)	-	-	9.9	7.8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↱		↰	↱	
Traffic Vol, veh/h	1	2	23	1	7	15	60	254	0	5	87	2
Future Vol, veh/h	1	2	23	1	7	15	60	254	0	5	87	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	2	25	1	8	16	65	276	0	5	95	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	524	512	96	526	513	276	97	0	0	276	0	0
Stage 1	106	106	-	406	406	-	-	-	-	-	-	-
Stage 2	418	406	-	120	107	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	464	465	960	462	465	763	1496	-	-	1287	-	-
Stage 1	900	807	-	622	598	-	-	-	-	-	-	-
Stage 2	612	598	-	884	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	432	443	960	432	443	763	1496	-	-	1287	-	-
Mov Cap-2 Maneuver	432	443	-	432	443	-	-	-	-	-	-	-
Stage 1	861	804	-	595	572	-	-	-	-	-	-	-
Stage 2	565	572	-	855	804	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	11.2	1.4	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1496	-	-	844	609	1287	-	-
HCM Lane V/C Ratio	0.044	-	-	0.033	0.041	0.004	-	-
HCM Control Delay (s)	7.5	-	-	9.4	11.2	7.8	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	48	266	0	16	95
Future Vol, veh/h	1	48	266	0	16	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	52	289	0	17	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	426	289	0	0	289	0
Stage 1	289	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	585	750	-	-	1273	-
Stage 1	760	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	577	750	-	-	1273	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	745	1273	-
HCM Lane V/C Ratio	-	-	0.071	0.014	-
HCM Control Delay (s)	-	-	10.2	7.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	75	201	1	2	65
Future Vol, veh/h	21	75	201	1	2	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	82	218	1	2	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	219	0	-	0	347	219
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	128	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1350	-	-	-	650	821
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	898	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1350	-	-	-	639	821
Mov Cap-2 Maneuver	-	-	-	-	639	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	898	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1350	-	-	-	814
HCM Lane V/C Ratio	0.017	-	-	-	0.089
HCM Control Delay (s)	7.7	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	20	1	143	59	1
Future Vol, veh/h	57	20	1	143	59	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	22	1	155	64	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	84	0	219	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	157	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1513	-	769	1003
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1513	-	768	1003
Mov Cap-2 Maneuver	-	-	-	-	768	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	870	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	771	-	-	1513	-
HCM Lane V/C Ratio	0.085	-	-	0.001	-
HCM Control Delay (s)	10.1	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

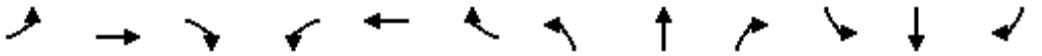
Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	42	11	1	96	0	32	0	2	1	0	16
Future Vol, veh/h	5	42	11	1	96	0	32	0	2	1	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	46	12	1	104	0	35	0	2	1	0	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	134	83	9	111	90	1	17	0	0	2	0	0
Stage 1	11	11	-	71	71	-	-	-	-	-	-	-
Stage 2	123	72	-	40	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	838	807	1073	867	800	1084	1600	-	-	1620	-	-
Stage 1	1010	886	-	939	836	-	-	-	-	-	-	-
Stage 2	881	835	-	975	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	739	788	1073	805	782	1084	1600	-	-	1620	-	-
Mov Cap-2 Maneuver	739	788	-	805	782	-	-	-	-	-	-	-
Stage 1	988	885	-	918	818	-	-	-	-	-	-	-
Stage 2	752	817	-	913	879	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.3	6.9	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	825	782	1620	-	-
HCM Lane V/C Ratio	0.022	-	-	0.076	0.135	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.7	10.3	7.2	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.5	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	2861	230	42	2258	145	165	38	90	125	37	460
Future Volume (vph)	435	2861	230	42	2258	145	165	38	90	125	37	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.989				0.850		0.894				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5029	0	1770	5085	1583	3433	1665	0	1770	1863	2787
Flt Permitted	0.950			0.061			0.950			0.423		
Satd. Flow (perm)	3433	5029	0	114	5085	1583	3433	1665	0	788	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				155		82				294
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	473	3110	250	46	2304	158	179	41	98	136	40	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3360	0	46	2304	158	179	139	0	136	40	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	22.0	81.0		10.0	69.0	69.0	12.0	18.0		11.0	17.0	17.0
Total Split (%)	18.3%	67.5%		8.3%	57.5%	57.5%	10.0%	15.0%		9.2%	14.2%	14.2%
Maximum Green (s)	17.0	75.0		5.0	63.0	63.0	7.0	13.0		6.0	12.0	12.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0	-1.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0		3.0	4.0	5.0	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	19.0	80.8		73.9	65.8	64.8	9.0	14.2		21.2	13.2	13.2
Actuated g/C Ratio	0.16	0.67		0.62	0.55	0.54	0.08	0.12		0.18	0.11	0.11
v/c Ratio	0.87	0.99		0.28	0.83	0.17	0.70	0.52		0.67	0.20	0.85
Control Delay	66.7	33.5		12.8	24.4	2.3	69.1	29.0		58.1	50.5	35.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.7	33.5		12.8	24.4	2.3	69.1	29.0		58.1	50.5	35.6
LOS	E	C		B	C	A	E	C		E	D	D
Approach Delay		37.6			22.8			51.5			41.1	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 33.4		Intersection LOS: C	
Intersection Capacity Utilization 91.5%		ICU Level of Service F	
Analysis Period (min) 15			

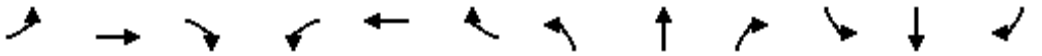
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	165	2126	685	140	1688	20	620	110	207	40	85	60
Future Volume (vph)	165	2126	685	140	1688	20	620	110	207	40	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.963			0.998				0.850		0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4897	0	1770	5075	0	3433	1863	1583	1770	3320	0
Flt Permitted	0.070			0.057			0.359			0.680		
Satd. Flow (perm)	130	4897	0	106	5075	0	1297	1863	1583	1267	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		113			2				160		65	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	2311	745	152	1835	22	633	120	225	43	92	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	3056	0	152	1857	0	633	120	225	43	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	72.0		15.0	75.0		22.0	21.0	21.0	12.0	11.0	
Total Split (%)	10.0%	60.0%		12.5%	62.5%		18.3%	17.5%	17.5%	10.0%	9.2%	
Maximum Green (s)	7.0	66.0		10.0	69.0		17.0	16.0	16.0	7.0	6.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.6		-2.0	-2.0		-2.0	-1.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.4		3.0	4.0		3.0	4.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	77.0	69.5		83.2	71.0		29.9	19.4	20.4	16.6	7.9	
Actuated g/C Ratio	0.64	0.58		0.69	0.59		0.25	0.16	0.17	0.14	0.07	
v/c Ratio	0.93	1.06		0.67	0.62		0.96	0.40	0.56	0.20	0.56	
Control Delay	48.9	54.9		37.5	16.9		68.3	51.1	21.0	38.0	39.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	48.9	54.9		37.5	16.9		68.3	51.1	21.0	38.0	39.8	
LOS	D	D		D	B		E	D	C	D	D	
Approach Delay		54.5			18.4			55.3			39.4	
Approach LOS		D			B			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 42.9		Intersection LOS: D	
Intersection Capacity Utilization 99.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

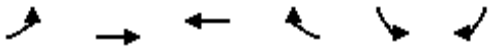


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1823	135	234	1573	95	105	45	364	173	48	8
Future Volume (vph)	8	1823	135	234	1573	95	105	45	364	173	48	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	3461	0
Flt Permitted	0.109			0.059			0.715			0.573		
Satd. Flow (perm)	203	3539	1583	110	3539	1583	2584	1863	1583	1067	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			118			73		9	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1919	147	254	1656	103	114	49	396	188	52	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1919	147	254	1656	103	114	49	396	188	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6	8		8	4		

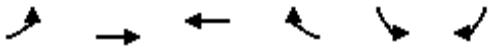
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	9.0	20.0	10.0	9.0	20.0	
Total Split (s)	10.0	66.0	66.0	18.0	74.0	74.0	13.0	20.0	18.0	16.0	23.0	
Total Split (%)	8.3%	55.0%	55.0%	15.0%	61.7%	61.7%	10.8%	16.7%	15.0%	13.3%	19.2%	
Maximum Green (s)	4.0	60.0	60.0	12.0	68.0	68.0	8.0	15.0	12.0	11.0	18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0	-1.0	-3.0	-3.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	4.0	3.0	3.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	72.2	65.5	63.5	89.6	87.1	85.1	19.6	10.5	31.5	24.4	13.0	
Actuated g/C Ratio	0.60	0.55	0.53	0.75	0.73	0.71	0.16	0.09	0.26	0.20	0.11	
v/c Ratio	0.04	0.99	0.16	0.68	0.64	0.09	0.23	0.30	0.85	0.64	0.16	
Control Delay	6.6	46.9	1.8	39.3	11.6	1.5	39.0	55.2	50.9	52.1	41.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.6	46.9	1.8	39.3	11.6	1.5	39.0	55.2	50.9	52.1	41.4	
LOS	A	D	A	D	B	A	D	E	D	D	D	
Approach Delay		43.5			14.6			48.9			49.4	
Approach LOS		D			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 32.6		Intersection LOS: C	
Intersection Capacity Utilization 92.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	785	1617	1217	135	148	580
Future Volume (vph)	785	1617	1217	135	148	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.902	0.850
Flt Protected	0.950				0.983	
Satd. Flow (prot)	3433	3539	3539	1583	3204	1441
Flt Permitted	0.950				0.983	
Satd. Flow (perm)	3433	3539	3539	1583	3204	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				123	306	305
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	853	1758	1281	147	161	611
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	853	1758	1281	147	467	305
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	39.0	93.0	54.0	54.0	27.0	
Total Split (%)	32.5%	77.5%	45.0%	45.0%	22.5%	
Maximum Green (s)	33.0	87.0	48.0	48.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	36.3	99.0	58.7	58.7	14.0	120.0
Actuated g/C Ratio	0.30	0.82	0.49	0.49	0.12	1.00
v/c Ratio	0.82	0.60	0.74	0.18	0.73	0.21
Control Delay	46.1	5.2	29.3	5.8	23.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	5.2	29.3	5.8	23.6	0.3
LOS	D	A	C	A	C	A
Approach Delay		18.5	26.9		14.4	
Approach LOS		B	C		B	

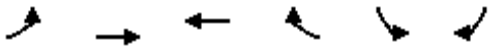
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

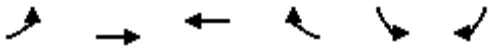
Intersection	
Intersection Delay, s/veh	4.6
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	299	204	148
Demand Flow Rate, veh/h	305	208	151
Vehicles Circulating, veh/h	107	63	144
Vehicles Exiting, veh/h	188	349	127
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.2	4.2	4.2
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	305	208	151
Cap Entry Lane, veh/h	1237	1294	1191
Entry HV Adj Factor	0.980	0.980	0.979
Flow Entry, veh/h	299	204	148
Cap Entry, veh/h	1213	1268	1167
V/C Ratio	0.247	0.161	0.127
Control Delay, s/veh	5.2	4.2	4.2
LOS	A	A	A
95th %tile Queue, veh	1	1	0



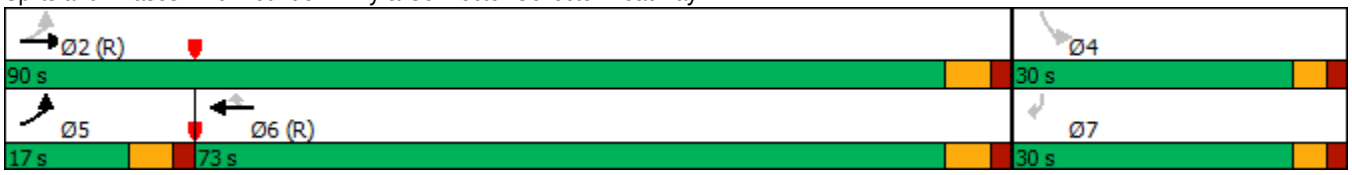
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	295	1460	1170	113	100	192
Future Volume (vph)	295	1460	1170	113	100	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400			400	200	0
Storage Lanes	1			1	0	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.159				0.950	
Satd. Flow (perm)	296	3539	3539	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				123		205
Link Speed (mph)		50	50		35	
Link Distance (ft)		483	546		622	
Travel Time (s)		6.6	7.4		12.1	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.92
Adj. Flow (vph)	321	1587	1232	123	109	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	321	1587	1232	123	109	209
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2			6	4	7



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	9.0
Total Split (s)	17.0	90.0	73.0	73.0	30.0	30.0
Total Split (%)	14.2%	75.0%	60.8%	60.8%	25.0%	25.0%
Maximum Green (s)	11.0	84.0	67.0	67.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0	-1.0	-1.0	-2.0	-1.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	3.0	4.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	98.3	97.3	75.3	75.3	14.7	13.7
Actuated g/C Ratio	0.82	0.81	0.63	0.63	0.12	0.11
v/c Ratio	0.69	0.55	0.56	0.12	0.50	0.58
Control Delay	18.1	5.1	15.0	2.3	56.6	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	5.1	15.0	2.3	56.6	13.5
LOS	B	A	B	A	E	B
Approach Delay		7.3	13.9		28.3	
Approach LOS		A	B		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 65.1%		ICU Level of Service C	
Analysis Period (min) 15			

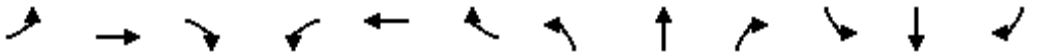
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	120	227	209
Demand Flow Rate, veh/h	122	231	213
Vehicles Circulating, veh/h	144	100	10
Vehicles Exiting, veh/h	79	166	321
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.9	4.5	4.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	122	231	213
Cap Entry Lane, veh/h	1191	1246	1366
Entry HV Adj Factor	0.984	0.981	0.982
Flow Entry, veh/h	120	227	209
Cap Entry, veh/h	1172	1223	1341
V/C Ratio	0.102	0.185	0.156
Control Delay, s/veh	3.9	4.5	4.0
LOS	A	A	A
95th %tile Queue, veh	0	1	1

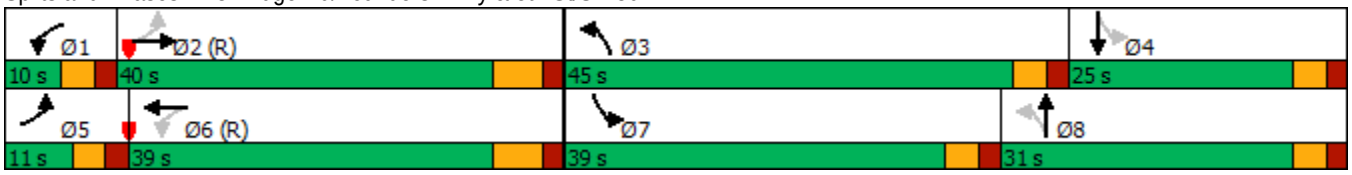


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	450	400	115	255	399	215	352	65	582	479	139
Future Volume (vph)	166	450	400	115	255	399	215	352	65	582	479	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	3539	1583
Flt Permitted	0.397			0.119			0.459			0.132		
Satd. Flow (perm)	740	1863	1583	222	1863	1583	855	1863	1583	246	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			435			434			214			214
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.95	0.92	0.92
Adj. Flow (vph)	180	489	435	125	268	434	234	383	71	613	521	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	489	435	125	268	434	234	383	71	613	521	151
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	11.0	40.0		10.0	39.0		45.0	31.0		39.0	25.0	
Total Split (%)	9.2%	33.3%		8.3%	32.5%		37.5%	25.8%		32.5%	20.8%	
Maximum Green (s)	6.0	33.5		5.0	32.5		40.0	26.0		34.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.5		4.0	4.5		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	43.6	35.5	120.0	41.6	34.5	120.0	44.3	27.4	120.0	66.4	43.4	120.0
Actuated g/C Ratio	0.36	0.30	1.00	0.35	0.29	1.00	0.37	0.23	1.00	0.55	0.36	1.00
v/c Ratio	0.54	0.89	0.27	0.77	0.50	0.27	0.52	0.90	0.04	1.03	0.41	0.10
Control Delay	33.4	59.9	0.4	58.2	39.5	0.4	20.9	70.4	0.0	79.0	30.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	59.9	0.4	58.2	39.5	0.4	20.9	70.4	0.0	79.0	30.7	0.1
LOS	C	E	A	E	D	A	C	E	A	E	C	A
Approach Delay		32.1			21.8			46.3			50.2	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 38.4		Intersection LOS: D	
Intersection Capacity Utilization 94.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	129	11	264	144	7	163
Future Vol, veh/h	129	11	264	144	7	163
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	12	287	157	8	177

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	480	287	0	0	444	0
Stage 1	287	-	-	-	-	-
Stage 2	193	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	545	752	-	-	1116	-
Stage 1	762	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	752	-	-	1116	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	834	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	541	752	1116	-
HCM Lane V/C Ratio	-	-	0.259	0.016	0.007	-
HCM Control Delay (s)	-	-	14	9.9	8.2	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	179	0	15	300
Future Vol, veh/h	0	9	179	0	15	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	195	0	16	326

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	553	195	0	0	195	0
Stage 1	195	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	494	846	-	-	1378	-
Stage 1	838	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	487	846	-	-	1378	-
Mov Cap-2 Maneuver	487	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	697	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	846	1378	-
HCM Lane V/C Ratio	-	-	0.012	0.012	-
HCM Control Delay (s)	-	-	9.3	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	7	9	98	0	4	10	47	162	1	15	275	10
Future Vol, veh/h	7	9	98	0	4	10	47	162	1	15	275	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	10	107	0	4	11	51	176	1	16	299	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	623	616	305	674	621	177	310	0	0	177	0	0
Stage 1	337	337	-	279	279	-	-	-	-	-	-	-
Stage 2	286	279	-	395	342	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	398	406	735	368	403	866	1250	-	-	1399	-	-
Stage 1	677	641	-	728	680	-	-	-	-	-	-	-
Stage 2	721	680	-	630	638	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	374	385	735	296	382	866	1250	-	-	1399	-	-
Mov Cap-2 Maneuver	374	385	-	296	382	-	-	-	-	-	-	-
Stage 1	649	634	-	698	652	-	-	-	-	-	-	-
Stage 2	678	652	-	524	631	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	10.8	1.8	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1250	-	-	650	636	1399	-	-
HCM Lane V/C Ratio	0.041	-	-	0.191	0.024	0.012	-	-
HCM Control Delay (s)	8	-	-	11.8	10.8	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	32	178	1	54	299
Future Vol, veh/h	1	32	178	1	54	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	35	193	1	59	325

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	637	194	0	0	194	0
Stage 1	194	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	441	847	-	-	1379	-
Stage 1	839	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	422	847	-	-	1379	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	822	1379	-
HCM Lane V/C Ratio	-	-	0.044	0.043	-
HCM Control Delay (s)	-	-	9.6	7.7	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	73	227	136	2	2	43
Future Vol, veh/h	73	227	136	2	2	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	247	148	2	2	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	150	0	-	0	554	149
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	405	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1431	-	-	-	493	898
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1431	-	-	-	466	898
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1431	-	-	-	862
HCM Lane V/C Ratio	0.055	-	-	-	0.057
HCM Control Delay (s)	7.7	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	162	67	1	99	39	1
Future Vol, veh/h	162	67	1	99	39	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	176	73	1	108	42	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	249	0	286	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	110	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1317	-	704	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1317	-	703	867
Mov Cap-2 Maneuver	-	-	-	-	703	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	914	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	706	-	-	1317	-
HCM Lane V/C Ratio	0.062	-	-	0.001	-
HCM Control Delay (s)	10.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	109	36	3	68	1	21	0	1	0	0	11
Future Vol, veh/h	18	109	36	3	68	1	21	0	1	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	118	39	3	74	1	23	0	1	0	0	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	90	53	6	132	59	1	12	0	0	1	0	0
Stage 1	6	6	-	47	47	-	-	-	-	-	-	-
Stage 2	84	47	-	85	12	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	895	838	1077	840	832	1084	1607	-	-	1622	-	-
Stage 1	1016	891	-	967	856	-	-	-	-	-	-	-
Stage 2	924	856	-	923	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	823	826	1077	713	820	1084	1607	-	-	1622	-	-
Mov Cap-2 Maneuver	823	826	-	713	820	-	-	-	-	-	-	-
Stage 1	1002	891	-	953	844	-	-	-	-	-	-	-
Stage 2	830	844	-	771	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.9	6.9	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	870	818	1622	-	-
HCM Lane V/C Ratio	0.014	-	-	0.204	0.096	-	-	-
HCM Control Delay (s)	7.3	0	-	10.2	9.9	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1366	150	45	3013	140	130	25	55	75	15	385
Future Volume (vph)	265	1366	150	45	3013	140	130	25	55	75	15	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.985				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5009	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.119			0.950			0.701		
Satd. Flow (perm)	3433	5009	0	222	5085	1583	3433	1671	0	1306	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27				109		60				217
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	1438	163	49	3074	152	141	27	60	82	16	418
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1601	0	49	3074	152	141	87	0	82	16	418
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	14.0	74.0		15.0	75.0	75.0	12.0	20.0		11.0	19.0	19.0
Total Split (%)	11.7%	61.7%		12.5%	62.5%	62.5%	10.0%	16.7%		9.2%	15.8%	15.8%
Maximum Green (s)	9.0	68.0		10.0	69.0	69.0	7.0	15.0		6.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0		4.0	4.0	5.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	12.1	76.1		78.8	71.4	70.4	8.0	16.7		20.5	13.5	13.5
Actuated g/C Ratio	0.10	0.63		0.66	0.60	0.59	0.07	0.14		0.17	0.11	0.11
v/c Ratio	0.83	0.50		0.20	1.02	0.16	0.62	0.31		0.33	0.08	0.83
Control Delay	73.9	12.9		4.8	36.5	1.2	66.8	21.5		42.6	47.5	39.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	73.9	12.9		4.8	36.5	1.2	66.8	21.5		42.6	47.5	39.1
LOS	E	B		A	D	A	E	C		D	D	D
Approach Delay		22.2			34.4			49.6			39.9	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 31.5		Intersection LOS: C	
Intersection Capacity Utilization 86.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Allen Way & Founder Pkwy

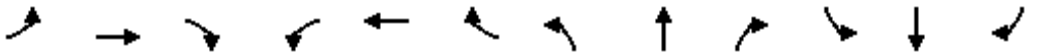
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	70	1146	280	62	2563	15	530	75	45	5	65	105
Future Volume (vph)	70	1146	280	62	2563	15	530	75	45	5	65	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.970			0.999				0.850		0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4933	0	1770	5080	0	3433	1863	1583	1770	3214	0
Flt Permitted	0.060			0.116			0.449			0.704		
Satd. Flow (perm)	112	4933	0	216	5080	0	1623	1863	1583	1311	3214	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			1				118		109	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1206	304	67	2615	16	576	82	49	5	71	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	1510	0	67	2631	0	576	82	49	5	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	63.0		12.0	63.0		20.0	33.0	33.0	12.0	25.0	
Total Split (%)	10.0%	52.5%		10.0%	52.5%		16.7%	27.5%	27.5%	10.0%	20.8%	
Maximum Green (s)	7.0	57.0		7.0	57.0		15.0	28.0	28.0	7.0	20.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	79.8	71.7		79.0	71.4		30.4	27.1	27.1	16.3	9.4	
Actuated g/C Ratio	0.66	0.60		0.66	0.60		0.25	0.23	0.23	0.14	0.08	
v/c Ratio	0.40	0.51		0.27	0.87		0.86	0.19	0.11	0.02	0.53	
Control Delay	26.1	18.1		9.5	25.9		54.5	39.7	0.5	33.6	27.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	26.1	18.1		9.5	25.9		54.5	39.7	0.5	33.6	27.8	
LOS	C	B		A	C		D	D	A	C	C	
Approach Delay		18.5			25.5			49.0			27.9	
Approach LOS		B			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 26.6 Intersection LOS: C
Intersection Capacity Utilization 88.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Front St & Founder Pkwy

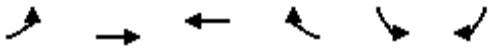


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Future Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.964			0.993			0.868			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4902	0	1770	5050	0	3433	1617	0	1770	3454	0
Flt Permitted	0.082			0.147			0.512			0.714		
Satd. Flow (perm)	153	4902	0	274	5050	0	1850	1617	0	1330	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83			9			246			3	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	869	272	533	2214	114	505	33	246	49	16	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1141	0	533	2328	0	505	279	0	49	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		

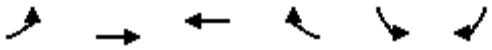
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	15.0	57.0		21.0	63.0		19.0	25.0		17.0	23.0	
Total Split (%)	12.5%	47.5%		17.5%	52.5%		15.8%	20.8%		14.2%	19.2%	
Maximum Green (s)	9.0	51.0		15.0	57.0		14.0	20.0		12.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-2.0	-1.0		-2.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	58.7	52.0		88.1	84.6		24.9	12.7		14.3	9.0	
Actuated g/C Ratio	0.49	0.43		0.73	0.70		0.21	0.11		0.12	0.08	
v/c Ratio	0.04	0.53		0.91	0.65		0.81	0.71		0.26	0.07	
Control Delay	9.5	24.0		46.4	12.9		54.0	19.9		43.1	44.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	24.0		46.4	12.9		54.0	19.9		43.1	44.2	
LOS	A	C		D	B		D	B		D	D	
Approach Delay		23.9			19.2			41.8			43.4	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 24.3		Intersection LOS: C	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	450	647	1695	182	116	1070
Future Volume (vph)	450	647	1695	182	116	1070
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.877	0.850
Flt Protected	0.950				0.991	
Satd. Flow (prot)	3433	3539	3539	1583	3141	1441
Flt Permitted	0.950				0.991	
Satd. Flow (perm)	3433	3539	3539	1583	3141	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				144	242	440
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	703	1842	198	126	1163
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	489	703	1842	198	708	581
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

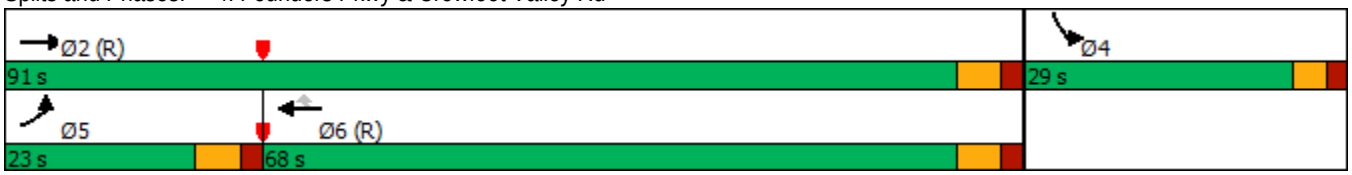


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	23.0	91.0	68.0	68.0	29.0	
Total Split (%)	19.2%	75.8%	56.7%	56.7%	24.2%	
Maximum Green (s)	17.0	85.0	62.0	62.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.7	88.9	65.2	65.2	24.1	120.0
Actuated g/C Ratio	0.16	0.74	0.54	0.54	0.20	1.00
v/c Ratio	0.87	0.27	0.96	0.21	1.14dr	0.40
Control Delay	65.7	5.5	39.8	5.0	41.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.7	5.5	39.8	5.0	41.4	0.8
LOS	E	A	D	A	D	A
Approach Delay		30.2	36.4		23.1	
Approach LOS		C	D		C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 31.0 Intersection LOS: C
Intersection Capacity Utilization 84.3% ICU Level of Service E
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

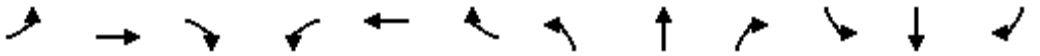
Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	109	130	87
Demand Flow Rate, veh/h	112	132	89
Vehicles Circulating, veh/h	66	55	28
Vehicles Exiting, veh/h	121	62	150
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.6	3.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	112	132	89
Cap Entry Lane, veh/h	1290	1305	1341
Entry HV Adj Factor	0.977	0.983	0.978
Flow Entry, veh/h	109	130	87
Cap Entry, veh/h	1261	1282	1311
V/C Ratio	0.087	0.101	0.066
Control Delay, s/veh	3.6	3.6	3.3
LOS	A	A	A
95th %tile Queue, veh	0	0	0

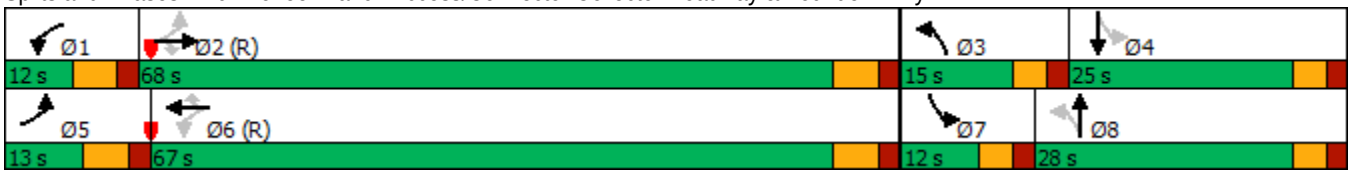


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	676	40	5	1702	30	120	0	10	40	0	95
Future Volume (vph)	50	676	40	5	1702	30	120	0	10	40	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1583	0	1770	1583	0
Flt Permitted	0.051			0.361			0.520			0.750		
Satd. Flow (perm)	95	3539	1583	672	3539	1583	969	1583	0	1397	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			118		310			141	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			1305	
Travel Time (s)		6.6			7.4			7.6			25.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	735	43	5	1792	33	130	0	11	43	0	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	735	43	5	1792	33	130	11	0	43	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	13.0	68.0	68.0	12.0	67.0	67.0	15.0	28.0		12.0	25.0	
Total Split (%)	10.8%	56.7%	56.7%	10.0%	55.8%	55.8%	12.5%	23.3%		10.0%	20.8%	
Maximum Green (s)	7.0	62.0	62.0	6.0	61.0	61.0	10.0	23.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	88.7	87.0	87.0	84.5	79.2	79.2	17.2	13.2		17.4	6.9	
Actuated g/C Ratio	0.74	0.72	0.72	0.70	0.66	0.66	0.14	0.11		0.14	0.06	
v/c Ratio	0.31	0.29	0.04	0.01	0.77	0.03	0.62	0.02		0.18	0.46	
Control Delay	12.0	6.6	0.1	4.4	17.9	0.1	61.2	0.1		42.9	10.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	12.0	6.6	0.1	4.4	17.9	0.1	61.2	0.1		42.9	10.0	
LOS	B	A	A	A	B	A	E	A		D	B	
Approach Delay		6.6			17.6			56.5			19.7	
Approach LOS		A			B			E			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

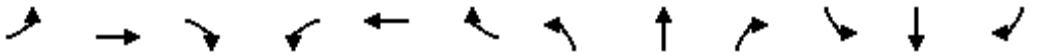
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	60	136	434
Demand Flow Rate, veh/h	61	138	443
Vehicles Circulating, veh/h	310	50	22
Vehicles Exiting, veh/h	155	321	166
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.2	3.6	5.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	61	138	443
Cap Entry Lane, veh/h	1006	1311	1349
Entry HV Adj Factor	0.984	0.984	0.980
Flow Entry, veh/h	60	136	434
Cap Entry, veh/h	989	1290	1322
V/C Ratio	0.061	0.105	0.328
Control Delay, s/veh	4.2	3.6	5.7
LOS	A	A	A
95th %tile Queue, veh	0	0	1

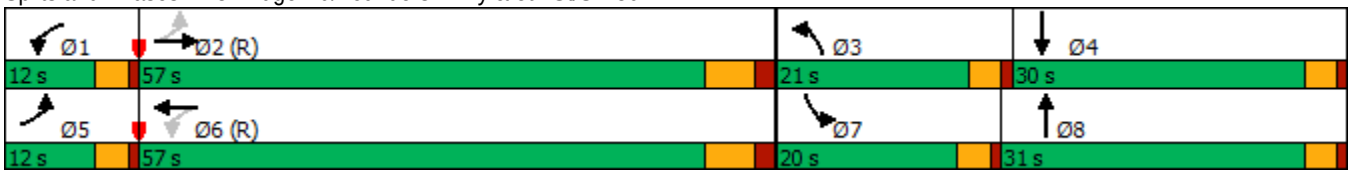


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	210	120	115	475	859	320	527	75	287	156	121
Future Volume (vph)	63	210	120	115	475	859	320	527	75	287	156	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.448			0.588			0.950			0.950		
Satd. Flow (perm)	835	3539	1583	1095	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			719			141			141
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	228	130	125	500	934	348	573	82	312	170	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	228	130	125	500	934	348	573	82	312	170	132
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	57.0		12.0	57.0		21.0	31.0		20.0	30.0	
Total Split (%)	10.0%	47.5%		10.0%	47.5%		17.5%	25.8%		16.7%	25.0%	
Maximum Green (s)	8.0	50.5		8.0	50.5		17.0	27.0		16.0	26.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	64.2	54.5	120.0	66.5	57.3	120.0	15.9	24.1	120.0	14.9	23.1	120.0
Actuated g/C Ratio	0.54	0.45	1.00	0.55	0.48	1.00	0.13	0.20	1.00	0.12	0.19	1.00
v/c Ratio	0.14	0.14	0.08	0.19	0.30	0.59	0.77	0.81	0.05	0.74	0.25	0.08
Control Delay	13.3	20.5	0.1	13.5	21.2	1.6	62.0	55.0	0.1	61.5	41.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	20.5	0.1	13.5	21.2	1.6	62.0	55.0	0.1	61.5	41.3	0.1
LOS	B	C	A	B	C	A	E	D	A	E	D	A
Approach Delay		13.1			8.9			52.9			42.7	
Approach LOS		B			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	3209	230	45	2372	160	185	45	90	145	40	460
Future Volume (vph)	435	3209	230	45	2372	160	185	45	90	145	40	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.990				0.850		0.900				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5034	0	1770	5085	1583	3433	1676	0	1770	1863	2787
Flt Permitted	0.950			0.061			0.950			0.397		
Satd. Flow (perm)	3433	5034	0	114	5085	1583	3433	1676	0	740	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				155		69				291
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	473	3378	250	49	2420	174	201	49	98	158	43	500
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3628	0	49	2420	174	201	147	0	158	43	500
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	22.0	81.0		10.0	69.0	69.0	12.0	18.0		11.0	17.0	17.0
Total Split (%)	18.3%	67.5%		8.3%	57.5%	57.5%	10.0%	15.0%		9.2%	14.2%	14.2%
Maximum Green (s)	17.0	75.0		5.0	63.0	63.0	7.0	13.0		6.0	12.0	12.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0	-1.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0		3.0	4.0	5.0	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	19.0	80.6		73.7	65.6	64.6	9.0	14.4		21.4	13.4	13.4
Actuated g/C Ratio	0.16	0.67		0.61	0.55	0.54	0.08	0.12		0.18	0.11	0.11
v/c Ratio	0.87	1.07		0.29	0.87	0.19	0.78	0.56		0.79	0.21	0.88
Control Delay	66.7	59.6		11.6	23.8	2.1	75.6	35.4		69.8	50.8	39.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.7	59.6		11.6	23.8	2.1	75.6	35.4		69.8	50.8	39.4
LOS	E	E		B	C	A	E	D		E	D	D
Approach Delay		60.4			22.2			58.6			46.9	
Approach LOS		E			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 46.2		Intersection LOS: D	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			

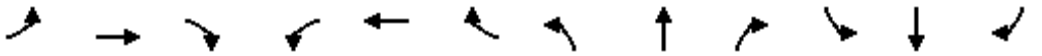
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	205	2624	615	135	1962	25	540	145	193	40	120	75
Future Volume (vph)	205	2624	615	135	1962	25	540	145	193	40	120	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.971			0.998				0.850		0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4938	0	1770	5075	0	3433	1863	1583	1770	3334	0
Flt Permitted	0.055			0.056			0.333			0.657		
Satd. Flow (perm)	102	4938	0	104	5075	0	1203	1863	1583	1224	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		91			3				122		82	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	2762	668	147	2002	27	587	158	210	43	130	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	3430	0	147	2029	0	587	158	210	43	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	13.0	78.0		11.0	76.0		20.0	21.0	21.0	10.0	11.0	
Total Split (%)	10.8%	65.0%		9.2%	63.3%		16.7%	17.5%	17.5%	8.3%	9.2%	
Maximum Green (s)	8.0	72.0		6.0	70.0		15.0	16.0	16.0	5.0	6.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	85.0	75.0		81.0	72.0		28.0	20.0	20.0	15.0	8.0	
Actuated g/C Ratio	0.71	0.62		0.68	0.60		0.23	0.17	0.17	0.12	0.07	
v/c Ratio	1.06	1.10		0.81	0.67		0.98	0.51	0.58	0.23	0.71	
Control Delay	67.9	66.9		57.4	17.3		77.0	53.2	27.2	40.3	47.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	67.9	66.9		57.4	17.3		77.0	53.2	27.2	40.3	47.3	
LOS	E	E		E	B		E	D	C	D	D	
Approach Delay		66.9			20.0			62.1			46.1	
Approach LOS		E			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 51.0		Intersection LOS: D	
Intersection Capacity Utilization 106.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

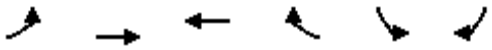


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Future Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.968			0.990			0.863			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4923	0	1770	5034	0	3433	1608	0	1770	3451	0
Flt Permitted	0.118			0.060			0.649			0.244		
Satd. Flow (perm)	220	4923	0	112	5034	0	2345	1608	0	455	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			17			107			11	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2039	549	267	1548	109	386	49	517	190	54	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	2588	0	267	1657	0	386	566	0	190	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	10.0	68.0		18.0	76.0		11.0	20.0		14.0	23.0	
Total Split (%)	8.3%	56.7%		15.0%	63.3%		9.2%	16.7%		11.7%	19.2%	
Maximum Green (s)	4.0	62.0		12.0	70.0		6.0	15.0		9.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	70.0	65.0		83.0	81.0		26.2	17.0		27.0	17.5	
Actuated g/C Ratio	0.58	0.54		0.69	0.68		0.22	0.14		0.22	0.15	
v/c Ratio	0.04	0.96		0.94	0.49		0.62	1.77		0.85	0.13	
Control Delay	7.1	35.4		74.0	10.3		44.3	386.5		72.2	36.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.1	35.4		74.0	10.3		44.3	386.5		72.2	36.3	
LOS	A	D		E	B		D	F		E	D	
Approach Delay		35.3			19.1			247.8			63.1	
Approach LOS		D			B			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.77			
Intersection Signal Delay: 66.4		Intersection LOS: E	
Intersection Capacity Utilization 117.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	960	1628	1193	165	187	670
Future Volume (vph)	960	1628	1193	165	187	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.904	0.850
Flt Protected	0.950				0.982	
Satd. Flow (prot)	3433	3539	3539	1583	3208	1441
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	3433	3539	3539	1583	3208	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				148	341	364
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1043	1770	1297	179	203	728
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	1043	1770	1297	179	567	364
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	39.0	93.0	54.0	54.0	27.0	
Total Split (%)	32.5%	77.5%	45.0%	45.0%	22.5%	
Maximum Green (s)	33.0	87.0	48.0	48.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	42.2	96.2	50.0	50.0	16.8	120.0
Actuated g/C Ratio	0.35	0.80	0.42	0.42	0.14	1.00
v/c Ratio	0.86	0.62	0.88	0.24	0.76	0.25
Control Delay	45.8	6.5	40.5	6.3	26.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	6.5	40.5	6.3	26.1	0.4
LOS	D	A	D	A	C	A
Approach Delay		21.1	36.4		16.0	
Approach LOS		C	D		B	

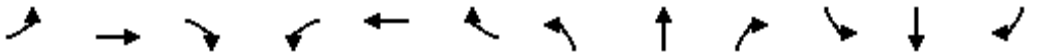
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 24.5		Intersection LOS: C	
Intersection Capacity Utilization 82.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

Intersection	
Intersection Delay, s/veh	3.8
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	136	98	169
Demand Flow Rate, veh/h	139	100	173
Vehicles Circulating, veh/h	50	84	78
Vehicles Exiting, veh/h	134	167	111
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.5	4.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	139	100	173
Cap Entry Lane, veh/h	1311	1267	1274
Entry HV Adj Factor	0.982	0.980	0.977
Flow Entry, veh/h	136	98	169
Cap Entry, veh/h	1287	1241	1245
V/C Ratio	0.106	0.079	0.136
Control Delay, s/veh	3.7	3.5	4.0
LOS	A	A	A
95th %tile Queue, veh	0	0	0

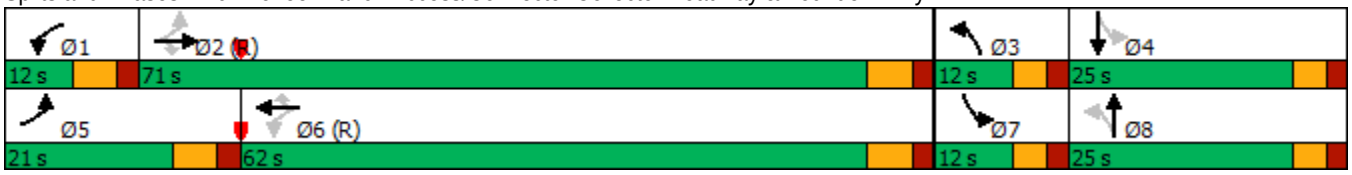


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	1585	130	10	1210	55	75	0	5	30	0	70
Future Volume (vph)	100	1585	130	10	1210	55	75	0	5	30	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1583	0	1770	1583	0
Flt Permitted	0.146			0.095			0.714			0.503		
Satd. Flow (perm)	272	3539	1583	177	3539	1583	1330	1583	0	937	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			173		185			219	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			1305	
Travel Time (s)		6.6			7.4			7.6			25.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1723	141	11	1315	60	82	0	5	33	0	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1723	141	11	1315	60	82	5	0	33	76	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	21.0	71.0	71.0	12.0	62.0	62.0	12.0	25.0		12.0	25.0	
Total Split (%)	17.5%	59.2%	59.2%	10.0%	51.7%	51.7%	10.0%	20.8%		10.0%	20.8%	
Maximum Green (s)	15.0	65.0	65.0	6.0	56.0	56.0	7.0	20.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	98.0	95.6	95.6	90.0	83.3	83.3	11.3	8.9		14.4	6.5	
Actuated g/C Ratio	0.82	0.80	0.80	0.75	0.69	0.69	0.09	0.07		0.12	0.05	
v/c Ratio	0.32	0.61	0.11	0.05	0.54	0.05	0.53	0.02		0.17	0.26	
Control Delay	5.4	8.2	1.1	4.0	11.3	0.1	63.3	0.2		46.2	2.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	5.4	8.2	1.1	4.0	11.3	0.1	63.3	0.2		46.2	2.2	
LOS	A	A	A	A	B	A	E	A		D	A	
Approach Delay		7.6			10.8			59.7			15.5	
Approach LOS		A			B			E			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

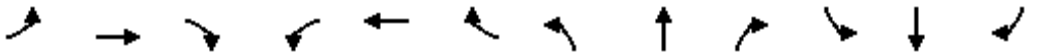
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	163	337	304
Demand Flow Rate, veh/h	166	344	310
Vehicles Circulating, veh/h	221	144	11
Vehicles Exiting, veh/h	100	243	477
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.7	5.8	4.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	166	344	310
Cap Entry Lane, veh/h	1101	1191	1364
Entry HV Adj Factor	0.982	0.981	0.980
Flow Entry, veh/h	163	337	304
Cap Entry, veh/h	1081	1169	1337
V/C Ratio	0.151	0.289	0.227
Control Delay, s/veh	4.7	5.8	4.6
LOS	A	A	A
95th %tile Queue, veh	1	1	1



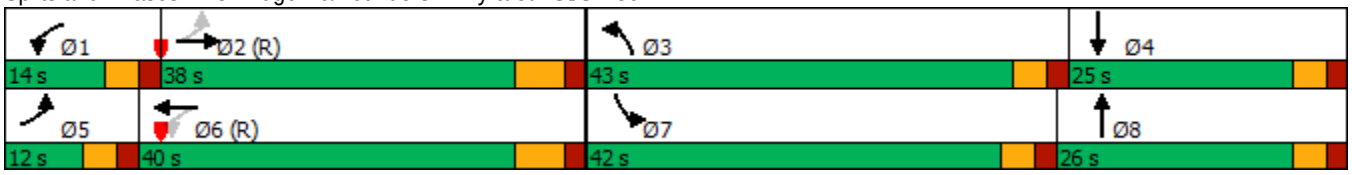
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	565	475	165	305	521	225	453	105	853	656	141
Future Volume (vph)	154	565	475	165	305	521	225	453	105	853	656	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.505			0.234			0.950			0.950		
Satd. Flow (perm)	941	3539	1583	436	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			516			566			168			168
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	614	516	179	332	566	245	492	114	927	713	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	614	516	179	332	566	245	492	114	927	713	153
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

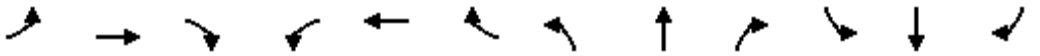
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	38.0		14.0	40.0		43.0	26.0		42.0	25.0	
Total Split (%)	10.0%	31.7%		11.7%	33.3%		35.8%	21.7%		35.0%	20.8%	
Maximum Green (s)	7.0	31.5		9.0	33.5		38.0	21.0		37.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.5		4.0	4.5		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	44.4	35.0	120.0	47.5	36.5	120.0	14.9	22.7	120.0	37.3	43.1	120.0
Actuated g/C Ratio	0.37	0.29	1.00	0.40	0.30	1.00	0.12	0.19	1.00	0.31	0.36	1.00
v/c Ratio	0.41	0.60	0.33	0.62	0.31	0.36	0.57	0.74	0.07	0.87	0.56	0.10
Control Delay	27.6	39.7	0.5	34.2	33.4	0.6	54.6	53.2	0.1	48.7	33.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	39.7	0.5	34.2	33.4	0.6	54.6	53.2	0.1	48.7	33.0	0.1
LOS	C	D	A	C	C	A	D	D	A	D	C	A
Approach Delay		22.6			16.3			46.5			38.3	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 30.9 Intersection LOS: C
Intersection Capacity Utilization 75.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



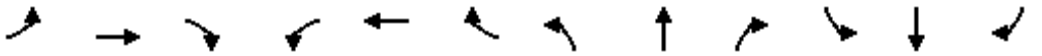


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Future Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		75	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.964			0.993				0.850		0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4902	0	1770	5050	0	3433	1863	1583	1770	3454	0
Flt Permitted	0.082			0.147			0.519					
Satd. Flow (perm)	153	4902	0	274	5050	0	1876	1863	1583	1863	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83			9				227		3	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	869	272	533	2214	114	505	33	246	49	16	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1141	0	533	2328	0	505	33	246	49	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	15.0	57.0		21.0	63.0		19.0	25.0	21.0	17.0	23.0	
Total Split (%)	12.5%	47.5%		17.5%	52.5%		15.8%	20.8%	17.5%	14.2%	19.2%	
Maximum Green (s)	9.0	51.0		15.0	57.0		14.0	20.0	15.0	12.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-2.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		3.0	4.0	5.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	58.7	52.0		90.9	87.5		22.1	10.9	45.4	13.7	7.1	
Actuated g/C Ratio	0.49	0.43		0.76	0.73		0.18	0.09	0.38	0.11	0.06	
v/c Ratio	0.04	0.53		0.85	0.63		0.88	0.20	0.33	0.24	0.09	
Control Delay	9.0	24.0		37.8	10.6		64.3	53.9	5.8	44.8	48.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	9.0	24.0		37.8	10.6		64.3	53.9	5.8	44.8	48.1	
LOS	A	C		D	B		E	D	A	D	D	
Approach Delay		23.9			15.6			45.5			45.7	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 22.8		Intersection LOS: C	
Intersection Capacity Utilization 79.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Future Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.968			0.990				0.850		0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4923	0	1770	5034	0	3433	1863	1583	1770	3451	0
Flt Permitted	0.137			0.060			0.712			0.572		
Satd. Flow (perm)	255	4923	0	112	5034	0	2573	1863	1583	1065	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			17				73		11	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.95	0.92	0.92	0.92
Adj. Flow (vph)	9	2039	549	267	1548	109	386	49	501	190	54	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	2588	0	267	1657	0	386	49	501	190	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	10.0	68.0		18.0	76.0		11.0	20.0	18.0	14.0	23.0	
Total Split (%)	8.3%	56.7%		15.0%	63.3%		9.2%	16.7%	15.0%	11.7%	19.2%	
Maximum Green (s)	4.0	62.0		12.0	70.0		6.0	15.0	12.0	9.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0	4.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	71.7	65.0		91.6	89.2		17.6	10.5	34.0	22.4	12.9	
Actuated g/C Ratio	0.60	0.54		0.76	0.74		0.15	0.09	0.28	0.19	0.11	
v/c Ratio	0.04	0.96		0.65	0.44		0.88	0.30	1.00	0.72	0.17	
Control Delay	6.0	35.4		37.5	7.4		67.7	55.2	78.0	59.5	40.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	6.0	35.4		37.5	7.4		67.7	55.2	78.0	59.5	40.5	
LOS	A	D		D	A		E	E	E	E	D	
Approach Delay		35.3			11.6			72.5			54.7	
Approach LOS		D			B			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 34.2		Intersection LOS: C	
Intersection Capacity Utilization 97.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1420	150	45	3160	140	130	25	55	75	15	385
Future Volume (vph)	265	1420	150	45	3160	140	130	25	55	75	15	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.986				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5014	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.103			0.950			0.701		
Satd. Flow (perm)	3433	5014	0	192	5085	1583	3433	1671	0	1306	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				109		60				217
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	288	1543	163	49	3224	152	141	27	60	82	16	405
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1706	0	49	3224	152	141	87	0	82	16	405
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	14.0	74.0		15.0	75.0	75.0	12.0	20.0		11.0	19.0	19.0
Total Split (%)	11.7%	61.7%		12.5%	62.5%	62.5%	10.0%	16.7%		9.2%	15.8%	15.8%
Maximum Green (s)	9.0	68.0		10.0	69.0	69.0	7.0	15.0		6.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0		4.0	4.0	5.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	12.3	76.4		79.0	71.5	70.5	8.0	16.4		20.2	13.2	13.2
Actuated g/C Ratio	0.10	0.64		0.66	0.60	0.59	0.07	0.14		0.17	0.11	0.11
v/c Ratio	0.82	0.53		0.22	1.06	0.16	0.62	0.31		0.33	0.08	0.81
Control Delay	72.7	13.3		4.6	52.4	0.9	66.8	21.6		42.8	47.6	37.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	72.7	13.3		4.6	52.4	0.9	66.8	21.6		42.8	47.6	37.1
LOS	E	B		A	D	A	E	C		D	D	D
Approach Delay		21.9			49.4			49.6			38.3	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 39.6		Intersection LOS: D	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	70	1200	280	75	2710	15	530	75	50	5	65	105
Future Volume (vph)	70	1200	280	75	2710	15	530	75	50	5	65	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.972			0.999				0.850		0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4943	0	1770	5080	0	3433	1863	1583	1770	3214	0
Flt Permitted	0.061			0.098			0.450			0.704		
Satd. Flow (perm)	114	4943	0	183	5080	0	1626	1863	1583	1311	3214	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			1				118		109	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1304	304	82	2853	16	576	82	54	5	71	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	1608	0	82	2869	0	576	82	54	5	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	63.0		12.0	63.0		20.0	33.0	33.0	12.0	25.0	
Total Split (%)	10.0%	52.5%		10.0%	52.5%		16.7%	27.5%	27.5%	10.0%	20.8%	
Maximum Green (s)	7.0	57.0		7.0	57.0		15.0	28.0	28.0	7.0	20.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	79.2	71.2		79.5	71.3		30.5	27.2	27.2	16.3	9.5	
Actuated g/C Ratio	0.66	0.59		0.66	0.59		0.25	0.23	0.23	0.14	0.08	
v/c Ratio	0.40	0.54		0.35	0.95		0.86	0.19	0.12	0.02	0.52	
Control Delay	25.4	20.1		10.9	32.5		54.3	39.7	0.5	33.6	27.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	25.4	20.1		10.9	32.5		54.3	39.7	0.5	33.6	27.7	
LOS	C	C		B	C		D	D	A	C	C	
Approach Delay		20.3			31.9			48.5			27.9	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 30.4 Intersection LOS: C
Intersection Capacity Utilization 91.0% ICU Level of Service F
Analysis Period (min) 15

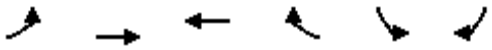
Splits and Phases: 2: Front St & Founder Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	885	250	495	2330	105	465	30	230	45	15	3
Future Volume (vph)	6	885	250	495	2330	105	465	30	230	45	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.966			0.993				0.850		0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4912	0	1770	5050	0	3433	1863	1583	1770	3454	0
Flt Permitted	0.082			0.131			0.519					
Satd. Flow (perm)	153	4912	0	244	5050	0	1876	1863	1583	1863	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			8				216		3	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	932	272	538	2453	114	505	33	250	49	16	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1204	0	538	2567	0	505	33	250	49	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

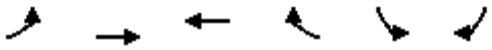
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	15.0	57.0		21.0	63.0		19.0	25.0	21.0	17.0	23.0	
Total Split (%)	12.5%	47.5%		17.5%	52.5%		15.8%	20.8%	17.5%	14.2%	19.2%	
Maximum Green (s)	9.0	51.0		15.0	57.0		14.0	20.0	15.0	12.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-2.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		3.0	4.0	5.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	58.7	52.0		90.9	87.5		22.1	10.9	45.4	13.7	7.1	
Actuated g/C Ratio	0.49	0.43		0.76	0.73		0.18	0.09	0.38	0.11	0.06	
v/c Ratio	0.04	0.55		0.87	0.70		0.88	0.20	0.34	0.24	0.09	
Control Delay	9.0	24.7		42.9	11.9		64.3	53.9	6.8	44.8	48.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	9.0	24.7		42.9	11.9		64.3	53.9	6.8	44.8	48.1	
LOS	A	C		D	B		E	D	A	D	D	
Approach Delay		24.6			17.3			45.6			45.7	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	450	710	1860	190	120	1070
Future Volume (vph)	450	710	1860	190	120	1070
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.878	0.850
Flt Protected	0.950				0.991	
Satd. Flow (prot)	3433	3539	3539	1583	3144	1441
Flt Permitted	0.950				0.991	
Satd. Flow (perm)	3433	3539	3539	1583	3144	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				142	240	438
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	489	772	1958	207	130	1126
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	489	772	1958	207	693	563
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

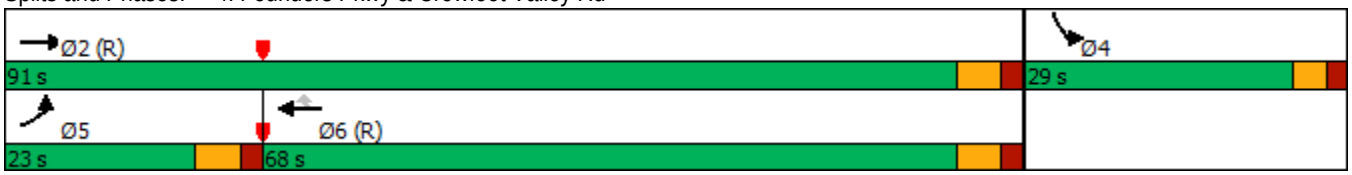


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	23.0	91.0	68.0	68.0	29.0	
Total Split (%)	19.2%	75.8%	56.7%	56.7%	24.2%	
Maximum Green (s)	17.0	85.0	62.0	62.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.9	89.2	65.3	65.3	23.8	120.0
Actuated g/C Ratio	0.17	0.74	0.54	0.54	0.20	1.00
v/c Ratio	0.86	0.29	1.02	0.22	1.11dr	0.39
Control Delay	64.7	5.6	52.8	5.5	40.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	5.6	52.8	5.5	40.6	0.8
LOS	E	A	D	A	D	A
Approach Delay		28.5	48.3		22.8	
Approach LOS		C	D		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 36.1		Intersection LOS: D	
Intersection Capacity Utilization 89.0%		ICU Level of Service E	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

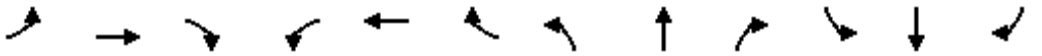
Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



Intersection	
Intersection Delay, s/veh	4.8
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	129	362	140
Demand Flow Rate, veh/h	132	370	143
Vehicles Circulating, veh/h	56	46	231
Vehicles Exiting, veh/h	318	142	185
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.7	5.3	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	132	370	143
Cap Entry Lane, veh/h	1303	1317	1090
Entry HV Adj Factor	0.977	0.979	0.978
Flow Entry, veh/h	129	362	140
Cap Entry, veh/h	1274	1289	1067
V/C Ratio	0.101	0.281	0.131
Control Delay, s/veh	3.7	5.3	4.5
LOS	A	A	A
95th %tile Queue, veh	0	1	0



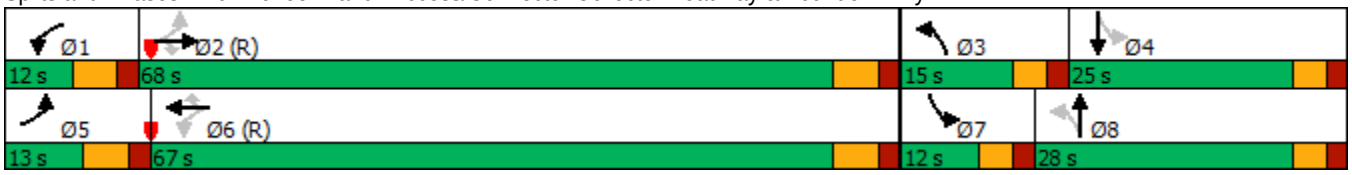
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	675	40	5	1700	55	120	3	10	83	1	270
Future Volume (vph)	118	675	40	5	1700	55	120	3	10	83	1	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.882			0.851	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1643	0	1770	1585	0
Flt Permitted	0.060			0.354			0.267			0.591		
Satd. Flow (perm)	112	3539	1583	659	3539	1583	497	1643	0	1101	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			118		11			129	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			622	
Travel Time (s)		6.6			7.4			7.6			12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	734	43	5	1789	60	130	3	11	90	1	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	734	43	5	1789	60	130	14	0	90	294	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	13.0	68.0	68.0	12.0	67.0	67.0	15.0	28.0		12.0	25.0	
Total Split (%)	10.8%	56.7%	56.7%	10.0%	55.8%	55.8%	12.5%	23.3%		10.0%	20.8%	
Maximum Green (s)	7.0	62.0	62.0	6.0	61.0	61.0	10.0	23.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	77.2	75.6	75.6	71.4	64.7	64.7	23.4	17.3		29.0	18.2	
Actuated g/C Ratio	0.64	0.63	0.63	0.60	0.54	0.54	0.20	0.14		0.24	0.15	
v/c Ratio	0.69	0.33	0.04	0.01	0.94	0.07	0.62	0.06		0.24	0.84	
Control Delay	40.2	11.9	0.1	8.6	37.2	0.1	53.2	22.8		34.0	48.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.2	11.9	0.1	8.6	37.2	0.1	53.2	22.8		34.0	48.3	
LOS	D	B	A	A	D	A	D	C		C	D	
Approach Delay		15.4			36.0			50.3			44.9	
Approach LOS		B			D			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 32.0 Intersection LOS: C
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15

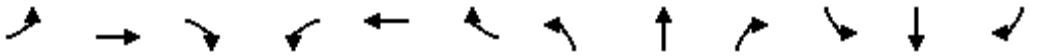
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	71	138	440
Demand Flow Rate, veh/h	72	140	449
Vehicles Circulating, veh/h	310	60	24
Vehicles Exiting, veh/h	163	322	176
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.3	3.7	5.8
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	72	140	449
Cap Entry Lane, veh/h	1006	1298	1346
Entry HV Adj Factor	0.986	0.984	0.980
Flow Entry, veh/h	71	138	440
Cap Entry, veh/h	992	1277	1319
V/C Ratio	0.072	0.108	0.333
Control Delay, s/veh	4.3	3.7	5.8
LOS	A	A	A
95th %tile Queue, veh	0	0	1

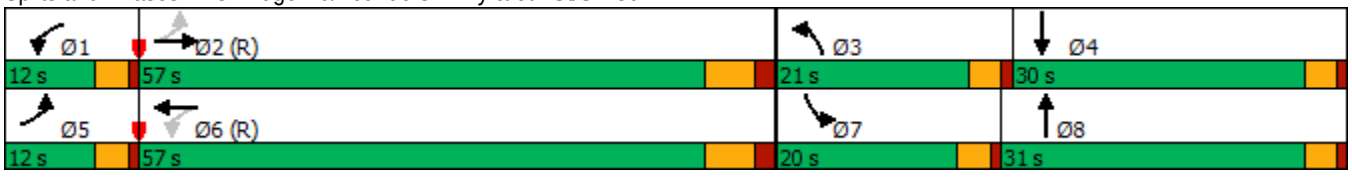


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	210	120	115	475	865	320	535	75	300	170	135
Future Volume (vph)	70	210	120	115	475	865	320	535	75	300	170	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.445			0.590			0.950			0.950		
Satd. Flow (perm)	829	3539	1583	1099	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			708			141			147
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	228	130	125	500	940	348	582	82	326	185	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	228	130	125	500	940	348	582	82	326	185	147
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	57.0		12.0	57.0		21.0	31.0		20.0	30.0	
Total Split (%)	10.0%	47.5%		10.0%	47.5%		17.5%	25.8%		16.7%	25.0%	
Maximum Green (s)	8.0	50.5		8.0	50.5		17.0	27.0		16.0	26.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	63.8	54.0	120.0	65.9	56.7	120.0	15.9	24.4	120.0	15.0	23.6	120.0
Actuated g/C Ratio	0.53	0.45	1.00	0.55	0.47	1.00	0.13	0.20	1.00	0.12	0.20	1.00
v/c Ratio	0.15	0.14	0.08	0.19	0.30	0.59	0.77	0.81	0.05	0.76	0.27	0.09
Control Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
LOS	B	C	A	B	C	A	E	D	A	E	D	A
Approach Delay		13.2			9.0			52.9			42.8	
Approach LOS		B			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 27.6		Intersection LOS: C	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	2	127	49	3	282
Future Vol, veh/h	70	2	127	49	3	282
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	2	138	53	3	307

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	451	138	0	0	191	0
Stage 1	138	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	566	910	-	-	1383	-
Stage 1	889	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	565	910	-	-	1383	-
Mov Cap-2 Maneuver	565	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	740	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	565	910	1383	-
HCM Lane V/C Ratio	-	-	0.135	0.002	0.002	-
HCM Control Delay (s)	-	-	12.4	9	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	320	0	5	114
Future Vol, veh/h	0	13	320	0	5	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	348	0	5	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	482	348	0	0	348	0
Stage 1	348	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	543	695	-	-	1211	-
Stage 1	715	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	695	-	-	1211	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	695	1211	-
HCM Lane V/C Ratio	-	-	0.02	0.004	-
HCM Control Delay (s)	-	-	10.3	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	1	2	23	1	7	15	60	304	0	5	107	2
Future Vol, veh/h	1	2	23	1	7	15	60	304	0	5	107	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	2	25	1	8	16	65	330	0	5	116	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	599	587	117	601	588	330	118	0	0	330	0	0
Stage 1	127	127	-	460	460	-	-	-	-	-	-	-
Stage 2	472	460	-	141	128	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	413	422	935	412	421	712	1470	-	-	1229	-	-
Stage 1	877	791	-	581	566	-	-	-	-	-	-	-
Stage 2	573	566	-	862	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	383	402	935	385	401	712	1470	-	-	1229	-	-
Mov Cap-2 Maneuver	383	402	-	385	401	-	-	-	-	-	-	-
Stage 1	838	788	-	555	541	-	-	-	-	-	-	-
Stage 2	528	541	-	833	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	11.7	1.2	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1470	-	-	808	559	1229	-	-
HCM Lane V/C Ratio	0.044	-	-	0.035	0.045	0.004	-	-
HCM Control Delay (s)	7.6	-	-	9.6	11.7	7.9	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	48	316	0	16	115
Future Vol, veh/h	1	48	316	0	16	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	52	343	0	17	125

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	502	343	0	0	343	0
Stage 1	343	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	529	700	-	-	1216	-
Stage 1	719	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	522	700	-	-	1216	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	858	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	695	1216	-
HCM Lane V/C Ratio	-	-	0.077	0.014	-
HCM Control Delay (s)	-	-	10.6	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	95	251	1	2	65
Future Vol, veh/h	21	95	251	1	2	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	103	273	1	2	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	274	0	-	0	423	274
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	149	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1289	-	-	-	588	765
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	879	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1289	-	-	-	577	765
Mov Cap-2 Maneuver	-	-	-	-	577	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1289	-	-	-	758
HCM Lane V/C Ratio	0.018	-	-	-	0.096
HCM Control Delay (s)	7.8	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	20	1	193	59	1
Future Vol, veh/h	77	20	1	193	59	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	22	1	210	64	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	106	0	296	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1485	-	695	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1485	-	694	975
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	697	-	-	1485	-
HCM Lane V/C Ratio	0.094	-	-	0.001	-
HCM Control Delay (s)	10.7	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

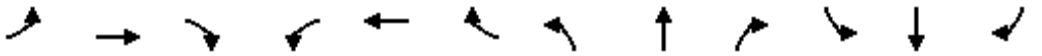
Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	62	11	1	146	0	32	0	2	1	0	16
Future Vol, veh/h	5	62	11	1	146	0	32	0	2	1	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	67	12	1	159	0	35	0	2	1	0	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	162	83	9	121	90	1	17	0	0	2	0	0
Stage 1	11	11	-	71	71	-	-	-	-	-	-	-
Stage 2	151	72	-	50	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	803	807	1073	854	800	1084	1600	-	-	1620	-	-
Stage 1	1010	886	-	939	836	-	-	-	-	-	-	-
Stage 2	851	835	-	963	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	666	788	1073	775	782	1084	1600	-	-	1620	-	-
Mov Cap-2 Maneuver	666	788	-	775	782	-	-	-	-	-	-	-
Stage 1	988	885	-	918	818	-	-	-	-	-	-	-
Stage 2	671	817	-	879	879	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.8	6.9	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	809	782	1620	-	-
HCM Lane V/C Ratio	0.022	-	-	0.105	0.204	0.001	-	-
HCM Control Delay (s)	7.3	0	-	10	10.8	7.2	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.8	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	3385	230	45	2485	160	185	45	90	145	40	460
Future Volume (vph)	435	3385	230	45	2485	160	185	45	90	145	40	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.990				0.850		0.900				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5034	0	1770	5085	1583	3433	1676	0	1770	1863	2787
Flt Permitted	0.950			0.061			0.950			0.392		
Satd. Flow (perm)	3433	5034	0	114	5085	1583	3433	1676	0	730	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				155		69				290
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.98	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	473	3454	250	49	2536	174	201	49	98	158	43	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3704	0	49	2536	174	201	147	0	158	43	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	22.0	81.0		10.0	69.0	69.0	12.0	18.0		11.0	17.0	17.0
Total Split (%)	18.3%	67.5%		8.3%	57.5%	57.5%	10.0%	15.0%		9.2%	14.2%	14.2%
Maximum Green (s)	17.0	75.0		5.0	63.0	63.0	7.0	13.0		6.0	12.0	12.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0	-1.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0		3.0	4.0	5.0	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	19.0	80.8		73.9	65.8	64.8	9.0	14.2		21.2	13.2	13.2
Actuated g/C Ratio	0.16	0.67		0.62	0.55	0.54	0.08	0.12		0.18	0.11	0.11
v/c Ratio	0.87	1.09		0.29	0.91	0.19	0.78	0.57		0.80	0.21	0.86
Control Delay	66.7	67.9		10.8	23.8	1.6	75.6	35.6		70.9	50.8	36.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.7	67.9		10.8	23.8	1.6	75.6	35.6		70.9	50.8	36.4
LOS	E	E		B	C	A	E	D		E	D	D
Approach Delay		67.8			22.2			58.7			45.3	
Approach LOS		E			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 49.7		Intersection LOS: D	
Intersection Capacity Utilization 103.1%		ICU Level of Service G	
Analysis Period (min) 15			

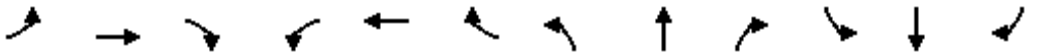
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	205	2800	615	145	2075	25	540	145	210	40	120	75
Future Volume (vph)	205	2800	615	145	2075	25	540	145	210	40	120	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.972			0.998				0.850		0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4943	0	1770	5075	0	3433	1863	1583	1770	3334	0
Flt Permitted	0.054			0.056			0.364			0.657		
Satd. Flow (perm)	101	4943	0	104	5075	0	1315	1863	1583	1224	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			3				118		82	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	2857	668	158	2255	27	587	158	228	43	130	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	3525	0	158	2282	0	587	158	228	43	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	13.0	79.0		11.0	77.0		20.0	21.0	21.0	9.0	10.0	
Total Split (%)	10.8%	65.8%		9.2%	64.2%		16.7%	17.5%	17.5%	7.5%	8.3%	
Maximum Green (s)	8.0	73.0		6.0	71.0		15.0	16.0	16.0	4.0	5.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	86.0	76.0		82.0	73.0		27.0	19.8	19.8	13.0	7.0	
Actuated g/C Ratio	0.72	0.63		0.68	0.61		0.22	0.16	0.16	0.11	0.06	
v/c Ratio	1.06	1.11		0.87	0.74		0.99	0.51	0.64	0.27	0.78	
Control Delay	67.7	73.2		66.8	18.6		78.2	53.4	31.7	42.4	54.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	67.7	73.2		66.8	18.6		78.2	53.4	31.7	42.4	54.2	
LOS	E	E		E	B		E	D	C	D	D	
Approach Delay		72.9			21.7			63.3			52.2	
Approach LOS		E			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 54.1		Intersection LOS: D	
Intersection Capacity Utilization 110.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

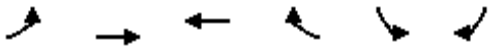


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	2130	505	255	1640	100	355	45	485	175	50	10
Future Volume (vph)	8	2130	505	255	1640	100	355	45	485	175	50	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.970			0.991				0.850		0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4933	0	1770	5040	0	3433	1863	1583	1770	3451	0
Flt Permitted	0.113			0.060			0.712			0.572		
Satd. Flow (perm)	210	4933	0	112	5040	0	2573	1863	1583	1065	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		76			15				73		11	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.95	0.92	0.92	0.92
Adj. Flow (vph)	9	2242	549	277	1726	109	386	49	511	190	54	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	2791	0	277	1835	0	386	49	511	190	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

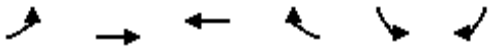
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	10.0	68.0		18.0	76.0		11.0	20.0	18.0	14.0	23.0	
Total Split (%)	8.3%	56.7%		15.0%	63.3%		9.2%	16.7%	15.0%	11.7%	19.2%	
Maximum Green (s)	4.0	62.0		12.0	70.0		6.0	15.0	12.0	9.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-2.0	-2.0	-3.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	71.7	65.0		91.6	89.2		17.6	10.5	35.0	22.4	12.9	
Actuated g/C Ratio	0.60	0.54		0.76	0.74		0.15	0.09	0.29	0.19	0.11	
v/c Ratio	0.04	1.03		0.68	0.49		0.88	0.30	1.00	0.72	0.17	
Control Delay	6.1	53.0		39.1	7.9		67.7	55.2	75.7	59.5	40.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	6.1	53.0		39.1	7.9		67.7	55.2	75.7	59.5	40.5	
LOS	A	D		D	A		E	E	E	E	D	
Approach Delay		52.9			12.0			71.4			54.7	
Approach LOS		D			B			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 41.7		Intersection LOS: D	
Intersection Capacity Utilization 102.1%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	960	1830	1325	175	200	670
Future Volume (vph)	960	1830	1325	175	200	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.907	0.850
Flt Protected	0.950				0.981	
Satd. Flow (prot)	3433	3539	3539	1583	3215	1441
Flt Permitted	0.950				0.981	
Satd. Flow (perm)	3433	3539	3539	1583	3215	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				146	308	352
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	1043	1989	1395	190	217	705
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	1043	1989	1395	190	570	352
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	39.0	93.0	54.0	54.0	27.0	
Total Split (%)	32.5%	77.5%	45.0%	45.0%	22.5%	
Maximum Green (s)	33.0	87.0	48.0	48.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	41.1	95.1	50.0	50.0	17.9	120.0
Actuated g/C Ratio	0.34	0.79	0.42	0.42	0.15	1.00
v/c Ratio	0.89	0.71	0.95	0.26	0.77	0.24
Control Delay	48.4	8.4	47.9	7.2	29.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	8.4	47.9	7.2	29.1	0.4
LOS	D	A	D	A	C	A
Approach Delay		22.1	43.0		18.1	
Approach LOS		C	D		B	

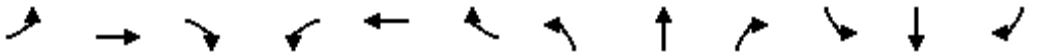
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	359	243	198
Demand Flow Rate, veh/h	366	248	202
Vehicles Circulating, veh/h	136	91	161
Vehicles Exiting, veh/h	227	411	178
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.9	4.6	4.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	366	248	202
Cap Entry Lane, veh/h	1201	1258	1171
Entry HV Adj Factor	0.981	0.981	0.982
Flow Entry, veh/h	359	243	198
Cap Entry, veh/h	1178	1234	1150
V/C Ratio	0.305	0.197	0.173
Control Delay, s/veh	5.9	4.6	4.6
LOS	A	A	A
95th %tile Queue, veh	1	1	1



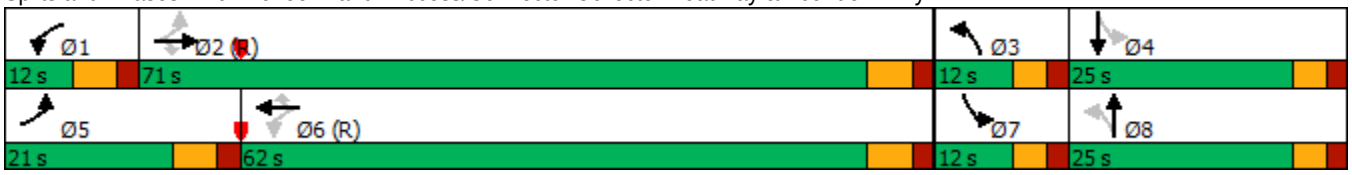
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	1570	130	10	1205	126	75	7	5	100	10	217
Future Volume (vph)	330	1570	130	10	1205	126	75	7	5	100	10	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.942			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1755	0	1770	1596	0
Flt Permitted	0.091			0.109			0.548			0.484		
Satd. Flow (perm)	170	3539	1583	203	3539	1583	1021	1755	0	902	1596	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			173		5			216	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			622	
Travel Time (s)		6.6			7.4			7.6			12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	1707	141	11	1268	137	82	8	5	109	11	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	359	1707	141	11	1268	137	82	13	0	109	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	21.0	71.0	71.0	12.0	62.0	62.0	12.0	25.0		12.0	25.0	
Total Split (%)	17.5%	59.2%	59.2%	10.0%	51.7%	51.7%	10.0%	20.8%		10.0%	20.8%	
Maximum Green (s)	15.0	65.0	65.0	6.0	56.0	56.0	7.0	20.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	90.8	87.3	87.3	66.7	60.0	60.0	14.6	10.7		19.6	11.6	
Actuated g/C Ratio	0.76	0.73	0.73	0.56	0.50	0.50	0.12	0.09		0.16	0.10	
v/c Ratio	0.76	0.66	0.12	0.06	0.72	0.16	0.47	0.08		0.45	0.71	
Control Delay	38.3	12.8	1.9	8.1	27.0	1.5	52.6	36.0		47.3	21.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	38.3	12.8	1.9	8.1	27.0	1.5	52.6	36.0		47.3	21.1	
LOS	D	B	A	A	C	A	D	D		D	C	
Approach Delay		16.2			24.4			50.4			29.1	
Approach LOS		B			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 83.9% ICU Level of Service E
Analysis Period (min) 15

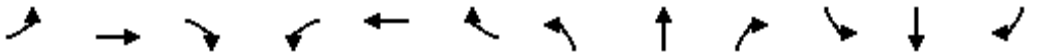
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	179	341	318
Demand Flow Rate, veh/h	183	348	324
Vehicles Circulating, veh/h	221	155	15
Vehicles Exiting, veh/h	118	249	488
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.8	5.9	4.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	183	348	324
Cap Entry Lane, veh/h	1101	1178	1359
Entry HV Adj Factor	0.978	0.981	0.980
Flow Entry, veh/h	179	341	318
Cap Entry, veh/h	1077	1156	1332
V/C Ratio	0.166	0.295	0.238
Control Delay, s/veh	4.8	5.9	4.7
LOS	A	A	A
95th %tile Queue, veh	1	1	1

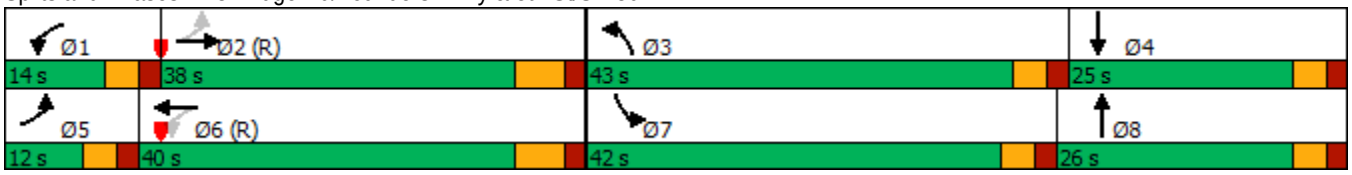


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	565	475	165	305	540	225	475	105	865	675	160
Future Volume (vph)	175	565	475	165	305	540	225	475	105	865	675	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.513			0.226			0.950			0.950		
Satd. Flow (perm)	956	3539	1583	421	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			516			587			168			174
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	614	516	179	321	587	245	516	114	940	734	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	614	516	179	321	587	245	516	114	940	734	174
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	38.0		14.0	40.0		43.0	26.0		42.0	25.0	
Total Split (%)	10.0%	31.7%		11.7%	33.3%		35.8%	21.7%		35.0%	20.8%	
Maximum Green (s)	7.0	31.5		9.0	33.5		38.0	21.0		37.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.5		4.0	4.5		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	43.4	34.1	120.0	46.5	35.7	120.0	14.9	23.5	120.0	37.6	44.1	120.0
Actuated g/C Ratio	0.36	0.28	1.00	0.39	0.30	1.00	0.12	0.20	1.00	0.31	0.37	1.00
v/c Ratio	0.47	0.61	0.33	0.64	0.31	0.37	0.57	0.75	0.07	0.88	0.56	0.11
Control Delay	29.6	40.5	0.5	35.8	33.6	0.7	54.6	53.2	0.1	49.1	32.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	40.5	0.5	35.8	33.6	0.7	54.6	53.2	0.1	49.1	32.7	0.1
LOS	C	D	A	D	C	A	D	D	A	D	C	A
Approach Delay		23.3			16.2			46.7			38.0	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 31.1		Intersection LOS: C	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	129	11	319	144	7	198
Future Vol, veh/h	129	11	319	144	7	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	12	347	157	8	215

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	578	347	0	0	504	0
Stage 1	347	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	478	696	-	-	1061	-
Stage 1	716	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	474	696	-	-	1061	-
Mov Cap-2 Maneuver	474	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	801	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	474	696	1061	-
HCM Lane V/C Ratio	-	-	0.296	0.017	0.007	-
HCM Control Delay (s)	-	-	15.8	10.3	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	214	0	15	355
Future Vol, veh/h	0	9	214	0	15	355
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	233	0	16	386

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	651	233	0	0	233	0
Stage 1	233	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	433	806	-	-	1335	-
Stage 1	806	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	427	806	-	-	1335	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	806	1335	-
HCM Lane V/C Ratio	-	-	0.012	0.012	-
HCM Control Delay (s)	-	-	9.5	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	9	78	0	4	10	47	197	1	15	330	10
Future Vol, veh/h	7	9	78	0	4	10	47	197	1	15	330	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	10	85	0	4	11	51	214	1	16	359	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	721	714	365	761	719	215	370	0	0	215	0	0
Stage 1	397	397	-	317	317	-	-	-	-	-	-	-
Stage 2	324	317	-	444	402	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	343	357	680	322	354	825	1189	-	-	1355	-	-
Stage 1	629	603	-	694	654	-	-	-	-	-	-	-
Stage 2	688	654	-	593	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	321	338	680	264	335	825	1189	-	-	1355	-	-
Mov Cap-2 Maneuver	321	338	-	264	335	-	-	-	-	-	-	-
Stage 1	602	596	-	664	626	-	-	-	-	-	-	-
Stage 2	645	626	-	505	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	11.4	1.6	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1189	-	-	576	582	1355	-	-
HCM Lane V/C Ratio	0.043	-	-	0.177	0.026	0.012	-	-
HCM Control Delay (s)	8.2	-	-	12.6	11.4	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	32	213	1	54	354
Future Vol, veh/h	1	32	213	1	54	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	35	232	1	59	385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	736	233	0	0	233	0
Stage 1	233	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	386	806	-	-	1335	-
Stage 1	806	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	369	806	-	-	1335	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	580	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1335	-
HCM Lane V/C Ratio	-	-	0.046	0.044	-
HCM Control Delay (s)	-	-	9.9	7.8	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	73	282	171	2	2	43
Future Vol, veh/h	73	282	171	2	2	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	307	186	2	2	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	188	0	-	0	652	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	465	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1386	-	-	-	433	855
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1386	-	-	-	408	855
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	632	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1386	-	-	-	815
HCM Lane V/C Ratio	0.057	-	-	-	0.06
HCM Control Delay (s)	7.8	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	217	67	1	134	39	1
Future Vol, veh/h	217	67	1	134	39	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	236	73	1	146	42	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	309	0	384	236
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1252	-	619	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1252	-	618	803
Mov Cap-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	622	-	-	1252	-
HCM Lane V/C Ratio	0.07	-	-	0.001	-
HCM Control Delay (s)	11.2	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

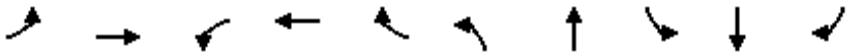
Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	164	36	3	103	1	11	0	1	0	0	11
Future Vol, veh/h	18	164	36	3	103	1	11	0	1	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	178	39	3	112	1	12	0	1	0	0	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	87	31	6	140	37	1	12	0	0	1	0	0
Stage 1	6	6	-	25	25	-	-	-	-	-	-	-
Stage 2	81	25	-	115	12	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	899	862	1077	830	855	1084	1607	-	-	1622	-	-
Stage 1	1016	891	-	993	874	-	-	-	-	-	-	-
Stage 2	927	874	-	890	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	803	856	1077	668	849	1084	1607	-	-	1622	-	-
Mov Cap-2 Maneuver	803	856	-	668	849	-	-	-	-	-	-	-
Stage 1	1009	891	-	986	868	-	-	-	-	-	-	-
Stage 2	801	868	-	686	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	9.9	6.7	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	881	844	1622	-	-
HCM Lane V/C Ratio	0.007	-	-	0.269	0.138	-	-	-
HCM Control Delay (s)	7.3	0	-	10.6	9.9	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.5	0	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	288	1434	41	2622	136	125	76	71	15	353
v/c Ratio	0.60	0.44	0.14	0.92	0.15	0.27	0.33	0.30	0.09	0.71
Control Delay	53.8	11.2	5.5	26.4	1.7	41.4	24.0	43.3	48.6	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	11.2	5.5	26.4	1.7	41.4	24.0	43.3	48.6	21.3
Queue Length 50th (ft)	108	183	6	710	4	42	18	47	11	34
Queue Length 95th (ft)	154	263	m9	#910	m6	65	63	84	31	83
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	300		330		200			125		
Base Capacity (vph)	481	3285	298	2839	931	459	375	235	372	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.44	0.14	0.92	0.15	0.27	0.20	0.30	0.04	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

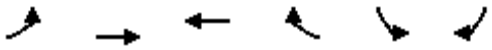
Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	70	1287	79	2216	451	54	43	5	135
v/c Ratio	0.38	0.42	0.25	0.71	0.78	0.14	0.08	0.03	0.44
Control Delay	25.7	10.5	7.6	18.1	52.0	41.9	2.1	36.2	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.5	7.6	18.1	52.0	41.9	2.1	36.2	24.1
Queue Length 50th (ft)	21	127	16	415	163	34	0	3	16
Queue Length 95th (ft)	76	150	34	530	210	77	9	14	48
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			210	
Base Capacity (vph)	191	3073	315	3141	581	420	536	211	632
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.42	0.25	0.71	0.78	0.13	0.08	0.02	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	852	87	402	2185	103	141	29	178	43	17
v/c Ratio	0.04	0.44	0.10	0.67	0.83	0.09	0.58	0.20	0.11	0.22	0.08
Control Delay	6.3	17.9	1.8	13.0	16.2	1.6	54.6	54.9	0.1	45.5	49.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	17.9	1.8	13.0	16.2	1.6	54.6	54.9	0.1	45.5	49.2
Queue Length 50th (ft)	1	211	0	85	525	0	98	22	0	32	5
Queue Length 95th (ft)	6	264	17	192	#1066	20	157	52	0	59	18
Internal Link Dist (ft)		641			702			339			417
Turn Bay Length (ft)	450			500		400	220			120	
Base Capacity (vph)	185	1917	907	598	2634	1193	250	326	1583	218	552
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.44	0.10	0.67	0.83	0.09	0.56	0.09	0.11	0.20	0.03

Intersection Summary

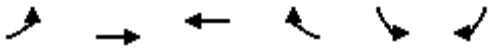
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	386	693	1734	150	586	489
v/c Ratio	0.70	0.26	0.84	0.16	1.01dr	0.34
Control Delay	54.9	5.1	27.0	5.9	33.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	5.1	27.0	5.9	33.9	0.6
Queue Length 50th (ft)	146	72	554	15	114	0
Queue Length 95th (ft)	195	122	#865	56	168	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	629	2683	2059	939	889	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.26	0.84	0.16	0.66	0.34

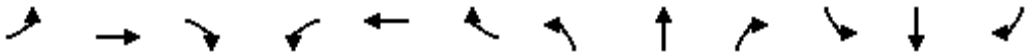
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	107	326	1628	49	74	261
v/c Ratio	0.40	0.11	0.63	0.04	0.49	0.16
Control Delay	6.6	2.3	10.6	2.2	62.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	2.3	10.6	2.2	62.5	0.2
Queue Length 50th (ft)	11	21	304	0	56	0
Queue Length 95th (ft)	25	36	476	14	103	0
Internal Link Dist (ft)		403	466		1225	
Turn Bay Length (ft)						
Base Capacity (vph)	271	3002	2594	1173	368	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.11	0.63	0.04	0.20	0.16

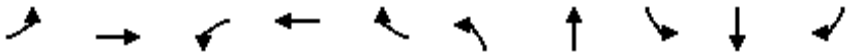
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	89	255	196	98	462	702	408	449	60	270	189	162
v/c Ratio	0.29	0.36	0.12	0.21	0.66	0.44	0.77	0.84	0.04	0.87	0.40	0.10
Control Delay	21.3	30.4	0.2	20.0	37.7	0.9	33.9	54.7	0.0	54.5	39.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	30.4	0.2	20.0	37.7	0.9	33.9	54.7	0.0	54.5	39.0	0.1
Queue Length 50th (ft)	37	147	0	41	303	0	217	324	0	137	121	0
Queue Length 95th (ft)	74	229	0	80	444	0	285	429	0	#265	180	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	375		425	500			230			600		600
Base Capacity (vph)	309	702	1583	473	705	1583	529	621	1583	313	558	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.36	0.12	0.21	0.66	0.44	0.77	0.72	0.04	0.86	0.34	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	473	3262	46	2377	158	179	139	136	40	500
v/c Ratio	0.83	1.02	0.28	0.92	0.18	0.33	0.48	0.64	0.17	0.80
Control Delay	62.4	44.7	11.9	29.3	2.5	39.3	25.0	53.7	45.9	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	44.7	11.9	29.3	2.5	39.3	25.0	53.7	45.9	29.5
Queue Length 50th (ft)	185	~1026	10	655	8	58	37	88	28	82
Queue Length 95th (ft)	#309	#1146	m15	m712	m18	87	98	143	60	147
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	300		330		200			125		
Base Capacity (vph)	571	3196	169	2588	870	539	349	213	310	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.02	0.27	0.92	0.18	0.33	0.40	0.64	0.13	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	179	2868	152	1799	646	120	225	43	157
v/c Ratio	0.94	1.05	0.86	0.67	0.98	0.30	0.41	0.20	0.49
Control Delay	55.1	54.8	64.7	22.1	79.8	42.7	24.4	33.8	35.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	54.8	64.7	22.1	79.8	42.7	24.4	33.8	35.9
Queue Length 50th (ft)	115	~544	65	357	259	80	90	24	36
Queue Length 95th (ft)	m#132	m#544	#207	411	#381	136	166	52	71
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			210	
Base Capacity (vph)	191	2721	176	2686	657	412	547	217	363
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.05	0.86	0.67	0.98	0.29	0.41	0.20	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

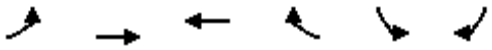
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	1919	147	254	1710	103	114	49	396	188	61
v/c Ratio	0.04	1.01	0.17	0.70	0.67	0.09	0.44	0.30	0.25	0.77	0.24
Control Delay	6.4	50.9	5.0	41.1	12.3	1.7	46.1	54.9	0.4	65.6	47.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	50.9	5.0	41.1	12.3	1.7	46.1	54.9	0.4	65.6	47.2
Queue Length 50th (ft)	2	~773	14	136	335	0	75	36	0	130	20
Queue Length 95th (ft)	7	#960	46	#290	600	20	127	74	0	201	42
Internal Link Dist (ft)		641			702			339			417
Turn Bay Length (ft)	450			500		400	220			120	
Base Capacity (vph)	209	1902	888	364	2555	1161	272	341	1583	243	555
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.01	0.17	0.70	0.67	0.09	0.42	0.14	0.25	0.77	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

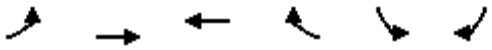
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	853	1758	1323	147	476	315
v/c Ratio	0.86	0.62	0.75	0.18	0.79	0.22
Control Delay	50.6	6.3	27.8	4.2	27.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	6.3	27.8	4.2	27.2	0.3
Queue Length 50th (ft)	321	224	421	5	62	0
Queue Length 95th (ft)	#494	367	510	40	115	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	997	2842	1754	828	914	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.75	0.18	0.52	0.22

Intersection Summary

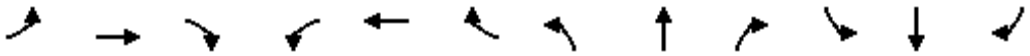
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	326	1582	1266	121	103	214
v/c Ratio	0.70	0.56	0.60	0.12	0.58	0.14
Control Delay	22.6	5.4	16.8	2.1	63.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	5.4	16.8	2.1	63.5	0.2
Queue Length 50th (ft)	86	185	306	0	77	0
Queue Length 95th (ft)	#247	281	372	24	131	0
Internal Link Dist (ft)		403	466		1225	
Turn Bay Length (ft)						
Base Capacity (vph)	464	2840	2108	992	368	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.56	0.60	0.12	0.28	0.14

Intersection Summary

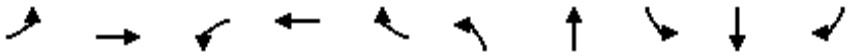
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	180	489	435	125	277	434	234	383	71	613	521	151
v/c Ratio	0.59	0.90	0.27	0.81	0.51	0.27	0.62	0.92	0.04	0.99	0.69	0.10
Control Delay	37.1	62.1	0.4	65.5	39.3	0.4	25.4	74.7	0.0	65.1	35.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	62.1	0.4	65.5	39.3	0.4	25.4	74.7	0.0	65.1	35.5	0.1
Queue Length 50th (ft)	96	364	0	64	179	0	88	291	0	415	329	0
Queue Length 95th (ft)	153	#560	0	#154	265	0	135	#473	0	#661	469	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	375		425	500			230			600		600
Base Capacity (vph)	307	543	1583	154	543	1583	408	419	1583	622	756	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.90	0.27	0.81	0.51	0.27	0.57	0.91	0.04	0.99	0.69	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	288	1706	49	3224	152	141	87	82	16	405
v/c Ratio	0.82	0.53	0.22	1.06	0.16	0.62	0.31	0.33	0.08	0.81
Control Delay	72.7	13.3	4.6	52.4	0.9	66.8	21.6	42.8	47.6	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	13.3	4.6	52.4	0.9	66.8	21.6	42.8	47.6	37.1
Queue Length 50th (ft)	115	267	5	~1018	5	55	19	52	11	80
Queue Length 95th (ft)	#198	317	m6	#1107	m1	90	68	98	33	143
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	290		325			75		130		110
Base Capacity (vph)	350	3201	276	3029	974	228	287	247	232	538
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.53	0.18	1.06	0.16	0.62	0.30	0.33	0.07	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	76	1608	82	2869	576	82	54	5	185
v/c Ratio	0.40	0.54	0.35	0.95	0.86	0.19	0.12	0.02	0.52
Control Delay	25.4	20.1	10.9	32.5	54.3	39.7	0.5	33.6	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	20.1	10.9	32.5	54.3	39.7	0.5	33.6	27.7
Queue Length 50th (ft)	34	275	19	744	207	50	0	3	30
Queue Length 95th (ft)	82	357	39	#993	258	103	0	13	65
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			230	
Base Capacity (vph)	195	2956	238	3018	668	456	477	221	652
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.54	0.34	0.95	0.86	0.18	0.11	0.02	0.28

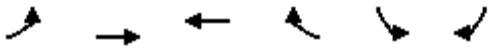
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	1204	538	2567	505	33	250	49	19
v/c Ratio	0.04	0.55	0.87	0.70	0.88	0.20	0.34	0.24	0.09
Control Delay	9.0	24.7	42.9	11.9	64.3	53.9	6.8	44.8	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	24.7	42.9	11.9	64.3	53.9	6.8	44.8	48.1
Queue Length 50th (ft)	1	234	297	334	192	25	17	36	6
Queue Length 95th (ft)	6	279	#564	629	240	57	77	65	19
Internal Link Dist (ft)		641		702		339			417
Turn Bay Length (ft)	450		500		300			150	
Base Capacity (vph)	213	2172	615	3683	571	326	733	245	549
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.55	0.87	0.70	0.88	0.10	0.34	0.20	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



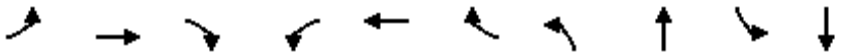
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	489	772	1958	207	693	563
v/c Ratio	0.86	0.29	1.02	0.22	1.11dr	0.39
Control Delay	64.7	5.6	52.8	5.5	40.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	5.6	52.8	5.5	40.6	0.8
Queue Length 50th (ft)	193	96	~860	24	176	0
Queue Length 95th (ft)	#288	122	#998	62	249	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	569	2630	1925	926	869	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.29	1.02	0.22	0.80	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

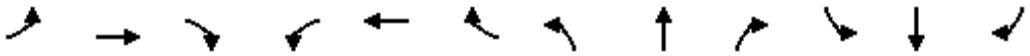
dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	734	43	5	1789	60	130	14	90	294
v/c Ratio	0.68	0.33	0.04	0.01	0.93	0.07	0.62	0.06	0.25	0.85
Control Delay	39.3	11.8	0.1	8.6	36.5	0.1	53.3	22.8	34.3	50.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	11.8	0.1	8.6	36.5	0.1	53.3	22.8	34.3	50.1
Queue Length 50th (ft)	45	129	0	1	688	0	100	2	52	125
Queue Length 95th (ft)	#143	218	0	6	#881	0	129	20	94	#252
Internal Link Dist (ft)		403			466			312		1225
Turn Bay Length (ft)	400		400	400		400	200		200	
Base Capacity (vph)	188	2242	1046	461	1918	911	213	338	363	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.33	0.04	0.01	0.93	0.07	0.61	0.04	0.25	0.77

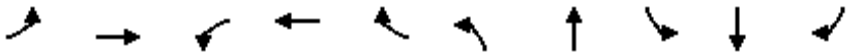
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	76	228	130	125	500	940	348	582	82	326	185	147
v/c Ratio	0.15	0.14	0.08	0.19	0.30	0.59	0.77	0.81	0.05	0.76	0.27	0.09
Control Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
Queue Length 50th (ft)	26	56	0	45	132	0	134	224	0	126	63	0
Queue Length 95th (ft)	52	83	0	78	178	0	186	287	0	176	96	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	300		425	250			250			600		500
Base Capacity (vph)	508	1593	1583	650	1672	1583	486	796	1583	457	766	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.14	0.08	0.19	0.30	0.59	0.72	0.73	0.05	0.71	0.24	0.09

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	458	3704	49	2616	174	201	147	158	43	484
v/c Ratio	0.85	1.09	0.29	0.94	0.19	0.78	0.57	0.80	0.21	0.86
Control Delay	64.7	67.9	11.1	26.5	1.6	75.6	35.6	70.9	50.8	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	67.9	11.1	26.5	1.6	75.6	35.6	70.9	50.8	36.4
Queue Length 50th (ft)	179	~1221	8	718	4	80	56	106	31	84
Queue Length 95th (ft)	#260	#1295	m11	m780	m9	#139	125	#210	67	#175
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	290		325			75		130		110
Base Capacity (vph)	543	3395	167	2792	927	257	269	198	217	581
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	1.09	0.29	0.94	0.19	0.78	0.55	0.80	0.20	0.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	223	3525	158	2211	563	158	228	43	212
v/c Ratio	1.06	1.11	0.87	0.72	0.99	0.51	0.64	0.25	0.71
Control Delay	67.7	73.2	66.8	18.0	79.9	53.4	31.7	41.7	47.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	73.2	66.8	18.0	79.9	53.4	31.7	41.7	47.3
Queue Length 50th (ft)	~155	~1127	69	408	209	115	80	27	52
Queue Length 95th (ft)	m135	m#522	#195	464	#297	187	171	59	#102
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			230	
Base Capacity (vph)	211	3162	182	3088	568	307	359	170	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	1.11	0.87	0.72	0.99	0.51	0.64	0.25	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

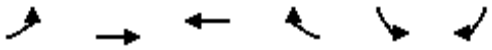
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	2722	274	1835	386	49	505	190	65
v/c Ratio	0.04	1.01	0.67	0.49	0.88	0.30	1.01	0.72	0.17
Control Delay	6.1	45.5	38.6	7.9	67.7	55.2	79.8	59.5	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	45.5	38.6	7.9	67.7	55.2	79.8	59.5	40.5
Queue Length 50th (ft)	2	~742	146	178	139	36	~353	132	20
Queue Length 95th (ft)	6	#887	#293	331	184	74	#582	202	41
Internal Link Dist (ft)		641		702		339			417
Turn Bay Length (ft)	450		500		300			150	
Base Capacity (vph)	225	2708	410	3748	439	263	500	263	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.01	0.67	0.49	0.88	0.19	1.01	0.72	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

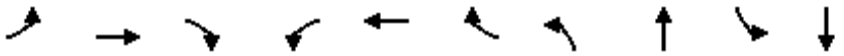


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1011	1926	1440	190	657	352
v/c Ratio	0.96	0.72	0.98	0.26	0.84	0.24
Control Delay	61.4	10.1	53.3	7.5	41.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	10.1	53.3	7.5	41.6	0.4
Queue Length 50th (ft)	~411	386	568	22	170	0
Queue Length 95th (ft)	#553	466	#735	69	240	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	1052	2677	1474	742	825	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.72	0.98	0.26	0.80	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

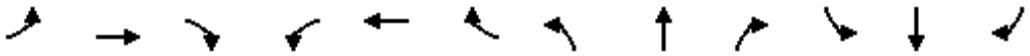
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	364	1701	141	11	1304	142	82	13	114	252
v/c Ratio	0.76	0.66	0.12	0.05	0.76	0.17	0.47	0.08	0.47	0.72
Control Delay	41.6	12.8	1.9	8.1	28.9	1.8	52.5	35.8	47.9	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	12.8	1.9	8.1	28.9	1.8	52.5	35.8	47.9	22.9
Queue Length 50th (ft)	198	303	0	2	430	0	63	6	78	29
Queue Length 95th (ft)	#443	676	28	9	521	21	92	24	121	109
Internal Link Dist (ft)		403			466			312		1225
Turn Bay Length (ft)	400		400	400		400	200		200	
Base Capacity (vph)	476	2571	1189	206	1724	859	175	311	242	455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.66	0.12	0.05	0.76	0.17	0.47	0.04	0.47	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	190	614	516	179	332	587	245	516	114	911	734	174
v/c Ratio	0.47	0.61	0.33	0.63	0.32	0.37	0.57	0.77	0.07	0.86	0.57	0.11
Control Delay	29.7	40.4	0.5	35.1	33.8	0.7	54.6	54.9	0.1	48.0	32.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	40.4	0.5	35.1	33.8	0.7	54.6	54.9	0.1	48.0	32.8	0.1
Queue Length 50th (ft)	98	218	0	91	105	0	93	203	0	332	233	0
Queue Length 95th (ft)	155	281	0	146	146	0	131	266	0	414	311	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	300		425	250			250			600		500
Base Capacity (vph)	402	1007	1583	283	1051	1583	1115	675	1583	1115	1294	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.61	0.33	0.63	0.32	0.37	0.22	0.76	0.07	0.82	0.57	0.11

Intersection Summary

Draft Report

Canyons South
Fiscal Impact Analysis

The Economics of Land Use

Prepared for:
Town of Castle Rock

Prepared by:
Economic & Planning Systems, Inc.

December 5, 2022

EPS #223042

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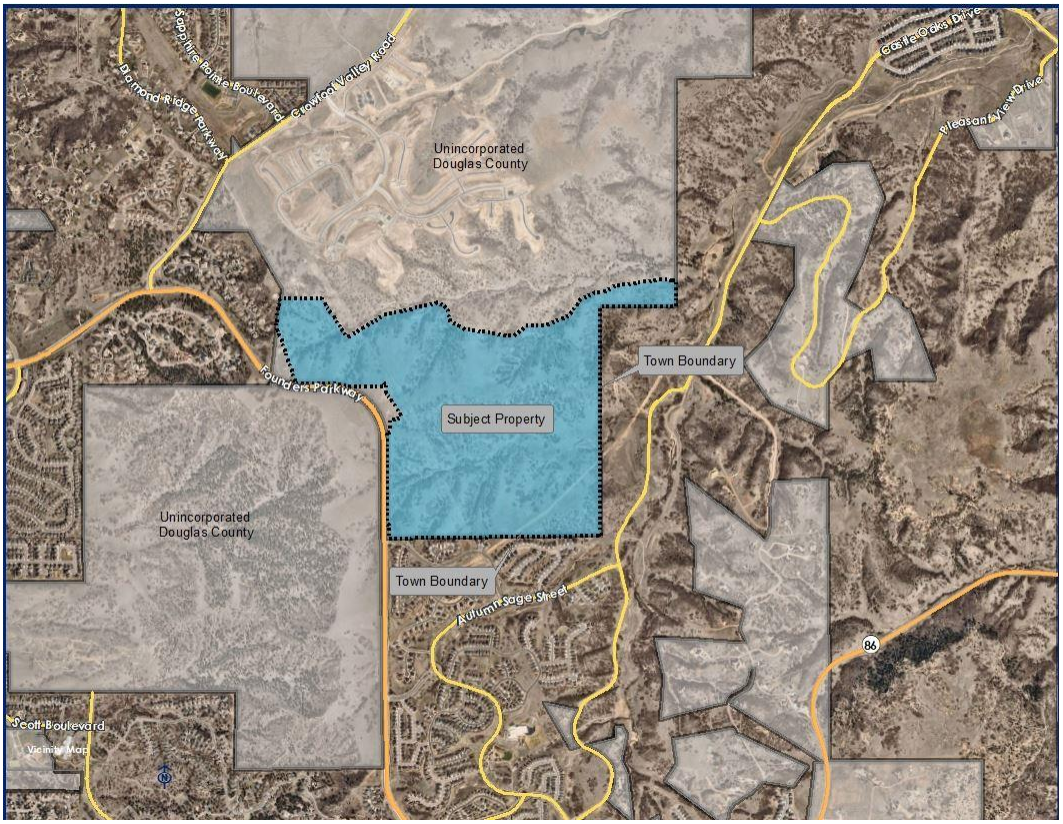
1. Introduction and Summary of Findings

Introduction

This report summarizes the analysis and conclusions of Economic & Planning Systems (EPS) regarding the fiscal impacts of the proposed Canyons Far South Planned Development (Canyons South) on the Town of Castle Rock, Colorado. Canyons South LLC and its affiliates (Developer) is proposing to annex the property into the Town of Castle Rock and zone the property as a Planned Development Plan to permit 474 single family residential units, 60,000 square feet of neighborhood commercial space, and 200 acres of open space.

The Canyons South property consists of approximately 409 acres and is located south of Crowfoot Valley Road, east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive, as shown in **Figure 1**.

Figure 1. Canyons South Vicinity Map



The development plan includes 474 residential dwelling units of varying densities and 60,000 square feet of retail space, as summarized in **Table 1**. The project is also planned to provide 200 acres of open space.

Table 1.Canyons South Development Program

Type	% of Total	Total	2024	2025	2026	2027
Residential For Sale (Sq. Ft.)						
Paired Homes	13%	60	0	6	36	18
Quad/Cluster Units	12%	56	10	46	0	0
Cottage Lots	7%	34	0	8	26	0
Small Lots	20%	97	18	22	43	14
Medium Lots	34%	159	27	66	48	18
Large Lots	14%	68	24	44	0	0
Total	**100%**	**474**	**79**	**192**	**153**	**50**
Nonresidential (Sq. Ft.)						
Retail	100%	60,000	0	30,000	30,000	0
Office	0%	0	0	0	0	0
Hotel	0%	0	0	0	0	0
Industrial	0%	0	0	0	0	0
Total	**100%**	**60,000**	**0**	**30,000**	**30,000**	**0**

Source: Developer; Economic & Planning Systems

Scope of Work

This report and analysis are presented in three sections following this Introduction and Summary of Findings as follows:

- **Development Program and Market Inputs** – This section presents the proposed development program by phase, detailing market inputs including estimated annual absorption and sales and lease values.
- **Fiscal Model Assumptions** – This section describes the public finance model developed by EPS to estimate the fiscal impacts of the proposed development on the Town of Castle Rock. The model was developed using the Town's 2022 adopted budget to identify the major revenues, expenditures, and trends. The model inputs include revenue and expenditure factors by land use category.
- **Fiscal Impacts** – This section provides a summary of the estimated revenues, expenditures, and net fiscal impacts of the proposed development program by in total and by land use category.

Summary of Findings

1. ***The proposed Canyons South development, which is anticipated to deliver predominantly single family detached housing and retail development, is estimated to result in a modest positive fiscal balance for the Town at full buildout.***

   The ongoing annual net fiscal impact of Canyons South on the Town's General Fund, Transportation Fund, and Community Center Fund is estimated at a positive $262,121, $18,783, and $1,450 per year at full stabilization, respectively. The total annual net fiscal impact at full stabilization is estimated at $282,354, which is a modest positive fiscal balance. The inclusion of a requirement for the Development's metro district to impose a 5-mill regional improvement levy accounts for $154,141 in revenues to the General Fund annually at buildout, which is 59 percent of its positive fiscal balance.

2. ***At full stabilization, retail development has the highest net fiscal impact for the Town, followed by medium lot single family housing units.***

   The ongoing net fiscal impact of the retail and medium lot housing land uses totals $115,187 and $78,872, respectively. The quad/cluster units and cottage lots generate the lowest fiscal impact, with ongoing net fiscal impacts of negative $7,337 and negative $1,589, respectively.

3. ***The positive fiscal impact of the development is contingent upon the relatively high average household incomes required to afford the higher value medium density and estate lot single family product types and that support the capture of higher levels of retail sales generating local sales tax revenue.***

   The land uses with the lowest ongoing net fiscal impacts—paired homes, quad/cluster homes, cottage lots, and small lots—also have the lowest household income assumptions. If the assumed household incomes do not materialize, the development may fail to generate sufficient net new retail sales tax to cover the estimated costs of serving the project.

4. ***It should be noted that a fiscal impact analysis provides an order of magnitude estimate of project revenues and expenses based on the current Town budget.***

   The aggregate fiscal impacts could be lower if the estimated household incomes are lower than estimated or if the household sizes are larger resulting in higher service level costs to the Town. The objective of the analysis is not to forecast a precise level of cost and revenues, but rather to determine if the project can be expected to not cause an unreasonable cost burden to the Town government and to the Town's existing residents, businesses, and taxpayers.

   As with any fiscal projection, there is an assumed margin of error associated with the estimates. Results are best interpreted as an estimate of fiscal impacts based on the Town's current budget. To the extent that the Town is providing services at a level below desired levels based on budget constraints, the analysis may underrepresent the future costs of providing services to the project.

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2. Development Program and Market Inputs

This section of the report summarizes the proposed development program by land use category and by phase. The market inputs to the fiscal model are also identified including estimated annual absorption and sales and lease values for the proposed development land uses.

Development Program

Residential Development Program

Canyons South is proposed to contain a total of 474 for-sale housing units including 60 paired homes, 56 quad/cluster units, 34 homes on cottage lots, and 324 homes on small, medium, or large lots, as shown in **Table 2**.

The annual absorption and average sales value of each product type, in current dollars, is also shown. Estimated sales values range from $500,000 for paired homes to $950,000 for the large lot homes. The majority of residential development, medium lot homes, are expected to be priced at $775,000.

Commercial Development Program

The Canyons South development is proposed to contain 60,000 square feet of neighborhood commercial development, all of which is anticipated to be comprised of retail space. The retail space is estimated by the Developer to have a market value of $400 per square foot, also shown in **Table 2**.

Table 2. Residential and Commercial Development Program

Type	Value per SF/Unit	Total Value	% of Total	Total	2024	2025	2026	2027
Residential Development (Units)								
Paired Homes	$500,000	$30.0M	13%	60	0	6	36	18
Quad/Cluster Units	$550,000	$30.8M	12%	56	10	46	0	0
Cottage Lots	$580,000	$19.7M	7%	34	0	8	26	0
Small Lots	$675,000	$65.5M	20%	97	18	22	43	14
Medium Lots	$775,000	$123.2M	34%	159	27	66	48	18
Large Lots	$950,000	$64.6M	14%	68	24	44	0	0
Total/Average	**$704,262**	**$333.8M**	**100%**	**474**	**79**	**192**	**153**	**50**
Commercial Development (Sq. Ft.)								
Retail	$400	$24.0M	100%	60,000	0	30,000	30,000	0
Office	$0	$0.0M	0%	0	0	0	0	0
Hotel	$0	$0.0M	0%	0	0	0	0	0
Industrial	$0	$0.0M	0%	0	0	0	0	0
Total/Average	**$400**	**$24.0M**	**100%**	**60,000**	**0**	**30,000**	**30,000**	**0**

Source: Developer; Economic & Planning Systems

Development Values

Key assumptions for the development, used as inputs to the fiscal impact analysis, are summarized in **Table 3**. Based on sales and construction values, the project is estimated to have a total market value of $357.8 million.

Table 3. Canyons South Property Valuation

Description	Factor	Total Value
Residential Development Value		
Paired Homes	$500,000 per unit	$30.0M
Quad/Cluster Units	$550,000 per unit	$30.8M
Cottage Lots	$580,000 per unit	$19.7M
Small Lots	$675,000 per unit	$65.5M
Medium Lots	$775,000 per unit	$123.2M
Large Lots	$950,000 per unit	$64.6M
Total	**$704,262 per unit**	**$333.8M**
Commercial Development Value		
Retail	$400 per sq. ft.	$24.0M
Office	$0 per sq. ft.	$0.0M
Hotel	$0 per sq. ft.	$0.0M
Industrial	$0 per sq. ft.	$0.0M
Total	**$400 per sq. ft.**	**$24.0M**
Total Development Value		**$357.8M**

Source: Developer; Economic & Planning Systems

Employment is estimated based on an average factor of 650 square feet per employee for retail, 250 square feet for office, 850 square feet for hotel, and 1,000 square feet for industrial. There are expected to be an estimated 92 jobs in the commercial space at Canyons South at buildout, as shown in **Table 4**.

Table 4. Canyons South Employment

Description	Factor	Jobs
Total Employment		
Retail	650 sq. ft. per emp.	92
Office	250 sq. ft. per emp.	0
Hotel	850 sq. ft. per emp.	0
Industrial	1,000 sq. ft. per emp.	0
Total	**650 sq. ft. per emp.**	**92**

Source: Developer; Economic & Planning Systems

Retail sales taxes are an important generator of revenues for the Town. The 60,000 square feet of retail space is estimated to generate an average of $265 per square foot in taxable sales, as shown in **Table 5**. Retail sales levels range from $180 per square foot for large retail support space and $265 per square foot for smaller "main street" retail stores to $536 per square foot for grocery stores. Revenues subject to sales tax range from 75 to 100 percent of the total depending on the store type. Additionally, the percentage of net new retail revenues—revenues that would not otherwise be generated if the development did not occur—ranges from 25 to 50 percent depending on the type of retail.

Table 5.Retail Value and Sales per Sq. Ft. Assumptions

Description	Sq. Ft.	Sales per SF [1]	% Taxable	Taxable Sales per SF	% Net New
Retail					
Large Format Retail	0	$334	100%	$334	50%
Large Support	0	$180	75%	$135	50%
Grocer	0	$536	85%	$455	25%
Grocer Support	0	$536	75%	$402	25%
Mainstreet	60,000	$265	75%	$198	50%
Total/Average	**60,000**	**$265**	**75%**	**$198**	**50%**

[1] Avg. of 2019 and 2020 sales

Source: Economic & Planning Systems

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3. Fiscal Model Assumptions

This section describes the revenue and expenditure factors used in the fiscal impact model to estimate the fiscal impacts of the proposed development on the Town of Castle Rock. The Town's 2022 annual budget was used to identify the major revenues, expenditures, and trends. The calculation of model inputs, including revenue and expenditure factors by land use category, are then estimated.

Demographic Factors

Demographic inputs are used to determine baseline Town service levels on a per resident or per employee basis. For many of the Town's revenues and expenditures, this analysis utilizes a "Proportionate Share" methodology to estimate the cost of providing services to future development based on current expenditures. It also estimates current revenues in a similar manner. This methodology derives demand for Town services, proportional to Town residents and employees over a typical 24-hour period. It provides a basis in the model for computing the cost per service hour for a given population across Town departments providing services to the proposed development. These factors are summarized in **Table 6**, and show an overall service demand split of approximately 77 percent residential/23 percent commercial.

Table 6. Demographic Factors

Description	Factor	Amount
Demographic Factors		
Population		79,364
Households		27,662
Housing Units		29,227
Jobs		24,312
Maintained Lane Miles		715
Retail Area (sf)		4,247,357
Office/Inst. Area (sf)		1,299,529
Industrial Area (sf)		1,242,105
Lodging Area (sf)		N/A
Proportionate Share Estimate		
Residential Conditions		
Population		79,364
Non-Working Residents	55.8%	42,746
Working Residents	44.2%	36,618
Out Commuter Residents	82.5%	29,990
Live/Work Residents	17.5%	6,628
Residential Service Demand		
Non-Working Residents	20 hours per day	854,912
Out Commuter Residents	14 hours per day	419,867
Live/Work Residents	14 hours per day	92,791
Residential Total		**1,367,570**
Commercial Conditions		
Total Jobs		24,312
Less: Mult. Job Holders	5.60%	1,361
Total Employment		**22,951**
In-Commuting Employees	72.05%	16,323
Live/Work Employees	27.95%	6,628
Employment Service Demand		
Non-Working Residents	4 hours per day	170,982
In-Commuting Employees	10 hours per day	163,226
Live/Work Employees	10 hours per day	66,279
Commercial Total		**400,488**
Total Service Demand		**1,768,057**
Residential Service Demand		**1,367,570**
% of Total		77.3%
Commercial Service Demand		**400,488**
% of Total		22.7%

Source: Town of Castle Rock; Economic & Planning Systems

Nexus to Growth Factors

Specific revenues and expenditures are tied to future development through nexus to growth factors, which account for the relationship between revenues/expenditures and new development. Factors used in this model include:

- **Case Studies** – Indicate that a specific revenue or expenditure item was estimated using project-specific data. Case studies used in this analysis include detailed estimates of property tax and sales tax revenues.
- **Residents** – Correlates the specific revenue or expenditure item to future growth in residents.
- **Employees (Commercial)** – Correlates the specific revenue or expenditure item to future growth in employees.
- **Service Population** – Reflects the service demand hours associated with residents and employees in the town. The model shows roughly 77 percent of service demand is attributed to providing services to residential development and 23 percent of service demand is attributed to serving commercial development.
- **Fixed Revenues/Expenditures** – Indicates that a specific revenue or expenditure item does not have a nexus to growth and as a result is not tied to future development. For specific revenue items that are estimated to be fixed, expenditures are adjusted accordingly, thus both the revenues and expenditures are adjusted equally. Net expenditures for individual departments are calculated by subtracting department-specific revenue items or the department's pro rata share of fixed revenues from total department expenditures.

Variability Factors

In addition to nexus to growth factors, the model includes assumptions relating to fixed and variable revenues and expenditures. This is captured in a "variability factor" that enables the model to account for the proportion of revenues or expenditures that are assumed to be variable (i.e., impacted by future development). Generally, revenues are typically assumed to be 100 percent variable and expenditures are estimated to be 25 to 100 percent variable, depending on the department. For example, Town administrative functions are relatively fixed and therefore have a lower variability. Existing staff are able to accommodate a substantial amount of growth without adding staff or other costs. By contrast, other functions, such as streets, have a high variability, reflecting a strong correlation between new growth and the need to expand services.

General Fund

This section summarizes the revenue and expenditure assumptions used to estimate the net fiscal impact of the Canyons South development on the Town's General Fund. The analysis is based on the Town's adopted 2022 budget.

Revenues

The model accounts for General Fund revenue impacts from the Canyons South development by linking each major revenue source to a nexus to growth factor and variability factor, as summarized below and shown in **Table 7**.

Sales Tax – Annual sales tax revenues are estimated based on the adopted 2022 budget and account for 66.6 percent of the Town's General Fund revenue. Of the Town's total 4.0 percent sales tax rate, 70.29 percent of the generated revenue is allotted to the General Fund. Sales tax revenues from the Canyons South development are estimated through a case study, which incorporates two methodologies to estimate sales tax revenue: Point of Sale and Point of Origin.

The Point of Sale methodology relies on an estimate of total sales and corresponding sales tax generated by commercial uses associated with a specific project. The Point of Origin methodology estimates future sales tax revenues based on the spending potential and local capture of households associated with each individual project.

Property Tax – Property taxes represent 2.3 percent of the Town's General Fund revenues and are estimated through a case study based on the total development value of Canyons South. The development values, corresponding with the project's anticipated absorption schedule, are applied the state's residential assessment rate of 7.15 percent and the commercial assessment rate of 29.00 percent, and multiplied by the Town mill levy of 1.196.

Other Revenues – Other revenue sources represent the remaining 31.1 percent of the Town's General Fund revenue. Of these revenue sources, only four were determined to have a nexus to growth, the largest being Motor Vehicle Tax (6.7 percent of total revenue). These revenue streams are primarily estimated based on a service population nexus to growth factor. The remaining revenue sources have no direct nexus to this project and are assumed to be fixed revenue sources. Fixed revenues are netted from the overall estimated revenues for the project.

Expenditures

All departments funded through the Town's General Fund, apart from Parks, are accounted for on a service population basis, as shown in **Table 7**. Based on the anticipated level of future growth in the Town and the current staffing levels in these departments, department expenditures are estimated to range from 25 to 100 variable. Parks are accounted for on a residential population basis, linking all future growth in park expenditures to the additional residents anticipated from the Canyons South development.

Table 7.General Fund Nexus to Growth Factors

Description	Adopted Budget 2022	% of Total	Nexus Factor	Variability	Res. Hourly 1,367,570	Comm. Hourly 400,488	Total Hourly 1,768,057
General Fund Revenues							
Property	$ 1,467,849	2.3%	Case Study	100.0%	$ -	$ -	$ -
Use Tax	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -
Sales Tax	$ 43,106,714	66.6%	Case Study	100.0%	$ -	$ -	$ -
Motor Vehicle Tax	$ 4,331,278	6.7%	Residential	100.0%	$ 3.17	$ -	$ -
Other Taxes	$ 396,730	0.6%	N/A	100.0%	$ -	$ -	$ -
Franchise Fees	$ 2,509,241	3.9%	Service Population	100.0%	$ -	$ -	$ 1.42
Licenses & Permits	$ 133,816	0.2%	Service Population	100.0%	$ -	$ -	$ 0.08
Intergovernmental	$ 2,614,092	4.0%	N/A	100.0%	$ -	$ -	$ -
Charges for Service	$ 2,906,638	4.5%	N/A	100.0%	$ -	$ -	$ -
Management Fees	$ 4,205,990	6.5%	N/A	100.0%	$ -	$ -	$ -
Fines & Forfeitures	$ 391,764	0.6%	Service Population	100.0%	$ -	$ -	$ 0.22
Investment Earnings	$ 368,383	0.6%	Fixed	100.0%	$ -	$ -	$ -
System Development Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -
Contributions & Donations	$ 1,336,000	2.1%	N/A	100.0%	$ -	$ -	$ -
Transfers In	$ 719,259	1.1%	N/A	100.0%	$ -	$ -	$ -
Interfund Loan Revenue	$ 1,112,318	1.7%	N/A	100.0%	$ -	$ -	$ -
Debt & Financing Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -
Other Revenue	$ 245,343	0.4%	N/A	100.0%	$ -	$ -	$ -
Fund Balance Transfer	$ (1,131,160)	-1.7%	Fixed	100.0%	$ -	$ -	$ -
Total	**$ 64,714,255**	**100.0%**			**$ 3.17**	**$ -**	**$ 1.72**
General Fund Expenditures							
Town Council	$ 382,381	0.6%	Service Population	25.0%	$ -	$ -	$ 0.04
Town Manager	$ 1,045,192	1.6%	Service Population	25.0%	$ -	$ -	$ 0.12
Human Resources	$ 807,103	1.2%	Service Population	50.0%	$ -	$ -	$ 0.18
Community Relations	$ 1,009,388	1.6%	Service Population	50.0%	$ -	$ -	$ 0.23
DoIT	$ 3,910,294	6.0%	Service Population	50.0%	$ -	$ -	$ 0.89
Facilities	$ 1,392,413	2.2%	Service Population	50.0%	$ -	$ -	$ 0.32
Town Attorney	$ 1,145,619	1.8%	Service Population	50.0%	$ -	$ -	$ 0.26
Town Clerk	$ 452,775	0.7%	Service Population	50.0%	$ -	$ -	$ 0.10
Municipal Court	$ 467,163	0.7%	Service Population	50.0%	$ -	$ -	$ 0.11
Finance - Departmental	$ 3,401,247	5.3%	Service Population	50.0%	$ -	$ -	$ 0.77
Police	$ 19,865,933	30.7%	Service Population	100.0%	$ -	$ -	$ 9.02
Fire	$ 18,494,264	28.6%	Service Population	100.0%	$ -	$ -	$ 8.40
Development Services	$ 690,788	1.1%	Service Population	50.0%	$ -	$ -	$ 0.16
Parks	$ 10,389,061	16.1%	Residential	100.0%	$ 6.10	$ -	$ -
Finance Non-Departmental	$ 1,260,634	1.9%	Service Population	50.0%	$ -	$ -	$ 0.29
Total	**$ 64,714,255**	**100.0%**			**$ 6.10**	**$ -**	**$ 20.88**

Source: Town of Castle Rock; Economic & Planning Systems

Transportation Fund

This section summarizes the revenue and expenditure assumptions used to estimate the net fiscal impact of the Canyons South development on the Town's Transportation Fund. The analysis is based on the Town's adopted 2022 budget.

Revenues

Variable revenue sources for the Transportation Fund are primarily attributable to sales tax, use tax, and motor vehicle tax, as shown in **Table 8**.

Sales Tax – The Town of Castle Rock's sales tax rate is 4.0 percent, of which 24.46 percent is allotted for the Transportation Fund. Similar to the General Fund, sales tax revenue generation from the Canyons South development is estimated through a case study, which incorporates the Point of Sale and Point of Origin methodology. Sales tax revenues account for 40.8 percent of the fund's total revenue.

Motor Vehicle Tax – Motor vehicle tax accounts for roughly 6.4 percent of the Town's Transportation Fund revenues. It is estimated using a residential nexus factor.

Use Tax – Roughly 36 percent of the Town's residential use tax revenues are allotted to the Transportation Fund. Use tax revenues are estimated on a one-time basis based on the estimated development value and corresponding material value associated with each use. The total material value is multiplied by the Town's 4.0 percent use tax rate to provide an estimate of revenues attributable to the Canyons South development. Use tax revenues account for 7.6 percent of the fund's total revenue.

Expenditures

Transportation Fund expenditures are estimated based on a Cost per Lane Mile case study. This approach applies the average cost of maintaining one lane mile in the town to the estimated number of new lane miles associated with Canyons South. The development is anticipated to require 12.6 new miles of 2 lane roads.

Table 8. Transportation Fund Nexus to Growth Factors

Description	Adopted Budget 2022	% of Total	Nexus Factor	Variability	Res. Hourly 1,367,570	Comm. Hourly 400,488	Total Hourly 1,768,057	Per Ln Mile 715
Transportation Fund Revenues								
Property Tax	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Use Tax	$ 2,803,639	7.6%	Case Study	100.0%	$ -	$ -	$ -	$ -
Sales Tax	$ 14,998,011	40.8%	Case Study	100.0%	$ -	$ -	$ -	$ -
Motor Vehicle Tax	$ 2,348,951	6.4%	Residential	100.0%	$ 1.72	$ -	$ -	$ -
Other Taxes	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Franchise Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Licenses & Permits	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Intergovernmental	$ 8,069,414	22.0%	Fixed	100.0%	$ -	$ -	$ -	$ -
Charges for Service	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Management Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Fines & Forfeitures	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Investment Earnings	$ 112,865	0.3%	Fixed	100.0%	$ -	$ -	$ -	$ -
Impact Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
System Development Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Contributions & Donations	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Transfers In	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Interfund Loan Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Debt & Financing Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Other Revenue	$ 5,155	0.0%	Fixed	100.0%	$ -	$ -	$ -	$ -
Fund Balance Transfer	$ 8,390,148	22.8%	Fixed	100.0%	$ -	$ -	$ -	$ -
Total	**$ 36,728,183**	**100.0%**			**$ 1.72**	**$ -**	**$ -**	**$ -**
Transportation Fund Expenditures								
Personnel	$ 5,362,650	14.6%	Per Lane Mile	50.0%	$ -	$ -	$ -	$ 2,057
Services & Other	$ 23,273,286	63.4%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 17,858
Supplies	$ 814,487	2.2%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 625
Capital	$ 1,115,950	3.0%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 856
Debt & Financing	$ 907,400	2.5%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 696
Interfund Loan	$ -	0.0%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ -
Transfers Out	$ 5,254,410	14.3%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 4,032
Total	**$ 36,728,183**	**100.0%**			**$ -**	**$ -**	**$ -**	**$ 26,125**

Source: Town of Castle Rock; Economic & Planning Systems

Community Center Fund

This section summarizes the revenue and expenditure assumptions used to estimate the net fiscal impact of the Canyons South development to the Town's Community Center Fund. The analysis is based on the Town's adopted 2022 budget.

Revenues

Variable revenue sources for the Community Center Fund are primarily attributable to sales tax, use tax, and motor vehicle tax, as shown in **Table 9** below.

Sales Tax – Of Castle Rock's 4.0 percent sales tax rate, 5.25 percent is allotted to the Community Center Fund. Similar to the General Fund and Transportation Fund, sales tax revenue generation from the Canyons South development is estimated through a case study that incorporates the Point of Sale and Point of Origin methodology. Sales tax revenues account for 38.1 percent of the fund's total revenue.

Motor Vehicle Tax – Motor vehicle tax accounts for 5.0 percent of the Town's Community Center Fund revenues. It is estimated using a residential nexus factor.

Use Tax – Approximately 6 percent of the Town's residential use tax revenues are allotted to the Community Center Fund. Use tax revenues are estimated on a one-time basis based on the estimated development value and corresponding material value associated with each use. The total material value is multiplied by the Town's 4.0 percent use tax rate to provide an estimate of revenues attributable to the Canyons South development. Use tax revenues account for 5.1 percent of the fund's total revenue.

Expenditures

Community Center Fund expenditures are estimated based on the Town's service population and all expenditure line items are estimated based on a variability factor of 100 percent, apart from Personnel, which is assumed to be 80 percent variable.

Table 9. Community Center Fund Nexus to Growth Factors

Description	Adopted Budget 2022	% of Total	Nexus Factor	Variability	Res. Hourly 1,367,570	Comm. Hourly 400,488	Total Hourly 1,768,057	Per Ln Mile 715
Community Center Fund Revenues								
Property Tax	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Use Tax	$ 433,409	5.1%	Case Study	100.0%	$ -	$ -	$ -	$ -
Sales Tax	$ 3,219,305	38.1%	Case Study	100.0%	$ -	$ -	$ -	$ -
Motor Vehicle Tax	$ 424,886	5.0%	Residential	100.0%	$ 0.31	$ -	$ -	$ -
Other Taxes	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Franchise Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Licenses & Permits	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Intergovernmental	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Charges for Service	$ 4,292,533	50.8%	N/A	100.0%	$ -	$ -	$ -	$ -
Management Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Fines & Forfeitures	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Investment Earnings	$ 11,903	0.1%	Fixed	100.0%	$ -	$ -	$ -	$ -
Impact Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
System Development Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Contributions & Donations	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Transfers In	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Interfund Loan Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Debt & Financing Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Other Revenue	$ 17,918	0.2%	N/A	100.0%	$ -	$ -	$ -	$ -
Fund Balance Transfer	$ 46,486	0.6%	Fixed	100.0%	$ -	$ -	$ -	$ -
Total	**$ 8,446,440**	**100.0%**			**$ 0.31**	**$ -**	**$ -**	
Community Center Fund Expenditures								
Personnel	$ 5,051,860	59.8%	Service Population	80.0%	$ -	$ -	$ 1.10	$ -
Services & Other	$ 2,367,220	28.0%	Service Population	100.0%	$ -	$ -	$ 0.65	$ -
Supplies	$ 569,822	6.7%	Service Population	100.0%	$ -	$ -	$ 0.16	$ -
Capital	$ 350,000	4.1%	Service Population	100.0%	$ -	$ -	$ 0.10	$ -
Debt & Financing	$ -	0.0%	Service Population	100.0%	$ -	$ -	$ -	$ -
Interfund Loan	$ -	0.0%	Service Population	100.0%	$ -	$ -	$ -	$ -
Transfers Out	$ 107,538	1.3%	Service Population	100.0%	$ -	$ -	$ 0.03	$ -
Total	**$ 8,446,440**	**100.0%**			**$ -**	**$ -**	**$ 2.03**	**$ -**

Source: Town of Castle Rock; Economic & Planning Systems

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4. Fiscal Impacts

The section of the reports summarizes the estimated Town revenues, expenditures, and net fiscal impacts of the proposed development program by fund, phase, and land use category.

Fiscal Impact by Fund

Revenues

Ongoing and one-time revenue generation estimates were provided for the General Fund, Transportation Fund, and Community Center Fund. Ongoing annual revenue associated with the Canyons South project is estimated to average $1.2 million at full stabilization. Additionally, one-time use tax revenues total an estimated $7.7 million over the course of buildout, from 2024 to 2027. Revenue generation estimates are shown in **Table 10** and summarized below.

Ongoing Revenue

Property Tax Revenues – Property tax revenues are allotted to the General Fund. The project has an overall development value of $357.8 million at full buildout. Applying the state's residential assessment rate of 7.15 percent and the commercial assessment rate of 29.00 percent, multiplied by the Town mill levy of 1.196, Canyons South is estimated to generate $35,113 in annual property tax revenue at full stabilization. Additionally, a regional improvement mill levy of 5 mills will be collected by the project's metro district and remitted to the city to fund capital improvements associated with regional improvements. The regional improvement mill levy is anticipated to generate $154,141 in annual property tax revenue at full stabilization.

Sales Tax Revenues – Sales tax revenues are estimated based on the Point of Origin and Point of Sale methodologies.

- **Point of Sale methodology** – The project is estimated to generate a weighted average of $265 per square foot in taxable retail sales, of which 38 percent are estimated to represent net new revenues to the Town. At full stabilization, the development is anticipated to generate $6.0 million annually in net new retail sales. After applying the 4.0 percent sales tax rate retained by the Town, Canyons South generates $255,904 annually in point of sale sales tax revenue.

- **Point of Origin methodology** – After full buildout, new households from the project are estimated to spend $18.1 million annually on retail goods within the Town of Castle Rock. After applying the 4.0 percent sales tax rate retained by the Town, Canyons South households generate $778,645 annually in additional sales tax revenue at full stabilization.

In total, at full stabilization Canyons South is estimated to generate $1.0 million in annual sales tax revenue. Approximately 25 percent of the total sales tax generated can be attributed to the retail development on the site, while 75 percent can be attributed to additional household spending from the residential uses. Of the total sales tax generated, 70.3 percent, 24.5 percent, and 5.2 percent are allotted to the General Fund, Transportation Fund, and Community Center Fund, respectively.

General Revenue – General revenue includes funding sources estimated using a residential or service population nexus to growth factor. At full stabilization, these sources total $123,699 annually in the General Fund, $41,171 in the Transportation Fund, and $7,447 in the Community Center Fund, totaling $172,317.

One-Time Revenue

Use Tax Revenues – Use tax revenues are allotted to the Transportation Fund, Community Center Fund, Transportation Capital Fund, General Long-Term Planning Fund, and Economic Development Fund.

The total material value associated with new construction from Canyons South averages $44.7 million and totals $178.9 million over the 4-year buildout period from 2024 to 2027. After applying the 4.0 percent use tax rate retained by the Town, Canyons South generates an average of $1.9 million annually and a total of $7.7 million, in use tax revenue.

Expenditures

Annual expenditures are estimated on a service population, residential, or per lane mile basis, depending on the fund, as shown in **Table 7**, **Table 8**, and **Table 9**. The Canyons South development is estimated to generate a total annual service cost of $1.1 million per year, which is comprised of $727,282 from General Fund services, $329,961 from Transportation Fund services, and $56,522 from Community Center Fund services, as shown in **Table 10**.

Ongoing Net Fiscal Impact

The average annual net fiscal impact of Canyons South on the Town's General Fund, Transportation Fund, and Community Center Fund is estimated at a positive $262,121, $18,783, and $1,450 at full stabilization, respectively, as shown in **Table 10**. The total net fiscal impact at full stabilization is estimated at $282,354. These project returns can be characterized as revenue neutral, given the margin of error applicable to a fiscal impact analysis. The analysis suggests that the project is estimated to largely cover the costs of providing Town services under current funding levels but should not be considered a revenue generator for the Town.

Table 10. Summary of Revenues, Expenditures, and Net Fiscal Impact by Fund

Description	General Fund	Transportation Fund	Community Center Fund	Other Funds [1]	Total
Ongoing Revenues					
Sales Tax - General	$676,451	$235,396	$50,524	--	$962,371
Sales Tax - County Transfer	--	$72,178	--	--	$72,178
Property Tax - City	$35,113	--	--	--	$35,113
Property Tax - Metro District	$154,141	--	--	--	$154,141
General Revenue	$123,699	$41,171	$7,447	--	$172,317
Total	**$989,404**	**$348,745**	**$57,972**	--	**$1,396,120**
Ongoing Expenditures					
Total	**-$727,282**	**-$329,961**	**-$56,522**	--	**-1,113,766**
Ongoing Net Fiscal Impact	**$262,121**	**$18,783**	**$1,450**	**$0**	**$282,354**
One-Time Revenues					
Use Tax - General	--	$2,422,866	$374,546	$4,358,988	7,156,400
Use Tax - County Transfer	--	$536,730	--	--	$536,730
Total	**--**	**$2,959,596**	**$374,546**	**$4,358,988**	**7,693,130**

[1] Other Funds include the Transportation Capital Fund, General Long-Term Planning Fund, and Economic Development Fund
Source: Economic & Planning Systems

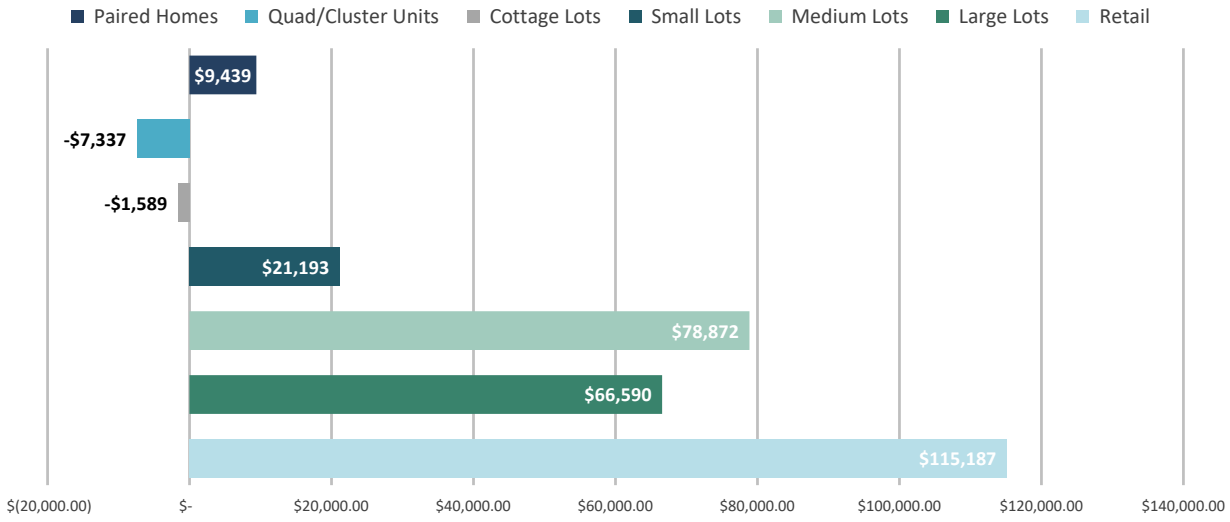
Fiscal Impact by Land Use

Ongoing Net Fiscal Impact

The proposed residential land uses result in a modest positive ongoing net fiscal impact to the Town in aggregate, as shown in **Figure 2**. At full buildout, the impacts range from negative $7,337 annually for the quad/cluster unit product to positive $78,872 annually for the medium lot product. The variations are largely due to the estimated household income for each unit type, which is related to sales tax revenues attributed to household spending under the Point of Origin methodology, in addition to the total number of proposed units of each product type.

The highest fiscal returns associated with the project are generated by retail development, which has an estimated ongoing net fiscal impact of approximately $115,187. In total, the combined net fiscal impact of residential and commercial uses equates to $282,354. Should the residential be developed and the retail not completed, the net fiscal impact would be reduced to $167,168.

Figure 2. Ongoing Net Fiscal Impact at Full Stabilization

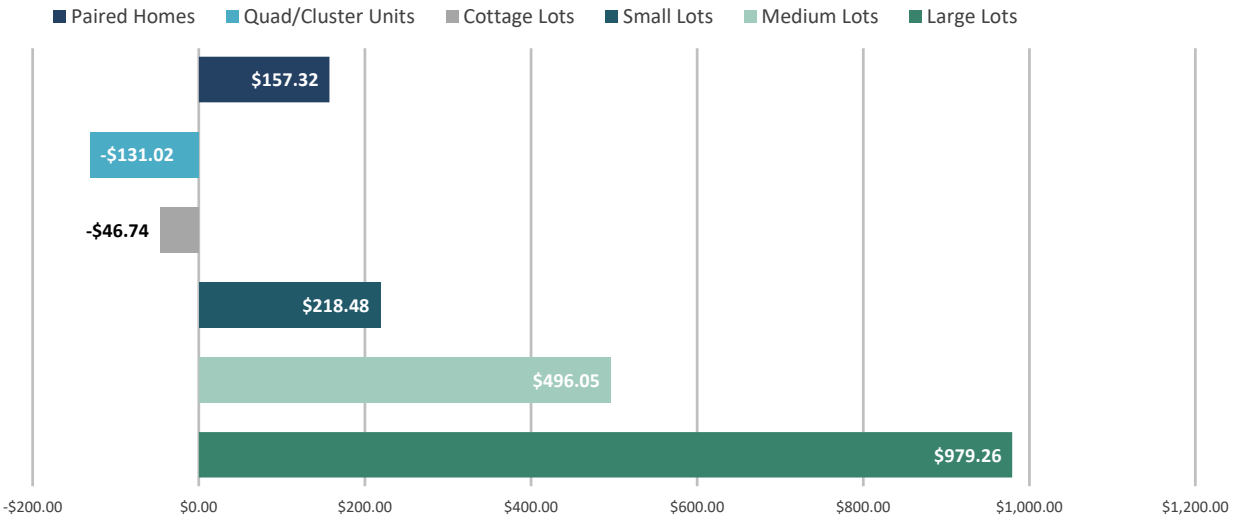


Source: Economic & Planning Systems

Ongoing Net Fiscal Impact Per Unit and Square Foot

At full stabilization, the large lot housing units have the highest ongoing net fiscal impact at $979.26 per unit, as seen in **Figure 3**. The quad/cluster housing units have the lowest ongoing net fiscal impact at negative $131.02 per unit. The retail development, which is not represented graphically, has a net fiscal impact of $1.92 per square foot.

Figure 3. Ongoing Net Fiscal Impact per Unit



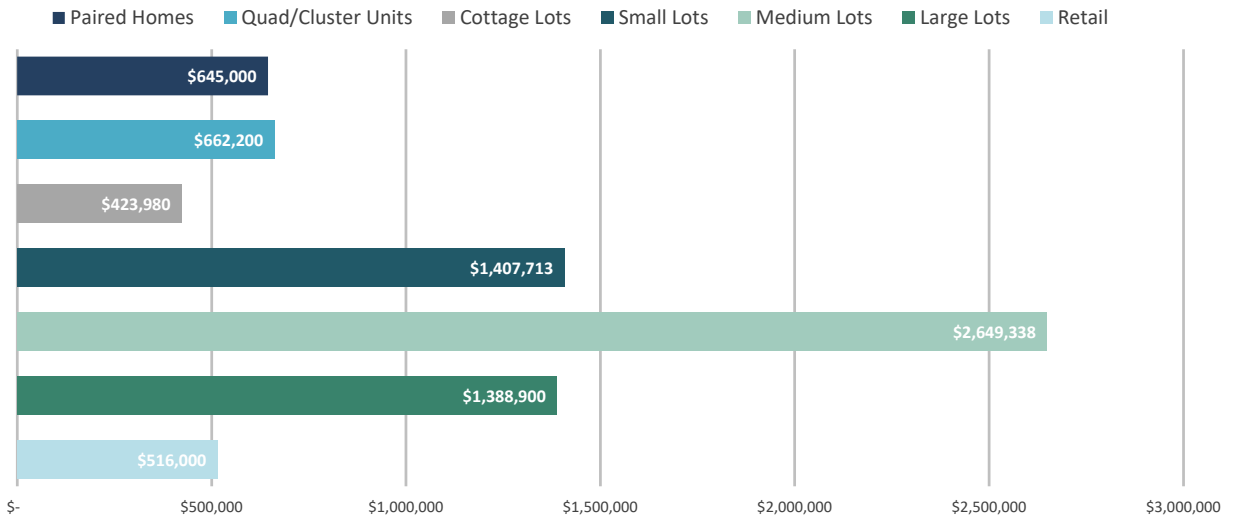
Source: Economic & Planning Systems

One-Time Revenues

In addition to ongoing revenues, the residential uses account for a total of $7.2 million in one-time use tax revenues generated between 2024 to 2027, as seen below in **Figure 4**. Residential use tax revenues account for approximately 93 percent of the total use tax revenues generated throughout the project's buildout.

The retail development accounts for approximately 7 percent of the total use tax revenues, for a total of $516,000.

Figure 4. Residential and Commercial One-Time Use Tax Revenue, 2024-2027



Source: Economic & Planning Systems

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 11. **File #:** ORD 2023-002

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Tara Vargish, PE, Director, Development Services
Sandy Vossler, Senior Planner, Development Services

Ordinance Approving the Initial Zoning for 409.008 Acres of Land Located in the South Half of Section 30 and the North Half of Section 31, Township 7 South, Range 66 West, and the Southeast Quarter of Section 25, Township 7 South, Range 67 West of the 6th Principal Meridian, Douglas County, Colorado, Pursuant to a Zoning Application Submitted by Canyons South, LLC (First Reading) [Canyons Far South Annexation] *[409 acres, located east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive]* - **Public Hearing To Be Continued to February 21, 2023**

Executive Summary

Canyons South, LLC (applicant) has submitted a Petition for Annexation and accompanying plat map (Attachment B) and is requesting approval of the Canyons Far South Annexation, a 409-acre property located northeast of the intersection of Founders Parkway and Crimson Sky Drive (Attachment A). The applicant proposes to zone the property as a planned development (PD), and is seeking approval of the Canyons Far South Planned Development Plan and Zoning Regulations (Attachment C and D).

Budget Impact

The proposed annexation and zoning will generate review fees. In addition, there are DA obligations and impact fees required at the time of annexation and with future site plans, plats and subdivision improvement obligations that will offset Town costs.

The 5-mill Regional Mill Levy to be remitted to the Town on an annual basis will defray costs incurred by the Town in providing public services and improvements related to the development.

Recommendation

The Planning Commission voted 7 - 0 to recommend approval to Town Council of the Canyons Far South Planned Development Plan and Zoning Regulations at a public hearing held on December 8,

2022.

Proposed Motions

Approval

"I move to approve the Canyons Far South Planned Development Plan and Zoning Regulations, as introduced by title."

Approval with Conditions

"I move to approve the Canyons Far South Planned Development Plan and Zoning Regulations, as introduced by title, with the following conditions." (list conditions)
Continue item to next hearing (need more information)

"I move to continue this item to the Town Council meeting on [date], 2023, at [time]."

Attachments

Staff Memorandum
Attachment A: Vicinity Map
Attachment B: Canyons Far South Annexation Petition and Plat
Attachment C: Ordinance No. 2023 - __
Attachment D: Canyons Far South Planned Development Plan and Zoning Regulations
Attachment E: Canyons South Planned Development, 7th Amendment
Attachment F: LSAR - Surrounding Densities
Attachment G: LSAR Developable Areas
Attachment H: LSAR Vegetative Cover
Attachment I: LSAR Cultural Resources Map
Attachment J: Castle Rock Water Resources Inclusion Area Map
Attachment K: Traffic Impact Analysis
Attachment L: Fiscal Impact Analysis - December 5, 2022

Meeting Date: January 3, 2023

AGENDA MEMORANDUM

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Tara Vargish, PE, Director, Development Services
Sandy Vossler, Senior Planner, Development Services

Title: **Ordinance No. 2023 -__: An Ordinance Approving the Initial Zoning for 409.008 Acres of Land Located in the South Half of Section 30 and the North Half of Section 31, Township 7 South, Range 66 West, and the Southeast Quarter of Section 25, Township 7 South, Range 67 West of the 6th Principal Meridian, Douglas County, Colorado, Pursuant to a Zoning Application Submitted by Canyons South, LLC (Canyons Far South Annexation)** [409 acres, located east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive]

Executive Summary

Canyons South, LLC (applicant) has submitted a Petition for Annexation and accompanying plat map (Attachment B) and is requesting approval of the Canyons Far South Annexation, a 409-acre property located northeast of the intersection of Founders Parkway and Crimson Sky Drive (Attachment A). The applicant proposes to zone the property as a planned development (PD), and is seeking approval of the Canyons Far South Planned Development Plan and Zoning Regulations (Attachment C and D).

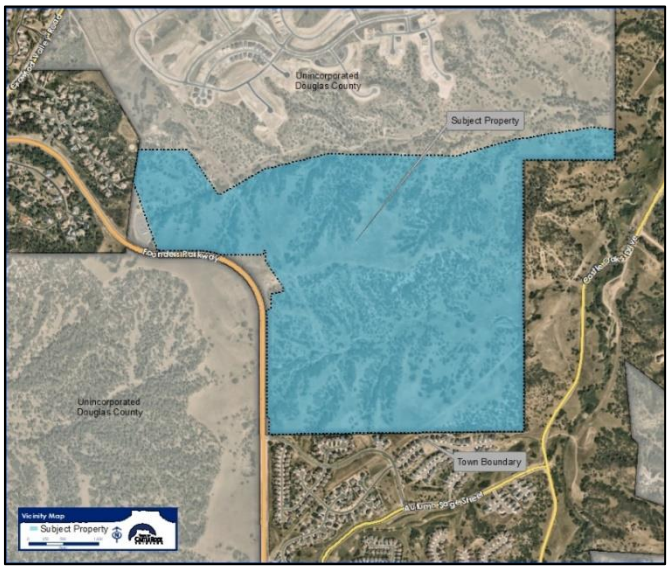


Figure 1: Vicinity Map

Key Benefits of Proposed Annexation and Zoning

- Provides 59% Open Space and Public Land Dedication, including completed Town park for community to enjoy
- Low density provides appropriate transition from urban to county development

- Establishes restrictive residential and commercial landscape regulations
- Provides for acquisition of renewable water resources to meet the water demand
- Preserves cultural resources on the property
- Provides regional trail connections
- Provides key road connections, improving circulation and emergency response
- Provides a 300' buffer on southern edge adjacent to existing Castle Rock neighborhood
- Imposes a 5-mill Regional Mill Levy to be remitted to the Town
- Closes the northern Town boundary
- Allows Town determination and provision of growth patterns, development standards, Code enforcement and public safety

Summary of Proposal

The property proposed for annexation is approximately 409 acres and is currently zoned planned development within the Canyons South PD in unincorporated Douglas County. Town Council held a public hearing on June 15, 2021, and found the annexation petition to be in substantial compliance with the provisions of Article II, Section 30(1)(B) of the Colorado Constitution and Section 31-12-107(1), C.R.S. Further, Town Council held a public hearing on August 17, 2021 and found the property proposed for annexation was eligible to be annexed in accordance with the Colorado Revised Statues. The Town will now consider whether the property should be annexed to the Town, and whether the proposed Planned Development zoning is appropriate and should be approved.

The Canyons Far South PD proposes to allow 474 single-family dwelling units for a gross density of 1.16 dwelling units per acre (du/ac), a maximum of 60,000 square feet (s.f.) of neighborhood commercial uses and approximately 240 acres, 59% of the site, of open space and park land.

The development plan includes restrictive landscape regulations. Front yard landscaping will be limited to Coloradoscape; a xeric design drawing from low water use native plants. No turf will be allowed in residential front yards. Irrigated turf will only be permitted in the backyards, and will be limited to a maximum of 500 square feet, regardless of the size of the lot. Water features are prohibited on commercial lots, and turf requiring more than 10 inches of water annually is prohibited. The applicant is required to dedicate all of the groundwater rights associated with the property to the Town, and will provide renewable water resources necessary to serve the development.

The applicant is requesting that the Canyons Far South Planned Development Plan be vested as a site specific development plan through December 31, 2037.

Planning Commission Recommendation

The Planning Commission voted 7 – 0 to recommend approval to Town Council of the Canyons Far South Planned Development Plan and Zoning Regulations at a public hearing held on December 8, 2022.

Background

Zoning History

The property is located east of Founders Parkway, west of Castle Oaks Drive, and north of Crimson Sky Drive. The property is currently zoned planned development as part of the Canyons South Planned Development. The Canyons South PD, approved by Douglas County in 2005, was designed as a golf course community with 968 dwelling units on 2,043 acres. The Canyons Far South property is located in the southern third of the Canyons South PD, and was originally zoned to allow approximately 436 dwelling units and 170 acres of open space.

Since 2005 Douglas County has approved several amendments to the Canyons South PD that essentially modified the planning areas, open space tracts and densities within the PD boundaries. The most recent amendment to the Canyons South PD, approved March 2022, reallocated all of the residential density to planning areas in the northern two-thirds of the PD (Attachment E). This amendment left the remaining southernmost planning areas 8, 11, 12 and 15 zoned to allow residential development, but reduced the allowed densities to 0, see blue highlighted use areas in Figure 2, above. The open space acreage in the Canyons South PD was not increased with the latest PD amendment.

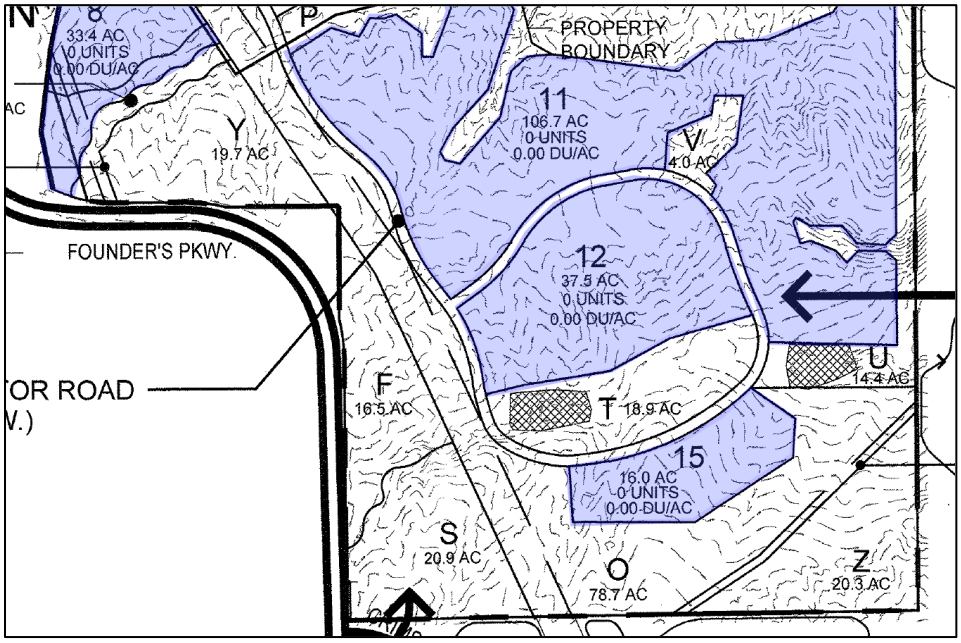


Figure 2: South Portion of Canyons South PD, 7th Amendment

In 2018 the Canyons South PD property was split between two ownership groups. The northern two-thirds is currently being developed by HT Canyons South Development (HT) in Douglas County, as Macanta. The southern 409 acres of the Canyons South PD is represented by the applicant, and is the area proposed for annexation and zoning in the Town. The remainder of this report focuses on the proposed Canyons Far South Annexation and PD Zoning, and includes a brief summary of the obligations included in the Canyons Far South Development Agreement.

Surrounding Zoning and Uses

The Canyons Far South property is adjacent to unincorporated Douglas County to the north and west. The property is adjacent to the Town of Castle Rock boundaries to the northwest, south and east. It is this adjacency with the Town that satisfies the minimum 1/6th adjacency requirement needed for annexation, per the Colorado Revised Statutes (Attachment C).

The Canyons Far South development plan proposes a gross density of 1.16 du/ac that creates an appropriate density transition between the lower density County development to the north and the higher density Town urban development located to the south, east, and as proposed in the pending annexation west of the site (Attachment F).

The Macanta subdivision abuts the Canyons Far South property to the north. As discussed previously, Macanta is zoned PD in Douglas County and is currently under development. The density of the Macanta neighborhood is approximately 0.60 du/ac.

The Terrain PD is approximately 590 total acres and located is within the Town boundaries. The Terrain abuts eastern boundary of the Canyons Far South property. The Terrain PD has a gross density of 2.67 dwelling units per acre.

The Castle Oaks PD is approximately 1,185 acres and is adjacent to the Canyons Far South southern boundary. The Castle Oaks PD has a gross density of 2.3 dwelling units per acre.

The Timber Canyon neighborhood is located northwest of the Canyons Far South PD. It is approximately 61.5 acres and zoned for a density of 1.0 dwelling units per acre.

Pioneer Ranch is located west of the property on the west side of Founders Parkway. Pioneer Ranch is a 388-acre property that is currently zoned Agricultural 1 (A-1) in Douglas County. The owner of Pioneer Ranch has submitted a Petition for Annexation to the Town and is proposing the property be zoned PD to allow 1123 dwelling units, approximately 2.9 dwelling units per acre (du/ac), 400,000 square feet of commercial uses. The Pioneer Ranch annexation and zoning proposal is under review by the Town.

Existing Conditions

The Land Suitability Analysis Report (LSAR), prepared by DIG Studio in August 2022, assessed the site's existing topography, vegetation, man-made improvements, geology, wildlife habitat, soils, wildfire mitigation and rock outcroppings. The LSAR concluded that the site is suitable for development as proposed. The following is a summary of the site features discussed in the LSAR.

The topography of the site consists of plateaus, suitable for development separated by significant drainage corridors and steep slopes along the drainageways (Attachment G).

The property generally slopes from the west to the east with all drainage flowing to the east. Elevations range from 6,170 feet on the eastern edge to over 6,540 feet on the western boundary. An area of unique rock outcroppings centrally located on the site will be preserved within a passive use Town park. A geotechnical investigation dated 2005 concluded that there were no geotechnical constraints that would preclude development. The drainage corridors and associated steep slopes, as well as the area of rock outcroppings posed some geologic hazard concerns, therefore those areas have been incorporated in to the open space acreage and excluded from the areas of development.

Vegetation on the property includes a mix of Gambel Oak and Ponderosa Pines, with an understory of blue grama, yucca, western wheatgrass, prickly pear cactus and sage. The stands of pines are located outside of the residential planning areas (Attachment H). The drainage corridors contain western wheat and blue grama grasses, and stands of scrub oak. There will be minimal disturbance of the drainageway and slope vegetation, except what is necessary to stabilize the channels, install trail connections or provide road crossings. The drainage corridors will continue to provide protective cover, foraging and nesting habitat, as well as movement corridors for wildlife and birds.

The wildlife found on the site is typical of that found in shortgrass habitats in Colorado. Large mammals include elk, mule deer, pronghorn, coyets and red fox. Small mammals include voles, prairies dogs, and ground squirrels. Elk and black footed prairies dogs were observed during site visits. The project area has been assessed for suitable habitat for the Preble's Meadow Jumping Mouse, and no evidence of the mouse was found. No threatened or endangered species or suitable habitat for such animals was found on the site.

Cultural resources on the site include earthen dams and rhyolite check dams constructed by the Civilian Conservation Corp (CCC) (Attachment I) and are considered to be the most historically significant structures on the property. The CCC dams will be preserved and may contribute, to the extent possible, to stabilizing and managing the drainageways. Recently discovered on the property is a stacked rhyolite brick water well, likely constructed to serve the CCC camps. The developer has covered the well and secured the site with temporary fencing. The well and the dams are located outside of the proposed areas of development and are in areas to be dedicated to the Town as open space. A windmill on the site will be retained as a site element if it can be secured for safety purposes. No historical or Native American artifacts have been found on the property.

Discussion of Proposal

Canyons Far South Annexation

The Canyons Far South annexation petition and plat map were accepted and filed with the Town Clerk on May 26, 2021. As required by the Colorado Revised Statutes

(C.R.S.), the petition was reviewed by Town Council in two separate hearings. The Substantial Compliance hearing was held on June 15, 2021 and the Council found that the petition substantially complied with the requirements of the Colorado Constitution and the C.R.S for annexation. The Eligibility hearing was held on August 17, 2021 and Town Council found the property to be eligible to be considered for annexation into the Town.

The area proposed for annexation is approximately 409-acres and is currently zoned Planned Development in Douglas County within the Canyons South PD.

Canyons Far South Planned Development Zoning

Residential Development

The applicant is requesting that the property be zoned Planned Development (PD) (Attachment D). The Canyons Far South Planned Development Plan and Zoning Regulations establish four residential planning areas and one commercial planning area. The proposed zoning would allow 474 single-family detached and attached dwelling units, at a gross density of 1.16 du/ac. Lot sizes are dependent on the housing type, and would range from a minimum of 4,000 s.f. to a maximum of 11,700 s.f. The maximum residential building height would be 35 feet. Setbacks are distinguished by the lot size and housing type and are depicted in the table below.

	Paired Home	Cottage Home	Cluster Home	Small Lot	Medium Lot	Large Lot
Min. Lot Size	4,000 s.f.	4,250 s.f.	4,875 s.f.	5,500 s.f.	6,000 s.f.	7,000 s.f.
Max. Height	35’	35’	35’	35’	35’	35’
Setbacks						
Front	10’	10’	10’	10’	15’	15’
Rear	10’	5’	5’	25’	30’	30’
Side	5’	7.5’	7.5’	5’	7.5’	10’
Side to Shared Wall	0’	N/A	N/A	N/A	N/A	N/A
Side to Street	7.5’	7.5’	7.5’	7.5	10’	12.5’

Figure 3: Development Standards

Commercial Development

Planning Area 5 is proposed to be an area of neighborhood commercial uses with design standards intended to create a pedestrian oriented village center. Permitted uses include retail, restaurant, office and personal services. Daycare facilities, school and restraurant with drive-through are only permitted if approved by Town Council as a use by special review. Among the prohibited uses are auto services, fuel station, car wash, and outdoor storage.

The maximum non-residential square footage allowed is 60,000. The maximum building square footage is 25,000, a limitation that is intended to promote smaller scale buildings. Also, to that end, the maximum building height is 35 feet. Signature architectural elements such as clock towers, windmills, or other entry feature may be a maximum of 45 feet in height.

Commercial building design standards call for four-sided architecture, variations in roof lines and facades to breakup massing, and use of accent materials such as granite, wrought iron slate, etc. are encouraged. Buildings adjacent to a sidewalk shall be

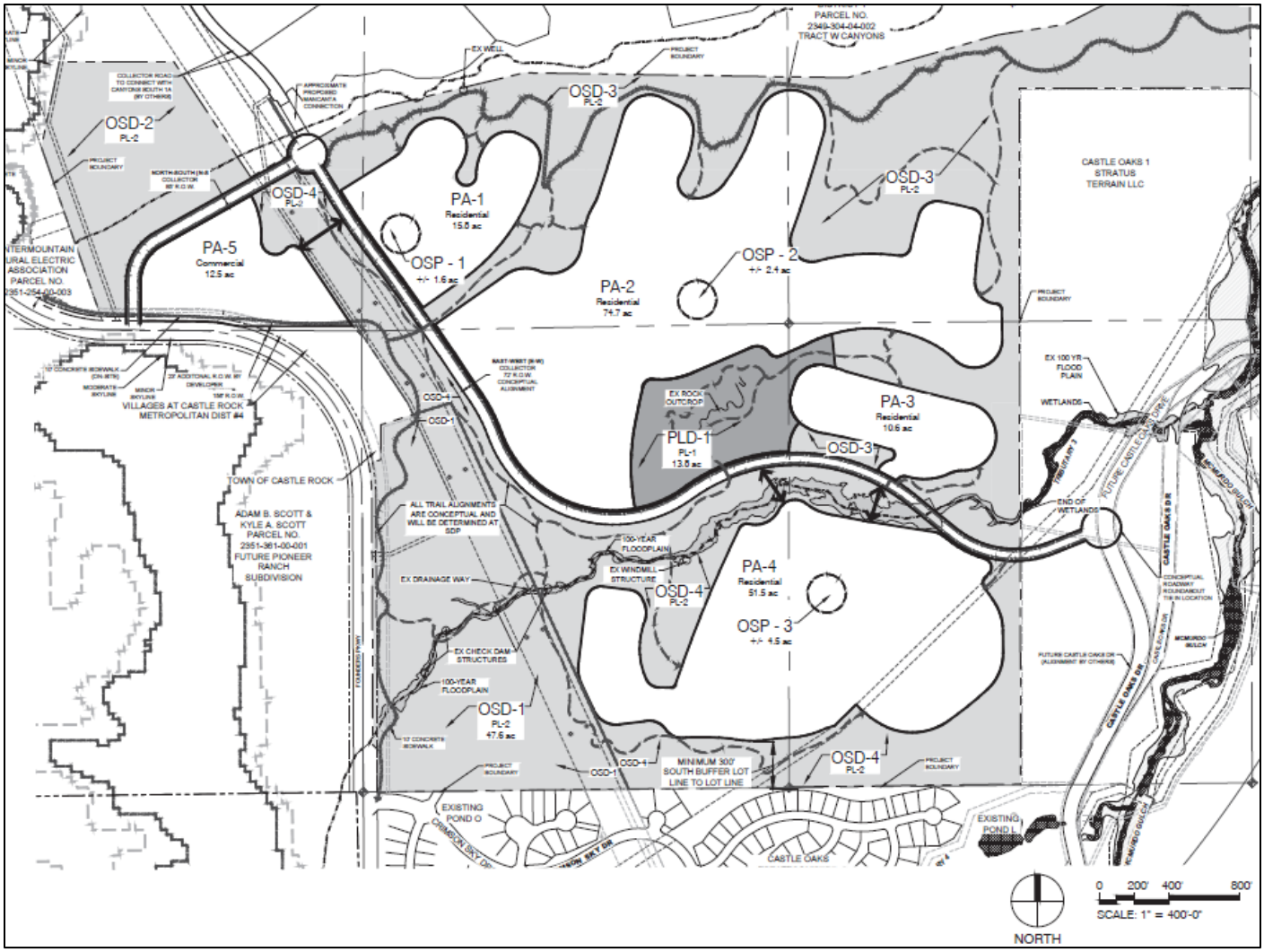


Figure 4: Canyons Far South Planned Development Planning Areas 1-5

oriented to provide a strong visual and physical connection between the sidewalk and first floor. Signage and landscaping will be used to create an unique sense of entry into the development. Conceptual renderings of the typical streetscape included in the PD Zoning regulations provide a visual interpretation of the design standards and may be used as a guide for design professionals and Town staff to achieve the pedestrian oriented village vision.

Open Space, Public Land, Park and Trails

The development plan proposes to set aside 217.6 acres as public open space (OSD). The areas of OSD essentially surround the developable planning areas, providing a transitional buffer to internal and external development and serving to protect drainage corridors, slopes, mature vegetative stands, and wildlife habitat and movement corridors. All OSD acreage will be dedicated to, and owned by, the Town, and will be zoned as Public Land-2 (PL-2). The PL-2 district permits passive uses and development standards as established in the Town's Municipal Code Section 17.30.030. The developer also plans to incorporate approximately 8.5 acres of private open space (OSP) into the residential planning areas. The permitted uses allowed in OSP are listed in the Canyons Far South PD Zoning Regulations and include recreation centers, pools, sports courts and other active recreational uses.

A public land dedication (PLD) of 13.8 acres will be made to the Town and will be developed as a community park. The park will be centrally located within the development and zoned PL-1. The park serves to preserve an area of unique rock outcroppings and will include benches, picnic tables and hiking trails.

Canyons Far South proposes a extensive network of trails, both hard and soft surface, throughout the development. The trails will provide pedestrian connections within the development, and will also provide an important link to the Front Range Trail.

Prescriptive Buffer

Based on input from the surrounding residents, the development plan was revised to create a prescriptive buffer between Planning Area 4 and the Castle Oaks/Terrain neighborhood abutting the southern property boundary of the PD. The buffer area shall be 300 feet from Canyons Far South residential lot line to the Castle Oak/Terrain residential lot line. This buffer is wholly within OSD-4, extending from the east side of the Xcel high power line easement to the eastern boundary of the PD.

Berms and vegetation will be added within the buffer area. The berms will vary in height, not to exceed 10 feet. The vegetation will include low-water use native plantings and trees organically arranged to blend with the natural landscape character. A four foot natural surface trail will traverse the buffer area. Conceptual renderings of the buffer area are included in these PD Zoning regulations as a visual guide to the intended character of the buffer area.

Technical Reports and Analyses

Water

Due to elevation changes within the Canyons Far South development there are three distinct water pressure zones. To adequately support the Canyons Far South development, two connections to the red zone will be required in Founders Parkway at

the northwest portion of the site. A connection to the blue zone will be required to the east of the project in Castle Oaks Drive. To the north, a connection to the red zone in the Macanta Development is required to complete the loop per the Water Master Plan to connect Crowfoot to Crimson Sky. Finally, an offsite extension of the purple zone water main to the north will be required to connect to the transmission main in old Tower Road, adjacent to the existing purple zone tank. All internal water mains will be required of the developer to deliver the necessary flows and pressures to any point within the development.

Sanitary Sewer

The elevation changes within this site will require two gravity sanitary sewer systems. The north and west portion of the site will require a gravity sewer system to tie into the sanitary sewer in the realigned Castle Oaks Drive and conveyed to the Castle Oaks Lift Station. The second gravity sewer system will be required on the southeastern portion of the site that will convey to the McMurdo Gulch Sanitary Sewer interceptor, where flows will be conveyed to the Castle Oaks Lift Station. An analysis will be required to determine if the existing lift station will require to be upsized to serve this site. All sanitary flows from this site will be conveyed to the Plum Creek Water Reclamation Authority for treatment.

Drainage/Floodplain

There is a Town designated major drainageway that extends west to east across the full width of the Canyons Far South development. This drainageway is the extension of the McMurdo Gulch Tributary 3 and outfalls into FEMA designated special flood hazard floodway, McMurdo Gulch. The developer will be required to preserve and fully stabilize this natural drainageway, in accordance with Town regulations, to ensure flood risk is mitigated, and the natural resources are protected.

This property is located within the Cherry Creek watershed basin, and will be required to provide water quality and full spectrum detention for the 100-percent of the site. The developer will be required to provide storm sewers, inlets, and extended detention basins for water quality and storage, in accordance with Town regulations.

Water Efficiency Plan

The WEP is a model of water efficiency for the Town of Castle Rock utilizing both exterior and interior efficiency programs while still providing an attractive landscaped environment. As of November 17, 2022, the Castle Rock Municipal Code was updated to remove the requirement of a Water Efficiency Plan (WEP) for annexation, however the Canyons Far South development team opted to keep the water efficiency plan as a part of their proposal. The Town approved WEP is an attachment to the DA.

The Canyons Far South WEP provides specifications required for indoor water-saving fixtures and outdoor landscaping that prohibits irrigated turf on commercial properties and residential front yards. Coloradoscape landscaping may be installed in residential front yards. A maximum of 500 square feet of irrigated turf will be allowed in residential backyards. No turf grass will be used within the streetscape. Only drought tolerant plants consistent with the Town of Castle Rock Landscape and Irrigation standards will be utilized throughout the development.

Common area parks may utilize approved irrigated turf, in areas created for high-demand, high-traffic recreation purposes. In-ground pools will not be allowed on private residential lots. Homes are to have water efficient indoor fixtures, and each home will also need provide additional optional fixtures, or opt for no turf in backyard to meet a landscape design point system.

Groundwater Rights and Dedication

All groundwater rights associated with the Canyons Far South PD property must be dedicated to the Town upon annexation. It is anticipated that the Canyons Far South owners will convey to the Town approximately 465 acre-feet of groundwater rights. A review of the Water Rights Title Opinion was completed and accepted by staff. Based on the review approximately 6 acre-feet of groundwater needs additional curative action to receive credit.

Renewable Water Resources

The Canyons Far South property is located outside of the Castle Rock Water inclusion area, which means that the applicant is required to dedicate renewable water to meet the planned community's water demand (Attachment J). The estimated wet water demand is 153 acre-feet. As a condition to the issuance of any Plat, the owner shall provide Renewable Water Resources to the Town in an amount sufficient to serve the equivalent number of residential, commercial, or irrigation uses authorized by the Plat.

Canyons Far South Water Bank

The Canyons Far South Development Agreement contains details on the Canyons Far South Water Bank, including the amount of Single Family Equivalent (SFE) Credits, allowances for future deposits of water credits, requirements for water conservation through implementation of the Water Efficiency Plan, limitation on any development until water rights are approved by the Town, and consequences of exhausting the Water Bank.

Transportation and Traffic Impacts

The site is projected to generate about 7,300 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 125 vehicles would enter and about 277 vehicles would exit the site. During

the afternoon peak-hour, about 407 vehicles would enter and about 309 vehicles would exit. The project proposes three access points to the existing road network:

Founders Parkway (State Highway 86) & Internal Collector Roadway: This is the primary access to the site. The traffic analysis anticipates this intersection to operate within the Town's standard for level of service through 2041 (Attachment K). The intersection will require intersection traffic control when necessary. The development agreement obligates the developer to construct a roundabout or a signal at this location when warranted. The development agreement also provides for the Town to recoup 50% of the cost for the developer from the Pioneer Ranch property, if developed.

Castle Oaks Drive & Internal Collector Roadway: This collector-collector class intersection is proposed to be a roundabout. The traffic analysis anticipates this intersection to operate very well with roundabout control. The roundabout and the internal collector roadway are required to be constructed with the first phase of the project. Castle Oaks Drive is planned to be realigned with the North Basin project in Terrain. The roundabout will be constructed on the ultimate alignment of Castle Oaks Drive with interim street connections to the existing alignment.

Internal Collector Roadway & Macanta Blvd: This collector-collector class intersection is also proposed to be a roundabout. The traffic analysis anticipates this intersection to operate very well with roundabout control. Macanta Blvd provides a connection to and through the Macanta Subdivision, providing access to a future school site and also access to Crowfoot Valley Road. The developer agreement provides an obligation to the developer to construct this connection, in the event it is not timely constructed by the Macanta project.

Town staff concurs with the conclusion of the traffic analysis in that the proposed project can be accommodated by the existing and planned roadway improvements along with the recommended improvements.

Sidewalk Variance: A variance has been requested for the collector class street connecting Founders Parkway to Castle Oaks Drive. To minimize impacts on existing vegetation and topography, the applicant is proposing to omit the standard 8-foot wide concrete sidewalk along the southerly and westerly side of the street. In lieu of the concrete sidewalk, the applicant is proposing to construct a natural soft surface trail paralleling the street. The section

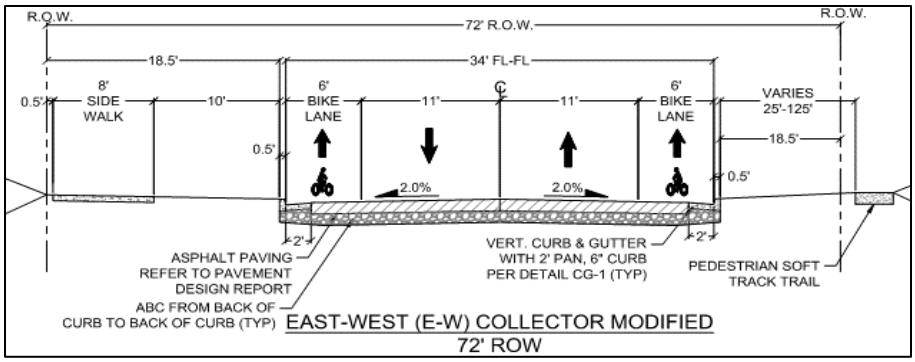


Figure 5: Proposed Collector Profile

where the concrete sidewalk is omitted and the soft surface trail is proposed is approximately 2,350 feet in length and will not have adjacent development.

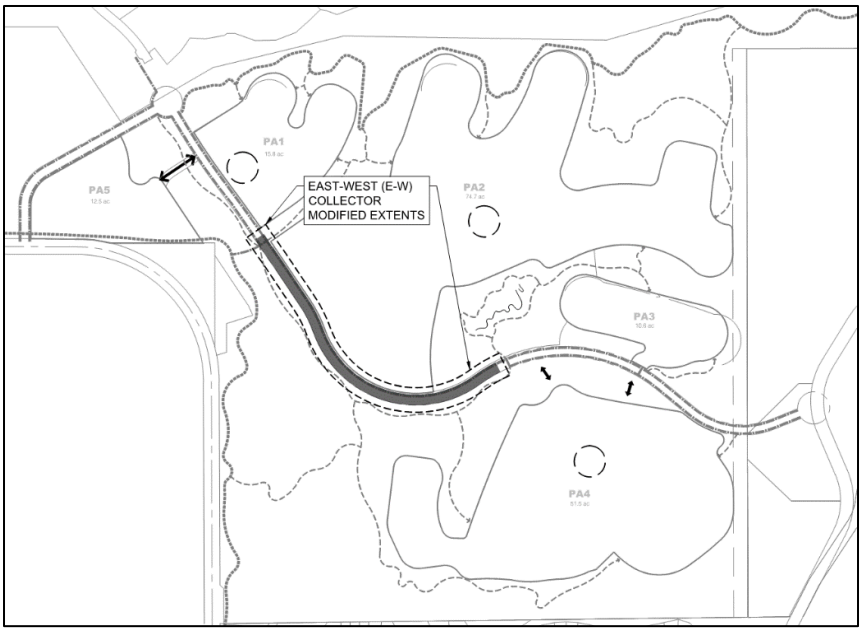


Figure 6: Section of Roadway subject to Variance

Where development is proposed on both sides of the street, concrete sidewalks will be available on both sides. Considering the property on the street frontage without the formal sidewalk will not be developed and therefore will not generate pedestrian trips to or from that area, staff concurs with the applicant that there should not be adverse impact to the public resulting from the omission of the sidewalk. Town staff supports the variance with the condition that the pedestrian crossings where the street transitions from two sidewalks to one sidewalk are provided with self-actuated flashing beacons and signage.

Parks and Recreation

The Canyons Far South Planned Development Plan enhances parks, trails and open space opportunities in the Town of Castle Rock. Currently the property is private and inaccessible to Town residents. The PDP designates approximately 59% of the property or nearly 240 acres to be set aside for Open Space and Park purposes available to all residents. A planned 13.8-acre neighborhood park will expand the Town's recreation offerings with off-street parking, trails and picnic areas. The park development will be funded through the by the developer, with planning oversight by Town staff. Park construction will occur in the first phase and a large public open space area will be dedicated with the first plat.

Public and private open space will provide buffers between existing and proposed residential neighborhoods and protect wildlife corridors. The open space will be linked through a network of off-street natural surface trails connecting internal parks, neighborhoods, transportation corridors and open spaces. Trails will also link to Town park and open space properties within adjacent neighborhoods, expanding recreational opportunities for existing Town residents. The plan preserves historic structures installed by the Civilian Conservation Corps (CCC) in the 1930's.

The Canyons Far South Planned Development Plan includes a new 10' concrete trail connecting Founders Parkway to the Front-Range Trail along McMurdo Gulch, improving the multimodal trail network within Castle Rock. The Front-Range Trail provides access throughout Castle Rock linking Denver and Colorado Springs. The trail will also provide access to the historic CCC camp located in the adjacent Terrain neighborhood. The Developer will be responsible for trail planning and construction as well as any required wildland fire mitigation on open spaces.

Police and Fire Service

Upon annexation, the property will be served by Castle Rock Police, rather than the Douglas County Sheriff. The property will also be disconnected from the Castle Rock Fire District, and will be served by the Castle Rock Fire Department.

The PD Plan requires that a Wildland/Urban Interface Wildfire Vegetation Management Plan (Plan), or compliance letter, be submitted for each phase of the development. The Plan shall be developed by a design professional familiar with wildfire mitigation techniques and standards. The Plan must be reviewed and approved by the Town Fire Department and comply with the Castle Rock Community Wildfire Protection Plan.

Fiscal Impact Analysis

The Castle Rock Municipal Code, Section 17.32.100, provides that the Town may require an evaluation of the fiscal impacts of any new Planned Development that involves significant changes to uses and densities. The analysis shall generally consist of a comparison of the project's projected direct revenues (property, sales and use tax generation) to projected costs of providing urban services to the development. The analysis shall examine the revenue/cost comparison not only at full build-out, but at appropriate phases of development as the project builds out over time. The Town of Castle Rock hired Economic & Planning Systems, Inc. (EPS), a third party financial consultant, to conduct this Fiscal Impact Study. The conclusions of the Fiscal Impact Analysis of the Canyons Far South proposed annexation and zoning are summarized as follows (Attachment L).

The proposed Canyons Far South development, which is anticipated to deliver predominantly single family detached housing and retail development, will result in a modest positive fiscal balance for the Town. The ongoing annual net fiscal impact of the Canyons Far South development on the Town's General Fund, Transportation Fund, and Community Center Fund is estimated at a positive $262,121, $18,783, and $1,450 per year at full stabilization, respectively.

The total annual net fiscal impact at full stabilization is estimated at $282,354, which is a modest positive fiscal balance. The inclusion of a requirement for the development's metropolitan district to impose a 5-mill regional improvement levy, accounts for $151,141 in revenues to the General Fund annually at buildout, which is 59% of its positive fiscal balance.

At full stabilization of the project, retail development has the highest net fiscal impact for the Town, followed by medium lot single family housing units. The ongoing net fiscal impact of the retail and medium lot housing land uses totals $115,187 and $78,872, respectively. The quad/cluster units and cottage lots generate the lowest fiscal impact, with ongoing net fiscal impacts of negative $7,337 and negative $1,589, respectively.

The positive fiscal impact of the development is contingent upon the relatively high average household incomes required to afford the higher value medium density and estate lot single family product types, and that support the capture of higher levels of retail sales generating local sales tax revenue.

The land uses with the lowest ongoing net fiscal impacts, paired homes, quad/cluster homes, cottage lots, and small lots, also have the lowest household income assumptions. If the assumed household incomes do not materialize, the development may fail to generate sufficient net new retail sales tax to cover the estimated costs of serving the project.

It should be noted that a fiscal impact analysis only provides an order of magnitude estimate of project revenues and expenses based on the current Town budget. As with any fiscal projection, there should be an assumed margin of error associated with the estimates. Results are best interpreted as an estimate of fiscal impacts based on the Town's current budget. To the extent that the Town is providing services at a level below desired levels based on budget constraints, the analysis may underrepresent the future costs of providing services to the project.

Given that all fiscal models rely on prospective assumptions and there are margins of error in these assumptions, in this case the fiscal model's very slight positive fiscal balance in favor of the Town, it is reasonable to conclude that as a generalized statement the fiscal benefits and costs for the Town from the proposed development are roughly equal.

Development Agreement Summary

A development agreement is a contract between the Town of Castle Rock and the property owner (Owner) that addresses required infrastructure improvements, development phasing, open space conveyances, water rights conveyances, Town service obligations, developer obligations and other relevant items. The development agreement is considered and acted upon by Town Council. The following is a brief summary of the key elements of the Canyons Far South DA.

The major provisions of the Canyons Far South Development Agreement (DA) are listed below.

- Owner shall convey all 465 acre feet of groundwater rights to the Town upon annexation.

- The issuance of any Plat is dependent on the Owner's provision of Renewable Water Resources to Town in an amount sufficient to serve the equivalent number of residential, commercial, or irrigation uses authorized by said Plat.
- A Water Efficiency Plan shall apply to all development within the PD.
- Owner shall design and construct water and wastewater system improvements necessary to serve the development.
- Owner shall be responsible for preserving and fully stabilizing all major drainageways with the project boundaries having a watershed greater than 130 acres.
- Owner shall design and construct a new intersection on Founders Parkway for furture access to the site.
- Owner shall design and construct a roadway connection between the property and Castle Oaks Drive.
- Owner shall design and construct a 10-foot concrete sidewalk adjacent to Founders Parkway from Crowfoot Valley Road to Crimson Sky Drive.
- If the Macanta Boulevard connection has not been extended to the property prior to the issuance of th first buildng permit, the Owner shall, at their expense, design and construct the connection.
- The public lands to be dedicated to the Town are identified on the Planned Development Plan as OSD-1, OSD-2, OSD-3, OSD-4, OSD-5 and PLD-1.
- Owner shall be responsible for the design and construction of required parking, picnic tables and shade structures for the Town park PLD-1 and the soft surface trail network.
- Owner shall be responsible for constructing, installing and maintaining the berms and landscaping in OSD-3.

Vesting

Vested Property Rights are a major provision established in the DA. The Owner has requested and demonstrated that the PD Plan, inclusive of the PD Zoning Regulations, meets the criteria under Chapter 17.08 of the Municipal Code and the Vested Property Rights of the Colorado Revised Statutes for vesting of property rights by agreement for a term in excess of three years. Therefore, as a site specific development plan, vested property rights are established and shall extend through December 31, 2037, allowing the Owner to undertake and complete the development and use of the property in accordance with this Planned Development Plan and Zoning Regulations.

Public Notification and Outreach

Public Hearing Notice

Public hearing notice signs were posted on the property on Friday, November 18th. Written notice letters were sent to property owners within 500 feet of the property, at least 15 days prior to the public hearing. In addition, a public notice of the Annexation and Zoning hearing was published in the Douglas County News-Press on November 17, 2022, in accordance with Section 20.02.020 of the Municipal Code.

Town staff published notice of the Planning Commission and Town Council public hearings on the Town's website and provided information about the proposal on the Town's *Development Activity* interactive map.

External Referrals

Requests for external referral comments were sent to local service providers and Douglas County agencies, as well as the Cherry Creek Basin Water Quality Authority, Plum Creek Water Reclamation Authority, Colorado Geological Survey, Colorado Parks and Wildlife, and the Douglas County School District (DCSD).

DCSD had no objections noting that the elementary and middle school sites in the Macanta development satisfied the land dedication requirement for the Canyons Far South PD proposal.

Douglas County Community Development provided comments suggesting more than one point of access, coordinating future trail alignments connections with Douglas County, and providing a buffer to the Macanta neighborhood. The road and buffer comments have been addressed. As the Town finalizes the trail alignments, connections to the Douglas County trails will be addressed.

Comments from Colorado Parks and Wildlife urged that fragmentation and loss of habitat be kept to a minimum through clustering of development, reduced densities and provision of open space. Trails were encouraged to be placed near the edges of open space and not wider than 8 feet. Education of future residents in living with wildlife was suggested. The comments have been addressed through the clustering of development and dedication of over half of the site as natural open space. The proposed density is an appropriate transition from the urban neighborhoods to the south and the lower density County development to the north.

CORE Electric required that a note be added to the PD Plan stating that monuments, ornamental columns, window wells, counterforts, patios, decks, retaining walls and their components are not permitted to encroach into the utility easements. This note was added.

Colorado Geological Survey suggested that debris deposition/inundation hazard in Planning Area 3 be evaluated with a qualified professional, and that updated geologic/geotechnical reports should be submitted at the time of site design. This evaluation and reports will be provided with the applicable Site Development Plan and Plats.
The remainder of the agencies contacted for external comments either did not respond or responded indicating “No Comment.” There are no outstanding external referral comments.

Neighborhood Meetings and Public Outreach

The applicant has conducted three hybrid neighborhood meetings. The first meeting was held on June 14, 2021 and attended by approximately 18 residents. Concerns were raised about cut-through traffic in Castle Oaks/Terrain, increased traffic on Castle Oaks Drive, impacts of the new intersection at Founders Parkway, and the proximity of the road alignment to the neighborhood to the south. Neighbors wanted to see a landscape buffer along the southern boundary, were concerned about impacts to wildlife and what kinds of commercial uses would be allowed.

The second neighborhood meeting was held on December 13, 2021. Approximately 11 residents attended the meeting. The applicant summarized the changes to the plan based on previous input, and highlighted the road connection from Founders Parkway to Castle Oaks Drive, the sidewalk extension from Crowfoot Valley Road to Crimson Sky Drive, and the minimum 200-foot landscape buffer along the southern boundary adjacent to the Terrain neighborhood and indicated that berms would be constructed and vegetation installed.

Residents questioned why the buffer was reduced to 200-feet and where the berms would be located. There was concern over the proximity of the trail in the buffer being too close to existing lots, the proximity of Planning Area 4 to Terrain and the type of residential development it would allow, and how quality development would be ensured.

The third and final neighborhood meeting was held on October 11, 2022 and approximately 12 people attended the meeting. The applicant described revisions to the plan based on feedback at the previous meeting, including a widened, 300-foot, berms and landscaped buffer along the southern boundary, connected trails, and public access to the extensive open space. In addition, the restrictive water conservation plan was discussed with the front yard turf prohibition and back yard 500 square foot limitation. Architectural and development standards were refined to promote quality development with attention to form, massing, articulations, colors, materials and architectural enhancements.

Additional questions were asked and answered concerning what schools the new residents would attend, who the homebuilder would be, how zoning controls the type of uses allowed, what will happen to the prairie dogs to prevent them from moving to Terrain residential lots, and why is any development being proposed on the site.

Analysis

Staff has completed a full analysis of the proposed annexation and proposed Planned Development zoning, taking into account the representations made in the application for annexation and zoning, and the goals and principles of the Town's 2030 Vision and Comprehensive Master Plan, the criterion of the Town's Municipal Code and the requirements of the Town's technical criteria. The remainder of this report focuses on how the annexation and zoning proposals are consistent with the Town's guiding

documents and meet the Town criterion for approval, beginning with the request for annexation.

Annexation Analysis

This staff report focuses primarily on the proposed zoning, however the annexation analysis is included as background and context.

The Town has complied with the process prescribed by the Municipal Annexation Act of 1965 (the Act). On June 15,2021, Town Council found the Canyons Far South Annexation Petition to be in substantial compliance with the prescribed form and content required by the Colorado Revised Statutes and set the date of the Eligibility Hearing for August 17, 2021. After proper public noticing, Town Council held the Eligibility Hearing as scheduled, reviewed the statutory allegations made in the Annexation Petition (Attachment B) and found that the property is eligible to be considered for annexation into the Town of Castle Rock.

The third phase of the process is the Annexation Hearing, the purpose of which is to determine whether the property should be annexed to the Town. Section 20.02.040 of the Municipal Code states that Town Council shall consider the policies, guidelines and criteria in the Town Comprehensive Master Plan, as amended, along with any other relevant information in determining whether it is in the best interests of the Town to grant or deny the petition for annexation. The following section identifies the applicable principles of the Comprehensive Master Plan and summarizes how the proposed Canyons Far South annexations achieves those principles.

2030 Vision and Comprehensive Master Plan

The principles set forth in the Town's Comprehensive Master Plan are based on four cornerstones identified through a Town-wide visioning effort as the characteristics most important to the community. The four cornerstones are Distinct Town Identity, Responsible Growth, Community Services and Thriving Economy. The following is an analysis of the specific principles applicable to this proposed annexation.
Distinct Town Identity

- *ID-1.1: Historic Preservation*

  Encourage the adaptive reuse of historic structures, the preservation and enhancement of key historic and archaeological resources and community education and awareness of Castle Rock's heritage.

  Analysis: The Civilian Conservation Corps (CCC) was a work relief program that provided young men with employment during the Great Depression. It is understood that a CCC camp was located in the area of the Canyons Far South property and existing on the site within the drainage channels are dams and drop structures. A stacked block water well was recently discovered on the site. All of the structures

are in areas to be dedicated as public open space. To the extent possible, the dams and drop structures will be preserved and incorporated in the channel stabilization measures. The Town Parks department is assessing the value of retaining the well. Interpretive signage on the internal trail system will identify the structures and educate the public on their origin and purpose.

- *ID-2.1 Master Planned Developments*

  Master Planned communities that offer diverse housing options, mixed use development, transition zones, trail connections, open space buffers and community services and amenities are encourage. Regional and local transportation networks serve to ensure safe and reliable commuter routes.

  Analysis: The Canyons is a master planned development and will offer a variety of housing types, neighborhood commercial uses, a transition from urban to county development, trail and road extensions and connections and a well-defined open space buffer to the existing Town neighborhood to the south of the property.

- *ID-4.1: Physical Separation*

  Create and retain defined edges of the Town and maintain Castle Rock's community character by promoting physical separation from nearby development, including buffering areas of unincorporated Douglas County and other municipalities.

  Analysis: Annexation of the Canyons Far South property will create a defined northern boundary to the Town providing a clear separation from the Douglas County Macanta development and the City of Castle Pines to the north. The extensive open space dedication will provide a physical separation for the County development of Macanta.

- ID-6.1 Natural Environment Protection

  Identify and preserve important properties that offer unique natural and scenic vistas or other characteristics that distinguish Castle rock from other communities.

  Analysis: Annexation to the Town will give the Town the ability to determine zoning and to preserve the unique natural features of this property. Specifically, approximately 59% of the property will be set aside as open space and public land preserving rock outcroppings, historic structures, slopes and channels and established vegetation.

- ID-7.1 Parks and Recreation Facilities

Provide a variety of indoor and outdoor spaces, well distributed throughout the Town, that encourage active community recreation.

Analysis: Extensive internal trails and links to surrounding trails will enhance the trail connections and access to open space in the northeast portion of the Town.

- ID-7.2 Open Space

  Establish permanent open space and natural buffers to preserve fragile ecosystems, habitats and corridors. Provide opportunities for passive recreation.

  Analysis: As described above, the Canyons Far South PD preserves 59% of the site as open space and will include passive use parks.

- ID-7.3 Trails

  Continue to build a connected municipal trails system that meets the needs of a wide diversity of users, connects Castle Rock's neighborhoods and activity centers, and provides linkages to the regional trails system.

  Analysis: Canyons Far South PD will enhance the Town's extensive trail system by linking neighborhoods and providing connection to the Front Range Trail.

Responsible Growth

The Comprehensive Master Plan specifically states that annexation requests must take into consideration the following items.

- *RG 2.1 - Castle Rock Annexation Areas*

  A. Is a logical extension or infill of the Town boundaries.

  Analysis: The Comprehensive Plan, Future Land Use Plan represents future Town buildout boundaries and anticipated land uses. The Canyons Far South property is well within the anticipated Town boundaries (see Figure 7). The property is anticipated

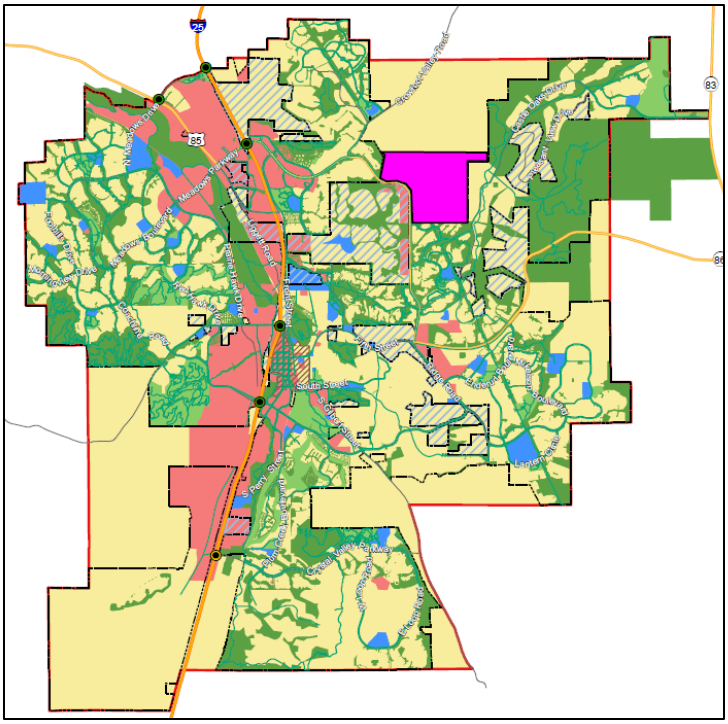


Figure 7: Future Land Use Map

to be an area of residential development. Annexation of the property will effectively close and define the Town's northern boundary.

B. Has demonstrated a significant benefit to the Town.

Analysis: Annexation and zoning of the Canyons Far South property is a step toward closing the Town boundaries and providing for continuity of Fire and Police services. Approximately 59% of the property will be dedicated at open space and public land, preserving areas of mature vegetation, deep channels and wildlife habitat. The trail system will benefit the entire community and provide important links to the Front Range Trail. Historic CCC dams and drop structures will be preserved and identified. Road extensions north through Macanta to Crowfoot Valley Road and east/west from Founders Parkway to Castle Oaks Drive will provide important transportation connections.

C. Will be provided with adequate urban services.

Analysis: The property is able to be served with appropriate and adequate municipal services.

D. Is fiscally responsible.

Analysis: The owner will be required to pay for all infrastructure improvements necessary for development of the property such as water, wastewater, storm water and/or drainage, and transportation improvements. Additionally, the owner will convey all groundwater rights to the Town and will participate in the acquisition of renewable water rights for the Town, which will be a cost savings to the Town.

The conclusions of the Fiscal Impact Analysis, summarized earlier in this report, estimate a modest positive fiscal balance for the Town at full buildout.

E. Conveys to the Town all water rights appurtenant to the ground at time of annexation.

Analysis: The owner will dedicate all appurtenant ground water rights, determined to be 465 acre feet, to the Town. As note previously, the owner will also participate in the purchase and acquisition of renewable water rights to be dedicated to the Town.

F. Secures renewable water to 100 percent of the expected development on the annexed area.

Analysis: As note previously, the owner will also participate with the Town in the purchase and acquisition of renewable water rights capable of providing renewable water for 100% of the expected development. The DA limits the issuance of any Plat to the Owner's provision of Renewable Water Resources to Town in an amount

sufficient to serve the equivalent number of residential, commercial, or irrigation uses authorized by said Plat.

- *RG2.2 - Annexation of Infill Areas*

  Consider the annexation and development of areas surrounded, or partially surrounded, by the Town boundary that can demonstrate a benefit to the Town, connect to Town water and sewer and create a contiguous municipal boundary.

  Analysis: The property lies within the Town's future boundary as anticipated by Comprehensive Master Plan. The property is partially surrounded by the Town, with approximately 40% of the peripheral boundary contiguous with the Town. In addition, the Macanta development on the northern boundary of the property is developing in Douglas County, however is served water by the Town. This property is able to connect to Town services and annexation will create a contiguous municipal boundary.

Planned Development Plan Approval Criteria and Analysis, CRMC 17.34.030:

Staff analysis of the proposed Canyons Far South Planned Development Plan and Zoning regulations has taken into account the representations made in the land use application and supporting reports and analyses. Per Section 17.34.030 PD Plan Approval Criteria, the proposed PD zoning shall be evaluated under the following criteria.

A. Community Vision/Land Use Entitlements

The proposed Canyons Far South PD meets this criterion. The development proposal conforms to the Town of Castle Rock Vision and Comprehensive Master plan by

- *Planning for and accommodating the needs of existing and future residents,*
- *Offering cohesive neighborhoods, with a mix of land uses that support a variety of lifestyle options for Castle Rock residents,*
- *Including a phasing plan that advances orderly, cost-effective and fiscally responsible growth,*
- *Including buffers and a transition Zone that recognizes, and is sensitive to, the scale and character of the surrounding neighborhoods,*
- *Protecting and preserving sensitive drainage corridors and wildlife habitat,*
- *Providing large areas of scenic open space, well-connected trail system, and passive park space,*
- *Preserving historic structures and striving for their adaptive reuse,*
- *Providing all groundwater rights to the Town, and partnering with the Town to acquire renewable water rights to serve the development, and*

- *Providing physical separation from County and City of Castle Pines development to the north and defining the Town's northern boundary.*

B. Relationship to surrounding area.

Open space buffers will exist on the periphery of the PD. In addition, the prescriptive buffer along the boundary with Castle Oaks/Terrain to the south provides a sensitive transition between the existing neighborhood to the south and new neighborhoods that will develop in Canyons Far South. The development plan is designed so that a majority of the lots within the PD will abut or have direct access to public open space. A variety of lot sizes, densities and housing types will meet the different needs of the new residents.

C. Circulation and connectivity.

The proposed PD plan complies with this criterion by providing appropriate internal pedestrian and vehicle circulation, capacity and connectivity, and the DA obligates the developer to required offsite improvements. The road improvements will be phased to correspond to development within the PD. Internal trails will provide pedestrian and bicycles with safe and convenient links to the internal commercial area and parks, as well as offsite trails and amenities.

D. Service, phasing and off-site impacts.

The proposed PD amendment complies with this criterion. The PD plan, phasing plan and DA establish the necessary onsite and offsite improvements to serve the Canyons Far South development with adequate municipal water, wastewater and sewer services. The developer is responsible for the cost and construction of the infrastructure improvements to serve the property.

The major drainageways must be preserved and stabilized as required by the Town's technical requirements. The groundwater rights will be dedicated to the Town and the owner is required to bring renewable water rights to satisfy the Town's Renewable Water Code.

The Canyons Far South Water Efficiency Plan will reduce the overall water demand of the development by prohibiting turf in residential front yards and limiting the rear yard turf to 500 square feet. Residential amenities such as pools and water features, will further reduce the irrigable turf allowed.

E. Open space, public lands and recreation amenities.

Planned Developments are required to dedicate a minimum of 20% of the property as open space. The Canyons Far South PD includes 217.6 of public open space, approximately 8.5 acres of private open space and 13.8 acres of PLD for public use as a park, for a cumulative total of 59% open space and public land. The public

open space and PLD will be dedicated to the Town in phases as development occurs. The areas of private open space will be developed as community amenities such as pocket parks or pools within the Planning Areas and will be owned and maintained by the HOA or Metropolitan District.

Public and private open space will also provide buffers and density relief, preserve natural features such as mature vegetation, rock outcroppings and drainageways. Hard and soft surface trails will connect open space, parks, recreation facilities and link to the commercial use area.

F. Preservation of natural features.

The PD plan complies with this criterion. As previously notes, the PD Plan preserves areas of natural drainage and slopes, mature vegetation, rock outcroppings and areas of wildlife habitat and corridors.

Development on the site will comply with state and federal regulations such as the Migratory Bird Act.

Budget Impact

The proposed annexation and zoning will generate review fees. In addition, there are DA obligations and impact fees required at the time of annexation and with future site plans, plats and subdivision improvement obligations that will offset Town costs.

The 5-mill Regional Mill Levy to be remitted to the Town on an annual basis will defray costs incurred by the Town in providing public services and improvements related to the development.

Recommendation

The Planning Commission voted 7 – 0 to recommend approval to Town Council of the Canyons Far South Planned Development Plan and Zoning Regulations at a public hearing held on December 8, 2022.

Proposed Motions

Approval

"I move to approve the Canyons Far South Planned Development Plan and Zoning Regulations, as introduced by title."

Approval with Conditions

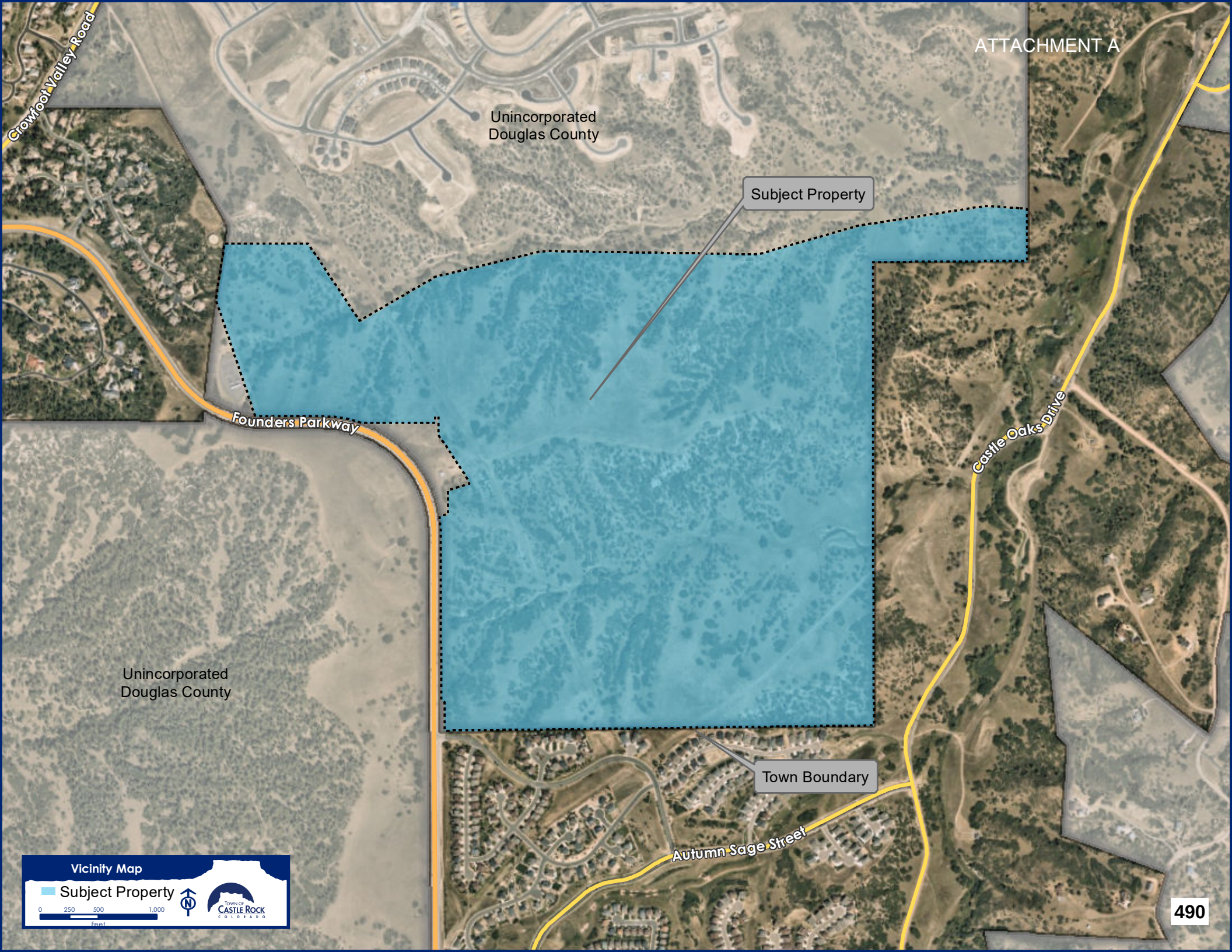
"I move to approve the Canyons Far South Planned Development Plan and Zoning Regulations, as introduced by title, with the following conditions." (list conditions)

Continue item to next hearing (need more information)

"I move to continue this item to the Town Council meeting on [date], 2023, at [time]."

Attachments

Attachment A: Vicinity Map
Attachment B: Canyons Far South Annexation Petition and Plat
Attachment C: Ordinance No. 2023 - __
Attachment D: Canyons Far South Planned Development Plan and Zoning Regulations
Attachment E: Canyons South Planned Development, 7th Amendment
Attachment F: LSAR – Surrounding Densities
Attachment G: LSAR Developable Areas
Attachment H: LSAR Vegetative Cover
Attachment I: LSAR Cultural Resources Map
Attachment J: Castle Rock Water Resources Inclusion Area Map
Attachment K: Traffic Impact Analysis
Attachment L: Fiscal Impact Analysis – December 5, 2022


Crowfoot Valley Road
Unincorporated
Douglas County
Subject Property
Founders Parkway
Castle Oaks Drive
Unincorporated
Douglas County
Town Boundary
Autumn Sage Street
Vicinity Map
Subject Property
0 250 500 1,000
Feet
Town of Castle Rock
Colorado

PETITION FOR ANNEXATION

CANYONS SOUTH

TO THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO

The undersigned ("**Petitioner**"), in accordance with Section 30(1)(b) of Article II of the Constitution of the State of Colorado (the "**State Constitution**") and the Municipal Annexation Act of 1965 as set forth in Article 12, Title 31, Colorado Revised Statutes, as amended and as in effect on the submission date set forth below (the "**Annexation Act**"), hereby petitions the Town Council (the "**Council**") of the Town of Castle Rock, Colorado (the "**Town**") to annex to the Town the unincorporated territory located in the County of Douglas, State of Colorado, which property is more particularly described in Exhibit A attached hereto and incorporated herein by reference (the "**Annexation Property**"). In support of this petition ("**Petition**"), Petitioner alleges that:

1. It is desirable and necessary that the Annexation Property be annexed to the Town.

2. The requirements of Section 30(1)(b) of Article II of the State Constitution and Sections 31-12-104 and 31-12-105 of the Annexation Act exist or have been met.

3. The Petitioner comprises more than fifty percent (50%) of the landowners in the area of the Annexation Property and owns more than fifty percent (50%) of the Annexation Property, excluding public streets and alleys and any land owned by the Town.

4. The signer of this Petition is the owner of one hundred percent (100%) of the area of the Annexation Property exclusive of public streets and alleys and any land owned by the Town.

5. Not less than one-sixth (1/6) of the perimeter of the Annexation Property is contiguous with the Town's current municipal boundaries.

6. A community of interest exists between the Annexation Property and the Town.

7. The Annexation Property is urban or will be urbanized in the near future.

8. The Annexation Property is integrated with or is capable of being integrated with the Town.

9. The Annexation Property is not presently a part of any incorporated city, city and county, or town; nor have any proceedings been commenced for annexation of part or all of the Annexation Property to any other municipality; nor has any election for annexation of the Annexation Property or substantially the same territory to the Town been held within the twelve (12) months immediately preceding the filing of this Petition.

10. The proposed annexation will not result in the detachment of area from any school district and attachment of the same to another school district.

11. Except to the extent necessary to avoid dividing parcels within the Annexation Property held in identical ownership, at least fifty percent (50%) of which are within the three (3) mile limit, the proposed annexation will not extend the municipal boundary of the Town more than three (3) miles in any direction from any point of the current municipal boundary in one (1) year.

12. In establishing the boundaries of the Annexation Property, if a portion of a platted street or alley is annexed, the entire width of said street or alley shall be included within the area annexed; and, reasonable access shall not be denied to landowners, owners of easements, or the owners of franchises, adjoining any platted street or alley to be annexed that will not be bounded on both sides by the Town.

13. In establishing the boundaries of the Annexation Property, no land which is held in identical ownership, whether consisting of a single tract or parcel of real estate or two or more contiguous tracts or parcels of real estate:

    (a) is being divided into separate parts or parcels without the written consent of the landowner thereof unless such tracts or parcels are separated by a dedicated street, road or other public way; or

    (b) comprising twenty (20) acres or more (which, together with buildings and improvements situate thereon having a valuation for assessment in excess of two hundred thousand dollars ($200,000) for ad valorem tax purposes for the year next preceding the proposed annexation) is included in the Annexation Property without the written consent of the landowner.

14. The legal description of the lands owned by the signer of this Petition is set forth underneath the name of such Petitioner on Exhibit B, attached hereto and incorporated herein by this reference.

15. The Petitioner signed this Petition no more than one hundred eighty (180) days prior to the date of filing.

16. Attached to this Petition as Exhibit C is the Affidavit of Circulator of this Petition that the signature hereon is the signature of the person whose name it purports to be.

17. This Petition is accompanied by four (4) prints of an annexation map containing, among other things, the following information;

    (a) a written legal description of the boundaries of the Annexation Property;

    (b) a map showing the boundaries of the Annexation Property;

(c) within the annexation map, a showing of the location of each ownership tract in unplatted land and, if part or all of the area is platted, the boundaries and the plat numbers of the plots or of lots and blocks; and

(d) next to the boundary of the Annexation Property, a drawing of the contiguous boundary of the Town and the contiguous boundary of any other municipality abutting the Annexation Property, if any.

18. In connection with the processing of this Petition, the Petitioner requests that the Town:

(a) institute the process to establish planned development ("**PD**") zoning for the Annexation Property in accordance with applicable provisions of the Town's Municipal Code (the "**Code**") and in accordance with any applicable provisions of Section 31-12-115 of the Annexation Act; and

(b) approve and execute a development agreement acceptable to Petitioner and the Town (the "**Development Agreement**") which establishes vested Annexation Property rights for the Annexation Property for an agreed upon term, pursuant to Chapter 17.08 of the Code and Article 68, Title 24, Colorado Revised Statutes, and which, in conjunction with the PD zoning, will establish the development plan for the Annexation Property.

19. Petitioner has filed this Petition subject to the following conditions:

(a) Unless otherwise agreed in writing by Petitioner, the annexation of the Annexation Property into the Town shall not be effective unless concurrently with the Council's final approval of an ordinance annexing the Annexation Property into the Town, the Council gives its final approval to (A) zoning regulations for the Annexation Property in form and substance satisfactory to the Petitioner, and (B) the Development Agreement in form and substance satisfactory to Petitioner which among other things creates vested rights for the Annexation Property pursuant to existing Town ordinances or resolution and Section 24-68-101, C.R.S., et seq.; and

(b) Petitioner hereby reserves the right to withdraw this Petition, and thereby prevent the Annexation Property from being annexed into the Town, by so notifying the Town Clerk in writing prior to the later to occur of:

(i) the occurrence of the conditions to effectiveness of the annexation as set forth in Section 31-12-113(2)(b) of the Annexation Act;

(ii) a later date, if any, set forth in the Development Agreement.

20. Upon the annexation of the Annexation Property becoming effective, and subject to the conditions set forth in this Petition, and to be set forth in the Development Agreement and the documents constituting the terms of the PD zoning for the Annexation Property (the "**PD Documents**"), the Annexation Property shall be subject to the regulations of the Town, except as otherwise set forth in the

Development Agreement and the PD Documents, and except for general taxation purposes in which case the annexation shall be deemed effective on January 1 of the next succeeding year following adoption of the annexation ordinance.

21. This Petition is filed on the condition that the zoning requested by Petitioner under paragraph 18 (a), above, is granted by the Town as provided in the Development Agreement, and the Town agrees that no filing of the annexation ordinance and annexation maps as provided under Section 31-12-113, subsection (2)(a)(II)(A) of the Annexation Act shall be made until, and unless the requested zoning is granted and no longer subject to appeal.

22. Except for the terms and conditions of this Petition, the Development Agreement and the PD Documents, which terms and conditions Petitioner has approved or shall expressly approve, and therefore do not constitute an imposition of additional terms and conditions within the meaning of Section 31-12-112(1) of the Annexation Act, Petitioner requests that no additional terms and conditions be imposed upon annexation of the Annexation Property to the Town.

THEREFORE, Petitioner requests that the Town Council of the Town of Castle Rock, Colorado, complete and approve the annexation of the Annexation Property pursuant and subject to the provisions of the Municipal Annexation Act of 1965, as amended, and the terms and conditions of this Petition.

Respectfully submitted this 15 day of APRIL, 2021

Signature of Landowner/Petitioner:

CANYONS SOUTH, LLC

By: Erik Clore Authorized Representative
(Name) (Title)

Date of Signature: 4/15/21

Mailing Address: 5299 DTC Boulevard, Suite 1260
Greenwood Village, CO 80111

EXHIBIT A
TO PETITION FOR ANNEXATION

Legal Description of Annexation Property

CANYONS SOUTH ANNEXATION BOUNDARY

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:

1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:

1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;

2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:

1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:

1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;

2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:

1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:

1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:

1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

EXHIBIT B
TO PETITION FOR ANNEXATION

LEGAL DESCRIPTION OF LAND OWNED BY THE LAND OWNER

Name of Owner: Canyons South, L.L.C.

Address of Owner: 5299 DTC Boulevard, Suite 1260
Greenwood Village, CO 80111

Legal description and address of land owned by Owner in area proposed for annexation:

- (See legal descriptions on annexation maps attached as part of Exhibit A.)
- Address of Land:

Percentage owned by Owner: 100%

EXHIBIT C
TO PETITION FOR ANNEXATION

AFFIDAVIT OF CIRCULATOR

STATE OF COLORADO)
) SS.
COUNTY OF)

The undersigned, Erik Clore, being duly sworn upon his oath, deposes and states:

1. That the affiant circulated the Petition for Annexation of lands known as Canyons South to the Town of Castle Rock, Colorado, for the purpose of obtaining the signature of the petitioner.

2. That the signature thereon is the signature of the person or party whose name it purports to be.

Date: APRIL 16, 2021

Subscribed and sworn to before me this 16 day of APRIL, 2021.

My commission expires August 5, 2023.

TAYLOR NICOLE WELSH
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20194029504
MY COMMISSION EXPIRES AUGUST 5, 2023

Taylor Nicole Welsh
Notary Public

WITNESS my hand and official seal.

CANYONS SOUTH ANNEXATION MAP

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

LEGAL DESCRIPTION

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:
1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:
1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;
2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:
1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:
1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;
2. N 19°2'106" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°53'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:
1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:
1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:
1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°59'00" E, A DISTANCE OF 166.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

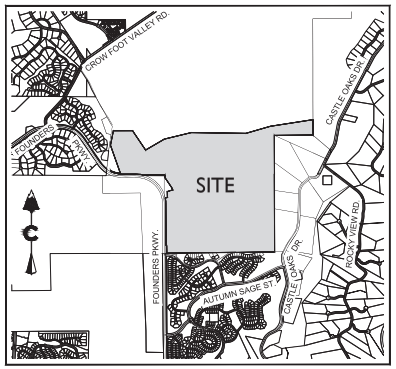
CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

CONTIGUITY STATEMENT

TOTAL ACREAGE OF ANNEXATION BOUNDARY	= 409.008 ACRES
PERIMETER OF BOUNDARY	= 23,578 FEET
1/6 OF PERIMETER BOUNDARY	= 3,930 FEET
CONTIGUITY WITH TOWN BOUNDARY	= 9,495 FEET

VICINITY MAP

1" = 2000'



SHEET INDEX

TOWN COUNCIL APPROVAL

THIS ANNEXATION MAP WAS APPROVED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO,

ON THE___ DAY OF_____, 20___.

_____ _____
MAYOR DATE

ATTEST:

_____ _____
TOWN CLERK DATE

SURVEYOR'S CERTIFICATE

I, THOMAS M. GIRARD, A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT MORE THAN ONE SIXTH (1/6) OF THE EXTERNAL BOUNDARY OF THE AREA PROPOSED TO BE ANNEXED TO THE TOWN OF CASTLE ROCK, COLORADO, IS CONTIGUOUS WITH THE BOUNDARIES OF THE ANNEXING MUNICIPALITY, AND THAT THIS ANNEXATION PLAT COMPLIES WITH THE COLORADO STATE STATUTES AND THE TOWN OF CASTLE ROCK, COLORADO CODES PERTAINING THERETO

_____
THOMAS M. GIRARD
PROFESSIONAL LAND SURVEYOR COLORADO REG. NO. 38151
FOR AND ON BEHALF OF CORE CONSULTANTS, INC.

NOTE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE (3) YEARS AFTER YOU FIRST DISCOVERED SUCH DEFECT. IN NO EVENT MAY ACTION BE TAKEN BASED UPON ANY DEFECT IN THIS SURVEY MORE THAN TEN (10) YEARS AFTER THE DATE OF THE SURVEY CERTIFICATION SHOWN HEREON.

DOUGLAS COUNTY CLERK AND RECORDER'S CERTIFICATE

THIS ANNEXATION MAP WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF DOUGLAS COUNTY AT _____, __M.,

ON THE ____ DAY OF _____, 20 ___ AT RECEPTION NO. _____

DOUGLAS COUNTY CLERK AND RECORDER

BY:

_____
DEPUTY

OWNER
CANYONS SOUTH, LLC
5299 DTC BLVD. SUITE #1260
GREENWOOD VILLAGE, CO 80111

DEVELOPER
LOWE ENTERPRISES
CANYONS SOUTH, LLC
5299 DTC BLVD. SUITE #1260
GREENWOOD VILLAGE, CO 80111
CONTACT: ERIK CLORE

ENGINEER, SURVEYOR & PLAN PREPARER
CORE CONSULTANTS
3473 SOUTH BROADWAY
ENGLEWOOD, CO 80113
PHONE: 303-703-4444
CONTACT: KEVIN ROHRBOUGH

LAND DEVELOPMENT
ENERGY
PUBLIC INFRASTRUCTURE

CORE CONSULTANTS, INC.
3473 SOUTH BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVECOREONLINE.COM

CORE

CANYONS SOUTH ANNEXATION MAP
NORTH 1/2 SEC. 31 & SOUTH 1/2 SEC. 30, T7S, R66W OF THE 6TH P.M.
SOUTHEAST 1/4 SEC. 25, T7S, R67W OF THE 6TH P.M.
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

RELEASE: 05/17/2021
DESIGNED: _____
CAD: JCA
QA/QC: TMG

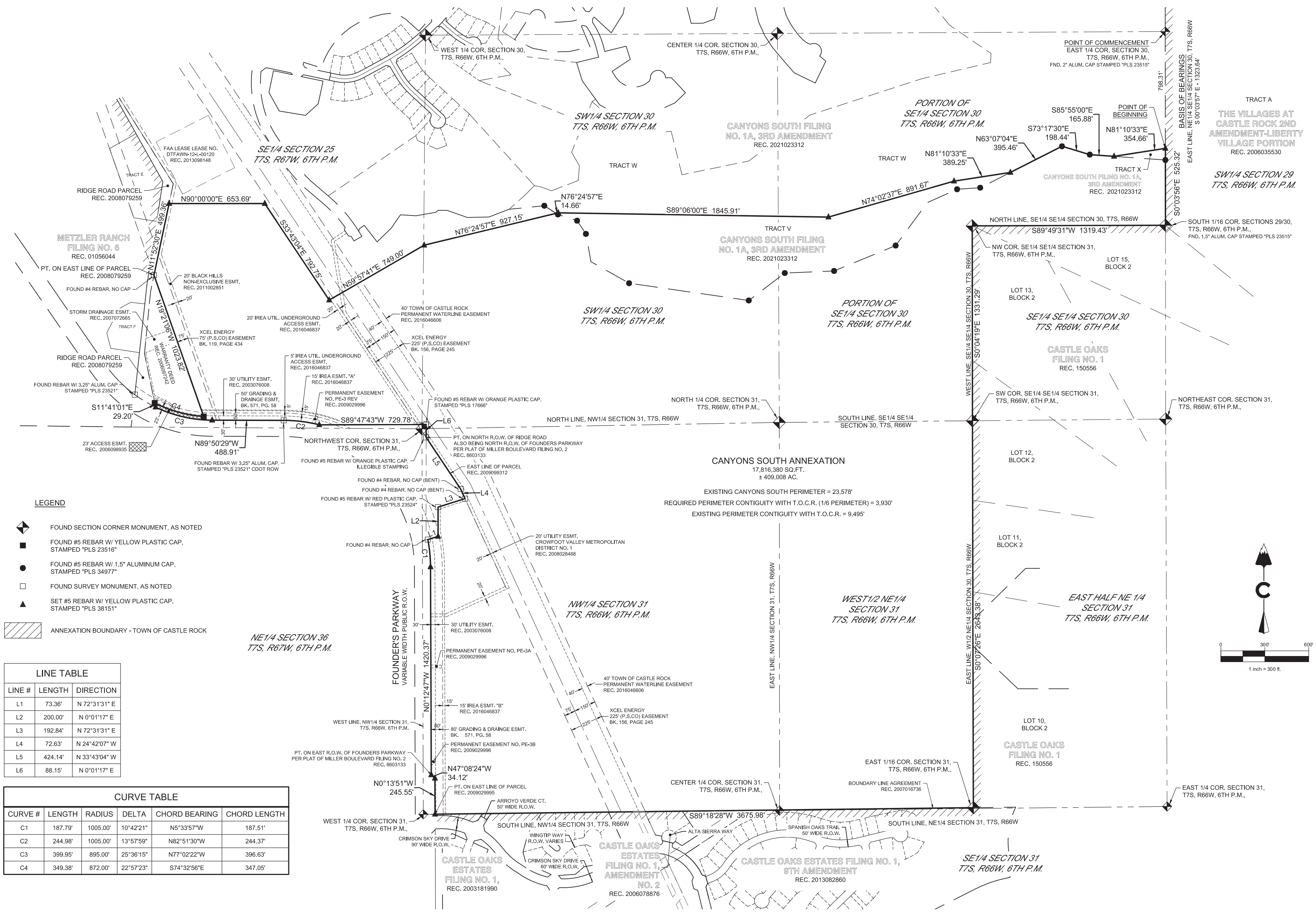
JOB NO. 20-245

SHEET 1 OF 2

501

CANYONS SOUTH ANNEXATION MAP

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- FOUND SECTION CORNER MONUMENT, AS NOTED
- FOUND #5 REBAR W/ YELLOW PLASTIC CAP, STAMPED "PLS 23516"
- FOUND #5 REBAR W/ 1.5" ALUMINUM CAP, STAMPED "PLS 34977"
- FOUND SURVEY MONUMENT, AS NOTED
- SET #5 REBAR W/ YELLOW PLASTIC CAP, STAMPED "PLS 38151"
- ANNEXATION BOUNDARY - TOWN OF CASTLE ROCK

LINE TABLE

LINE #	LENGTH	DIRECTION
L1	73.36'	N 72°31'31" E
L2	200.00'	N 0°01'17" E
L3	192.84'	N 72°31'31" E
L4	72.63'	N 24°42'07" W
L5	424.14'	N 33°43'04" W
L6	88.15'	N 0°01'17" E

CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	187.79'	1005.00'	10°42'21"	N5°33'57"W	187.51'
C2	244.98'	1005.00'	13°57'59"	N82°51'30"W	244.37'
C3	399.95'	895.00'	25°36'15"	N77°02'22"W	396.63'
C4	349.38'	872.00'	22°57'23"	S74°32'56"E	347.05'

LAND DEVELOPMENT
ENERGY
PUBLIC INFRASTRUCTURE

CORE CONSULTANTS, INC.
3473 SOUTH BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVEYOURCORE.COM

CORE

CANYONS SOUTH ANNEXATION MAP
NORTH 1/2 SEC. 31 & SOUTH 1/2 SEC. 30, T7S, R66W OF THE 6TH P.M,
SOUTHEAST 1/4 SEC. 25, T7S, R67W OF THE 6TH P.M.
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

RELEASE: 05/17/2021
DESIGNED:
CAD: JCA
QA/QC: TMG

JOB NO. 20-245

SHEET 2 OF 2

ORDINANCE NO. 2023-___

AN ORDINANCE APPROVING THE INITIAL ZONING FOR 409.008 ACRES OF LAND LOCATED IN THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST, AND THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, DOUGLAS COUNTY, COLORADO, PURSUANT TO A ZONING APPLICATION SUBMITTED BY CANYONS SOUTH, LLC (Canyons Far South Annexation)

WHEREAS, Canyons South, LLC (the "Owner") is the owner of 409.008 acres of land located south of Crowfoot Road, east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive, as more particularly described on the attached ***Exhibit 1*** (the "Property"); and

WHEREAS, the Property is the subject of a petition for annexation to the Town of Castle Rock (the "Town"), which annexation was approved by the Town Council at tonight's meeting; and

WHEREAS, the Owner has submitted an application to the Town for the initial zoning of the Property (the "Zoning Application"), requesting that it be classified as Planned Development; and

WHEREAS, according to Section 20.02.030 of the Castle Rock Municipal Code ("CRMC"), the Town Council may evaluate any pending zoning requests for the Property concurrently with the annexation request, and the annexation hearing may be combined and held concurrently with the required public hearing on the zoning classification of the Property (the "Combined Hearings"); and

WHEREAS, in addition, prior to the date set for the Combined Hearings, the Owner's Zoning Application shall be reviewed in a public hearing by the Planning Commission; and

WHEREAS, the Planning Commission and Town Council have conducted the required public hearings in accordance with the applicable provisions of the CRMC.

NOW, THEREFORE, IT IS ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO:

Section 1. **Findings**. Based upon the testimony and evidence presented at the Combined Hearings, pursuant to the requirements of Section 17.02.060.C. of the CRMC, the Town Council makes the following findings:

A. The zoning of the Property is not subject to any existing land use intergovernmental agreements;

B. The proposed zoning conforms to the most recently adopted versions of the Town's Vision and Comprehensive Master Plan. The Property is not located within the boundaries of any sub-area or corridor plan;

C. The proposed zoning and use of the Property are compatible with existing and planned development on adjacent properties and in the surrounding area;

D. The redevelopment and future operation of the Property will be undertaken in accordance with Town regulations and technical criteria and, as such, any impacts upon the natural environment, including air, water, noise, stormwater management, wildlife and vegetation, will be minimal;

E. The Property will have access to Town services and infrastructure adequate to support its orderly development; and

F. Development of the Property is anticipated to have a generally positive economic impact on the Town.

Section 2. **Zoning Approval**. The Property is hereby zoned to Planned Development zoning. The Town's Zoning District Map will be amended to reflect the zoning classification of Planned Development for the Property.

Section 3. **Plan Approval**. The Canyons Far South Planned Development Plan and Zoning Regulations in the form attached as ***Exhibit 2*** is hereby approved.

Section 4. **Severability**. If any clause, sentence, paragraph, or part of this Ordinance or the application thereof to any person or circumstances shall for any reason be adjudged by a court of competent jurisdiction invalid, such judgment shall not affect the remaining provisions of this Ordinance.

Section 5. **Safety Clause**. The Town Council finds and declares that this Ordinance is promulgated and adopted for the public health, safety and welfare and this ordinance bears a rational relationship to the legislative object sought to be obtained.

APPROVED ON FIRST READING this ___ day of _____, 2023, by the Town Council of the Town of Castle Rock, Colorado by a vote of ___ for and ___ against, after publication; and

PASSED, APPROVED AND ADOPTED ON SECOND AND FINAL READING this ___ day of _____, 2023, by the Town Council of the Town of Castle Rock, Colorado by a vote of ___ for and ___ against.

ATTEST: **TOWN OF CASTLE ROCK**

_____ _____

Lisa Anderson, Town Clerk Jason Gray, Mayor

Approved as to form:

_____
Michael J. Hyman, Town Attorney

Approved as to content:

_____
Tara Vargish, Development Services Director

CANYONS SOUTH ANNEXATION BOUNDARY

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:

1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:

1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;

2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:

1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:

1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;

2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:

1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:

1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:

1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP STANDARD NOTES

1. MINERAL RIGHTS ASSOCIATED WITH THIS DEVELOPMENT HAVE NOT BEEN SEVERED. NOTIFICATION OF DEVELOPMENT HEARINGS BEFORE PLANNING COMMISSION AND TOWN COUNCIL SHALL BE PROVIDED TO OWNERS OF MINERAL ESTATES PURSUANT TO ARTICLE 65.5 OF TITLE 24, C.R.S.
2. A PORTION OF THIS SITE LIES WITHIN FEMA FLOOD ZONE X & A PER MAP DATED March 16, 2016. NO STRUCTURES SHALL BE PERMITTED IN THE APPROVED 100-YEAR FLOOD PLAIN.
3. THIS DEVELOPMENT PLAN IS NOT IMPACTED BY THE TOWN OF CASTLE ROCK SKYLINE/RIDGELINE PROTECTION REGULATIONS.
4. THIS SITE IS WITHIN THE TOWN OF CASTLE ROCK PURPLE & RED WATER PRESSURE ZONE.
5. ALL-WEATHER (CONCRETE OR ASPHALT) SURFACED ACCESS ROADS CAPABLE OF WITHSTANDING THE IMPOSED LOADS OF FIRE APPARATUS (75,000 LBS.) AND ALL REQUIRED FIRE HYDRANTS SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING ALL CONSTRUCTION.
6. RIGHT-OF-WAY INGRESS AND EGRESS ACCESS FOR EMERGENCY VEHICLES AND PERSONAL IS GRANTED OVER, ACROSS, ON AND THROUGH ANY AND ALL PRIVATE ROADS, DRIVES, TRAILS AND WALKWAYS.
7. A WILDLAND/URBAN INTERFACE WILDFIRE VEGETATION MANAGEMENT PLAN (PLAN), OR COMPLIANCE LETTER, IS REQUIRED TO BE SUBMITTED FOR EACH PHASE OF THE PLANNED DEVELOPMENT, WITH THE FIRST SITE DEVELOPMENT PLAN OR CONSTRUCTION DRAWINGS FOR EVALUATION AND APPROVAL BY THE TOWN OF CASTLE ROCK FIRE DEPARTMENT. THE PLAN SHALL BE DEVELOPED BY A DESIGN PROFESSIONAL FAMILIAR WITH WILDFIRE MITIGATION TECHNIQUES AND STANDARDS. REFER TO THE TOWN OF CASTLE ROCK COMMUNITY WILDFIRE PROTECTION PLAN.
8. MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS, AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
9. THE EASTERN AREA OF PLANNING AREA 3 IS WITHIN A MAPPED DEBRIS-FLOW SUSCEPTIBLE AREA (DEBRIS FLOW SUSCEPTIBILITY MAP OF DOUGLAS COUNTY, COLORADO: MCCOY ET AL, CGS OPEN FILE REPORT OF-18-08). THE DEBRIS DEPOSITION/INUNDATION HAZARD AND ANY NEED FOR MITIGATION OR AVOIDANCE WILL BE EVALUATED BY A QUALIFIED PROFESSIONAL, AND THE CONCLUSIONS SUBMITTED TO THE TOWN WITH THE SUBMITTAL OF THE SITE DEVELOPMENT PLAN FOR THE SUBJECT AREA.
10. AN UPDATED GEOLOGIC HAZARD AND GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS WILL BE PROVIDED WITH THE RESPECTIVE SITE DEVELOPMENT PLANS AND PLATS.

UTILIZATION TABLE

	Site Totals	Private Open Space Areas	Percentage of Site
Acreage	409 ac		100.0%
Planning Areas	165.1ac		40.4%
Open Space Private (OSP)		+/- 8.5ac	2.1% (part of PA)
Open Space Dedicated (PL-2)	217.6 ac		53.2%
Public Land Dedicated (PL-1)	13.8ac		3.4%
Right-of-Way*	12.5 ac		3.1%

* Actual acreage To Be Determined at Site Plan

LEGAL DESCRIPTION

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:
1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:
1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;
2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:
1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:
1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;
2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:
1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:
1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

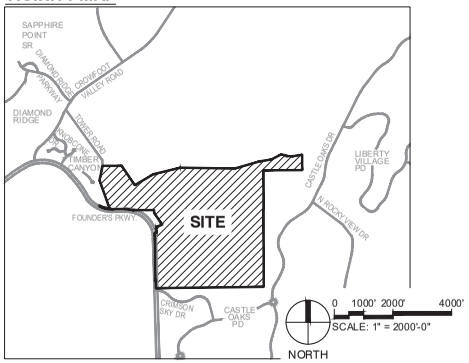
THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:
1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

SHEET INDEX

VICINITY MAP



PROJECT BENCHMARK

PROJECT BENCHMARK IS A REBAR WITH A 2.5" ALUMINUM CAP STAMPED "DOUGLAS COUNTY SECONDARY CONTROL 4.004007", SET FLUSH TO THE GROUND. LOCATED ON THE SOUTH SIDE OF CASTLE OAKS DRIVE, APPROXIMATELY 700 FEET NORTHEAST FROM THE INTERSECTION OF CASTLE OAKS DRIVE AND AUTUMN SAGE DRIVE. CASTLE ROCK, COLORADO. PUBLISHED ELEVATION = 1979.760 METERS (6495.20 FEET) NAVD88.

BASIS OF BEARING

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515".

VESTING STATEMENT

THIS CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN AND ZONING REGULATIONS CONSTITUTES A SITE SPECIFIC DEVELOPMENT PLAN PURSUANT TO CHAPTER 17.08 OF THE CASTLE ROCK MUNICIPAL CODE AND SECTION 24-68-101, ET SEQ., C.R.S., AND ESTABLISHES VESTED PROPERTY RIGHTS FOR 15 YEARS FROM ITS EFFECTIVE DATE TO UNDERTAKE AND COMPLETE THE DEVELOPMENT AND USE OF THE PROPERTY IN ACCORDANCE WITH THIS PLAN.

CERTIFICATION OF OWNERSHIP

THE UNDERSIGNED ARE ALL OF THE OWNERS OF THE ABOVE DESCRIBED PROPERTY IN THE TOWN OF CASTLE ROCK.

_____
CANYONS SOUTH, LLC, A DELAWARE LIMITED LIABILITY COMPANY

SIGNED THIS_____DAY OF_____, 20____

COUNTY OF _____)
STATE OF _____)

NOTARY BLOCK

SUBSCRIBED AND SWORN TO BEFORE ME THIS_____DAY OF_____, 20____

BY_____AS_____OF
CANYONS SOUTH, LLC.

_____
WITNESS MY HAND AND OFFICIAL SEAL

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

CONTACTS

APPLICANT:
LOWE, INC.
11777 SAN VICENTE BLVD #900
LOS ANGELES, CA 90049
310.820.6661
LOWE-RE.COM
CONTACT: ERIK CLORE

ENGINEERING:
CORE CONSULTANTS, INC.
3473 S. BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVEYOURCORE.COM
CONTACT: KEVIN ROHBBOUGH

PLANNER/LANDSCAPE ARCHITECT:
DIG STUDIO, INC.
1521 15TH ST
DENVER, CO 80202
720.328.1986
DIGSTUDIO.COM
CONTACT: BILL VITEK

TITLE CERTIFICATION

I, _____, AN AUTHORIZED REPRESENTATIVE OF_____A TITLE INSURANCE COMPANY LICENSED TO DO BUSINESS IN THE STATE OF COLORADO, HAVE MADE AN EXAMINATION OF THE PUBLIC RECORDS AND STATE THAT ALL OWNERS, MORTGAGES AND LIENHOLDERS OF THE PROPERTY ARE LISTED IN THE CERTIFICATE OF OWNERSHIP AND LIENHOLDER SUBORDINATION CERTIFICATE. 20____. SIGNED THIS_____DAY OF_____, 20____.

_____
AUTHORIZED REPRESENTATIVE

_____
TITLE INSURANCE COMPANY

COUNTY OF _____)
STATE OF _____)

NOTARY BLOCK

SUBSCRIBED AND SWORN TO BEFORE ME THIS_____DAY OF_____, 20____

BY_____AS AUTHORIZED REPRESENTATIVE
OF_____.

_____
WITNESS MY HAND AND OFFICIAL SEAL

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

SURVEYOR'S CERTIFICATION

I, _____, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY ATTEST THAT THE LEGAL DESCRIPTION AS DESCRIBED HEREON WAS MADE UNDER MY DIRECT SUPERVISION.

_____ _____
MILES M. SMALL DATE
PROFESSIONAL LAND SURVEYOR
COLORADO PLS NO. 38534
FOR AND BEHALF OF CORE CONSULTANT, INC.

PLANNING COMMISSION RECOMMENDATION

THIS PLANNED DEVELOPMENT PLAN WAS RECOMMENDED FOR APPROVAL BY THE PLANNING COMMISSION OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE_____ DAY OF_____, 20____.

_____ _____
CHAIR DATE

ATTEST:

_____ _____
DIRECTOR OF DEVELOPMENT SERVICES DATE

TOWN COUNCIL APPROVAL

THIS PLANNED DEVELOPMENT PLAN WAS APPROVED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE_____DAY OF_____, 20____.

_____ _____
MAYOR DATE

ATTEST:

_____ _____
TOWN CLERK DATE

DOUGLAS COUNTY CLERK AND RECORDER'S CERTIFICATE

THIS PLANNED DEVELOPMENT PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF DOUGLAS COUNTY AT _____ON THE_____DAY OF_____, 20_____AT RECEPTION NO. _____.

DOUGLAS COUNTY CLERK AND RECORDER

BY: _____ _____
DEPUTY DATE

CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN TOWN OF CASTLE ROCK PROJECT NO. PDP21-0003

LOWE
CORE CONSULTANTS, INC.
3473 S. BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVEYOURCORE.COM
CORE
DIG STUDIO, INC.
1521 15TH ST
DENVER, CO 80202
720.328.1986
DIGSTUDIO.COM
Dig Studio

CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
COVER SHEET

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Exhibit 2

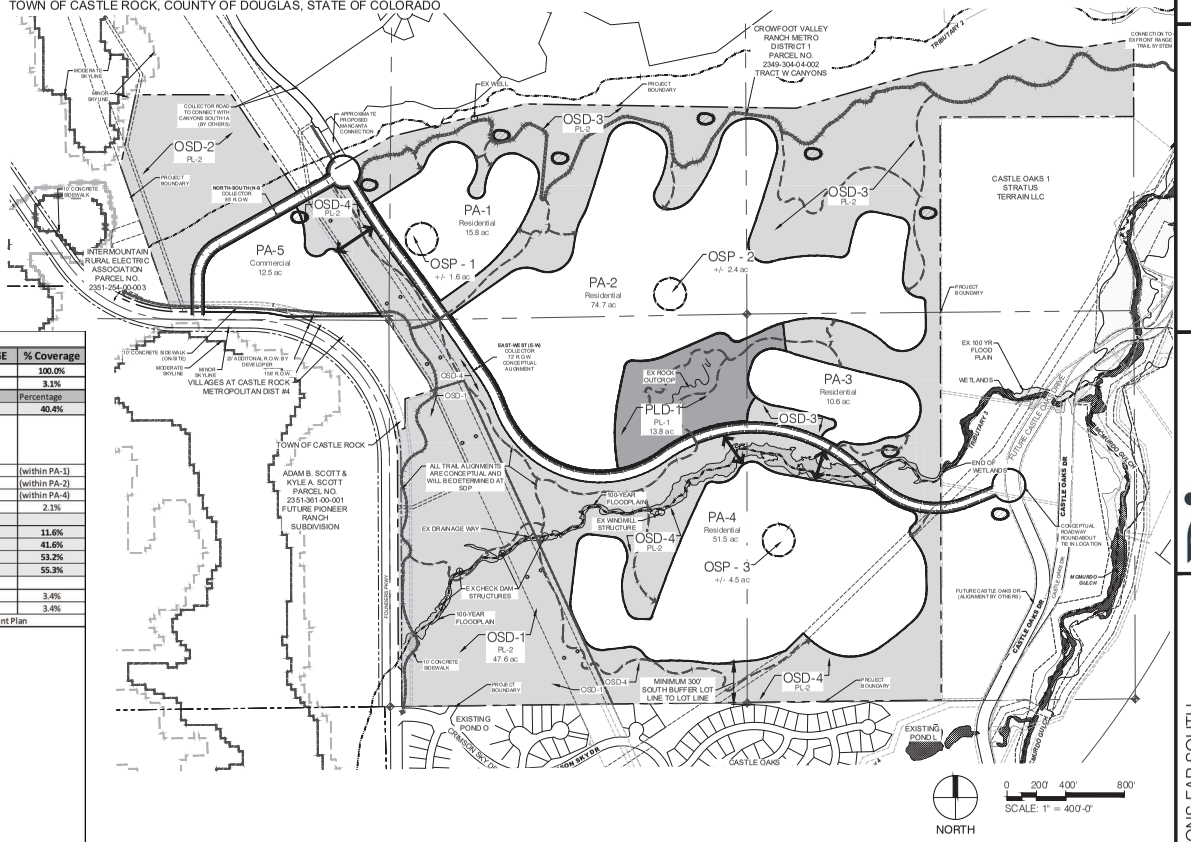
CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

LEGEND

- PROPERTY BOUNDARY
- DRAINAGEWAY
- PROPOSED OSD
- PROPOSED PLD
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS
- ACCESS POINT
- PROPOSED POND
- EASEMENTS
- 10' CONCRETE TRAIL
- 8' SIDEWALK
- 4' SOFT SURFACE TRAIL



Canyons Far South Zoning Summary Table and Development Standards

AREAS						Zoning	ACREAGE	% Coverage
SITE AREA							409	100.0%
SPINE ROAD ROW							12.5	3.1%
PLANNING AREAS	PA-1	PA-2	PA-3	PA-4	PA-5			
Acreage	15.8	74.7	10.6	51.5	12.5			
Allowable Uses	Single-family with attached or detached garages	Single-family with attached or detached garages	Single-family with attached or detached garages	Single-family with attached or detached garages	Commercial			
Minimum Lot Size	4,250	4,000	4,250	4,000				
Maximum Lot Size	11,700	11,700	11,700	11,700				
Dwelling Unit per PA	40 - 55	190 - 225	25 - 32	190	N/A			
Dwelling units per acre	2.5 - 3.5	2.5 - 3.0	2.4 - 3.0	3.7				
Total Dwelling Units	474							
Gross DU per Acre	1.16							
Maximum Building SF	N/A	N/A	N/A	N/A	60,000sf			
Maximum Building Height	35'	35'	35'	35'	35'*			
Lot Size and Setbacks								
Commercial Buildings								
Minimum Lot Size					2,000sf			
Front					0'			
Rear					10'			
Side					0'			
Side to Street					10',25'at collector and above			
Paired Homes								
Minimum Lot Size (per Unit)	4,000	4,000	4,000	4,000				
Front	10'	10'	10'	10'				
Rear	10'	10'	10'	10'				
Side	5'	5'	5'	5'				
Side at Shared Wall	0'	0'	0'	0'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Cluster Homes								
Minimum Lot Size	4,875	4,875	4,875	4,875				
Front	10'	10'	10'	10'				
Rear	5'	5'	5'	5'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Cottage Lots								
Minimum Lot Size	4,250	4,250	4,250	4,250				
Front	10'	10'	10'	10'				
Rear	5'	5'	5'	5'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Small Lot								
Minimum Lot Size	5,500	5,500	5,500	5,500				
Front	10'	10'	10'	10'				
Rear	25'	25'	25'	25'				
Side	5'	5'	5'	5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Medium Lot								
Minimum Lot Size	6,000	6,000	6,000	6,000				
Front	15'	15'	15'	15'				
Rear	30'	30'	30'	30'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	10'	10'	10'	10'				
Large Lot								
Minimum Lot Size	7,000	7,000	7,000	7,000				
Front	15'	15'	15'	15'				
Rear	30'	30'	30'	30'				
Side	10'	10'	10'	10'				
Side to Street	12.5'	12.5'	12.5'	12.5'				
Minimum Buffer	N/A	N/A	N/A	300-foot buffer property line to property line	N/A			
Minimum Parking	2-car garage	2-car garage	2-car garage	2-car garage				
Maximum Parking	4-car garage	4-car garage	4-car garage	4-car garage				

*See Design Guidelines.

PAs/OSP/PL-1/PL-2		Acreage	Percentage
Planning Areas		**165.1**	**40.4%**
Open Space Private (OSP)*			
OSP - 1	OSP	1.6	(within PA-1)
OSP - 2	OSP	2.4	(within PA-2)
OSP - 3	OSP	4.5	(within PA-4)
Total OSP		8.5	2.1%
Open Space Dedicated (OSD)			
OSD - 1	**PL - 2**	**47.6**	**11.6%**
OSD-2, OSD-3, OSD-4	**PL - 2**	**170**	**41.6%**
Total OSD		**217.6**	**53.2%**
Total OSP & OSD		**226.1**	**55.3%**
Public Land Dedication (PLD)			
PLD - 1	PL - 1	13.8	3.4%
Total PLD		13.8	3.4%

* Actual acreage to be determined at Site Development Plan

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
SITE CHARTS AND NOTES

NOT FOR CONSTRUCTION

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CHECKED BY:

JOB NO.
20-245

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CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
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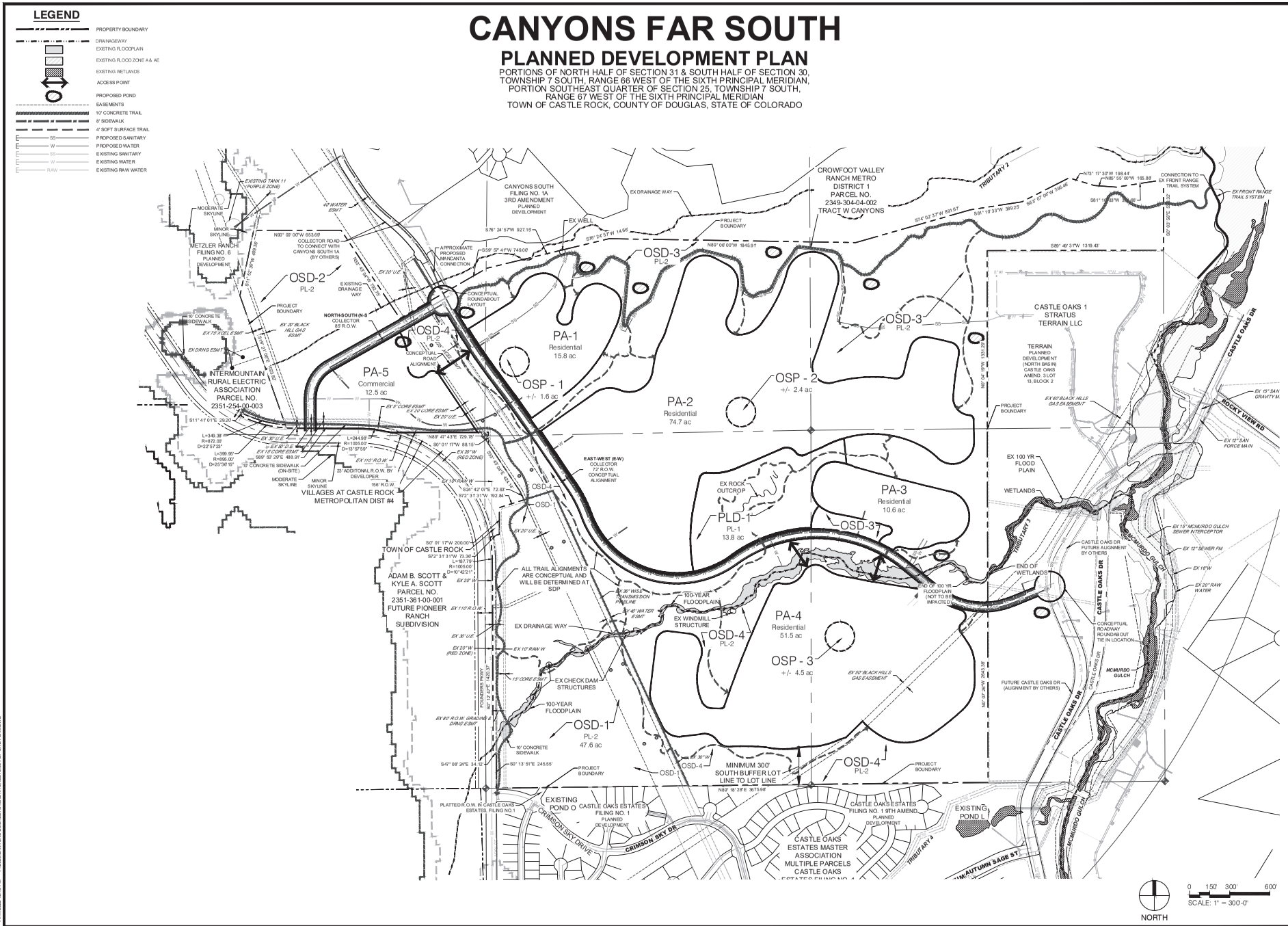
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN TOWN OF CASTLE ROCK PROJECT NO. PDP21-0003

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP SITE PLAN

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CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
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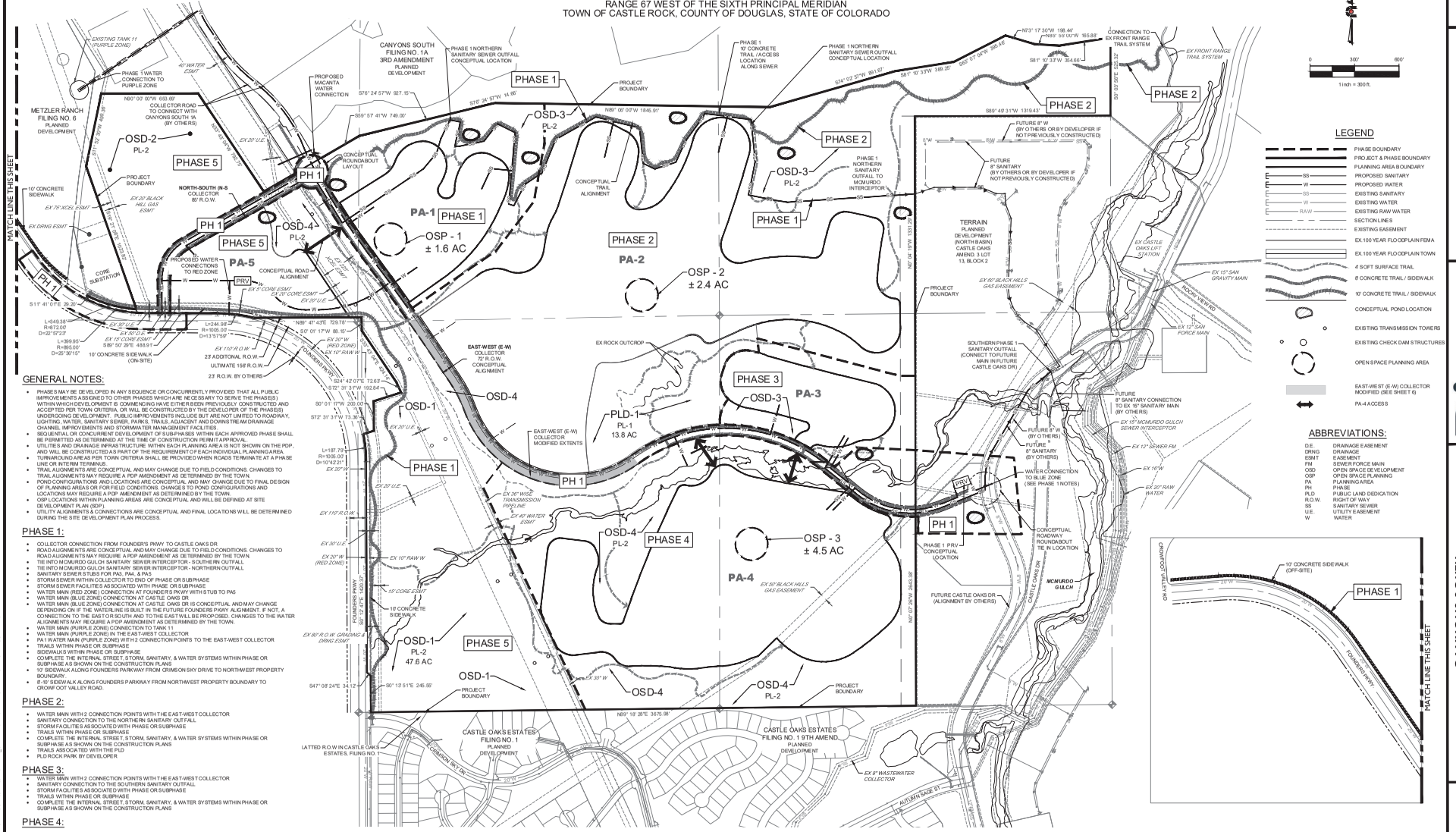
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



GENERAL NOTES:

- PHASES MAY BE DEVELOPED IN ANY SEQUENCE OR CONCURRENTLY PROVIDED THAT ALL PUBLIC IMPROVEMENTS ASSIGNED TO OTHER PHASES WHICH ARE NECESSARY TO SERVE THE PHASE(S) WITHIN WHICH DEVELOPMENT IS COMMENCING HAVE EITHER BEEN PREVIOUSLY CONSTRUCTED AND ACCEPTED PER TOWN CRITERIA, OR WILL BE CONSTRUCTED BY THE DEVELOPER OF THE PHASE(S) UNDERGOING DEVELOPMENT. PUBLIC IMPROVEMENTS INCLUDE BUT ARE NOT LIMITED TO ROADWAY, LIGHTING, WATER, SANITARY SEWER, PARKS, TRAILS, ADJACENT AND DOWNSTREAM DRAINAGE CHANNEL IMPROVEMENTS AND STORMWATER MANAGEMENT FACILITIES.
- SEQUENTIAL OR CONCURRENT DEVELOPMENT OF SUB-PHASES WITHIN EACH APPROVED PHASE SHALL BE PERMITTED AS DETERMINED AT THE TIME OF CONSTRUCTION PERMIT APPROVAL.
- UTILITIES AND DRAINAGE INFRASTRUCTURE WITHIN EACH PLANNING AREA IS NOT SHOWN ON THE PDP, AND WILL BE CONSTRUCTED AS PART OF THE REQUIREMENT OF EACH INDIVIDUAL PLANNING AREA.
- TURNAROUND AREAS PER TOWN CRITERIA SHALL BE PROVIDED WHEN ROADS TERMINATE AT A PHASE LINE OR INTERIM TERMINUS.
- TRAIL ALIGNMENTS ARE CONCEPTUAL AND MAY CHANGE DUE TO FIELD CONDITIONS. CHANGES TO TRAIL ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- POND CONFIGURATIONS AND LOCATIONS ARE CONCEPTUAL AND MAY CHANGE DUE TO FINAL DESIGN OF PLANNING AREAS OR FOR FIELD CONDITIONS. CHANGES TO POND CONFIGURATIONS AND LOCATIONS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- OSP LOCATIONS WITHIN PLANNING AREAS ARE CONCEPTUAL AND WILL BE DEFINED AT SITE DEVELOPMENT PLAN (SDP).
- UTILITY ALIGNMENTS & CONNECTIONS ARE CONCEPTUAL AND FINAL LOCATIONS WILL BE DETERMINED DURING THE SITE DEVELOPMENT PLAN PROCESS.

PHASE 1:

- COLLECTOR CONNECTION FROM FOUNDER'S PKWY TO CASTLE OAKS DR
- ROAD ALIGNMENTS ARE CONCEPTUAL, AND MAY CHANGE DUE TO FIELD CONDITIONS. CHANGES TO ROAD ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- TIE INTO MCMURDO GULCH SANITARY SEWER INTERCEPTOR - SOUTHERN OUTFALL
- TIE INTO MCMURDO GULCH SANITARY SEWER INTERCEPTOR - NORTHERN OUTFALL
- SANITARY SEWER STUBS FOR PA3, PA4, & PA5
- STORM SEWER WITHIN COLLECTOR TO END OF PHASE OR SUBPHASE
- STORM SEWER FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- WATER MAIN (RED ZONE) CONNECTION AT FOUNDER'S PKWY WITH STUB TO PA5
- WATER MAIN (BLUE ZONE) CONNECTION AT CASTLE OAKS DR
- WATER MAIN (BLUE ZONE) CONNECTION AT CASTLE OAKS DR IS CONCEPTUAL AND MAY CHANGE DEPENDING ON IF THE WATERLINE IS BUILT IN THE FUTURE FOUNDERS PKWY ALIGNMENT. IF NOT, A CONNECTION TO THE EAST OR SOUTH AND TO THE EAST WILL BE PROPOSED. CHANGES TO THE WATER ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- WATER MAIN (PURPLE ZONE) CONNECTION TO TANK 11
- WATER MAIN (PURPLE ZONE) IN THE EAST-WEST COLLECTOR
- PA1 WATER MAIN (PURPLE ZONE) WITH 2 CONNECTION POINTS TO THE EAST-WEST COLLECTOR
- TRAILS WITHIN PHASE OR SUBPHASE
- SIDEWALKS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS
- 10' SIDEWALK ALONG FOUNDERS PARKWAY FROM CRIMSON SKY DRIVE TO NORTHWEST PROPERTY BOUNDARY.
- 6'-10' SIDEWALK ALONG FOUNDERS PARKWAY FROM NORTHWEST PROPERTY BOUNDARY TO CROWFOOT VALLEY ROAD.

PHASE 2:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE NORTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS
- TRAILS ASSOCIATED WITH THE PLD
- PLD ROCK PARK BY DEVELOPER

PHASE 3:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE SOUTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

PHASE 4:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE SOUTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

PHASE 5:

- WATER MAIN (RED ZONE) CONNECTION TO FOUNDERS PKWY
- SANITARY CONNECTION TO THE NORTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

LEGEND

- PHASE BOUNDARY
- PROJECT & PHASE BOUNDARY
- PLANNING AREA BOUNDARY
- SS — PROPOSED SANITARY
- W — PROPOSED WATER
- SS — EXISTING SANITARY
- W — EXISTING WATER
- RAW — EXISTING RAW WATER
- SECTION LINES
- EXISTING EASEMENT
- EX 100 YEAR FLO ODPLAIN FEMA
- EX 100 YEAR FLO ODPLAIN TOWN
- 4' SOFT SURFACE TRAIL
- 8' CONCRETE TRAIL / SIDEWALK
- 10' CONCRETE TRAIL / SIDEWALK
- CONCEPTUAL POND LOCATION
- EXISTING TRANSMISSION TOWERS
- EXISTING CHECK DAM STRUCTURES
- OPEN SPACE PLANNING AREA
- EAST-WEST (E-W) COLLECTOR MODIFIED (SEE SHEET 6)
- PA-4 ACCESS

ABBREVIATIONS:

D.E.	DRAINAGE EASEMENT
DRNG	DRAINAGE
ESMT	EASEMENT
FM	SEWER FORCE MAIN
OSD	OPEN SPACE DEVELOPMENT
OSP	OPEN SPACE PLANNING
PA	PLANNING AREA
PH	PHASE
PLD	PUBLIC LAND DEDICATION
R.O.W.	RIGHT OF WAY
SS	SANITARY SEWER
U.E.	UTILITY EASEMENT
W	WATER

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CANYONS SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PHASING PLAN

NOT FOR CONSTRUCTION

DESIGNED BY: CGV
DRAWN BY: CGV
CHECKED BY: KJK

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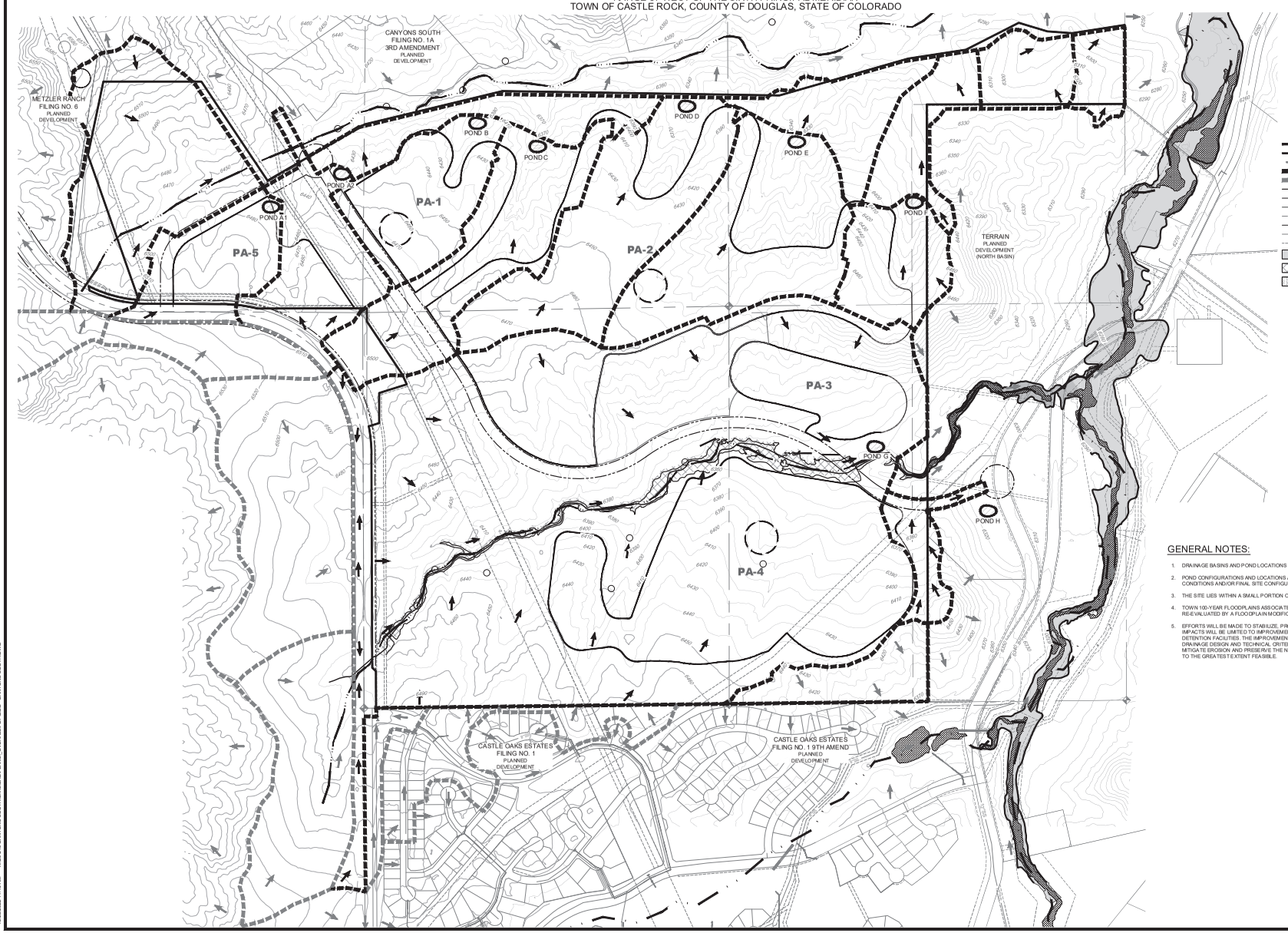
CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



0 300' 600'
1 inch = 300 ft.

LEGEND

- PHASE BOUNDARY
- PLANNING AREA BOUNDARY
- DIRECTIONAL FLOW ARROW
- PROPOSED DRAINAGE BASIN
- EXISTING DRAINAGE BASIN
- 5280 PROPOSED MAJOR CONTOUR
- 5279 PROPOSED MINOR CONTOUR
- 5280 EXISTING MAJOR CONTOUR
- 5279 EXISTING MINOR CONTOUR
- EX DRAINAGE WAY
- SECTION LINES
- EXISTING EASEMENT
- EX 100 YEAR FLOODPLAIN FEMA
- EX 100 YEAR FLOODPLAIN TOWN
- WETLANDS
- CONCEPTUAL POND LOCATION
- EXISTING CHECK DAM STRUCTURES

ABBREVIATIONS:

D.E.	DRAINAGE EASEMENT
DRNG	DRAINAGE
ESMT	EASEMENT
FM	SEWER FORCE MAIN
OSD	OPEN SPACE DEVELOPMENT
OSP	OPEN SPACE PLANNING
PA	PLANNING AREA
PH	PHASE
PLD	PUBLIC LAND DEDICATION
R.O.W.	RIGHT OF WAY
SS	SANITARY SEWER
U.E.	UTILITY EASEMENT
W	WATER

GENERAL NOTES:

1. DRAINAGE BASINS AND POND LOCATIONS ARE APPROXIMATE.
2. POND CONFIGURATIONS AND LOCATIONS ARE CONCEPTUAL AND MAY CHANGE DUE TO FIELD CONDITIONS AND/OR FINAL SITE CONFIGURATIONS.
3. THE SITE LIES WITHIN A SMALL PORTION OF ZONE A OF THE FEMA 100-YEAR FLOODPLAIN.
4. TOWN 100-YEAR FLOODPLAINS ASSOCIATED WITH THE MCMURDO GULCH TRIBUTARY 3 WILL BE RE-EVALUATED BY A FLOODPLAIN MODIFICATION STUDY.
5. EFFORTS WILL BE MADE TO STABILIZE, PROTECT, AND PRESERVE THE MAJOR DRAINAGEWAYS ON-SITE. IMPACTS WILL BE LIMITED TO IMPROVEMENTS IN THE AREAS OF DISCHARGES FROM THE PROPOSED DETENTION FACILITIES. THE IMPROVEMENTS WILL CONFORM TO THE TOWN OF CASTLE ROCK STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA MANUAL. THESE IMPROVEMENTS WILL BE DESIGNED TO MITIGATE EROSION AND PRESERVE THE NATURAL CHARACTER AND HISTORICAL DRAINAGE PATTERNS TO THE GREATEST EXTENT FEASIBLE.

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CANYONS SOUTH
CASTLE ROCK, COLORADO

PLANNED DEVELOPMENT PLAN (PDP)
GRADING & DRAINAGE

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CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
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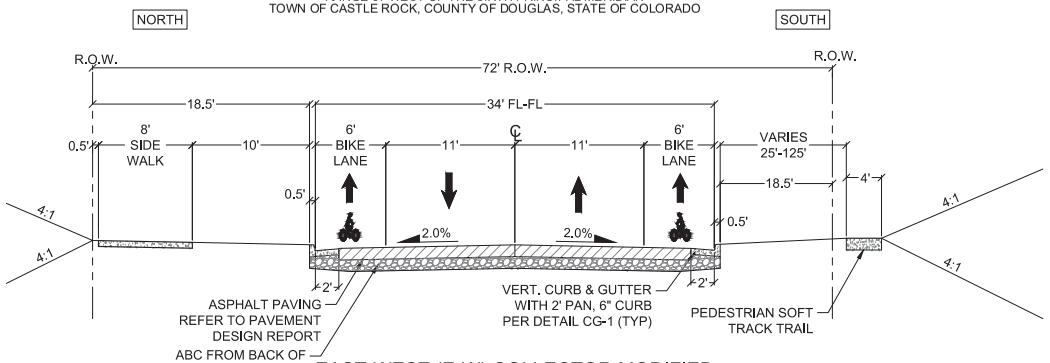
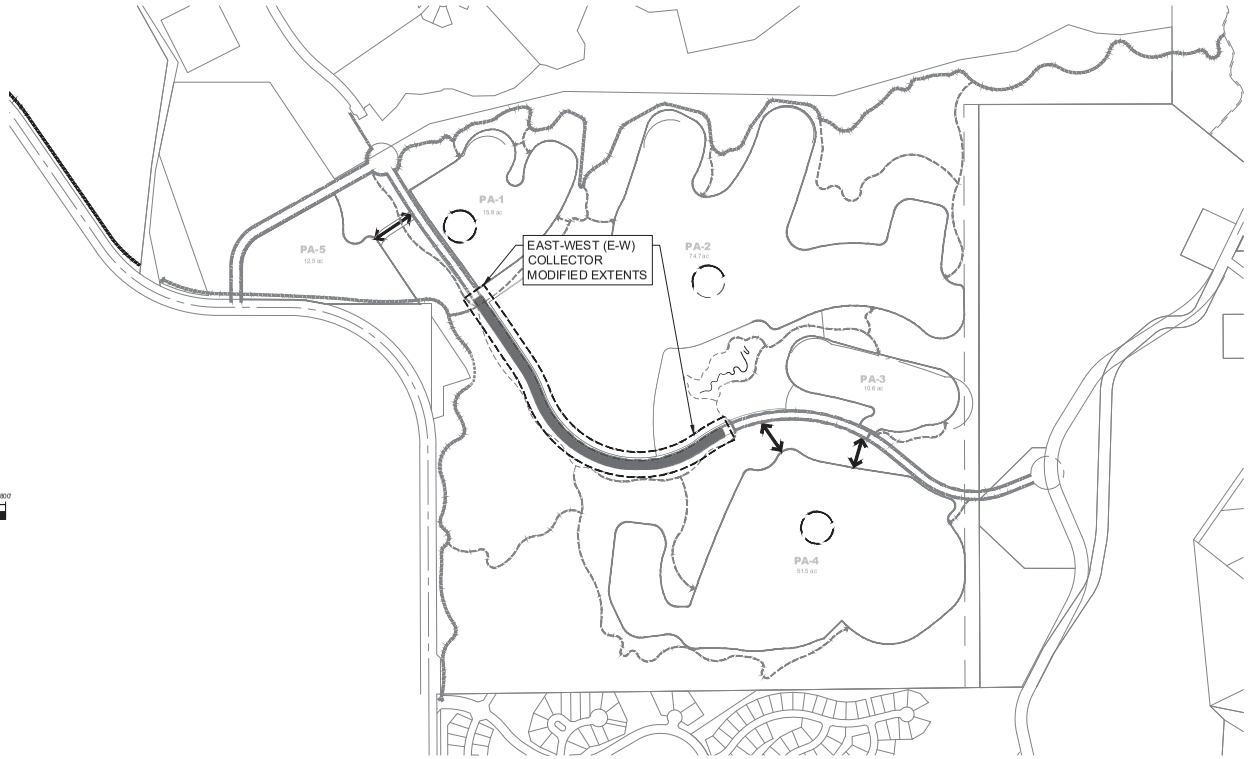
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



EAST-WEST (E-W) COLLECTOR MODIFIED
72' ROW
1" = 5'



NOTE:

1. A MODIFICATION TO THE TOWNS COLLECTOR RESIDENTIAL TYPICAL SECTION IS PROPOSED FOR AN 8 FT WIDE SIDEWALK ON THE NORTH SIDE ONLY FOR THE EAST-WEST (E-W) COLLECTOR. SEE SECTION THIS SHEET & TCV22-0115.
2. ALL PROPOSED STREET SECTIONS OTHER THAN THE E-W COLLECTOR MEET TOWN STANDARDS FOUND IN THE TOWNS TRANSPORTATION DESIGN CRITERIA MANUAL.
3. SEE LEFT & PHASING PLAN FOR LOCATION

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CANYONS SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
ROAD SECTIONS

NOT FOR CONSTRUCTION

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CHECKED BY: KJK

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CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
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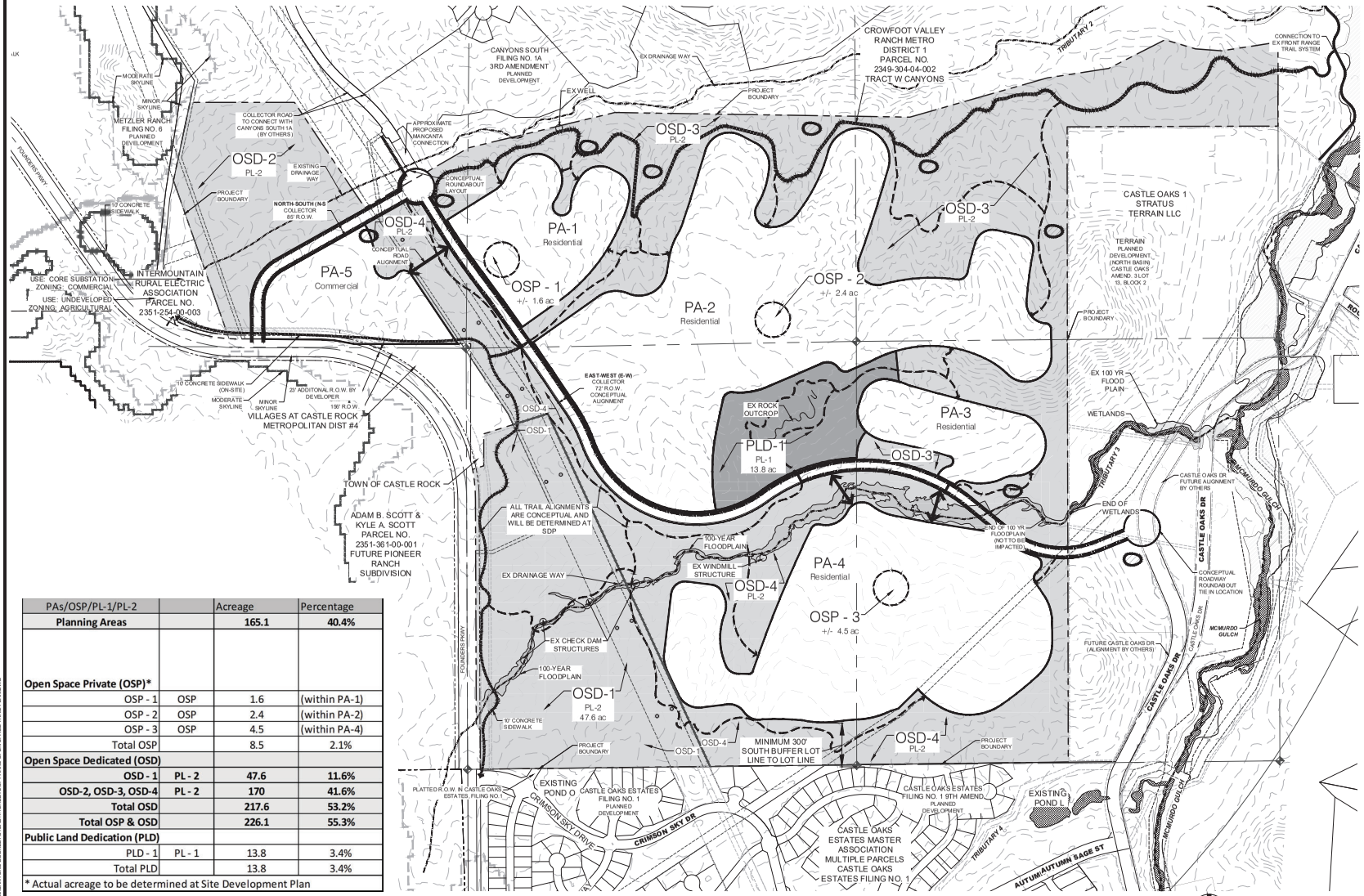

LEGEND

- PROPERTY BOUNDARY
- EASEMENTS
- DRAINAGEWAY
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS
- PLD (PARK LAND DEDICATION)
- OSD (OPEN SPACE DEDICATION)
- OSP (OPEN SPACE PRIVATE)
- 10' CONCRETE TRAIL
- 8' SIDEWALK
- 4' SOFT SURFACE TRAIL
- ACCESS POINT
- PROPOSED POND

NOTE:
OPEN SPACE AREAS ARE CONCEPTUAL. FINAL AREAS AND ACREAGES WILL BE DEFINED AT SITE PLAN.

PAs/OSP/PL-1/PL-2		Acreage	Percentage
Planning Areas		**165.1**	**40.4%**
Open Space Private (OSP)*			
OSP - 1	OSP	1.6	(within PA-1)
OSP - 2	OSP	2.4	(within PA-2)
OSP - 3	OSP	4.5	(within PA-4)
Total OSP		8.5	2.1%
Open Space Dedicated (OSD)			
OSD - 1	**PL - 2**	**47.6**	**11.6%**
OSD-2, OSD-3, OSD-4	**PL - 2**	**170**	**41.6%**
Total OSD		**217.6**	**53.2%**
Total OSP & OSD		**226.1**	**55.3%**
Public Land Dedication (PLD)			
PLD - 1	PL - 1	13.8	3.4%
Total PLD		13.8	3.4%

* Actual acreage to be determined at Site Development Plan

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PARKS, OPEN SPACE AND TRAILS PLAN

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DRAWN BY:
CHECKED BY:

JOB NO. 20-245

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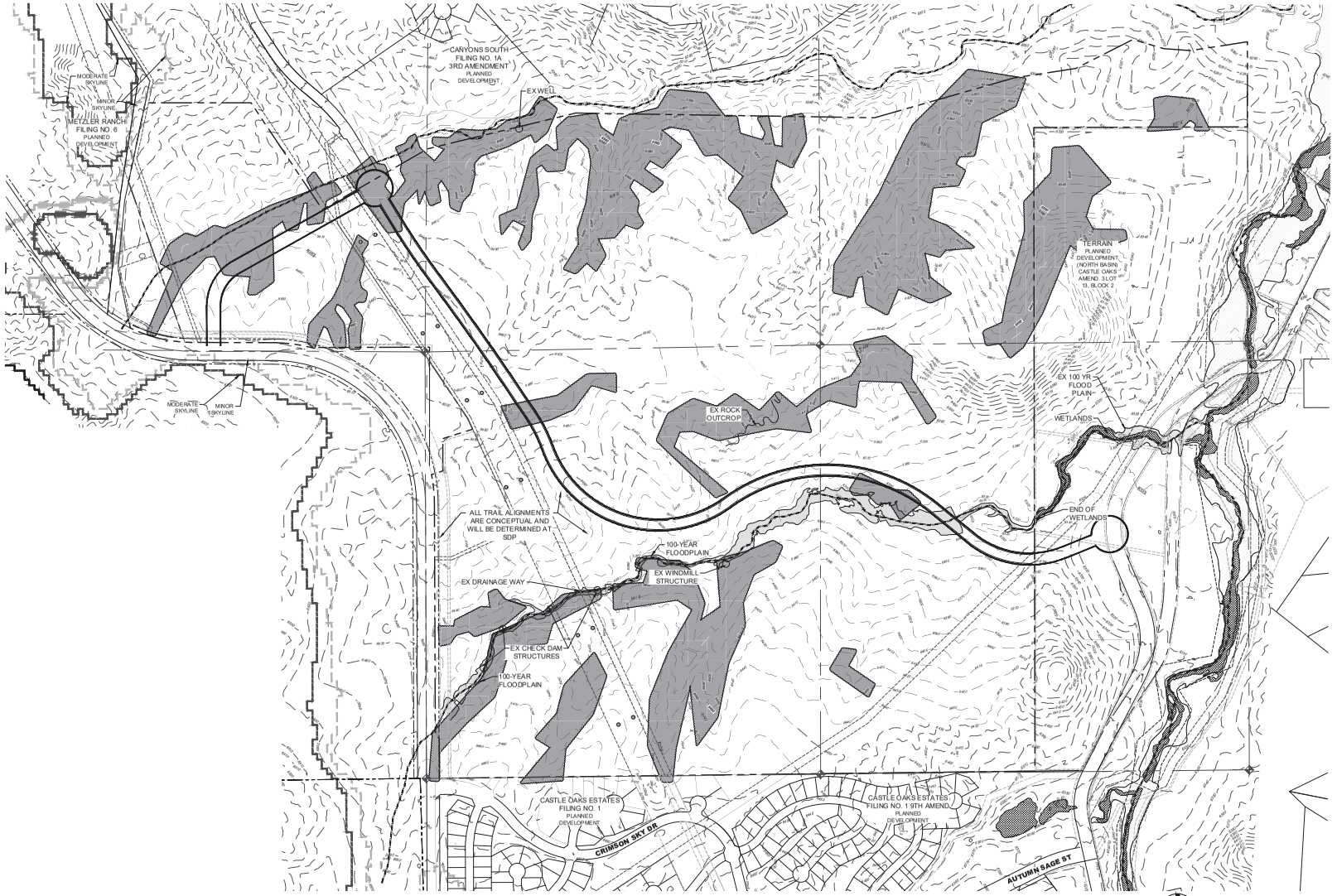
10/25/2022 10:38 AM P:\2020\CANYONS BOOK LET\CAD\C4-1 SHEETS\07 PARKS OPEN SPACE TRAIL PLAN.DWG

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- PROPERTY BOUNDARY
- EASEMENTS
- DRAINAGEWAY
- EXISTING PONDEROSA PINE VEGETATION STANDS
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
NATURAL FEATURES

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

SHEET
8 OF 12

10/25/2022 10:19 AM P:\2020\CANYONS BOOKLET\04CAD\4.1 SHEETS\08 NATURAL FEATURES PLAN.DWG

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
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RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP ZONING REGULATIONS

SECTION 1 GENERAL PROVISIONS

1.1 PURPOSE

A. Statement of Purpose

The purpose of the Planned Development Plan Zoning Regulations (PDP Zoning Regulations) is to establish standards for the development and improvement of the Canyons Far South property (Property). The standards contained in these PDP Zoning Regulations are intended to carry out the goals of the Canyons Far South Planned Development Plan (PDP).

B. Application

These standards and development controls shall apply to the Property as shown on the PDP. These PDP Zoning Regulations run with the land and shall bind the Owner and its successors or assigns of the Property.

C. Development Phasing

The development phasing order indicated on the PDP is only advisory in nature as set forth in the General Notes thereon, and is not obligatory upon the Owner pursuant to the provisions of the Development Agreement described below.

D. Severability of Provisions

In the event any provision herein shall be determined to be illegal or void by the final order of any court of competent jurisdiction, the remaining provisions shall remain in full force and effect.

E. Annexation and Development Agreement

In addition to these regulations, certain provisions of the development of the PDP are controlled by the Annexation and Development Agreement ("Development Agreement") between the Town of Castle Rock and the Owner as approved by the Town Council on the _____ day of_____, 2022, by Resolution No. _____.

1.2 AUTHORITY

A. Authority

The authority of these PDP Zoning Regulations is Chapter 17.32 (PDP-Planned Development District) of the Castle Rock Municipal Code, as amended (Code).

B. Adoption

The Town Council approved the PDP and PDP Zoning Regulations pursuant to Section 17.34 of Title 17 (Zoning) of the Code after appropriate public notice and hearing on _____, 2022 by Ordinance No. _____.

C. Relationship of Town of Castle Rock Regulations

All Town ordinances and regulations, as the same are amended from time to time, shall apply to and be enforceable in a Planned Development. Accordingly, such Town ordinances and regulations shall govern and control over any conflicting provisions in the PDP Zoning Regulations unless such conflicting provision is vested as an express property development right under the Development Agreement pursuant to Chapter 17.34, Section 17.30.040, A.3. of the Code.

D. Maximum Level of Development

The total number of dwelling units approved for development within each established Planning Area pursuant to the PDP is the maximum allowed for platting and development within that Planning Area. The actual number of dwelling units approved within a Planning Area will be determined at the Site Development Plan (SDP)/Subdivision Plat stage of review. However, in no event shall the total count of all residential dwelling units under the PDP Plan exceed 474.

1.3. CONTROL PROVISIONS

A. Incorporation of the PDP

The PDP includes the type and intensity of permitted uses, and the location and boundaries of Planning Areas, and is hereby incorporated by reference into these PDP Zoning Regulations.

B. Planning Area Boundaries

The boundaries and acreage of all Planning Areas within the Property are shown on the PDP. Where a Planning Area abuts an internal local street or drive, the boundary shall be the centerline of the street. Where a Planning Area abuts an arterial or collector street, the boundary shall be the right-of-way of that street as indicated on the PDP.

C. Administrative Amendments to the PDP Acreage and Dwelling Unit Count per Planning Area

There shall be limited flexibility in determining the exact location of the Planning Area boundaries and Dwelling Unit count within designated Planning Areas. A maximum of twenty percent (20%) change or adjustment to the Planning Area boundaries, as measured by acreage, and in Dwelling Unit count between and among Planning areas is permitted. The boundary change or adjustment must be supported by an analysis which shows that no more than twenty percent (20%) of permitted contiguous acreage is in a different location from the Planning Area boundary depicted on the PDP.

D. Road Alignments

The PDP is intended to depict general locations of roadways. Final road alignments are subject to adjustment and changes resulting from Owner's engineering studies. Minor changes to road alignments can be accomplished by the Owner through the platting process without any amendment to the PDP or PDP Zoning Regulations. Major road alignments, as determined by the Town of Castle Rock Development Services Director, shall follow the PDP Amendment procedure as provided in the Code.

SECTION 2 DEFINITIONS

In addition to the standard definitions found in the Town Code, the following definitions of terms shall apply to this PDP:

2.1 Paired Homes

Dwelling Units sharing one common building wall, a maximum total of 2 dwelling units per structure.

2.2 Cluster Home

Detached single-family dwelling unit sharing one common auto court access way.

2.3 Detached Accessory Structures

Accessory Structures which are not physically connected to the main dwelling unit on the lot. As used herein, the term detached accessory structure shall include, but not be limited to a pool house, outdoor kitchen structure, and a greenhouse or garden shed. These structures shall not count toward the total number of all residential dwelling units permitted under the PDP.

2.4 Owner

Canyons South LLC, or its successors or assigns.

2.5 Open Space Private - OSP

Open Space that is to remain in private common ownership and use and is maintained by an HOA or Metropolitan District which is suitable for a clubhouse as well as indoor or outdoor recreation facilities, pocket parks, landscaping, passive and/or active recreation, gardens, view protections and enhancement, buffers and/or other appropriate uses.

2.6 Open Space Dedicated (OSD) – PL-2

Open Space that will be dedicated to and owned and maintained by the Town. Land use will follow the Town of Castle Rock Municipal Code 17.30.030.

2.7 Public Land Dedication (PLD) – PL-1

Park land that will be dedicated to and owned and maintained by the Town. Land use will follow the Town of Castle Rock Municipal Code 17.30.020.

SECTION 3 PA-1, PA-2, PA-3, and PA-4 | RESIDENTIAL

3.1. Intent

The residential PA neighborhoods will include residential lots and accessory structures and uses, open space, streets, landscape tracts and trail corridors which will connect the residences to the Property's amenities and extensive trail networks.

3.2 Uses Permitted by Right

A. Detached single family dwellings with attached or detached private garages.
B. Paired Homes
C. Cluster Homes
D. Public and private open space, parks, and recreational uses, trails and facilities.
E. Recreation or clubhouse facilities and associated parking.
F. Public and Private Utilities and appurtenant facilities.
G. Drainage and detention facilities.

3.3 Accessory Uses and Structures

A. Community information kiosks
B. Community mailbox kiosks
C. Detached garages
D. Storage shed, 120 sq. ft. maximum and subject to architectural and maintenance controls/covenants
E. Private swimming pools and spas
E. Private tennis courts
F. Outdoor kitchen or kitchen/BBQ structures
G. A detached subordinate use of which is customarily incidental to that of the main building or to the main use of the land and which is located on the same lot with the main building or use.

3.4 Temporary Uses

A. Construction offices and material storage shall be permitted for a maximum period of sixty (60) consecutive days after completion of actual construction in those areas being served by such construction office or material storage area.
B. Temporary sales trailers, model homes with parking area, show home complexes, temporary sales signage and associated uses.

3.5 Residential Development Standards

A. Minimum standard lot Sizes:

Lot Type	Minimum Lot Size	Maximum Lot Size
Paired Home Lots	4,000 SF	5,500 SF
Cluster Homes Lots	4,875 SF (with shared access)	6,000 SF (with shared access)
Cottage Lots	4,250 SF	5,500 SF
Small Lots	5,500 SF	7,000 SF
Medium Lots	6,000 SF	8,500 SF
Large Lots	7,000 SF	11,700 SF

B. Maximum Building height: 35 feet for primary structures

C. Minimum standard lot width:
- At the street: 50 feet
- At building setback: 50 feet
- At a cul-de-sac, knuckle or similarly curved frontage at the street: 35 feet
- Flag lot width at street: 25 feet

D. Primary structure minimum setbacks:

	Front	Rear	Side	Side to Street	Notes
Paired Homes	10*	10*	5*	7.5	* Paired Home Front and Rear Setbacks must be offset 5ft from adjacent structure
Cluster Homes	10	5	7.5	7.5	
Cottage Lots	10	5**	7.5	7.5	** Rear 5 ft for garage, 25ft for house
Small Lots	10	25	5	7.5	
Medium Lots	15	30	7.5	10	
Large Lots	15	30	10	12.5	

E. Accessory structure maximum height: 25 feet

F. The PA 4 southern boundary with Castle Oaks Estates shall maintain a minimum rear lot line to rear lot line buffer of 300' separation.

G. Garage accessory structure minimum front setback (from local street right-of-way):
- 20 feet to the face of a garage for front loaded detached garage
- 15 feet to the side of a side loaded detached garage
- Accessory structures other than detached garages are not permitted forward of the front facade of the primary structure including the attached garage

H. Accessory structure minimum rear setback: 25 feet

I. Accessory structure minimum side setback: 10 feet

J. Accessory structure minimum side to street setback: 15 feet; 20 feet to the face of a side loaded detached garage

K. Encroachments

1. Uncovered decks and uncovered patios 30 inches or less above grade may encroach the rear or side setback provided they are no closer than five (5) feet to the rear or side property line.
2. Uncovered decks and patios greater than 30 inches in height above grade may encroach the rear or side setback provided they are no closer than 5 feet to a side lot line and 15 feet to the rear lot line.
3. Window Wells, Counterforts, Bay Windows and Roof Overhangs are permitted to encroach a maximum of 30" into primary structure setbacks.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP ZONING REGULATIONS

NOT FOR CONSTRUCTION

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____

JOB NO. 20-245

SHEET 9 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

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RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP ZONING REGULATIONS (CONTINUED)

SECTION 4 PA-5 | COMMERCIAL

4.1. Intent

The commercial use Planning Area is intended to provide neighborhood level commercial and retail. It will be accessed via the main entry road into the Property. Direct access from the project's main spine road, providing internal access from the residential planning areas interior to the project, may also be utilized. Open space, streets, landscape tracts and multi-modal trail corridors will connect the residences to this planning area's amenities and commercial uses. Individual lots within the commercial Planning Area will be defined at the SDP and Plat submittal.

4.2 Uses Permitted by Right

A. Retail
B. Restaurants
C. Office space
D. Personal Services
E. Public and private open space, plazas, parks, and recreational uses, trails and incidental related facilities
F. Utilities and appurtenant facilities
G. Drainage and detention facilities

4.3 Accessory Uses

A. Community information kiosks
B. Accessory structures
C. Outdoor merchandise displays, 120 sq. ft. maximum and subject to architectural and maintenance controls/ covenants

4.4 Uses by Special Review

A. Schools: day care centers, pre-school facilities, and learning facilities.
B. Food Service with Drive-Thru

4.5 Prohibited Uses

A. Automobile service/fuel station/wash/rental.
B. Auto body and vehicle/RV/boat storage, equipment, repair, sales and leasing.
C. Marijuana Establishments
D. Tattoo Parlors
E. Convenience Store with Gas Station
F. Outdoor Storage

4.6 Temporary Uses

A. Construction offices and material storage shall be permitted in all use areas during and for a maximum period of sixty (60) consecutive days after cessation of actual construction in those areas being served by such construction office or material storage area.
B. Temporary sales trailers, model homes with parking area, show home complexes, temporary sales signage and associated uses.

4.7 Development Standards

A. Minimum standard lot area: 2,000 square feet
B. Maximum Building size: 25,000 square feet
C. Maximum height (Buildings and Structures): 35 feet for buildings and structures. Signature architectural elements such as a clock tower, windmill, or entry/landscape feature are limited to a maximum height of 45 feet.
D. Setbacks
  i. Primary Structure
    a. ROW
      1. Front
        (a) From Founders: 30 feet
        (b) From Spine Road: 30 feet
        (c) From Internal Road: 0 feet
      2. Rear setback: 10 feet
      3. Side setback
        (a) From Founders: 25 feet
        (b) From Spine Road: 25 feet
        (c) From Internal Road: 10 feet
    b. Lot Line
      1. Front: 0 feet
      2. Rear: 10 feet
      3. Side: 0 feet
  ii. Accessory Structure
    a. ROW
      1. Front: 45 feet
      2. Rear: 20 feet
      3. Side: 10 feet
    b. Lot Line
      1. Front: 30 feet
      2. Rear: 10 feet
      3. Side: 10 feet
  iii. Encroachment of Patios and Uncovered Decks
    a. Setback from ROW
      1. Front: 5 feet
      2. Side: 5 feet
    b. Setback from Lot Line
      1. Rear: 5 feet
      2. Side: 5 feet
  iv. Encroachment of Canopies & Overhangs
    a. Into ROW setback
      1. Front: 5 feet
    b. Into Lot Line setback
      1. Front: 5 feet

SECTION 5 Public Land Dedication | PLD-1

5.1 Intent

Public Land Dedication (PLD) is intended to be municipally owned land, used for public purposes and satisfies the PLD requirements of the Town of Castle Rock Subdivision Regulations of the Municipal Code Title 16. The PLD in this PD Plan is zoned PL-1 which allows active and developed parks. All permitted uses and development standards for PL-1 are established in the Town of Castle Rock Municipal Code Title 17.

SECTION 6 Dedicated Open Space | OSD-1, OSD-2, OSD-3, OSD-4

6.1 Intent

Dedicated Open Space (OSD) is intended to be municipally owned land, used for public purposes and counts toward the minimum 20% PD Open Space requirement. The OSD shown in this PD Plan is zoned PL-2 which allows passive recreation uses such as trails and open space. All permitted uses and development standards for PL-2 are established in the Town of Castle Rock Municipal Code Title 17.

SECTION 7 OSP-1, OSP-2, OSP-3 | OPEN SPACE PRIVATE (OSP)

7.1 Intent

Open Space Private (OSP) includes clubhouse, park, and recreational amenities accessible only to residents living within the property and their guests and will be owned and maintained by an HOA or Metropolitan District. All other land designated as Open Space Private (OSP) on the PDP (subject to adjustment of the boundaries thereof as provided below in the Development Standards), will be dedicated to a Metropolitan District, homeowners' association, or other entity designated by the Owner at such time as adjacent property is platted. Such open space shall thereafter be owned and maintained by the Metropolitan District, homeowners' association, or other entity to which the dedication is made.

7.2 Uses and Structures Permitted by Right in OSP

A. Recreation or Clubhouse facilities and associated Parking
B. Swimming Pools and Spas and support facilities
C. Active Parks and recreational elements including playgrounds and sports courts
D. Natural/unpaved or paved pedestrian and bicycle trails.
E. Interpretive and Directional Signage
F. Community entry and other typical community signage
G. Picnic areas including shelters
H. Seating nodes and lookouts including open air shelters
I. Grading and drainage improvements
J. Public utility improvements and associated structures
K. Neighborhood parks and playgrounds
L. Irrigation, water storage, distribution and well facilities
M. Water, Wastewater, Utility Service Facilities, Drainage Facilities
N. Parking Areas
O. Windmills and other existing structures on the property
P. Landscape Improvements

7.3 Development Standards. Development standards for the OSP are as follows:

A. Maximum Height: Fifty (50) feet;
B. Minimum Front Yard Setback: A minimum of fifteen (15) feet from the property line; twenty-five (25) feet if abutting an arterial street.

SECTION 8 OVERALL PROJECT STANDARDS

These PDP Regulations shall not preclude the application of Town ordinances, including Code revisions, which are of general application and uniformly applied throughout the Town, unless such application would conflict with an express vested property right established pursuant to the Development Agreement. The standard zoning requirements of the Town of Castle Rock Zoning Ordinance including off-street parking, development standards, landscaping, site development, accessory and temporary uses, and use by special review and variance processes shall apply to this Planned Development, except as otherwise modified herein and by the following;

8.1 General Project Description

The PDP consists of approximately 409 acres with an approved maximum of 474 single family detached or paired dwelling units. The overall gross residential density for the property is 1.16 units per acre. The general character and layout of the development includes preservation of major drainageways, vegetation and topographic features which act as buffers between Planning Areas within the project and at project edges with the Macanta community to the north and the Castle Oaks Estates community to the south. An approximate 13-acre parcel, PA 5, will provide neighborhood serving retail services and be accessible off of the main entry road into the project near Founders Parkway.

8.2 Fencing

All existing perimeter fencing is permitted to remain as is or can be modified and maintained by the Owner and or HOA. If the existing fence is intentionally removed, the new fencing requirements shall apply. The existing fence type may be replaced with similar fencing if the fence is damaged. The following requirements apply to any new fencing.

A. For Lots adjacent to open space perimeter fences are limited to a maximum height of four (4) feet and shall be split rail or open rail.
B. Fences taller than 30 inches in height above the street flowline are prohibited in sight distance easements.
C. Solid wood privacy fences are not permitted for lots that abut Open Space or are immediately adjacent to a road ROW. A 2" x 4" wire mesh grid is permitted on the lot side of the open rail fence for pet enclosure. Solid wood property fences are allowed for back-to-back lots along the back property line and up to 10 feet from the most setback element of the front building façade.
D. Barbed wire and chain link are not permitted fencing types within any Planning Areas.
E. The existing typical agricultural wire fence is permitted to define the Property boundary along Castle Oaks Estates to the south, Founders Parkway ROW, Macanta to the north and along the eastern property edge.
F. Additional fencing guidelines will be provided in future design guideline s/ covenants provided in guidelines and managed as part of the covenants established and managed by the HOA or Metro District.

8.3 Landscaping

A. Landscape design regulations will be provided in future design guidelines/covenants established by the HOA, contracts and/or easements as established with the adjacent neighbors and HOA.
B. All landscaping shall be in conformance with Town of Castle Rock Landscape and Irrigation Performance Standards and Specifications, as amended.
C. The provisions and restrictions of the Property's Water Efficiency Plan (WEP) are applicable to all developed property within the Canyons Far South PDP unless superseded by more restrictive Town of Castle Rock Municipal Code or technical requirements.

8.4 Grading/Drainage

The grading/drainage of an individual lot or open space tract shall not vary from the Final Plat Grading Plan without the written approval of Canyons Far South and its Engineer(s) and review and approval by the Town. Any unauthorized work performed will be required to be returned to the specified grade by the individual(s) or organization(s) that authorized the change without proper approval.

8.5 Retaining Walls

All retaining walls adjacent to Public Street Right-of-Way are to be constructed, or faced, with natural stone material (or equal as identified in the Architectural Design Guidelines). Walls greater than 4-feet in height shall be approved for material and color per the Architectural Design Guidelines. Retaining wall height shall not exceed 8 feet. Any walls over 8 feet in height shall be tiered with a minimum 4 ft planting zone between wall segments to accommodate the structural geogrid, healthy plantings, drainage, and to reduce visual impact. Walls shall not impair traffic visibility.

All retaining walls are to be constructed, or faced, with natural stone material or Allan Block to be further defined within the Architectural Design Guidelines.

8.6 Existing Vegetation

Areas of significant scrub oak or mature ponderosa pine trees located in the natural open space outside of the Planning Areas will be left undeveloped, wherever practical, to provide habitat for wildlife, erosion protection and visual buffering.

8.7 Planning and Design

A. Design and construction of any lot or structure shall consider the relationship of roads and buildings to existing slope grades and drainage-ways and shall strive to achieve a fit with the existing landscape and topography that will attempt to minimize disturbance.
B. Structures in sloping areas shall be designed to conform to the slope by means of walk-out lower levels, stepped foundations, retaining walls or similar methods that will seek to minimize grading, site preparation and site disturbance.
C. Grading shall be shaped to complement the natural landforms and areas outside the limits of construction will be fence protected during construction.
D. Roads in steeply sloping or heavily vegetated areas shall be designed to minimize the area of disturbance. Where practical, clearing of vegetation within the right-of-way shall be feathered to create more natural appearing edges.

8.8 OSD-4 BUFFER AND BERM

A 300' open space buffer, within OSD-4, shall serve as a transition from the existing neighborhoods in Castle Oaks/Terrain. The buffer will have the following design considerations. See Conceptual Buffer Landscape Rendering on Sheet 12.

A. The buffer area will extend from the east side of the existing Xcel easement for approximately 1,000' east along the southern property boundary of the Property.
B. The buffer area will measure 300' between the Terrain community and residential lot lines in the Property, measured by residential lot line to residential lot line.
C. Berms of varying height, not to exceed a maximum height of 10', shall be added east of the Xcel easement and west of the Black Hills Energy easement to add visual interest from the properties to the south. No single berm shall extend longer than 500'.
D. Vegetation shall include low-water use native plantings and trees and will be arranged in a manner to enhance screening while also blending with the natural landscape character. Trees shall be a minimum of 8 feet in height at the time of planting.
E. A 4' (four-foot) natural surface trail may be added in this buffer area.

SECTION 9 TRANSITIONAL USE

9.1 After approval of the PDP, incorporated herein by reference, any portion or portions of the property described as the PDP, which has not been subjected to an SDP, may be used for agricultural purposes until approval of an SDP for those area or areas in question. Agricultural uses, for the purposes of this section shall mean farming or ranching or support structures pertaining thereto.
9.2 Any activity permitted by this section shall be considered to be a valid pre-existing non-conforming use within the area described above until an SDP for such area or areas has been approved.
9.3 Areas or agricultural activities shall be closed to vehicular traffic and off- road recreation motor biking excepting agricultural vehicles and implements, emergency vehicles, vehicles engaged in utility and other maintenance work, and designees of the Owner.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP ZONING REGULATIONS

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

SHEET
10 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
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TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP DESIGN GUIDELINES

Section 10 - RESIDENTIAL ARCHITECTURAL DESIGN GUIDELINES
Architectural Design Guidelines for primary and accessory structures within the PDP will be prepared by the Owner. The purpose of the Architectural Design Guidelines is to ensure that primary and accessory structures are consistent with this Section 10 and the design vision and objectives of the PDP. Builders must submit completed architectural plans to the Canyons Far South Architectural Design Control Committee (ACC) created pursuant to the Architectural Design Guidelines for review and adherence to the architectural guidelines prior to submitting an application for building permit to the Town of Castle Rock.

A. Design Guidelines
The Owner shall prepare written Architectural Design Guidelines at the time of each respective Site Development Plan submittal which shall govern the design requirements for each respective Residential Planning Area (PA1, PA 2, PA 3, and PA 4). Such guidelines will include architecture styles, materials and colors, general lot layouts and general landscaping requirements. Changes and/or amendments to the Architectural Design Guidelines may be made by the ACC.

B. Architectural Design Control Committee
All development within the PDP shall be subject to recorded private Covenants, Conditions and Restrictions ("CC&Rs") which will establish one or more ACC committees that will utilize written design standards and architectural guidelines ("Architectural Design Guidelines") in the review of all development within the PDP. The Architectural Design Guidelines will define specific site and building requirements such as colors, materials, landscaping and other items that will enable the Canyons Far South ACC to assure the design integrity and intent of the PDP. The CC&Rs are intended to achieve a consistent quality image for the development of the Property.

C. Architectural Design Approval
Final architectural plans must be consistent with the Architectural Design Guidelines for each respective planning area, and must be submitted to the Canyons Far South ACC for review and approval. Plans not approved shall be modified in accordance with the requirements of the Owner and Architectural Design Guidelines and resubmitted for review and approval. Application for a building permit may not be submitted if the Owner has not approved the architectural plans for the respective planning area.

D. Amendments to Residential Architectural Guidelines
Amendments to this Section 10 (Residential Architectural Guidelines) may be submitted by the Owner, or successor, to the Town and subject to an administrative review and approval. The Towns standard level of service review timelines shall apply.

E. Architectural Variety
1. A variety of product types and building forms shall be used throughout the PDP. A diversity of architectural styles is encouraged to differentiate between the planning areas and to bring architectural interest into the community.
2. Single-story elements, such as porches, covered entries, and living space or garages, are strongly encouraged to establish pedestrian scale.
3. To maintain architectural variety along residential streets, adjacent or directly opposing homes shall not have the same building plan and elevation or the same exterior color package. Each floor plan or model shall have a minimum of two distinctly different building elevations.
4. The same building plan and elevation shall not be repeated directly across any street from the same model elevation.
5. The same building plan and elevation shall not be repeated more than once every 4 lots on the same side of the street except for the cluster product which will accomplish elevation changes with color and material.
6. Plot buildings to achieve interest by varying front setbacks where feasible, providing varied setbacks to different parts of the building to encourage massing breaks, using different plan forms and elevations on adjacent buildings, and utilizing different garage placements.

F. Design Standards
1. Each dwelling unit front elevation shall include a minimum of 2 windows or 1 window and door per floor, excluding the garage door.
2. Each dwelling unit front elevation shall include 2 or more wall plane changes with no less than 2 feet offset between the wall planes or covered front porch. Articulation that adds shadow and elevation plane variation is encouraged.
3. Columns or posts extending more than 36 inches above the ground which support structural elements such as porches, decks, or roofs should appear to be of adequate mass to support the structure above and shall be a minimum of 6 inches x 6 inches finished and complementary to the architectural style with appropriate detailing.
4. Side and rear dwelling unit elevations shall include but are not limited to the following.
   a. Window grids, if window grids are provided on the front elevation. The window grids shall be of the same style or otherwise in general conformity as the front elevation.
      i. Window grids are not required on picture windows.
   b. Decorative window trim shall be on all windows and should match the style on the front elevation.
   c. The inclusion of architectural detail elements such as: shutters, eave brackets, exposed rafter tails, corbels, lintels, gable end treatments, or other approved architectural features that match the front elevation.
   d. The use of a minimum of 2 styles of siding or 2 exterior cladding materials where the second material must have a substantial impact on the elevation. Approved materials include, masonry (cultured stone, stone, brick, stucco, or tile), lap siding, shingles, board and batten, or other decorative siding treatment.
   e. Rear elevations only: A wall plane change, including a covered porch or covered deck, with a minimum of 8 feet in width and at least a 2-foot offset between wall planes.
   f. Walkout plans only: A covered deck exposed to the public facing direction that is at least 80 square feet in size.
5. Buildings located on corner lots should be designed for the two-sides that face the public street with a higher level of architectural treatment. The corner lots generally include additional setback areas from adjacent public rights-of-way or open space to accommodate additional landscaping or architectural elements such as porches, balconies, and pop-outs

G. Roofing
1. A variety of roof forms should be used, and each dwelling unit model elevation shall have a differing mass than the other elevations for the same model.
2. The main roof should extend beyond any facade by a minimum of 12 inches unless appropriate to the architectural style.
3. Roof Pitch & Material:
   a. Roof pitches shall be complementary to the architectural style.
   b. 30-year composition asphalt shingle (minimum).

H. Exterior Materials
1. All exterior building materials shall be of high quality and shall be used in applications and treated appropriately to provide an over-all harmonious and long-lasting design appearance.
2. When siding or masonry cladding is used, it should be used in a location where its mass is logical and appropriate. In instances where siding or masonry wraps the exterior corner of the home, the siding or masonry should continue to a natural transition point such as an inside corner of a projecting wall, a column, a door or window or other logical point. In cases where no such feature exists near the corner, the siding or masonry wrap shall extend at least 2 feet from the outside corner or end at a natural break in architecture or wing fence.

I. Front Porch
1. The minimum size of a non-recessed front porch shall be 60 square feet of floor area, with a minimum depth of 6 feet.

J. Decks
1. Decks must be redwood, treated lumber or composite material (e.g. Trex Decking). Railings may be painted or stained in a color that is compatible with the color scheme of the home. Composite materials must also be a color compatible with the color scheme of the home.
2. Deck railing must also match that of the deck, existing railing on the house or the general scheme within the community.

K. Garages
1. Detached garages and all other outbuildings shall be subject to the same architectural design treatment and shall be constructed of the same or similar materials as the dwelling until on the same lot.
2. All garage doors must have composite or cedar clad facing, wood grain simulated metal facing equivalent, or equal, as approved by the Canyons Far South ACC.

L. Exterior Colors
1. All exterior color schemes shall be approved by the Canyons Far South ACC.
2. Color schemes should be natural in tones and complement the style of architecture. Accent and "punch" colors, such as front doors, shutters, etc. may be more pronounced.
3. A minimum of 3 color schemes options shall be offered for each dwelling unit elevation style.

Section 11 - COMMERCIAL DESIGN STANDARDS
Architectural design review of primary and accessory structures within PA5 of the PDP will be conducted by the Owner and the ACC. The purpose of the design review is to ensure that primary and accessory structures are consistent with the design vision and objectives of the PDP. Builders must submit completed architectural plans to the Owner and the Canyons Far South ACC for review and approval prior to submitting for an application for Site Development Plan to the Town of Castle Rock.

A. Building Design Standards:
1. Free standing buildings shall incorporate compatible four-sided design. All sides of a building open to view shall display a similar level of material quality and architectural interest.
2. Pedestrian oriented façade design shall be required, including variation in the building facade by using vertical or horizontal articulation, window and entry variations as well as patios, plazas or other landscaped pedestrian areas is encouraged. Strong vertical design elements such as windows, pilasters, columns, stairs, and towers should be used to identify individual commercial spaces.
3. Variations in roofline and building parapet walls shall be utilized to effectively break up massing, provide visual interest, and develop a 'neighborhood feel' characteristic.
4. Building design shall incorporate textured surfaces, projections, recesses, shadow lines, color, window patterns, overhangs, reveals, changes in parapet height to avoid monolithic shapes and surfaces.
5. Building materials and colors shall be selected to create exterior surface distinction and may be augmented with tenant selected materials provided that they maintain the overall quality and style of the project and are deemed appropriate by the Canyons Far South ACC.
6. Buildings shall be designed using high quality, durable and low maintenance materials.
7. Buildings that utilize CMU walls shall use integrally colored units. Painted CMU is not permitted.
8. Buildings that utilize tilt wall concrete wall panels for distinctive articulation, color patterning and elevation plane variation shall be incorporated to add a variety of texture and visual interest.
9. The style and placement of exterior accent lighting shall enhance the building's architectural elements such as entry features, pilasters, columns, and landscaping.
10. Each building should have distinctive base, middle and top. Architectural detailing or a change of materials or color at the ground level may be used to create the base. The elevation plane variations of a building's facade should be emphasized by use of color, arrangement of facade elements, or a change of exterior materials.
11. Large façade volumes or planes should be broken up into smaller elements in order to reduce the visual scale of a building. The mass of a building should be varied in form or divided to emphasize the various interior building functions. Building design should reinforce structural grid with pilasters and or colonnades.
12. A variety of building roof lines and parapet heights incorporating changes or elements should be provided.
13. Variations in rooflines can include gables, dormers, flat roofs, and well-defined parapets. Offsets in the roofline break up the mass of the roof and are encouraged.
14. Roof overhangs at pedestrian entries provide protection for shoppers and are encouraged.
15. Roofing materials should be of a color and material consistent with the architectural character of the building and should convey a sense of permanence and quality. Roofing color and material specifications are to be provided at the site development plan.
16. A mix of building detailing and accent materials is encouraged to add creativity and variety. Specific materials and colors are to be provided at with the site development plan. An example of these accent materials includes granite, wrought iron, slate, glass, tile, and others as appropriate. Light to medium intensity colors with low reflectivity are preferred as the background building color.
17. Brighter colors may be used for accents, trim or highlighting architectural features. The warm, subdued hues of natural, earth colors are encouraged.
18. Color can be used to impact the scale and form of a building by highlighting various architectural elements.
19. Integration of fabric/canvas awnings, flat metal awnings, and trellises is encouraged.
20. A variety of wall mounted exterior light fixtures are encouraged, which fit the period or architectural style proposed. Unshielded exterior lighting and wall packs are prohibited.
21. Delivery, loading, trash, and other service areas must be screened on two sides or integrated into the building.
22. Screening must be accomplished by a wall constructed of integrally colored CMU, architectural metal screening, stone, stucco, textured stained concrete, or brick to match the primary structure.
23. All roof top or pad mounted mechanical units must be screened from general public view and integrated into the over-all building design.
24. Parking shall incorporate a mix of on-street parking and smaller lots spread throughout the development to encourage a walkable commercial core. Final parking configuration will be determined at Site Development Plan.

B. Building Placement and Orientation:
1. Buildings adjacent to a sidewalk shall be situated to provide a strong visual and physical connection between the sidewalk and the first floor.
2. Development shall relate to the site's aesthetic setting and context considering impacts and enhancements to natural features and important pedestrian view corridors.
3. The importance of spaces between buildings should be recognized in over-all building design, and these spaces should be planned and useful in shape and not simply be left over areas.
4. A sense of entry shall be created into the development by using signage and landscaping.
5. The arrangement of buildings, parking, and outdoor areas should recognize the site characteristics and relate to the surroundings in pattern, function, scale, character and materials.
6. Trash storage areas, mechanical equipment and similar areas should be screened from the Founders Parkway view corridor.

D. Amendments to Commercial Design Standards
Amendments to this Section may be submitted by the Owner, or successor, to the Town and subject to an administrative review and approval. Amendments must meet the intent of the Canyons Far South design vision. The Towns standard level of service review timelines shall apply.

LOWE

CORE
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720.328.1986
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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP DESIGN GUIDELINES

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

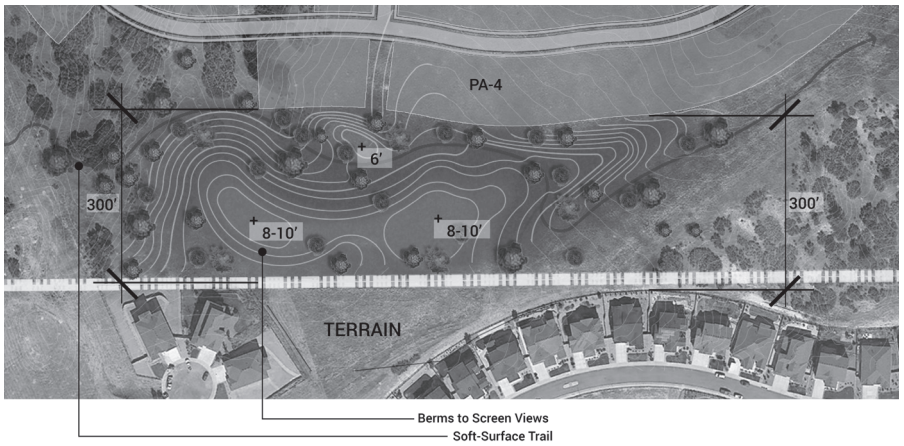
SHEET
11 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

CHARACTER OF SOUTHERN BUFFER



CONCEPTUAL PLAN FOR BUFFER AREA

CONCEPTUAL RENDERING OF BUFFER AREA

CHARACTER OF COMMERCIAL AREA

TYPICAL PEDESTRAIN ORIENTED STREETSCAPE

TYPICAL CENTRALIZED AREA FOR GATHERING, RETAIL, AND MULTI-MODAL TRAFFIC

NOTE:

IMAGES SHOWN FOR INTENDED CHARACTER OF BUFFER AND DEVELOPMENT.
ACTUAL LAYOUT AND BUILDING DESIGN WILL BE DETERMINED AT SITE DEVELOPMENT PLAN.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO

PLANNED DEVELOPMENT PLAN (PDP)
COMMERCIAL AREA AND SOUTHERN BUFFER CHARACTER

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

SHEET
12 OF 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP STANDARD NOTES

1. MINERAL RIGHTS ASSOCIATED WITH THIS DEVELOPMENT HAVE NOT BEEN SEVERED. NOTIFICATION OF DEVELOPMENT HEARINGS BEFORE PLANNING COMMISSION AND TOWN COUNCIL SHALL BE PROVIDED TO OWNERS OF MINERAL ESTATES PURSUANT TO ARTICLE 65.5 OF TITLE 24, C.R.S.
2. A PORTION OF THIS SITE LIES WITHIN FEMA FLOOD ZONE X & A PER MAP DATED March 16, 2016. NO STRUCTURES SHALL BE PERMITTED IN THE APPROVED 100-YEAR FLOOD PLAIN.
3. THIS DEVELOPMENT PLAN IS NOT IMPACTED BY THE TOWN OF CASTLE ROCK SKYLINE/RIDGELINE PROTECTION REGULATIONS.
4. THIS SITE IS WITHIN THE TOWN OF CASTLE ROCK PURPLE & RED WATER PRESSURE ZONE.
5. ALL-WEATHER (CONCRETE OR ASPHALT) SURFACED ACCESS ROADS CAPABLE OF WITHSTANDING THE IMPOSED LOADS OF FIRE APPARATUS (75,000 LBS.) AND ALL REQUIRED FIRE HYDRANTS SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING ALL CONSTRUCTION.
6. RIGHT-OF-WAY INGRESS AND EGRESS ACCESS FOR EMERGENCY VEHICLES AND PERSONAL IS GRANTED OVER, ACROSS, ON AND THROUGH ANY AND ALL PRIVATE ROADS, DRIVES, TRAILS AND WALKWAYS.
7. A WILDLAND/URBAN INTERFACE WILDFIRE VEGETATION MANAGEMENT PLAN (PLAN), OR COMPLIANCE LETTER, IS REQUIRED TO BE SUBMITTED FOR EACH PHASE OF THE PLANNED DEVELOPMENT, WITH THE FIRST SITE DEVELOPMENT PLAN OR CONSTRUCTION DRAWINGS FOR EVALUATION AND APPROVAL BY THE TOWN OF CASTLE ROCK FIRE DEPARTMENT. THE PLAN SHALL BE DEVELOPED BY A DESIGN PROFESSIONAL FAMILIAR WITH WILDFIRE MITIGATION TECHNIQUES AND STANDARDS. REFER TO THE TOWN OF CASTLE ROCK COMMUNITY WILDFIRE PROTECTION PLAN.
8. MONUMENTS, ORNAMENTAL COLUMNS, WINDOW WELLS, COUNTERFORTS, PATIOS, DECKS, RETAINING WALLS, AND THEIR COMPONENTS ARE NOT PERMITTED TO ENCROACH INTO UTILITY EASEMENTS.
9. THE EASTERN AREA OF PLANNING AREA 3 IS WITHIN A MAPPED DEBRIS-FLOW SUSCEPTIBLE AREA (DEBRIS FLOW SUSCEPTIBILITY MAP OF DOUGLAS COUNTY, COLORADO: MCCOY ET AL, CGS OPEN FILE REPORT OF-18-08). THE DEBRIS DEPOSITION/INUNDATION HAZARD AND ANY NEED FOR MITIGATION OR AVOIDANCE WILL BE EVALUATED BY A QUALIFIED PROFESSIONAL, AND THE CONCLUSIONS SUBMITTED TO THE TOWN WITH THE SUBMITTAL OF THE SITE DEVELOPMENT PLAN FOR THE SUBJECT AREA.
10. AN UPDATED GEOLOGIC HAZARD AND GEOTECHNICAL INVESTIGATION AND RECOMMENDATIONS WILL BE PROVIDED WITH THE RESPECTIVE SITE DEVELOPMENT PLANS AND PLATS.

UTILIZATION TABLE

	Site Totals	Private Open Space Areas	Percentage of Site
Acreage	409 ac		100.0%
Planning Areas	165.1ac		40.4%
Open Space Private (OSP)		+/- 8.5ac	2.1% (part of PA)
Open Space Dedicated (PL-2)	217.6 ac		53.2%
Public Land Dedicated (PL-1)	13.8ac		3.4%
Right-of-Way*	12.5 ac		3.1%

* Actual acreage To Be Determined at Site Plan

LEGAL DESCRIPTION

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:
1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:
1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;
2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:
1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:
1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:
1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;
2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:
1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:
1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

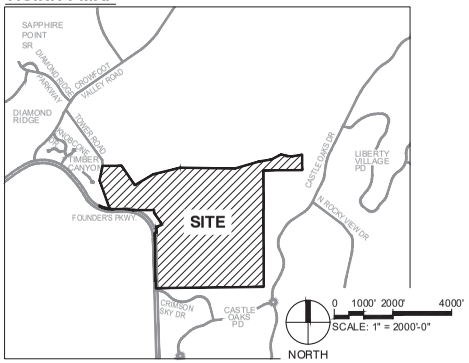
THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:
1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

SHEET INDEX

VICINITY MAP



PROJECT BENCHMARK

PROJECT BENCHMARK IS A REBAR WITH A 2.5" ALUMINUM CAP STAMPED "DOUGLAS COUNTY SECONDARY CONTROL 4.004007", SET FLUSH TO THE GROUND. LOCATED ON THE SOUTH SIDE OF CASTLE OAKS DRIVE, APPROXIMATELY 700 FEET NORTHEAST FROM THE INTERSECTION OF CASTLE OAKS DRIVE AND AUTUMN SAGE DRIVE. CASTLE ROCK, COLORADO. PUBLISHED ELEVATION = 1979.760 METERS (6495.20 FEET) NAVD88.

BASIS OF BEARING

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515".

VESTING STATEMENT

THIS CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN AND ZONING REGULATIONS CONSTITUTES A SITE SPECIFIC DEVELOPMENT PLAN PURSUANT TO CHAPTER 17.08 OF THE CASTLE ROCK MUNICIPAL CODE AND SECTION 24-68-101, ET SEQ., C.R.S., AND ESTABLISHES VESTED PROPERTY RIGHTS FOR 15 YEARS FROM ITS EFFECTIVE DATE TO UNDERTAKE AND COMPLETE THE DEVELOPMENT AND USE OF THE PROPERTY IN ACCORDANCE WITH THIS PLAN.

CERTIFICATION OF OWNERSHIP

THE UNDERSIGNED ARE ALL OF THE OWNERS OF THE ABOVE DESCRIBED PROPERTY IN THE TOWN OF CASTLE ROCK.

_____
CANYONS SOUTH, LLC, A DELAWARE LIMITED LIABILITY COMPANY

SIGNED THIS_____DAY OF_____, 20____

COUNTY OF _____)
STATE OF _____)

NOTARY BLOCK

SUBSCRIBED AND SWORN TO BEFORE ME THIS_____DAY OF_____, 20____

BY_____AS_____OF
CANYONS SOUTH, LLC.

_____
WITNESS MY HAND AND OFFICIAL SEAL

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

CONTACTS

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11777 SAN VICENTE BLVD #900
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310.820.6661
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720.328.1986
DIGSTUDIO.COM
CONTACT: BILL VITEK

TITLE CERTIFICATION

I, _____, AN AUTHORIZED REPRESENTATIVE OF_____A TITLE INSURANCE COMPANY LICENSED TO DO BUSINESS IN THE STATE OF COLORADO, HAVE MADE AN EXAMINATION OF THE PUBLIC RECORDS AND STATE THAT ALL OWNERS, MORTGAGES AND LIENHOLDERS OF THE PROPERTY ARE LISTED IN THE CERTIFICATE OF OWNERSHIP AND LIENHOLDER SUBORDINATION CERTIFICATE. 20____. SIGNED THIS_____DAY OF_____, 20____.

_____
AUTHORIZED REPRESENTATIVE

_____
TITLE INSURANCE COMPANY

COUNTY OF _____)
STATE OF _____)

NOTARY BLOCK

SUBSCRIBED AND SWORN TO BEFORE ME THIS_____DAY OF_____, 20____

BY_____AS AUTHORIZED REPRESENTATIVE
OF_____.

_____
WITNESS MY HAND AND OFFICIAL SEAL

_____
NOTARY PUBLIC

MY COMMISSION EXPIRES: _____

SURVEYOR'S CERTIFICATION

I, _____, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY ATTEST THAT THE LEGAL DESCRIPTION AS DESCRIBED HEREON WAS MADE UNDER MY DIRECT SUPERVISION.

_____ _____
MILES M. SMALL DATE
PROFESSIONAL LAND SURVEYOR
COLORADO PLS NO. 38534
FOR AND BEHALF OF CORE CONSULTANT, INC.

PLANNING COMMISSION RECOMMENDATION

THIS PLANNED DEVELOPMENT PLAN WAS RECOMMENDED FOR APPROVAL BY THE PLANNING COMMISSION OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE_____ DAY OF_____, 20____.

_____ _____
CHAIR DATE

ATTEST:

_____ _____
DIRECTOR OF DEVELOPMENT SERVICES DATE

TOWN COUNCIL APPROVAL

THIS PLANNED DEVELOPMENT PLAN WAS APPROVED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO, ON THE_____DAY OF_____, 20____.

_____ _____
MAYOR DATE

ATTEST:

_____ _____
TOWN CLERK DATE

DOUGLAS COUNTY CLERK AND RECORDER'S CERTIFICATE

THIS PLANNED DEVELOPMENT PLAN WAS FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK AND RECORDER OF DOUGLAS COUNTY AT _____ON THE_____DAY OF_____, 20_____AT RECEPTION NO. _____.

DOUGLAS COUNTY CLERK AND RECORDER

BY: _____ _____
DEPUTY DATE

CANYONS FAR SOUTH PLANNED DEVELOPMENT PLAN TOWN OF CASTLE ROCK PROJECT NO. PDP21-0003

LOWE
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DENVER, CO 80202
720.328.1986
DIGSTUDIO.COM
Dig Studio

CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
LANNED DEVELOPMENT PLAN (PDP)
COVER SHEET

ATTACHMENT D

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DRAWN BY
CHECKED B

JOB
20-2

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1 OF 12

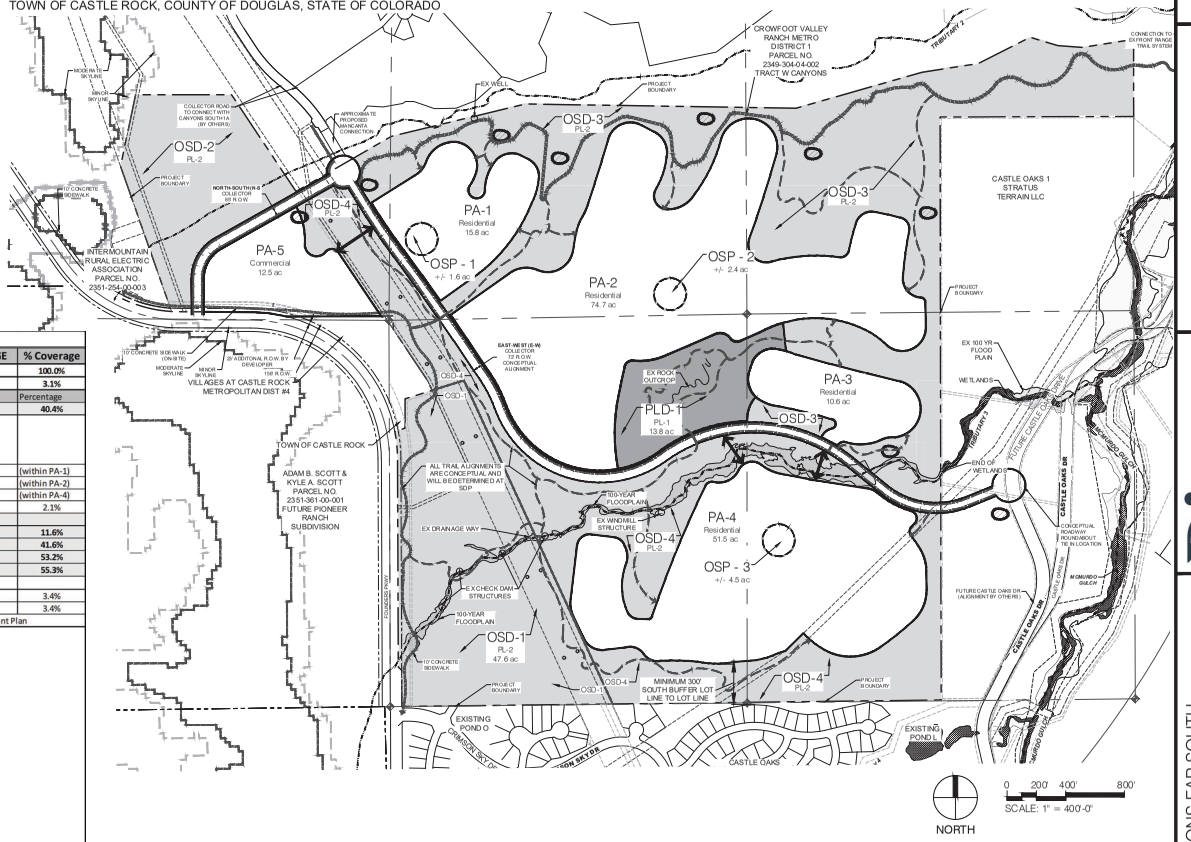
CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

LEGEND

- PROPERTY BOUNDARY
- DRAINAGEWAY
- PROPOSED OSD
- PROPOSED PLD
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS
- ACCESS POINT
- PROPOSED POND
- EASEMENTS
- 10' CONCRETE TRAIL
- 8' SIDEWALK
- 4' SOFT SURFACE TRAIL



Canyons Far South Zoning Summary Table and Development Standards

AREAS						Zoning	ACREAGE	% Coverage
SITE AREA							409	100.0%
SPINE ROAD ROW							12.5	3.1%
PLANNING AREAS	PA-1	PA-2	PA-3	PA-4	PA-5			
Acreage	15.8	74.7	10.6	51.5	12.5			
Allowable Uses	Single-family with attached or detached garages	Single-family with attached or detached garages	Single-family with attached or detached garages	Single-family with attached or detached garages	Commercial			
Minimum Lot Size	4,250	4,000	4,250	4,000				
Maximum Lot Size	11,700	11,700	11,700	11,700				
Dwelling Unit per PA	40 - 55	190 - 225	25 - 32	190	N/A			
Dwelling units per acre	2.5 - 3.5	2.5 - 3.0	2.4 - 3.0	3.7				
Total Dwelling Units	474							
Gross DU per Acre	1.16							
Maximum Building SF	N/A	N/A	N/A	N/A	60,000sf			
Maximum Building Height	35'	35'	35'	35'	35'*			
Lot Size and Setbacks								
Commercial Buildings								
Minimum Lot Size					2,000sf			
Front					0'			
Rear					10'			
Side					0'			
Side to Street					10',25'at collector and above			
Paired Homes								
Minimum Lot Size (per Unit)	4,000	4,000	4,000	4,000				
Front	10'	10'	10'	10'				
Rear	10'	10'	10'	10'				
Side	5'	5'	5'	5'				
Side at Shared Wall	0'	0'	0'	0'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Cluster Homes								
Minimum Lot Size	4,875	4,875	4,875	4,875				
Front	10'	10'	10'	10'				
Rear	5'	5'	5'	5'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Cottage Lots								
Minimum Lot Size	4,250	4,250	4,250	4,250				
Front	10'	10'	10'	10'				
Rear	5'	5'	5'	5'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Small Lot								
Minimum Lot Size	5,500	5,500	5,500	5,500				
Front	10'	10'	10'	10'				
Rear	25'	25'	25'	25'				
Side	5'	5'	5'	5'				
Side to Street	7.5'	7.5'	7.5'	7.5'				
Medium Lot								
Minimum Lot Size	6,000	6,000	6,000	6,000				
Front	15'	15'	15'	15'				
Rear	30'	30'	30'	30'				
Side	7.5'	7.5'	7.5'	7.5'				
Side to Street	10'	10'	10'	10'				
Large Lot								
Minimum Lot Size	7,000	7,000	7,000	7,000				
Front	15'	15'	15'	15'				
Rear	30'	30'	30'	30'				
Side	10'	10'	10'	10'				
Side to Street	12.5'	12.5'	12.5'	12.5'				
Minimum Buffer	N/A	N/A	N/A	300-foot buffer property line to property line	N/A			
Minimum Parking	2-car garage	2-car garage	2-car garage	2-car garage				
Maximum Parking	4-car garage	4-car garage	4-car garage	4-car garage				

*See Design Guidelines.

PAs/OSP/PL-1/PL-2		Acreage	Percentage
Planning Areas		**165.1**	**40.4%**
Open Space Private (OSP)*			
OSP - 1	OSP	1.6	(within PA-1)
OSP - 2	OSP	2.4	(within PA-2)
OSP - 3	OSP	4.5	(within PA-4)
Total OSP		8.5	2.1%
Open Space Dedicated (OSD)			
OSD - 1	**PL - 2**	**47.6**	**11.6%**
OSD-2, OSD-3, OSD-4	**PL - 2**	**170**	**41.6%**
Total OSD		**217.6**	**53.2%**
Total OSP & OSD		**226.1**	**55.3%**
Public Land Dedication (PLD)			
PLD - 1	PL - 1	13.8	3.4%
Total PLD		13.8	3.4%

* Actual acreage to be determined at Site Development Plan

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
SITE CHARTS AND NOTES

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

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2 OF 12

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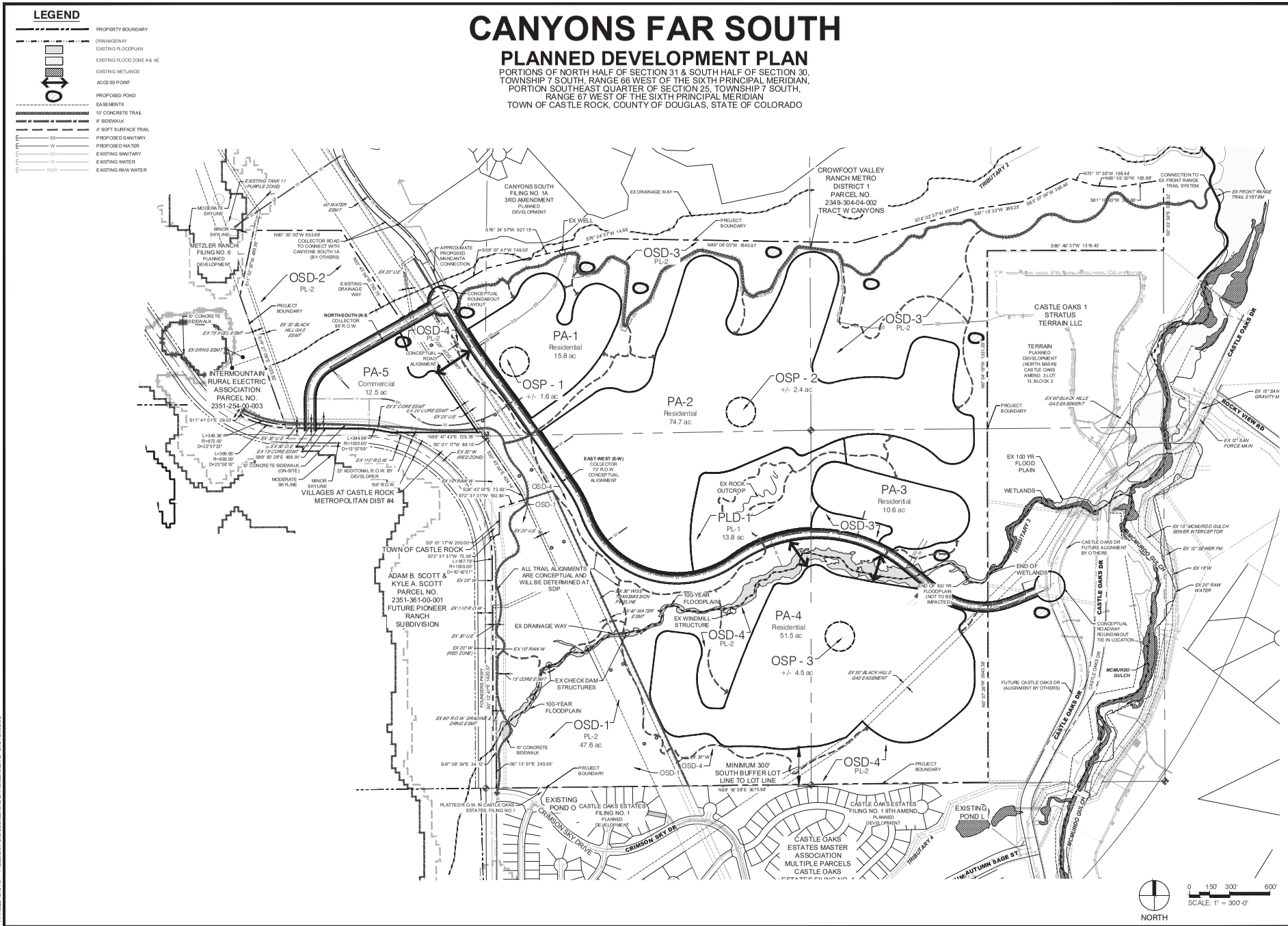
CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP SITE PLAN

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

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CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
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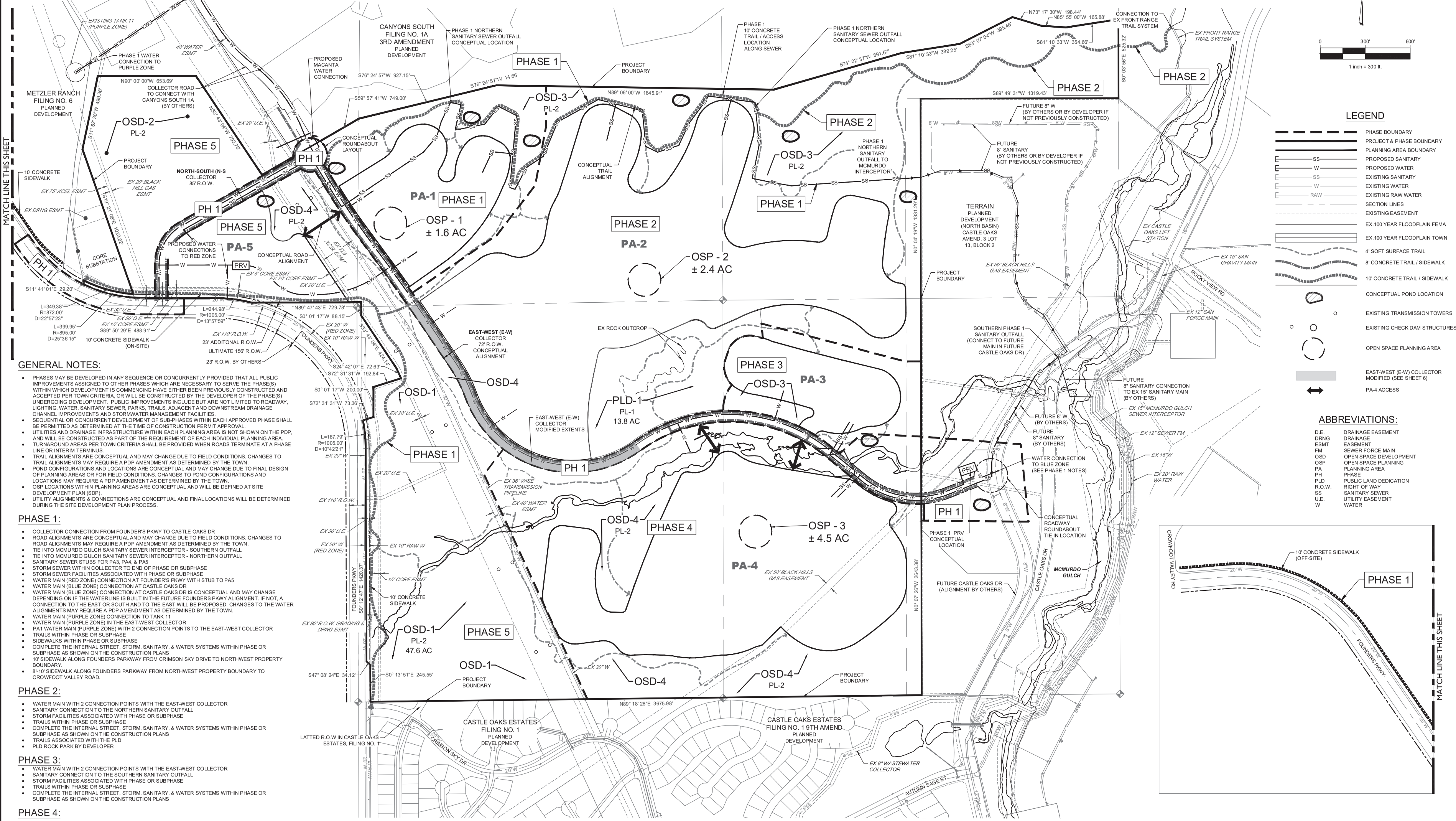
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



GENERAL NOTES:

- PHASES MAY BE DEVELOPED IN ANY SEQUENCE OR CONCURRENTLY PROVIDED THAT ALL PUBLIC IMPROVEMENTS ASSIGNED TO OTHER PHASES WHICH ARE NECESSARY TO SERVE THE PHASE(S) WITHIN WHICH DEVELOPMENT IS COMMENCING HAVE EITHER BEEN PREVIOUSLY CONSTRUCTED AND ACCEPTED PER TOWN CRITERIA, OR WILL BE CONSTRUCTED BY THE DEVELOPER OF THE PHASE(S) UNDERGOING DEVELOPMENT. PUBLIC IMPROVEMENTS INCLUDE BUT ARE NOT LIMITED TO ROADWAY, LIGHTING, WATER, SANITARY SEWER, PARKS, TRAILS, ADJACENT AND DOWNSTREAM DRAINAGE CHANNEL IMPROVEMENTS AND STORMWATER MANAGEMENT FACILITIES.
- SEQUENTIAL OR CONCURRENT DEVELOPMENT OF SUB-PHASES WITHIN EACH APPROVED PHASE SHALL BE PERMITTED AS DETERMINED AT THE TIME OF CONSTRUCTION PERMIT APPROVAL.
- UTILITIES AND DRAINAGE INFRASTRUCTURE WITHIN EACH PLANNING AREA IS NOT SHOWN ON THE PDP, AND WILL BE CONSTRUCTED AS PART OF THE REQUIREMENT OF EACH INDIVIDUAL PLANNING AREA.
- TURNAROUND AREAS PER TOWN CRITERIA SHALL BE PROVIDED WHEN ROADS TERMINATE AT A PHASE LINE OR INTERIM TERMINUS.
- TRAIL ALIGNMENTS ARE CONCEPTUAL AND MAY CHANGE DUE TO FIELD CONDITIONS. CHANGES TO TRAIL ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- POND CONFIGURATIONS AND LOCATIONS ARE CONCEPTUAL AND MAY CHANGE DUE TO FINAL DESIGN OF PLANNING AREAS OR FOR FIELD CONDITIONS. CHANGES TO POND CONFIGURATIONS AND LOCATIONS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- OSP LOCATIONS WITHIN PLANNING AREAS ARE CONCEPTUAL AND WILL BE DEFINED AT SITE DEVELOPMENT PLAN (SDP).
- UTILITY ALIGNMENTS & CONNECTIONS ARE CONCEPTUAL AND FINAL LOCATIONS WILL BE DETERMINED DURING THE SITE DEVELOPMENT PLAN PROCESS.

PHASE 1:

- COLLECTOR CONNECTION FROM FOUNDER'S PKWY TO CASTLE OAKS DR
- ROAD ALIGNMENTS ARE CONCEPTUAL AND MAY CHANGE DUE TO FIELD CONDITIONS. CHANGES TO ROAD ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- TIE INTO MCMURDO GULCH SANITARY SEWER INTERCEPTOR - SOUTHERN OUTFALL
- TIE INTO MCMURDO GULCH SANITARY SEWER INTERCEPTOR - NORTHERN OUTFALL
- SANITARY SEWER STUBS FOR PA3, PA4, & PA5
- STORM SEWER WITHIN COLLECTOR TO END OF PHASE OR SUBPHASE
- STORM SEWER FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- WATER MAIN (RED ZONE) CONNECTION AT FOUNDER'S PKWY WITH STUB TO PA5
- WATER MAIN (BLUE ZONE) CONNECTION AT CASTLE OAKS DR
- WATER MAIN (BLUE ZONE) CONNECTION AT CASTLE OAKS DR IS CONCEPTUAL AND MAY CHANGE DEPENDING ON IF THE WATERLINE IS BUILT IN THE FUTURE FOUNDERS PKWY ALIGNMENT. IF NOT, A CONNECTION TO THE EAST OR SOUTH AND TO THE EAST WILL BE PROPOSED. CHANGES TO THE WATER ALIGNMENTS MAY REQUIRE A PDP AMENDMENT AS DETERMINED BY THE TOWN.
- WATER MAIN (PURPLE ZONE) CONNECTION TO TANK 11
- WATER MAIN (PURPLE ZONE) IN THE EAST-WEST COLLECTOR
- PA1 WATER MAIN (PURPLE ZONE) WITH 2 CONNECTION POINTS TO THE EAST-WEST COLLECTOR
- TRAILS WITHIN PHASE OR SUBPHASE
- SIDEWALKS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS
- 10' SIDEWALK ALONG FOUNDERS PARKWAY FROM CRIMSON SKY DRIVE TO NORTHWEST PROPERTY BOUNDARY.
- 8'-10' SIDEWALK ALONG FOUNDERS PARKWAY FROM NORTHWEST PROPERTY BOUNDARY TO CROWFOOT VALLEY ROAD.

PHASE 2:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE NORTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS
- TRAILS ASSOCIATED WITH THE PLD
- PLD ROCK PARK BY DEVELOPER

PHASE 3:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE SOUTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

PHASE 4:

- WATER MAIN WITH 2 CONNECTION POINTS WITH THE EAST-WEST COLLECTOR
- SANITARY CONNECTION TO THE SOUTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

PHASE 5:

- WATER MAIN (RED ZONE) CONNECTION TO FOUNDERS PKWY
- SANITARY CONNECTION TO THE NORTHERN SANITARY OUTFALL
- STORM FACILITIES ASSOCIATED WITH PHASE OR SUBPHASE
- TRAILS WITHIN PHASE OR SUBPHASE
- COMPLETE THE INTERNAL STREET, STORM, SANITARY, & WATER SYSTEMS WITHIN PHASE OR SUBPHASE AS SHOWN ON THE CONSTRUCTION PLANS

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CANYONS SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PHASING PLAN

NOT FOR CONSTRUCTION

DESIGNED BY: CGV
DRAWN BY: CGV
CHECKED BY: KJR

JOB NO. 20-245

SHEET 4 OF 12

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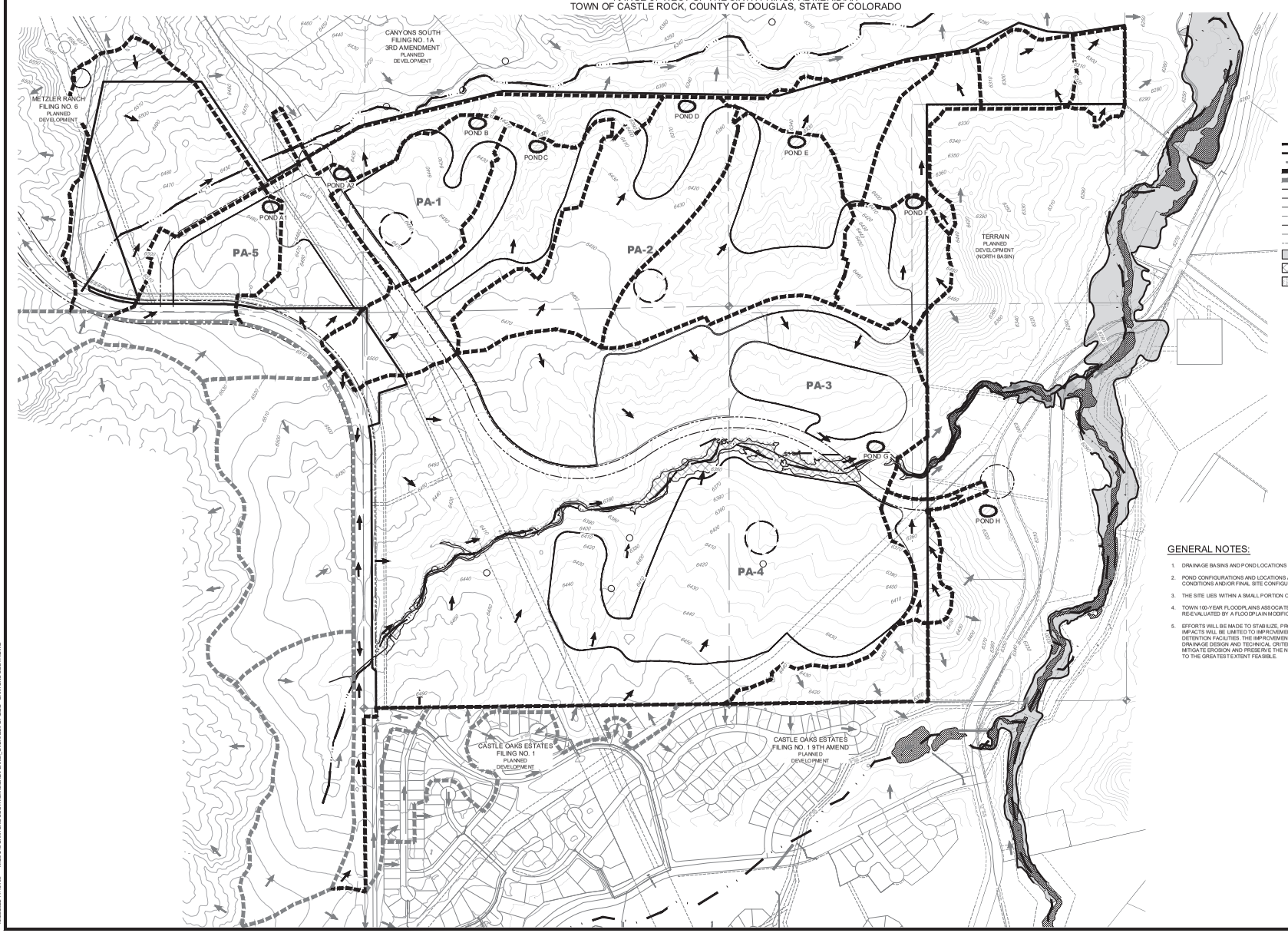
CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



0 300' 600'
1 inch = 300 ft.

LEGEND

- PHASE BOUNDARY
- PLANNING AREA BOUNDARY
- DIRECTIONAL FLOW ARROW
- PROPOSED DRAINAGE BASIN
- EXISTING DRAINAGE BASIN
- 5280 PROPOSED MAJOR CONTOUR
- 5279 PROPOSED MINOR CONTOUR
- 5280 EXISTING MAJOR CONTOUR
- 5279 EXISTING MINOR CONTOUR
- EX DRAINAGE WAY
- SECTION LINES
- EXISTING EASEMENT
- EX 100 YEAR FLOODPLAIN FEMA
- EX 100 YEAR FLOODPLAIN TOWN
- WETLANDS
- CONCEPTUAL POND LOCATION
- EXISTING CHECK DAM STRUCTURES

ABBREVIATIONS:

D.E.	DRAINAGE EASEMENT
DRNG	DRAINAGE
ESMT	EASEMENT
FM	SEWER FORCE MAIN
OSD	OPEN SPACE DEVELOPMENT
OSP	OPEN SPACE PLANNING
PA	PLANNING AREA
PH	PHASE
PLD	PUBLIC LAND DEDICATION
R.O.W.	RIGHT OF WAY
SS	SANITARY SEWER
U.E.	UTILITY EASEMENT
W	WATER

GENERAL NOTES:

1. DRAINAGE BASINS AND POND LOCATIONS ARE APPROXIMATE.
2. POND CONFIGURATIONS AND LOCATIONS ARE CONCEPTUAL AND MAY CHANGE DUE TO FIELD CONDITIONS AND/OR FINAL SITE CONFIGURATIONS.
3. THE SITE LIES WITHIN A SMALL PORTION OF ZONE A OF THE FEMA 100-YEAR FLOODPLAIN.
4. TOWN 100-YEAR FLOODPLAINS ASSOCIATED WITH THE MCMURDO GULCH TRIBUTARY 3 WILL BE RE-EVALUATED BY A FLOODPLAIN MODIFICATION STUDY.
5. EFFORTS WILL BE MADE TO STABILIZE, PROTECT, AND PRESERVE THE MAJOR DRAINAGEWAYS ON-SITE. IMPACTS WILL BE LIMITED TO IMPROVEMENTS IN THE AREAS OF DISCHARGES FROM THE PROPOSED DETENTION FACILITIES. THE IMPROVEMENTS WILL CONFORM TO THE TOWN OF CASTLE ROCK STORM DRAINAGE DESIGN AND TECHNICAL CRITERIA MANUAL. THESE IMPROVEMENTS WILL BE DESIGNED TO MITIGATE EROSION AND PRESERVE THE NATURAL CHARACTER AND HISTORICAL DRAINAGE PATTERNS TO THE GREATEST EXTENT FEASIBLE.

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CANYONS SOUTH
CASTLE ROCK, COLORADO

PLANNED DEVELOPMENT PLAN (PDP)
GRADING & DRAINAGE

NOT FOR CONSTRUCTION

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DRAWN BY: CGV
CHECKED BY: KJK

JOB NO. 20-245

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CANYONS SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
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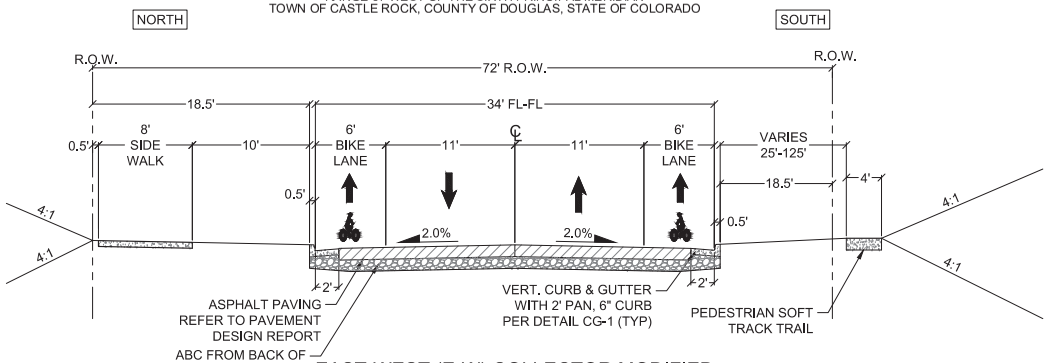
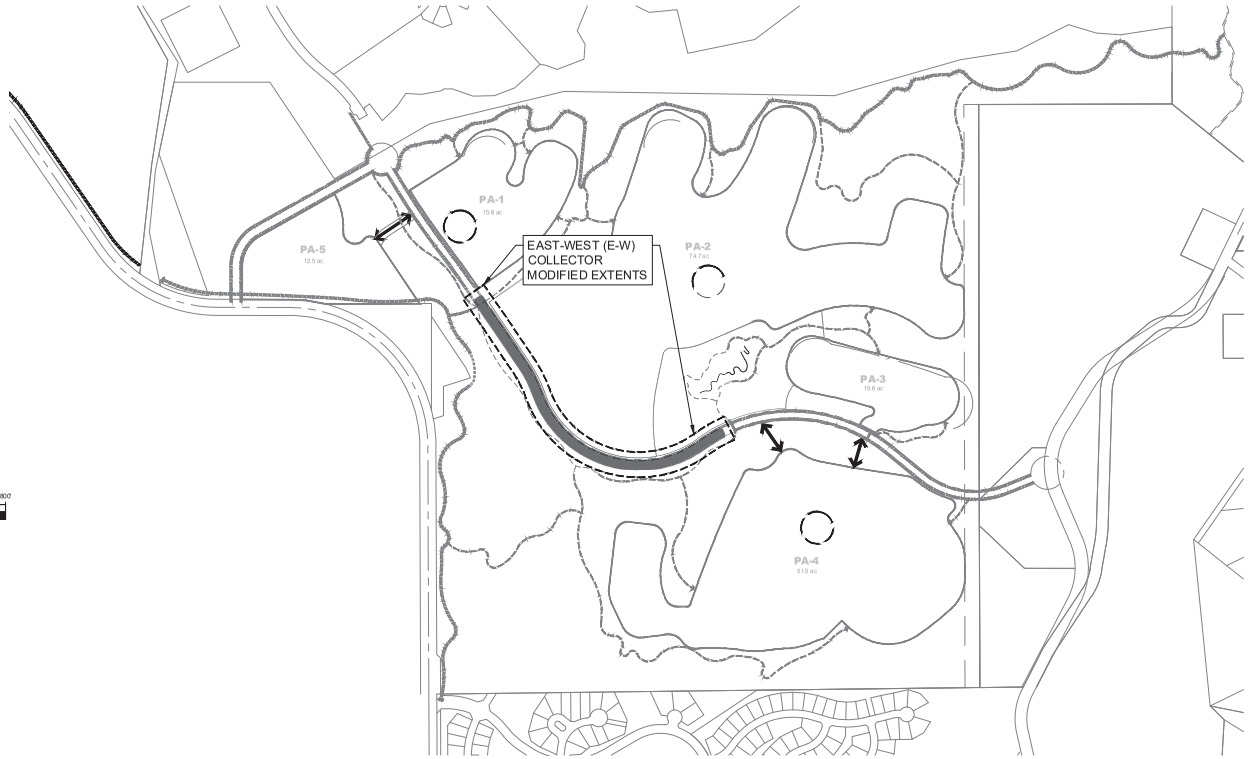
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



EAST-WEST (E-W) COLLECTOR MODIFIED
72' ROW
1" = 5'



NOTE:

1. A MODIFICATION TO THE TOWNS COLLECTOR RESIDENTIAL TYPICAL SECTION IS PROPOSED FOR AN 8 FT WIDE SIDEWALK ON THE NORTH SIDE ONLY FOR THE EAST-WEST (E-W) COLLECTOR. SEE SECTION THIS SHEET & TCV22-0115.
2. ALL PROPOSED STREET SECTIONS OTHER THAN THE E-W COLLECTOR MEET TOWN STANDARDS FOUND IN THE TOWNS TRANSPORTATION DESIGN CRITERIA MANUAL.
3. SEE LEFT & PHASING PLAN FOR LOCATION

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CANYONS SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
ROAD SECTIONS

NOT FOR CONSTRUCTION

DESIGNED BY: CGV
DRAWN BY: CGV
CHECKED BY: KJK

JOB NO.
20-245

SHEET
6 OF 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
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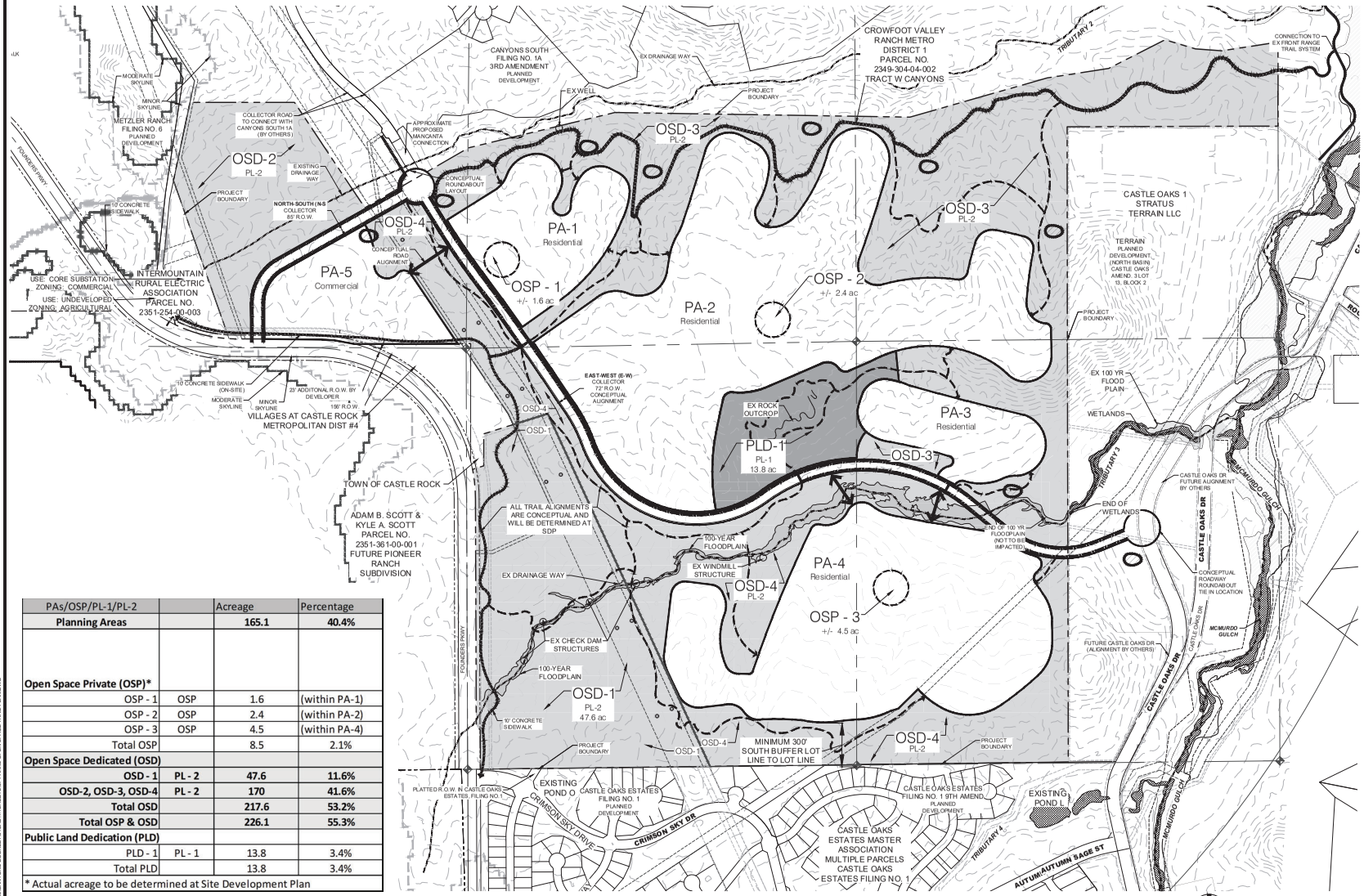
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- PROPERTY BOUNDARY
- EASEMENTS
- DRAINAGEWAY
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS
- PLD (PARK LAND DEDICATION)
- OSD (OPEN SPACE DEDICATION)
- OSP (OPEN SPACE PRIVATE)
- 10' CONCRETE TRAIL
- 8' SIDEWALK
- 4' SOFT SURFACE TRAIL
- ACCESS POINT
- PROPOSED POND

NOTE:
OPEN SPACE AREAS ARE CONCEPTUAL. FINAL AREAS AND ACREAGES WILL BE DEFINED AT SITE PLAN.

PAs/OSP/PL-1/PL-2		Acreage	Percentage
Planning Areas		**165.1**	**40.4%**
Open Space Private (OSP)*			
OSP - 1	OSP	1.6	(within PA-1)
OSP - 2	OSP	2.4	(within PA-2)
OSP - 3	OSP	4.5	(within PA-4)
Total OSP		8.5	2.1%
Open Space Dedicated (OSD)			
OSD - 1	**PL - 2**	**47.6**	**11.6%**
OSD-2, OSD-3, OSD-4	**PL - 2**	**170**	**41.6%**
Total OSD		**217.6**	**53.2%**
Total OSP & OSD		**226.1**	**55.3%**
Public Land Dedication (PLD)			
PLD - 1	PL - 1	13.8	3.4%
Total PLD		13.8	3.4%

* Actual acreage to be determined at Site Development Plan

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PARKS, OPEN SPACE AND TRAILS PLAN

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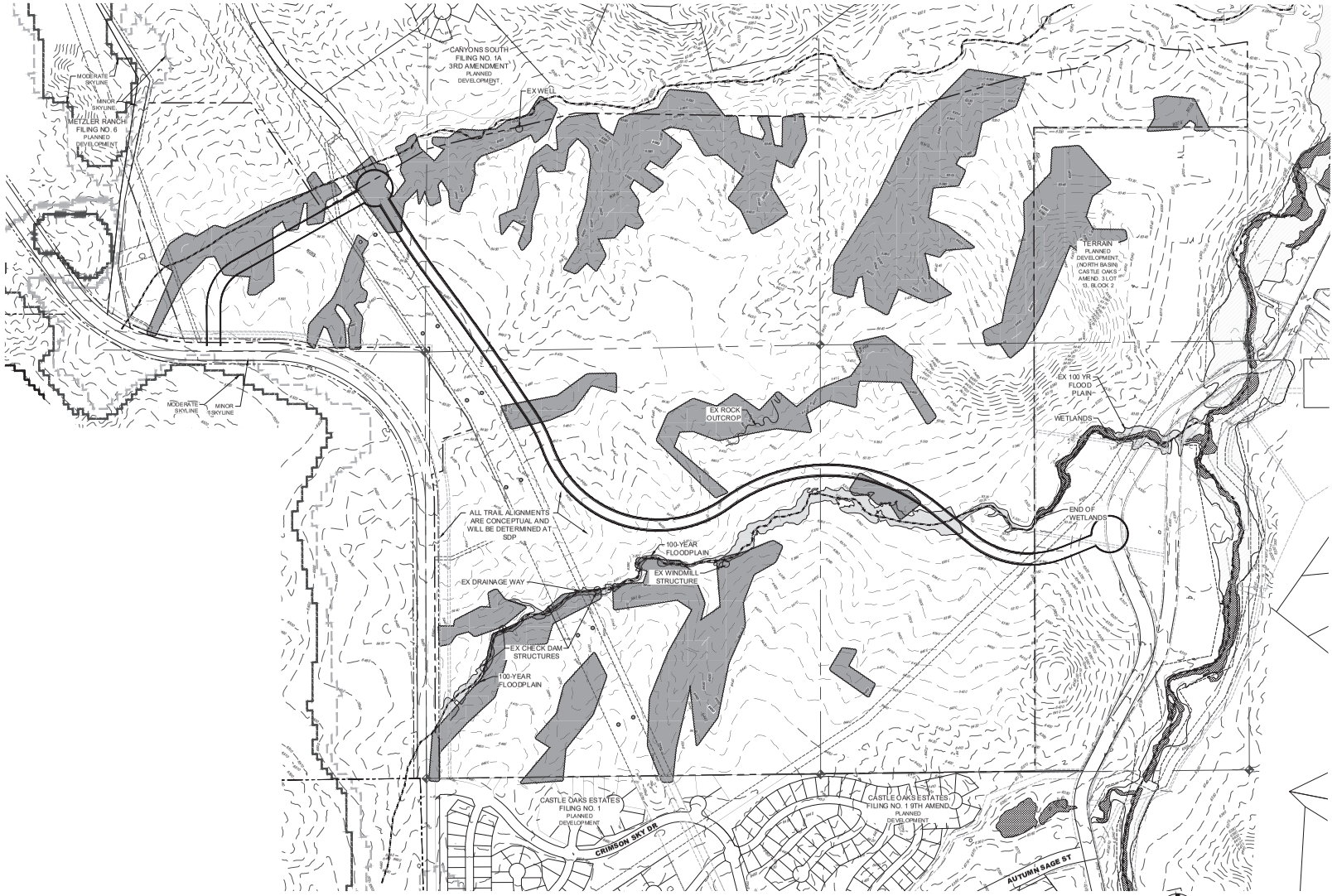
CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



LEGEND

- PROPERTY BOUNDARY
- EASEMENTS
- DRAINAGEWAY
- EXISTING PONDEROSA PINE VEGETATION STANDS
- EXISTING FLOODPLAIN
- EXISTING FLOOD ZONE A & AE
- EXISTING WETLANDS

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CANYONS FAR SOUTH
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PLANNED DEVELOPMENT PLAN (PDP)
NATURAL FEATURES

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8 OF 12

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CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
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RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP ZONING REGULATIONS

SECTION 1 GENERAL PROVISIONS

1.1 PURPOSE

A. Statement of Purpose

The purpose of the Planned Development Plan Zoning Regulations (PDP Zoning Regulations) is to establish standards for the development and improvement of the Canyons Far South property (Property). The standards contained in these PDP Zoning Regulations are intended to carry out the goals of the Canyons Far South Planned Development Plan (PDP).

B. Application

These standards and development controls shall apply to the Property as shown on the PDP. These PDP Zoning Regulations run with the land and shall bind the Owner and its successors or assigns of the Property.

C. Development Phasing

The development phasing order indicated on the PDP is only advisory in nature as set forth in the General Notes thereon, and is not obligatory upon the Owner pursuant to the provisions of the Development Agreement described below.

D. Severability of Provisions

In the event any provision herein shall be determined to be illegal or void by the final order of any court of competent jurisdiction, the remaining provisions shall remain in full force and effect.

E. Annexation and Development Agreement

In addition to these regulations, certain provisions of the development of the PDP are controlled by the Annexation and Development Agreement ("Development Agreement") between the Town of Castle Rock and the Owner as approved by the Town Council on the _____ day of_____, 2022, by Resolution No. _____.

1.2 AUTHORITY

A. Authority

The authority of these PDP Zoning Regulations is Chapter 17.32 (PDP-Planned Development District) of the Castle Rock Municipal Code, as amended (Code).

B. Adoption

The Town Council approved the PDP and PDP Zoning Regulations pursuant to Section 17.34 of Title 17 (Zoning) of the Code after appropriate public notice and hearing on _____, 2022 by Ordinance No. _____.

C. Relationship of Town of Castle Rock Regulations

All Town ordinances and regulations, as the same are amended from time to time, shall apply to and be enforceable in a Planned Development. Accordingly, such Town ordinances and regulations shall govern and control over any conflicting provisions in the PDP Zoning Regulations unless such conflicting provision is vested as an express property development right under the Development Agreement pursuant to Chapter 17.34, Section 17.30.040, A.3. of the Code.

D. Maximum Level of Development

The total number of dwelling units approved for development within each established Planning Area pursuant to the PDP is the maximum allowed for platting and development within that Planning Area. The actual number of dwelling units approved within a Planning Area will be determined at the Site Development Plan (SDP)/Subdivision Plat stage of review. However, in no event shall the total count of all residential dwelling units under the PDP Plan exceed 474.

1.3. CONTROL PROVISIONS

A. Incorporation of the PDP

The PDP includes the type and intensity of permitted uses, and the location and boundaries of Planning Areas, and is hereby incorporated by reference into these PDP Zoning Regulations.

B. Planning Area Boundaries

The boundaries and acreage of all Planning Areas within the Property are shown on the PDP. Where a Planning Area abuts an internal local street or drive, the boundary shall be the centerline of the street. Where a Planning Area abuts an arterial or collector street, the boundary shall be the right-of-way of that street as indicated on the PDP.

C. Administrative Amendments to the PDP Acreage and Dwelling Unit Count per Planning Area

There shall be limited flexibility in determining the exact location of the Planning Area boundaries and Dwelling Unit count within designated Planning Areas. A maximum of twenty percent (20%) change or adjustment to the Planning Area boundaries, as measured by acreage, and in Dwelling Unit count between and among Planning areas is permitted. The boundary change or adjustment must be supported by an analysis which shows that no more than twenty percent (20%) of permitted contiguous acreage is in a different location from the Planning Area boundary depicted on the PDP.

D. Road Alignments

The PDP is intended to depict general locations of roadways. Final road alignments are subject to adjustment and changes resulting from Owner's engineering studies. Minor changes to road alignments can be accomplished by the Owner through the platting process without any amendment to the PDP or PDP Zoning Regulations. Major road alignments, as determined by the Town of Castle Rock Development Services Director, shall follow the PDP Amendment procedure as provided in the Code.

SECTION 2 DEFINITIONS

In addition to the standard definitions found in the Town Code, the following definitions of terms shall apply to this PDP:

2.1 Paired Homes

Dwelling Units sharing one common building wall, a maximum total of 2 dwelling units per structure.

2.2 Cluster Home

Detached single-family dwelling unit sharing one common auto court access way.

2.3 Detached Accessory Structures

Accessory Structures which are not physically connected to the main dwelling unit on the lot. As used herein, the term detached accessory structure shall include, but not be limited to a pool house, outdoor kitchen structure, and a greenhouse or garden shed. These structures shall not count toward the total number of all residential dwelling units permitted under the PDP.

2.4 Owner

Canyons South LLC, or its successors or assigns.

2.5 Open Space Private - OSP

Open Space that is to remain in private common ownership and use and is maintained by an HOA or Metropolitan District which is suitable for a clubhouse as well as indoor or outdoor recreation facilities, pocket parks, landscaping, passive and/or active recreation, gardens, view protections and enhancement, buffers and/or other appropriate uses.

2.6 Open Space Dedicated (OSD) – PL-2

Open Space that will be dedicated to and owned and maintained by the Town. Land use will follow the Town of Castle Rock Municipal Code 17.30.030.

2.7 Public Land Dedication (PLD) – PL-1

Park land that will be dedicated to and owned and maintained by the Town. Land use will follow the Town of Castle Rock Municipal Code 17.30.020.

SECTION 3 PA-1, PA-2, PA-3, and PA-4 | RESIDENTIAL

3.1. Intent

The residential PA neighborhoods will include residential lots and accessory structures and uses, open space, streets, landscape tracts and trail corridors which will connect the residences to the Property's amenities and extensive trail networks.

3.2 Uses Permitted by Right

A. Detached single family dwellings with attached or detached private garages.
B. Paired Homes
C. Cluster Homes
D. Public and private open space, parks, and recreational uses, trails and facilities.
E. Recreation or clubhouse facilities and associated parking.
F. Public and Private Utilities and appurtenant facilities.
G. Drainage and detention facilities.

3.3 Accessory Uses and Structures

A. Community information kiosks
B. Community mailbox kiosks
C. Detached garages
D. Storage shed, 120 sq. ft. maximum and subject to architectural and maintenance controls/covenants
E. Private swimming pools and spas
E. Private tennis courts
F. Outdoor kitchen or kitchen/BBQ structures
G. A detached subordinate use of which is customarily incidental to that of the main building or to the main use of the land and which is located on the same lot with the main building or use.

3.4 Temporary Uses

A. Construction offices and material storage shall be permitted for a maximum period of sixty (60) consecutive days after completion of actual construction in those areas being served by such construction office or material storage area.
B. Temporary sales trailers, model homes with parking area, show home complexes, temporary sales signage and associated uses.

3.5 Residential Development Standards

A. Minimum standard lot Sizes:

Lot Type	Minimum Lot Size	Maximum Lot Size
Paired Home Lots	4,000 SF	5,500 SF
Cluster Homes Lots	4,875 SF (with shared access)	6,000 SF (with shared access)
Cottage Lots	4,250 SF	5,500 SF
Small Lots	5,500 SF	7,000 SF
Medium Lots	6,000 SF	8,500 SF
Large Lots	7,000 SF	11,700 SF

B. Maximum Building height: 35 feet for primary structures

C. Minimum standard lot width:
- At the street: 50 feet
- At building setback: 50 feet
- At a cul-de-sac, knuckle or similarly curved frontage at the street: 35 feet
- Flag lot width at street: 25 feet

D. Primary structure minimum setbacks:

	Front	Rear	Side	Side to Street	Notes
Paired Homes	10*	10*	5*	7.5	* Paired Home Front and Rear Setbacks must be offset 5ft from adjacent structure
Cluster Homes	10	5	7.5	7.5	
Cottage Lots	10	5**	7.5	7.5	** Rear 5 ft for garage, 25ft for house
Small Lots	10	25	5	7.5	
Medium Lots	15	30	7.5	10	
Large Lots	15	30	10	12.5	

E. Accessory structure maximum height: 25 feet

F. The PA 4 southern boundary with Castle Oaks Estates shall maintain a minimum rear lot line to rear lot line buffer of 300' separation.

G. Garage accessory structure minimum front setback (from local street right-of-way):
- 20 feet to the face of a garage for front loaded detached garage
- 15 feet to the side of a side loaded detached garage
- Accessory structures other than detached garages are not permitted forward of the front facade of the primary structure including the attached garage

H. Accessory structure minimum rear setback: 25 feet

I. Accessory structure minimum side setback: 10 feet

J. Accessory structure minimum side to street setback: 15 feet; 20 feet to the face of a side loaded detached garage

K. Encroachments

1. Uncovered decks and uncovered patios 30 inches or less above grade may encroach the rear or side setback provided they are no closer than five (5) feet to the rear or side property line.
2. Uncovered decks and patios greater than 30 inches in height above grade may encroach the rear or side setback provided they are no closer than 5 feet to a side lot line and 15 feet to the rear lot line.
3. Window Wells, Counterforts, Bay Windows and Roof Overhangs are permitted to encroach a maximum of 30" into primary structure setbacks.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP ZONING REGULATIONS

NOT FOR CONSTRUCTION

DESIGNED BY: _____
DRAWN BY: _____
CHECKED BY: _____

JOB NO. 20-245

SHEET 9 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
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PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP ZONING REGULATIONS (CONTINUED)

SECTION 4 PA-5 | COMMERCIAL

4.1. Intent

The commercial use Planning Area is intended to provide neighborhood level commercial and retail. It will be accessed via the main entry road into the Property. Direct access from the project's main spine road, providing internal access from the residential planning areas interior to the project, may also be utilized. Open space, streets, landscape tracts and multi-modal trail corridors will connect the residences to this planning area's amenities and commercial uses. Individual lots within the commercial Planning Area will be defined at the SDP and Plat submittal.

4.2 Uses Permitted by Right

A. Retail
B. Restaurants
C. Office space
D. Personal Services
E. Public and private open space, plazas, parks, and recreational uses, trails and incidental related facilities
F. Utilities and appurtenant facilities
G. Drainage and detention facilities

4.3 Accessory Uses

A. Community information kiosks
B. Accessory structures
C. Outdoor merchandise displays, 120 sq. ft. maximum and subject to architectural and maintenance controls/ covenants

4.4 Uses by Special Review

A. Schools: day care centers, pre-school facilities, and learning facilities.
B. Food Service with Drive-Thru

4.5 Prohibited Uses

A. Automobile service/fuel station/wash/rental.
B. Auto body and vehicle/RV/boat storage, equipment, repair, sales and leasing.
C. Marijuana Establishments
D. Tattoo Parlors
E. Convenience Store with Gas Station
F. Outdoor Storage

4.6 Temporary Uses

A. Construction offices and material storage shall be permitted in all use areas during and for a maximum period of sixty (60) consecutive days after cessation of actual construction in those areas being served by such construction office or material storage area.
B. Temporary sales trailers, model homes with parking area, show home complexes, temporary sales signage and associated uses.

4.7 Development Standards

A. Minimum standard lot area: 2,000 square feet
B. Maximum Building size: 25,000 square feet
C. Maximum height (Buildings and Structures): 35 feet for buildings and structures. Signature architectural elements such as a clock tower, windmill, or entry/landscape feature are limited to a maximum height of 45 feet.
D. Setbacks
  i. Primary Structure
    a. ROW
      1. Front
        (a) From Founders: 30 feet
        (b) From Spine Road: 30 feet
        (c) From Internal Road: 0 feet
      2. Rear setback: 10 feet
      3. Side setback
        (a) From Founders: 25 feet
        (b) From Spine Road: 25 feet
        (c) From Internal Road: 10 feet
    b. Lot Line
      1. Front: 0 feet
      2. Rear: 10 feet
      3. Side: 0 feet
  ii. Accessory Structure
    a. ROW
      1. Front: 45 feet
      2. Rear: 20 feet
      3. Side: 10 feet
    b. Lot Line
      1. Front: 30 feet
      2. Rear: 10 feet
      3. Side: 10 feet
  iii. Encroachment of Patios and Uncovered Decks
    a. Setback from ROW
      1. Front: 5 feet
      2. Side: 5 feet
    b. Setback from Lot Line
      1. Rear: 5 feet
      2. Side: 5 feet
  iv. Encroachment of Canopies & Overhangs
    a. Into ROW setback
      1. Front: 5 feet
    b. Into Lot Line setback
      1. Front: 5 feet

SECTION 5 Public Land Dedication | PLD-1

5.1 Intent

Public Land Dedication (PLD) is intended to be municipally-owned land, used for public purposes and satisfies the PLD requirements of the Town of Castle Rock Subdivisons Regulations of the Municipal Code Title 16. The PLD in this PD Plan is zoned PL-1 which allows active and developed parks. All permitted uses and development standards for PL-1 are established in the Town of Castle Rock Municipal Code Title 17.

SECTION 6 Dedicated Open Space | OSD-1, OSD-2, OSD-3, OSD-4

6.1 Intent

Dedicated Open Space (OSD) is intended to be municipally-owned, used for public purposes and counts toward the minimum 20% PD Open Space requirement. The OSD shown in this PD Plan is zoned PL-2 which allows passive recreation uses such as trails and open space. All permitted uses and development standards for PL-2 are established in the Town of Castle Rock Municipal Code Title 17.

SECTION 7 OSP-1, OSP-2, OSP-3 | OPEN SPACE PRIVATE (OSP)

7.1 Intent

Open Space Private (OSP) includes clubhouse, park, and recreational amenities accessible only to residents living within the property and their guests and will be owned and maintained by an HOA or Metropolitan District. All other land designated as Open Space Private (OSP) on the PDP (subject to adjustment of the boundaries thereof as provided below in the Development Standards), will be dedicated to a Metropolitan District, homeowners' association, or other entity designated by the Owner at such time as adjacent property is platted. Such open space shall thereafter be owned and maintained by the Metropolitan District, homeowners' association, or other entity to which the dedication is made.

7.2 Uses and Structures Permitted by Right in OSP

A. Recreation or Clubhouse facilities and associated Parking
B. Swimming Pools and Spas and support facilities
C. Active Parks and recreational elements including playgrounds and sports courts
D. Natural/unpaved or paved pedestrian and bicycle trails.
E. Interpretive and Directional Signage
F. Community entry and other typical community signage
G. Picnic areas including shelters
H. Seating nodes and lookouts including open air shelters
I. Grading and drainage improvements
J. Public utility improvements and associated structures
K. Neighborhood parks and playgrounds
L. Irrigation, water storage, distribution and well facilities
M. Water, Wastewater, Utility Service Facilities, Drainage Facilities
N. Parking Areas
O. Windmills and other existing structures on the property
P. Landscape Improvements

7.3 Development Standards. Development standards for the OSP are as follows:

A. Maximum Height: Fifty (50) feet;
B. Minimum Front Yard Setback: A minimum of fifteen (15) feet from the property line; twenty-five (25) feet if abutting an arterial street.

SECTION 8 OVERALL PROJECT STANDARDS

These PDP Regulations shall not preclude the application of Town ordinances, including Code revisions, which are of general application and uniformly applied throughout the Town, unless such application would conflict with an express vested property right established pursuant to the Development Agreement. The standard zoning requirements of the Town of Castle Rock Zoning Ordinance including off-street parking, development standards, landscaping, site development, accessory and temporary uses, and use by special review and variance processes shall apply to this Planned Development, except as otherwise modified herein and by the following;

8.1 General Project Description

The PDP consists of approximately 409 acres with an approved maximum of 474 single family detached or paired dwelling units. The overall gross residential density for the property is 1.16 units per acre. The general character and layout of the development includes preservation of major drainageways, vegetation and topographic features which act as buffers between Planning Areas within the project and at project edges with the Macanta community to the north and the Castle Oaks Estates community to the south. An approximate 13-acre parcel, PA 5, will provide neighborhood serving retail services and be accessible off of the main entry road into the project near Founders Parkway.

8.2 Fencing

All existing perimeter fencing is permitted to remain as is or can be modified and maintained by the Owner and or HOA. If the existing fence is intentionally removed, the new fencing requirements shall apply. The existing fence type may be replaced with similar fencing if the fence is damaged. The following requirements apply to any new fencing.

A. For Lots adjacent to open space perimeter fences are limited to a maximum height of four (4) feet and shall be split rail or open rail.
B. Fences taller than 30 inches in height above the street flowline are prohibited in sight distance easements.
C. Solid wood privacy fences are not permitted for lots that abut Open Space or are immediately adjacent to a road ROW. A 2" x 4" wire mesh grid is permitted on the lot side of the open rail fence for pet enclosure. Solid wood property fences are allowed for back-to-back lots along the back property line and up to 10 feet from the most setback element of the front building façade.
D. Barbed wire and chain link are not permitted fencing types within any Planning Areas.
E. The existing typical agricultural wire fence is permitted to define the Property boundary along Castle Oaks Estates to the south, Founders Parkway ROW, Macanta to the north and along the eastern property edge.
F. Additional fencing guidelines will be provided in future design guidelines/covenants provided in guidelines and managed as part of the covenants established and managed by the HOA or Metro District.

8.3 Landscaping

A. Landscape design regulations will be provided in future design guidelines/covenants established by the HOA, contracts and/or easements as established with the adjacent neighbors and HOA.
B. All landscaping shall be in conformance with Town of Castle Rock Landscape and Irrigation Performance Standards and Specifications, as amended.
C. The provisions and restrictions of the Property's Water Efficiency Plan (WEP) are applicable to all developed property within the Canyons Far South PDP.

8.4 Grading/Drainage

The grading/drainage of an individual lot or open space tract shall not vary from the Final Plat Grading Plan without the written approval of Canyons Far South and its Engineer(s) and review and approval by the Town. Any unauthorized work performed will be required to be returned to the specified grade by the individual(s) or organization(s) that authorized the change without proper approval.

8.5 Retaining Walls

All retaining walls adjacent to Public Street Right-of-Way are to be constructed, or faced, with natural stone material (or equal as identified in the Architectural Design Guidelines). Walls greater than 4-feet in height shall be approved for material and color per the Architectural Design Guidelines. Retaining wall height shall not exceed 8 feet. Any walls over 8 feet in height shall be tiered with a minimum 4 ft planting zone between wall segments to accommodate the structural geogrid, healthy plantings, drainage, and to reduce visual impact. Walls shall not impair traffic visibility.

All retaining walls are to be constructed, or faced, with natural stone material or Allan Block to be further defined within the Architectural Design Guidelines.

8.6 Existing Vegetation

Areas of significant scrub oak or mature ponderosa pine trees located in the natural open space outside of the Planning Areas will be left undeveloped, wherever practical, to provide habitat for wildlife, erosion protection and visual buffering.

8.7 Planning and Design

A. Design and construction of any lot or structure shall consider the relationship of roads and buildings to existing slope grades and drainage-ways and shall strive to achieve a fit with the existing landscape and topography that will attempt to minimize disturbance.
B. Structures in sloping areas shall be designed to conform to the slope by means of walk out lower levels, stepped foundations, retaining walls or similar methods that will seek to minimize grading, site preparation and site disturbance.
C. Grading shall be shaped to compliment the natural land forms and areas outside the limits of construction will be fence protected during construction.
D. Roads in steeply sloping or heavily vegetated areas shall be designed to minimize the area of disturbance. Where practical, clearing of vegetation within the right-of-way shall be feathered to create more natural appearing edges.

8.8 OSD-4 BUFFER AND BERM

A 300' open space buffer, within OSD-4, shall serve as a transition from the existing neighborhoods in Castle Oaks/Terrain. The buffer will have the following design considerations. See Conceptual Buffer Landscape Rendering on Sheet 12.

A. The buffer area will extend from the east side of the existing Xcel easement for approximately 1,000' east along the southern property boundary of the Property.
B. The buffer area will measure 300' between the Terrain community and residential lot lines in the Property, measured by lot line to lot line.
C. Berms of varying height, not to exceed a maximum height of 10', shall be added east of the Xcel easement and west of the Black Hills Energy easement to add visual interest from the properties to the south. No single berm shall extend longer than 500'.
D. Vegetation shall include low-water use native plantings and trees and will be arranged in a manner to enhance screening while also blending with the natural landscape character. Trees shall be a minimum of 8 feet in height at the time of planting.
E. A 4' (four-foot) natural surface trail may be added in this buffer area.

SECTION 9 TRANSITIONAL USE

9.1 After approval of the PDP, incorporated herein by reference, any portion or portions of the property described as the PDP, which has not been subjected to an SDP, may be used for agricultural purposes until approval of an SDP for those area or areas in question. Agricultural uses, for the purposes of this section shall mean farming or ranching or support structures pertaining thereto.
9.2 Any activity permitted by this section shall be considered to be a valid pre-existing non-conforming use within the area described above until an SDP for such area or areas has been approved.
9.3 Areas or agricultural activities shall be closed to vehicular traffic and off- road recreation motor biking excepting agricultural vehicles and implements, emergency vehicles, vehicles engaged in utility and other maintenance work, and designees of the Owner.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP ZONING REGULATIONS

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

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SHEET
10 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

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TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

PDP DESIGN GUIDELINES

Section 10 - RESIDENTIAL ARCHITECTURAL DESIGN GUIDELINES

Architectural Design Guidelines for primary and accessory structures within the PDP will be prepared by the Owner. The purpose of the Architectural Design Guidelines is to ensure that primary and accessory structures are consistent with this Section 10 and the design vision and objectives of the PDP. Builders must submit completed architectural plans to the Canyons Far South Architectural Design Control Committee (ACC) created pursuant to the Architectural Design Guidelines for review and adherence to the architectural guidelines prior to submitting an application for building permit to the Town of Castle Rock.

A. Design Guidelines

The Owner shall prepare written Architectural Design Guidelines at the time of each respective Site Development Plan submittal which shall govern the design requirements for each respective Residential Planning Area (PA1, PA 2, PA 3, and PA 4). Such guidelines will include architecture styles, materials and colors, general lot layouts and general landscaping requirements. Changes and/or amendments to the Architectural Design Guidelines may be made by the ACC.

B. Architectural Design Control Committee

All development within the PDP shall be subject to recorded private Covenants, Conditions and Restrictions ("CC&Rs") which will establish one or more ACC committees that will utilize written design standards and architectural guidelines ("Architectural Design Guidelines") in the review of all development within the PDP. The Architectural Design Guidelines will define specific site and building requirements such as colors, materials, landscaping and other items that will enable the Canyons Far South ACC to assure the design integrity and intent of the PDP. The CC&Rs are intended to achieve a consistent quality image for the development of the Property.

C. Architectural Design Approval

Final architectural plans must be consistent with the Architectural Design Guidelines for each respective planning area, and must be submitted to the Canyons Far South ACC for review and approval. Plans not approved shall be modified in accordance with the requirements of the Owner and Architectural Design Guidelines and resubmitted for review and approval. Application for a building permit may not be submitted if the Owner has not approved the architectural plans for the respective planning area.

D. Amendments to Residential Architectural Guidelines

Amendments to this Section 10 (Residential Architectural Guidelines) may be submitted by the Owner, or successor, to the Town and subject to an administrative review and approval. The Towns standard level of service review timelines shall apply.

E. Architectural Variety

1. A variety of product types and building forms shall be used throughout the PDP. A diversity of architectural styles is encouraged to differentiate between the planning areas and to bring architectural interest into the community.
2. Single-story elements, such as porches, covered entries, and living space or garages, are strongly encouraged to establish pedestrian scale.
3. To maintain architectural variety along residential streets, adjacent or directly opposing homes shall not have the same building plan and elevation or the same exterior color package. Each floor plan or model shall have a minimum of two distinctly different building elevations.
4. The same building plan and elevation shall not be repeated directly across any street from the same model elevation.
5. The same building plan and elevation shall not be repeated more than once every 4 lots on the same side of the street except for the cluster product which will accomplish elevation changes with color and material.
6. Plot buildings to achieve interest by varying front setbacks where feasible, providing varied setbacks to different parts of the building to encourage massing breaks, using different plan forms and elevations on adjacent buildings, and utilizing different garage placements.

F. Design Standards

1. Each dwelling unit front elevation shall include a minimum of 2 windows or 1 window and door per floor, excluding the garage door.
2. Each dwelling unit front elevation shall include 2 or more wall plane changes with no less than 2 feet offset between the wall planes or covered front porch. Articulation that adds shadow and elevation plane variation is encouraged.
3. Columns or posts extending more than 36 inches above the ground which support structural elements such as porches, decks, or roofs should appear to be of adequate mass to support the structure above and shall be a minimum of 6 inches x 6 inches finished and complementary to the architectural style with appropriate detailing.
4. Side and rear dwelling unit elevations shall include but are not limited to the following.
   a. Window grids, if window grids are provided on the front elevation. The window grids shall be of the same style or otherwise in general conformity as the front elevation.
      i. Window grids are not required on picture windows.
   b. Decorative window trim shall be on all windows and should match the style on the front elevation.
   c. The inclusion of architectural detail elements such as: shutters, eave brackets, exposed rafter tails, corbels, lintels, gable end treatments, or other approved architectural features that match the front elevation.
   d. The use of a minimum of 2 styles of siding or 2 exterior cladding materials where the second material must have a substantial impact on the elevation. Approved materials include, masonry (cultured stone, stone, brick, stucco, or tile), lap siding, shingles, board and batten, or other decorative siding treatment.
   e. Rear elevations only: A wall plane change, including a covered porch or covered deck, with a minimum of 8 feet in width and at least a 2-foot offset between wall planes.
   f. Walkout plans only: A covered deck exposed to the public facing direction that is at least 80 square feet in size.
5. Buildings located on corner lots should be designed for the two-sides that face the public street with a higher level of architectural treatment. The corner lots generally include additional setback areas from adjacent public rights-of-way or open space to accommodate additional landscaping or architectural elements such as porches, balconies, and pop-outs

G. Roofing

1. A variety of roof forms should be used, and each dwelling unit model elevation shall have a differing mass than the other elevations for the same model.
2. The main roof should extend beyond any facade by a minimum of 12 inches unless appropriate to the architectural style.
3. Roof Pitch & Material:
   a. Roof pitches shall be complementary to the architectural style.
   b. 30-year composition asphalt shingle (minimum).

H. Exterior Materials

1. All exterior building materials shall be of high quality and shall be used in applications and treated appropriately to provide an over-all harmonious and long-lasting design appearance.
2. When siding or masonry cladding is used, it should be used in a location where its mass is logical and appropriate. In instances where siding or masonry wraps the exterior corner of the home, the siding or masonry should continue to a natural transition point such as an inside corner of a projecting wall, a column, a door or window or other logical point. In cases where no such feature exists near the corner, the siding or masonry wrap shall extend at least 2 feet from the outside corner or end at a natural break in architecture or wing fence.

I. Front Porch

1. The minimum size of a non-recessed front porch shall be 60 square feet of floor area, with a minimum depth of 6 feet.

J. Decks

1. Decks must be redwood, treated lumber or composite material (e.g. Trex Decking). Railings may be painted or stained in a color that is compatible with the color scheme of the home. Composite materials must also be a color compatible with the color scheme of the home.
2. Deck railing must also match that of the deck, existing railing on the house or the general scheme within the community.

K. Garages

1. Detached garages and all other outbuildings shall be subject to the same architectural design treatment and shall be constructed of the same or similar materials as the dwelling until on the same lot.
2. All garage doors must have composite or cedar clad facing, wood grain simulated metal facing equivalent, or equal, as approved by the Canyons Far South ACC.

L. Exterior Colors

1. All exterior color schemes shall be approved by the Canyons Far South ACC.
2. Color schemes should be natural in tones and complement the style of architecture. Accent and "punch" colors, such as front doors, shutters, etc. may be more pronounced.
3. A minimum of 3 color schemes options shall be offered for each dwelling unit elevation style.

Section 11 - COMMERCIAL DESIGN STANDARDS

Architectural design review of primary and accessory structures within PA5 of the PDP will be conducted by the Owner and the ACC. The purpose of the design review is to ensure that primary and accessory structures are consistent with the design vision and objectives of the PDP. Builders must submit completed architectural plans to the Owner and the Canyons Far South ACC for review and approval prior to submitting for an application for Site Development Plan to the Town of Castle Rock.

A. Building Design Standards:

1. Free standing buildings shall incorporate compatible four-sided design. All sides of a building open to view shall display a similar level of material quality and architectural interest.
2. Pedestrian oriented façade design shall be required, including variation in the building facade by using vertical or horizontal articulation, window and entry variations as well as patios, plazas or other landscaped pedestrian areas is encouraged. Strong vertical design elements such as windows, pilasters, columns, stairs, and towers should be used to identify individual commercial spaces.
3. Variations in roofline and building parapet walls shall be utilized to effectively break up massing, provide visual interest, and develop a 'neighborhood feel' characteristic.
4. Building design shall incorporate textured surfaces, projections, recesses, shadow lines, color, window patterns, overhangs, reveals, changes in parapet height to avoid monolithic shapes and surfaces.
5. Building materials and colors shall be selected to create exterior surface distinction and may be augmented with tenant selected materials provided that they maintain the overall quality and style of the project and are deemed appropriate by the Canyons Far South ACC.
6. Buildings shall be designed using high quality, durable and low maintenance materials.
7. Buildings that utilize CMU walls shall use integrally colored units. Painted CMU is not permitted.
8. Buildings that utilize tilt wall concrete wall panels for distinctive articulation, color patterning and elevation plane variation shall be incorporated to add a variety of texture and visual interest.
9. The style and placement of exterior accent lighting shall enhance the building's architectural elements such as entry features, pilasters, columns, and landscaping.
10. Each building should have distinctive base, middle and top. Architectural detailing or a change of materials or color at the ground level may be used to create the base. The elevation plane variations of a building's façade should be emphasized by use of color, arrangement of facade elements, or a change of exterior materials.
11. Large façade volumes or planes should be broken up into smaller elements in order to reduce the visual scale of a building. The mass of a building should be varied in form or divided to emphasize the various interior building functions. Building design should reinforce structural grid with pilasters and or colonnades.
12. A variety of building roof lines and parapet heights incorporating changes or elements should be provided.
13. Variations in rooflines can include gables, dormers, flat roofs, and well-defined parapets. Offsets in the roofline break up the mass of the roof and are encouraged.
14. Roof overhangs at pedestrian entries provide protection for shoppers and are encouraged.
15. Roofing materials should be of a color and material consistent with the architectural character of the building and should convey a sense of permanence and quality. Roofing color and material specifications are to be provided at the site development plan.
16. A mix of building detailing and accent materials is encouraged to add creativity and variety. Specific materials and colors are to be provided at with the site development plan. An example of these accent materials includes granite, wrought iron, slate, glass, tile, and others as appropriate. Light to medium intensity colors with low reflectivity are preferred as the background building color.
17. Brighter colors may be used for accents, trim or highlighting architectural features. The warm, subdued hues of natural, earth colors are encouraged.
18. Color can be used to impact the scale and form of a building by highlighting various architectural elements.
19. Integration of fabric/canvas awnings, flat metal awnings, and trellises is encouraged.
20. A variety of wall mounted exterior light fixtures are encouraged, which fit the period or architectural style proposed. Unshielded exterior lighting and wall packs are prohibited.
21. Delivery, loading, trash, and other service areas must be screened on two sides or integrated into the building.
22. Screening must be accomplished by a wall constructed of integrally colored CMU, architectural metal screening, stone, stucco, textured stained concrete, or brick to match the primary structure.
23. All roof top or pad mounted mechanical units must be screened from general public view and integrated into the over-all building design.
24. Parking shall incorporate a mix of on-street parking and smaller lots spread throughout the development to encourage a walkable commercial core. Final parking configuration will be determined at Site Development Plan.

B. Building Placement and Orientation:

1. Buildings adjacent to a sidewalk shall be situated to provide a strong visual and physical connection between the sidewalk and the first floor.
2. Development shall relate to the site's aesthetic setting and context considering impacts and enhancements to natural features and important pedestrian view corridors.
3. The importance of spaces between buildings should be recognized in over-all building design, and these spaces should be planned and useful in shape and not simply be left over areas.
4. A sense of entry shall be created into the development by using signage and landscaping.
5. The arrangement of buildings, parking, and outdoor areas should recognize the site characteristics and relate to the surroundings in pattern, function, scale, character and materials.
6. Trash storage areas, mechanical equipment and similar areas should be screened from the Founders Parkway view corridor.

D. Amendments to Commercial Design Standards

Amendments to this Section may be submitted by the Owner, or successor, to the Town and subject to an administrative review and approval. Amendments must meet the intent of the Canyons Far South design vision. The Towns standard level of service review timelines shall apply.

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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
PDP DESIGN GUIDELINES

NOT FOR CONSTRUCTION

DESIGNED BY: ____
DRAWN BY: ____
CHECKED BY: ____

JOB NO. 20-245

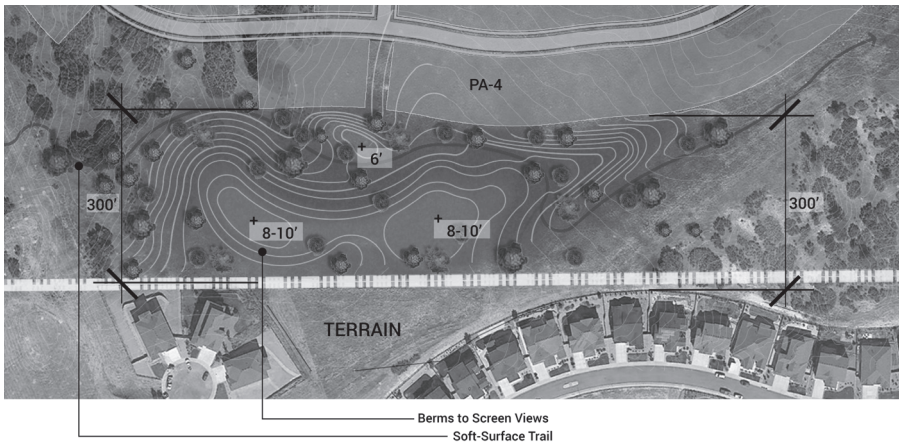
SHEET 11 of 12

CANYONS FAR SOUTH

PLANNED DEVELOPMENT PLAN

PORTIONS OF NORTH HALF OF SECTION 31 & SOUTH HALF OF SECTION 30,
TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
PORTION SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH,
RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO

CHARACTER OF SOUTHERN BUFFER



CONCEPTUAL PLAN FOR BUFFER AREA

CONCEPTUAL RENDERING OF BUFFER AREA

CHARACTER OF COMMERCIAL AREA

TYPICAL PEDESTRAIN ORIENTED STREETSCAPE

TYPICAL CENTRALIZED AREA FOR GATHERING, RETAIL, AND MULTI-MODAL TRAFFIC

NOTE:

IMAGES SHOWN FOR INTENDED CHARACTER OF BUFFER AND DEVELOPMENT.
ACTUAL LAYOUT AND BUILDING DESIGN WILL BE DETERMINED AT SITE DEVELOPMENT PLAN.

LOWE
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CANYONS FAR SOUTH
CASTLE ROCK, COLORADO
PLANNED DEVELOPMENT PLAN (PDP)
COMMERCIAL AREA AND SOUTHERN BUFFER CHARACTER

NOT FOR CONSTRUCTION

DESIGNED BY:
DRAWN BY:
CHECKED BY:

JOB NO.
20-245

SHEET
12 OF 12

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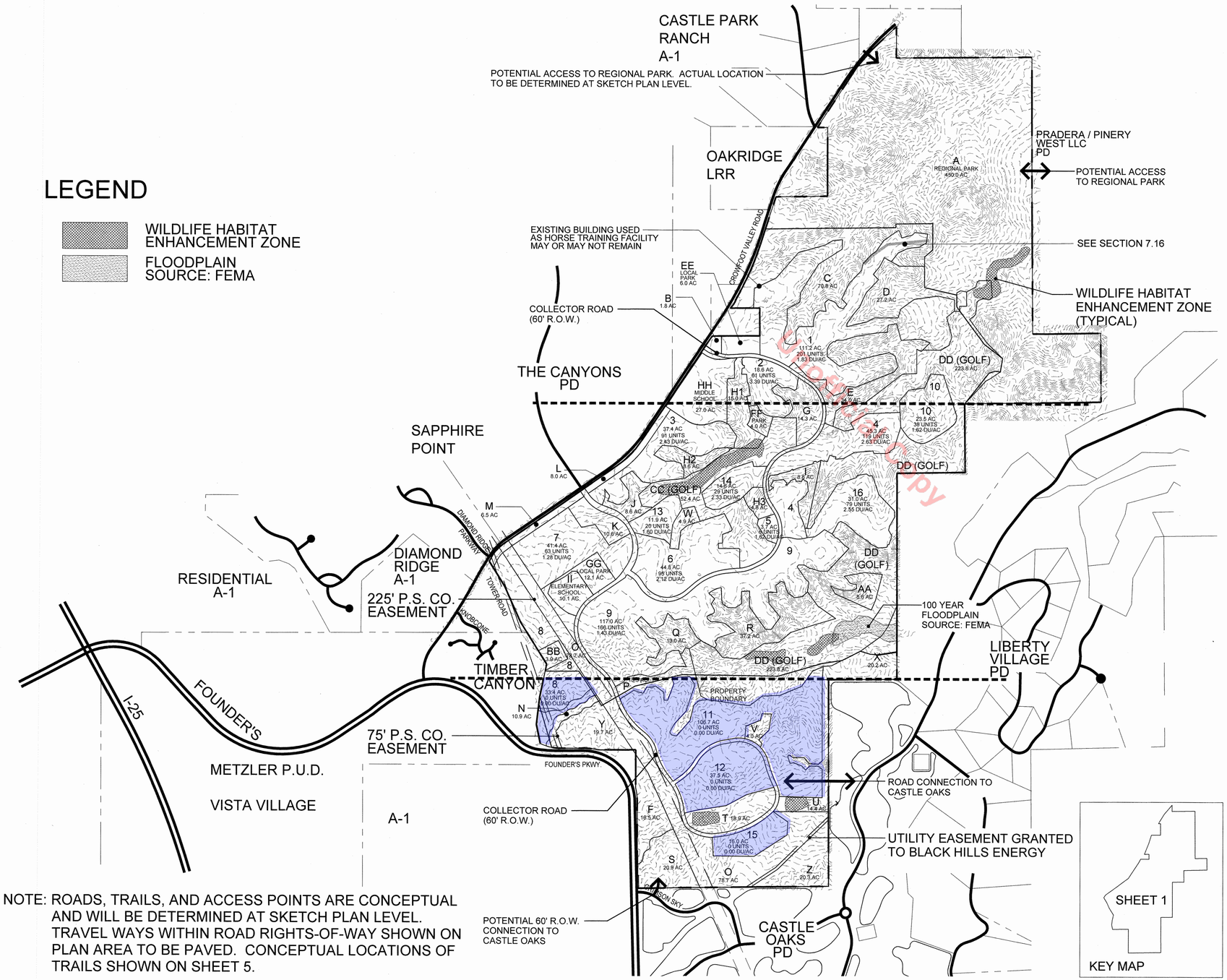
Rec $20.00 2022059327, Date: 4/29/2022 3:09 PM, Pages: 1 of 11 ,RECORDING $113.00
Douglas County, CO. Merlin Klotz, Clerk and Recorder

CANYONS SOUTH PLANNED DEVELOPMENT (PD) 7th AMENDMENT

A MAJOR AMENDMENT TO AMEND PLANNING AREA DENSITY
FOR PLANNING AREAS 1, 2, 3, 4, 7, 10, 11, 12, 13, 14, 15, 16
A PARCEL OF LAND BEING A PORTION OF SECTIONS 17, 18, 19, 20, 30, & 31, T7S, R66W OF THE 6TH PRINCIPAL MERIDIAN
AND SECTIONS 24 & 25, T7S, R67W OF THE 6TH PRINCIPAL MERIDIAN, DOUGLAS COUNTY, COLORADO.
2,043 ACRES - 968 RESIDENTIAL UNITS - ZR2022-003



LEGEND

- WILDLIFE HABITAT ENHANCEMENT ZONE
- FLOODPLAIN SOURCE: FEMA

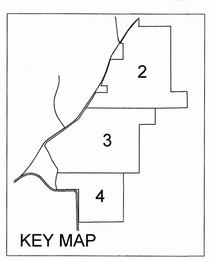
NOTE: ROADS, TRAILS, AND ACCESS POINTS ARE CONCEPTUAL AND WILL BE DETERMINED AT SKETCH PLAN LEVEL. TRAVEL WAYS WITHIN ROAD RIGHTS-OF-WAY SHOWN ON PLAN AREA TO BE PAVED. CONCEPTUAL LOCATIONS OF TRAILS SHOWN ON SHEET 5.

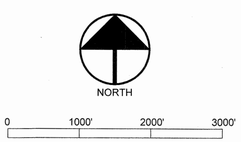
THE CANYONS SOUTH PD PLAN

THE CANYONS SOUTH PD PLAN				
PA	LAND USE	PD7 AC	PD7 UNITS	PD7 DENSITY
RESIDENTIAL				
1	PD RESIDENTIAL	111.2	201	1.81
2	PD RESIDENTIAL	18.6	61	3.28
3	PD RESIDENTIAL	37.4	91	2.43
4	PD RESIDENTIAL	45.3	119	2.63
5	PD RESIDENTIAL	3.7	6	1.62
6	PD RESIDENTIAL	44.8	95	2.12
7	PD RESIDENTIAL	41.4	63	1.52
8	PD RESIDENTIAL	33.4	0	0.00
9	PD RESIDENTIAL	117	166	1.42
10	PD RESIDENTIAL	23.5	38	1.62
11	PD RESIDENTIAL	106.7	0	0.00
12	PD RESIDENTIAL	37.5	0	0.00
13	PD RESIDENTIAL	11.9	20	1.68
14	PD RESIDENTIAL	14.6	29	1.99
15	PD RESIDENTIAL	16	0	0.00
16	PD RESIDENTIAL	31	79	2.55
SUBTOTAL		694	968	
B	NAT. OPEN SPACE	1.8		
C	NAT. OPEN SPACE	70.8		
D	NAT. OPEN SPACE	27.2		
E	NAT. OPEN SPACE	34		
F	NAT. OPEN SPACE	16.5		
G	NAT. OPEN SPACE	14.3		
H1	NAT. OPEN SPACE	15		
H2	NAT. OPEN SPACE	8.6		
H3	NAT. OPEN SPACE	4.8		
I	NAT. OPEN SPACE	8.8		
J	NAT. OPEN SPACE	8.6		
K	NAT. OPEN SPACE	10.6		
L	NAT. OPEN SPACE	8		
M	NAT. OPEN SPACE	6.5		
N	NAT. OPEN SPACE	10.9		
O	NAT. OPEN SPACE	78.7		
P	NAT. OPEN SPACE	15.3		
Q	NAT. OPEN SPACE	13		
R	NAT. OPEN SPACE	37.2		
S	NAT. OPEN SPACE	20.9		
T	NAT. OPEN SPACE	18.9		
U	NAT. OPEN SPACE	14.4		
V	NAT. OPEN SPACE	4		
W	NAT. OPEN SPACE	4.9		
X	NAT. OPEN SPACE	20.2		
Y	NAT. OPEN SPACE	19.7		
Z	NAT. OPEN SPACE	20.3		
AA	NAT. OPEN SPACE	8.6		
BB	NAT. OPEN SPACE	3.9		
SUBTOTAL		526.4		
A	Regional Park	450		
SUBTOTAL		450		
EE	Local Parks	6		
FF	Local Parks	4		
GG	Local Parks	12.1		
SUBTOTAL		22.1		
HH	Schools	27		
II	Schools	10.1		
SUBTOTAL		37.1		
CC	Golf Course	52.4		
DD	Golf Course	223.8		
SUBTOTAL		276.2		
	Road R.O.W.	37.2		
TOTAL		2043		

LAND USE	ACRES	UNITS	%OF SITE
PD RESIDENTIAL	694	968	34.0%
NAT. OPEN SPACE	526.4		25.8%
REGIONAL PARK	450		22.0%
LOCAL PARKS	22.1		1.1%
SCHOOLS	37.1		1.8%
GOLF COURSE	276.2		13.5%
ROAD R.O.W.	37.2		1.8%
TOTAL	2043	968	100.0%

PD Amendment Chart	
Amendment #	Date
7 - Minor	In process
6 - Minor	4/27/2021
5 - Minor	4/7/2017
4 - Major	2/6/2008
3 - Minor	7/2/2007
2 - Major	3/30/2007
1 - Minor	9/8/2006

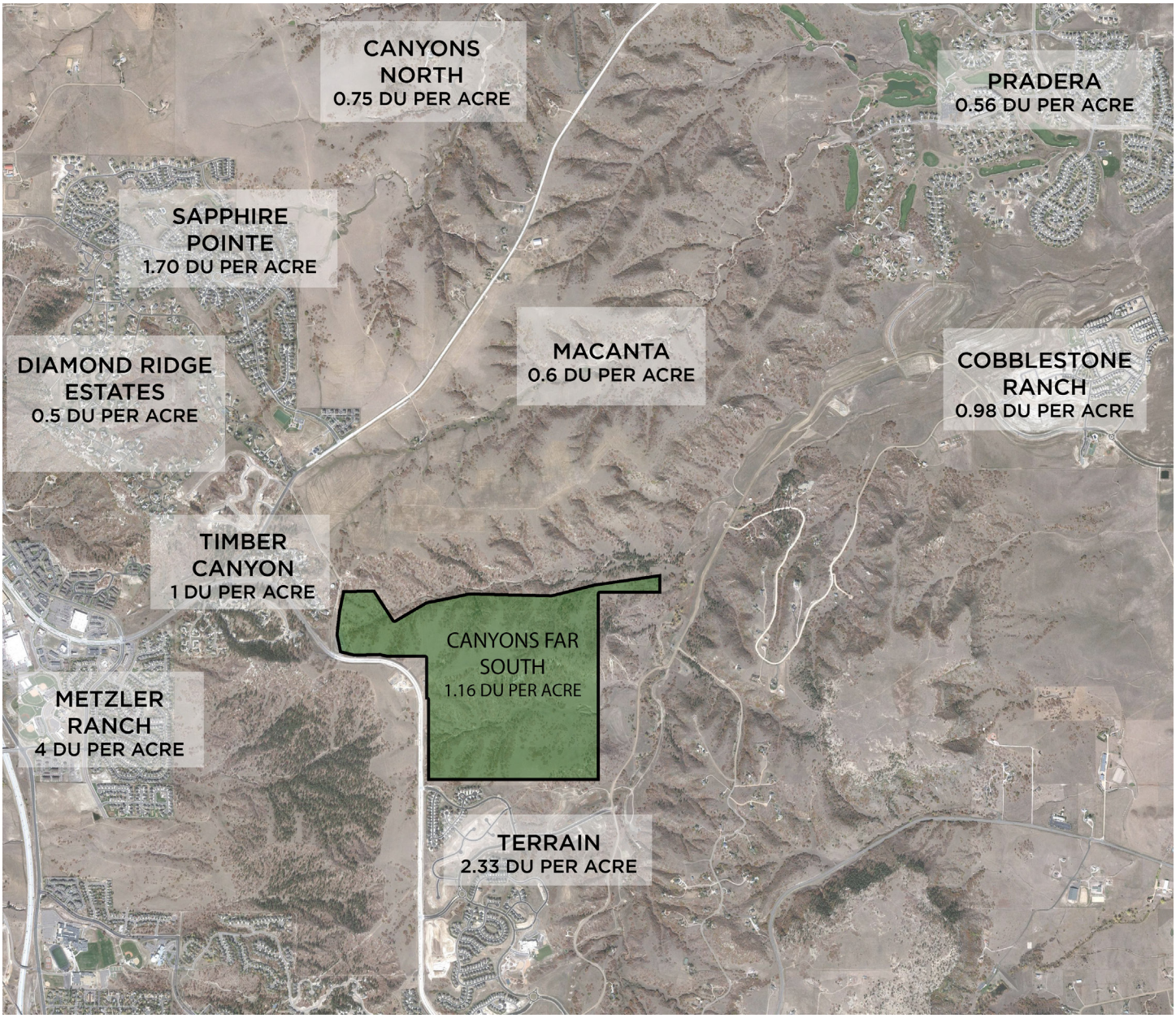




DEVELOPER / APPLICANT:
HT CANYONS SOUTH DEVELOPMENT LP
1144 15TH ST., SUITE 3675
DENVER, CO 80202

LAND PLANNERS:
PCS GROUP
PO BOX 18287
DENVER, CO 80218
PREPARATION DATE: 03.22.2022

EXHIBIT A



ADJACENT DENSITY
CANYONS FAR SOUTH

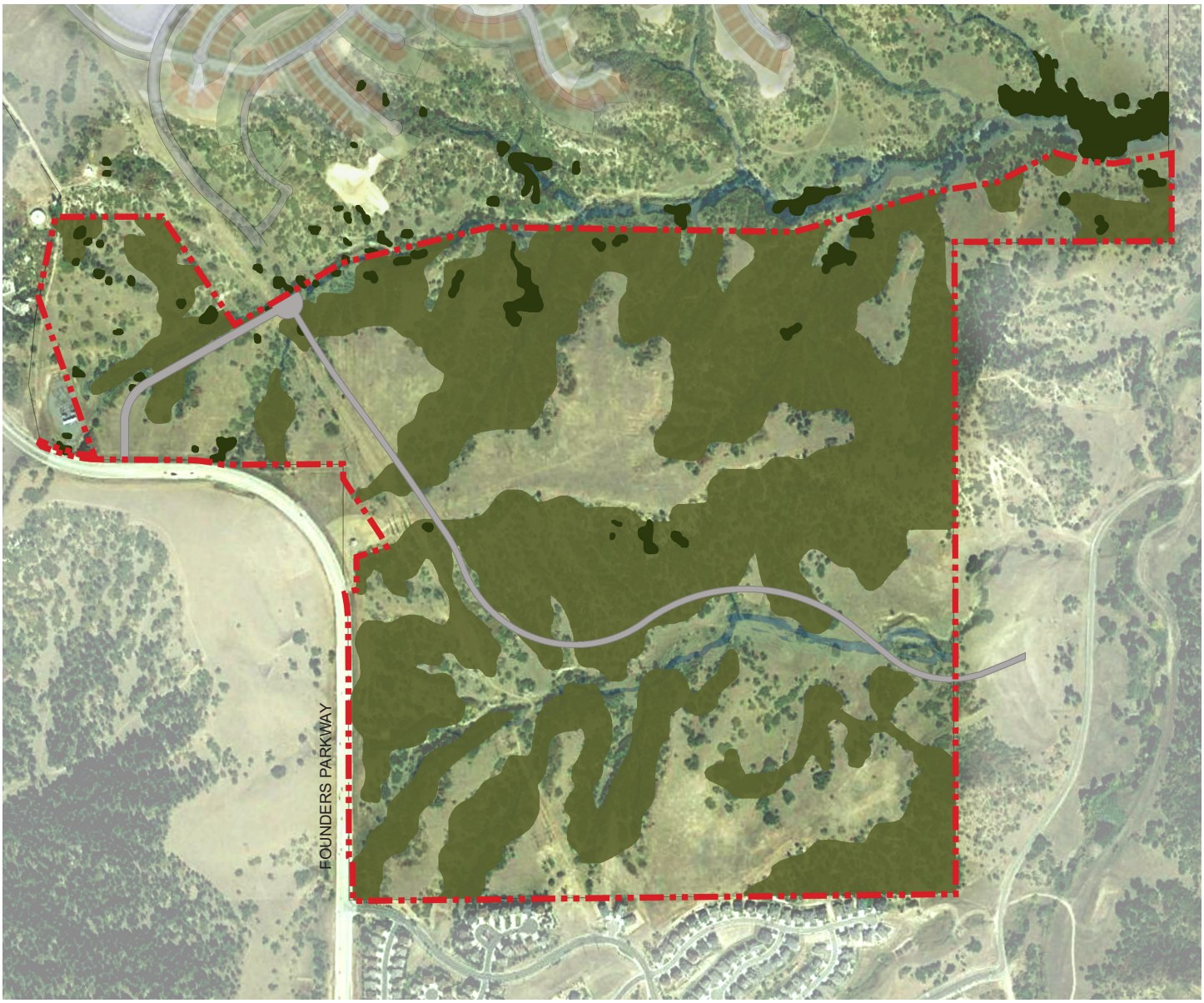
EXHIBIT D

LEGEND:

- Developable Area
- Power Line Poles
- Main Road
- Easement
- Site Boundary

DEVELOPABLE AREA
CANYONS FAR

EXHIBIT C

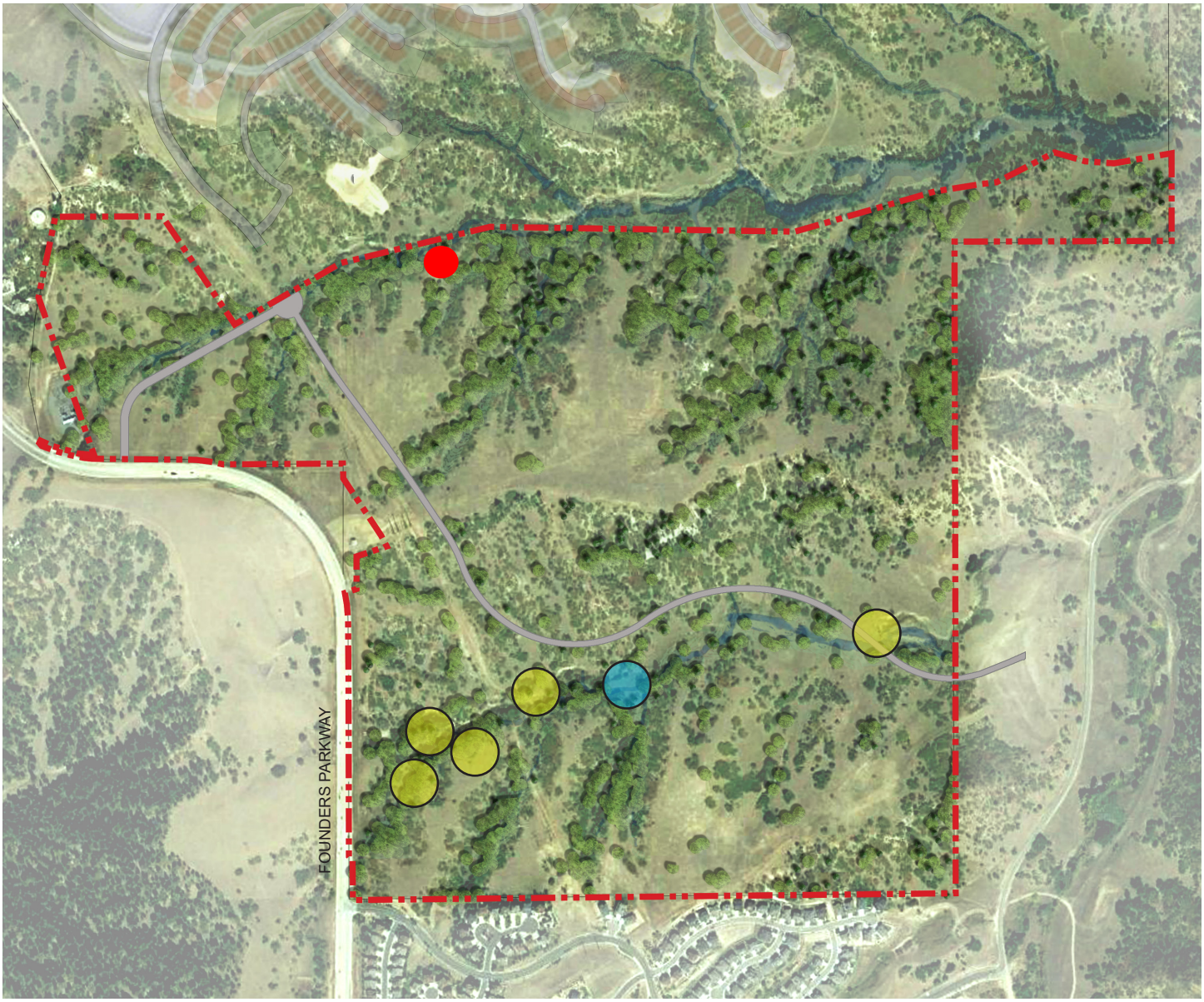


VEGETATION:

- Oak Shrubland
- Ponderosa Pine Forest
- Grasslands
- Main Road
- Site Boundary

VEGETATIVE COVER
CANYONS FAR

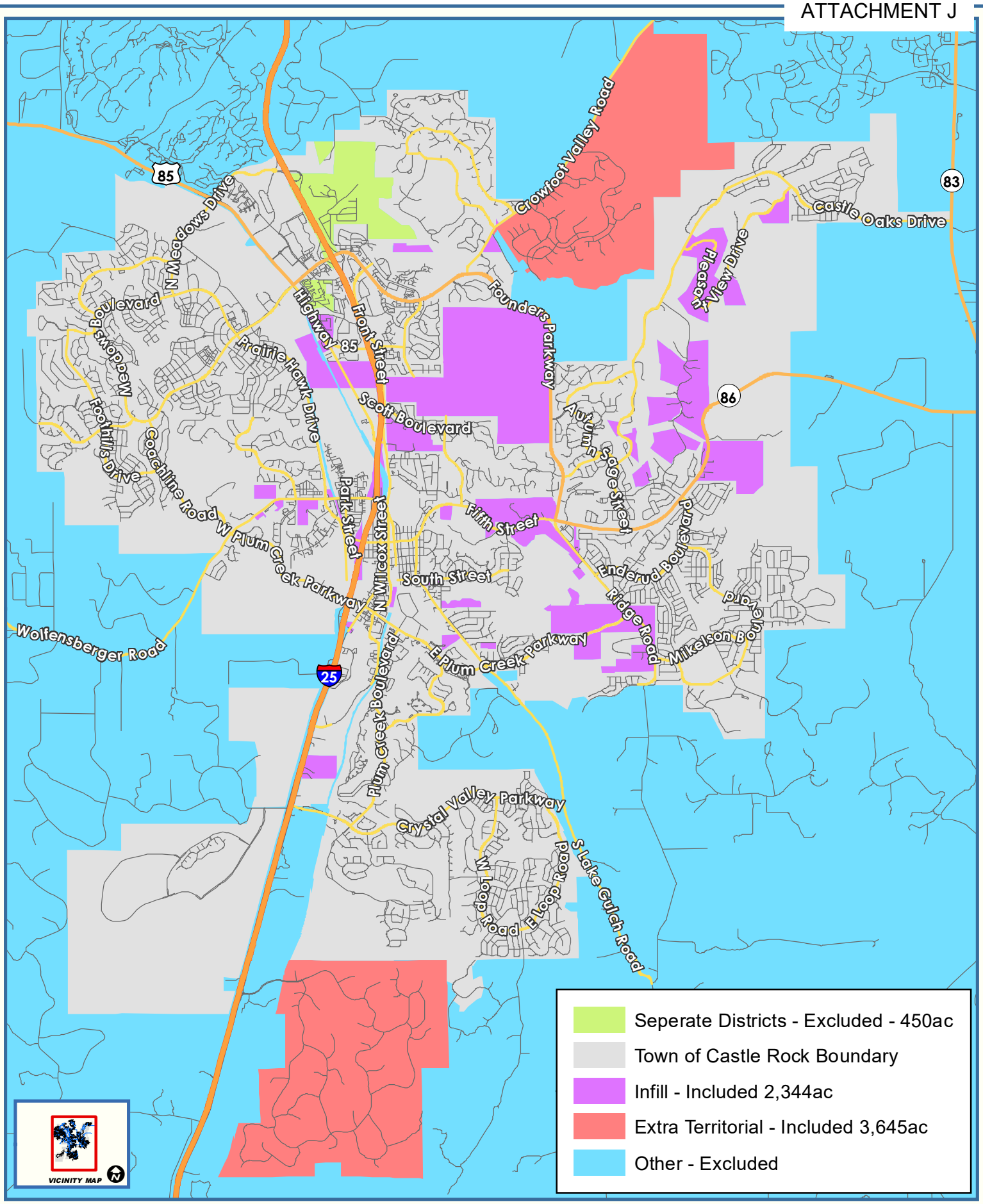
EXHIBIT E



LEGEND:

- Check Dam Structures
- Windmill
- Main Road
- Site Boundary
- Stone Water Well

ATTACHMENT J



CASTLE ROCK Qwater
Securing our future drop by drop

0 3,000 6,000 12,000 Feet

Castle Rock Water Renewable Water Inclusion Area

Date: 1/26/2022

Document Path: J:\GIS\Map Requests\2022\Internal_Requests\Inclusion_Map\InclusionMap.mxd

LSC TRANSPORTATION CONSULTANTS, INC.

1889 York Street
Denver, CO 80206
(303) 333-1105
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E-mail: lsc@lscdenver.com

TRANSPORTATION CONSULTANTS, INC.

December 6, 2021

Mr. Eric Clore
Lowe
5299 DTC Boulevard, Suite 1260
Greenwood Village, CO 80111

Re: Canyons South
Castle Rock, CO
LSC #210310

Dear Mr. Clore:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated traffic impact analysis for the proposed Canyons South development to address Town comments and to evaluate the local access points to the proposed collector streets. As shown on Figure 1, the site is located northeast of Founders Parkway (SH 86) and is proposed for annexation into the Town of Castle Rock, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; an adjustment to account for the ongoing pandemic; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the growth in background traffic or the impact of the site.

LAND USE AND ACCESS

The site is proposed to include about 474 single-family detached dwelling units, about 30,000 square feet of retail space, and about 20,000 square feet of office space. Access is proposed from several locations as shown in the conceptual site plan in Figure 2. The proposed collector street system will provide connectivity between Founders Parkway (SH 86), Crowfoot Valley Road, and Castle Oaks Drive.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **Founders Parkway (SH 86)** is a four-lane arterial roadway southwest of the site. The intersections with Allen Way, Front Street, Woodlands Boulevard, Crowfoot Valley Road, and 5th Street/SH 86 are signalized with auxiliary turn lanes. The posted speed limit is 50 mph in the vicinity of the site. It is classified by CDOT as RA (Regional Highway). The CDOT Straight Line Diagram is attached.

- **Crowfoot Valley Road** is a north-south, four-lane major arterial north of the site. The intersection with Founders Parkway (SH 86) is signalized with auxiliary turn lanes. The posted speed limit is 40 mph in the vicinity of Founders Parkway but increases to 45 mph to the north. It is planned to be a four-lane roadway from Castle Rock to Parker over time.

- **Castle Oaks Drive** is a two-lane collector roadway east of the site with a 40 mph posted speed limit. The proposed Community Collector roadway (Minor Collector) is planned to connect east to Castle Oaks Drive and northwest towards Crowfoot Valley Road.

Existing Traffic Conditions

Figure 3a shows the existing traffic volumes, lane geometry, and traffic control in the site's vicinity on a typical weekday. The weekday peak-hour traffic volumes and average daily traffic volumes are from the attached traffic counts conducted in April, May, and June, 2021 by Counter Measures, Inc.

Pandemic Adjustment

Figure 3b shows the existing traffic volumes adjusted for the ongoing pandemic. The traffic volumes at Intersection #8 are based on the higher of the traffic volumes in Figure 3a and the 2019 traffic volumes provided by Town staff (attached for reference) grown for two years at an annual rate of four percent. The traffic volumes at Intersection #7 were increased by five percent to maintain a conservative analysis because the traffic volumes at Intersection #8 were generally higher than the historic 2019 traffic volumes. Intersections #1, #2, #3, #4, and #6 were adjusted based on the higher of the traffic volumes in Figure 3a and the 2018 traffic volumes in Figure 3 of the *Pine Canyon TIA* by Kimley Horn grown for three years at an annual rate of three percent.

2025 and 2041 Background Traffic

Figure 4 shows the estimated 2025 background traffic and Figure 5 shows the estimated 2041 background traffic. The 2025 background traffic in Figure 4 assumes four years of growth at an annual rate of three percent plus half of the 2041 background traffic passing through the site. Little or no growth was assumed for movements serving built out developments. The 2041 background traffic in Figure 5 assumes the 2041 total traffic volumes in Figure 9 less the total site-generated trips in Figure 7d with the following exception: Intersection #8 is based on the 2040 traffic projections provided by Town staff (attached) grown for one year at an annual rate of three percent. This was done because the Canyons South development was not included in the modeling that resulted in the 2040 traffic volumes provided. The volumes on the south leg of Intersection #6 are based on the traffic volumes in Figure 7a from the 2017 *Pine Canyon TIA*

by LSC. The buildout lane geometry at Intersection #8 is based on the figure provided by Town staff (attached). The side road volumes at Intersections #1, #2, #3, and #4 are based on the 2040 total traffic volumes from Figure 12 of the 2020 *Pine Canyon TIA* by Kimley Horn with some adjustments based on the recent traffic counts.

About 30 percent of Castle Oaks Drive traffic at Intersection #7 is expected to divert to the proposed minor collector roadway through the site.

Existing, 2025, and 2041 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in Figures 3b, 4, and 5 were analyzed to determine the existing, 2025, and 2041 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached. CDOT and the Town plan to implement adaptive traffic signal control between I-25 and Crowfoot Valley Road so those intersections were optimized with a 120-second cycle length per coordination with CDOT and Town staff.

1. **Founders Parkway (SH 86)/Allen Way:** This signalized intersection currently operates at an overall LOS "C" during both morning and afternoon peak-hours and is expected to do so through 2025. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour.

2. **Founders Parkway (SH 86)/Front Street:** This signalized intersection currently operates at an overall LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour. By 2025, it is expected to operate at LOS "B" during the morning peak-hour and LOS "D" during the afternoon peak-hour. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour.

3. **Founders Parkway (SH 86)/Woodlands Boulevard:** This signalized intersection currently operates at an overall LOS "B" during both morning and afternoon peak-hours. By 2025, it is expected to operate at LOS "B" during the morning peak-hour and LOS "C" during the afternoon peak-hour. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "E" during the afternoon peak-hour. With implementation of the recommended mitigation the afternoon peak-hour can be improved to LOS "C".

4. **Founders Parkway (SH 86)/Crowfoot Valley Road:** This signalized intersection currently operates at an overall LOS "C" during the morning peak-hour and LOS "B" during the afternoon peak-hour and is expected to operate at LOS "C" through 2041.

5. **Connector Collector Road/Internal Collector Roadway:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

6. **Founders Parkway/Pioneer Ranch Access/Connector Collector Roadway:** This future signalized intersection is expected to operate at an overall LOS "B" or better through 2041.

7. **Castle Oaks Drive/Internal Community Collector:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

8. **Founders Parkway (SH 86)/Ridge Road/5th Street/SH 86:** This signalized intersection currently operates at an overall LOS "C" during both morning and afternoon peak-hours and is expected operate at LOS "D" or better through 2041.

9. **Connector Collector Roadway/Commercial Access:** This intersection was only analyzed in the total traffic scenarios.

10. **Internal Collector Roadway/Site Access #10:** This intersection was only analyzed in the total traffic scenarios.

11. **Internal Collector Roadway/Site Access #11:** This intersection was only analyzed in the total traffic scenarios.

12. **Internal Collector Roadway/Site Access #12:** This intersection was only analyzed in the total traffic scenarios.

13. **Internal Collector Roadway/Site Access #13:** This intersection was only analyzed in the total traffic scenarios.

14. **Internal Collector Roadway/Site Access #14:** This intersection was only analyzed in the total traffic scenarios.

15. **Internal Collector Roadway/Site Access #15:** This intersection was only analyzed in the total traffic scenarios.

TRIP GENERATION

Table 2 shows the estimated average weekday, morning peak-hour, and afternoon peak-hour trip generation for the proposed site based on the rates from *Trip Generation, 10th Edition, 2017* by the Institute of Transportation Engineers (ITE).

The site is projected to generate about 7,321 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 125 vehicles would enter and about 277 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 407 vehicles would enter and about 309 vehicles would exit. Table 2 also shows the estimated pass-by trips.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the primary site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; and the site's proposed land use.

TRIP ASSIGNMENT

Figures 7a and 7b show the estimated assignment of the residential site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the residential trip generation estimate (from Table 2).

Figures 7c and 7d show the assignment of primary non-residential site-generated traffic based on the directional distribution percentages (from Figure 6) and the non-residential trip generation estimate (from Table 2).

Figure 7e shows the assignment of the passby site-generated traffic.

Figure 7f shows the assignment of the total site-generated traffic which is the sum of the volumes in Figures 7a through 7e.

2025 AND 2041 TOTAL TRAFFIC

Figures 8a and 8b show the 2025 total traffic which is the sum of the 2025 background traffic volumes (from Figure 4) and the total site-generated traffic volumes (from Figure 7f). Figures 8a and 8b also shows the recommended 2025 lane geometry and traffic control.

Figures 9a and 9b shows the 2041 total traffic which is the sum of the 2041 background traffic volumes (from Figure 5) and the total site-generated traffic volumes (from Figure 7f). Figures 9a and 9b also shows the recommended 2041 lane geometry and traffic control.

PROJECTED LEVELS OF SERVICE

The intersections in Figures 8a through 9b were analyzed to determine the 2025 and 2041 total traffic levels of service. Table 1 shows the level of service analysis results.

1. **Founders Parkway (SH 86)/Allen Way:** This signalized intersection is expected to operate at an overall LOS "D" or better during both morning and afternoon peak-hours through 2041.

2. **Founders Parkway (SH 86)/Front Street:** This signalized intersection is expected to operate at an overall LOS "D" or better during both morning and afternoon peak-hours through 2041.

3. **Founders Parkway (SH 86)/Woodlands Boulevard:** This signalized intersection is expected to operate at an overall LOS "B" during the morning peak-hour and LOS "C" during the

afternoon peak-hour through 2025. By 2041, this intersection is expected to operate at LOS "C" during the morning peak-hour and LOS "D" during the afternoon peak-hour.

4. **Founders Parkway (SH 86)/Crowfoot Valley Road:** This signalized intersection is expected to operate at an overall LOS "C" during both morning and afternoon peak-hours through 2025. By 2041, this intersection is expected to operate at LOS "D" during the morning peak-hour and LOS "C" during the afternoon peak-hour.

5. **Connector Collector Road/Internal Collector Roadway:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

6. **Founders Parkway (SH 86)/Pioneer Ranch Access/Connector Collector Roadway:** This future signalized intersection is expected to operate at an overall LOS "C" or better through 2041.

7. **Castle Oaks Drive/Internal Community Collector:** This future roundabout controlled intersection is expected to operate at an overall LOS "A" during both morning and afternoon peak-hours through 2041.

8. **Founders Parkway (SH 86)/Ridge Road/5th Street/SH 86:** This signalized intersection is expected to operate at an overall LOS "D" or better during both morning and afternoon peak-hours through 2041.

9. **Connector Collector Roadway/Commercial Access:** All movements at this future stop-sign controlled intersection are expected to operate at LOS "C" or better during both morning and afternoon peak-hours through 2041.

10. **Internal Collector Roadway/Site Access #10:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

11. **Internal Collector Roadway/Site Access #11:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

12. **Internal Collector Roadway/Site Access #12:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

13. **Internal Collector Roadway/Site Access #13:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

14. **Internal Collector Roadway/Site Access #14:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

15. **Internal Collector Roadway/Site Access #15:** All movements at this unsignalized intersection are expected to operate at LOS "B" or better through 2041.

TRAFFIC SIGNAL WARRANT ANALYSIS

The projected traffic volumes at Intersection #6 (Founders Parkway (SH 86)/Pioneer Ranch Access/Connector Collector Roadway) shown in Figure 8a (2025 Total Traffic) and Figure 9a (2041 Total Traffic) are sufficient to warrant traffic signal control over time based on the 70 percent reduced criteria due to the posted speed limit being over 40 mph on Founders Parkway (SH 86).

95th PERCENTILE QUEUING ANALYSIS

The estimated 2025 and 2041 95th percentile queue lengths for the signalized intersections in the study area are shown in Table 3 along with the recommended turn lane lengths.

PEDESTRIAN AND BICYCLE ACCOMMODATION

The site plan will include an east-west multi-use path through the site along the prominent drainage as well as a multi-use path along the site's frontage to Founders Parkway.

RECOMMENDED IMPROVEMENTS

Table 4 shows the 2025 and 2041 recommended improvements to the public street network.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The site is projected to generate about 7,321 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 125 vehicles would enter and about 277 vehicles would exit the site. During the afternoon peak-hour, about 407 vehicles would enter and about 309 vehicles would exit. Table 2 also shows the estimated pass-by trips.

Projected Levels of Service

2. The two future roundabout controlled intersections are expected to operate at an overall LOS "A" through 2041.

3. All movements at the unsignalized intersections are expected to operate at LOS "C" or better through 2041.

4. All of the signalized intersections are expected to operate at an overall LOS "D" or better with implementation of the recommended improvements shown in Figures 8a through 9b and in Tables 3 and 4.

Conclusions

5. The impact of the site can be accommodated by the existing and planned roadway improvements with the recommended improvements.

Recommendations

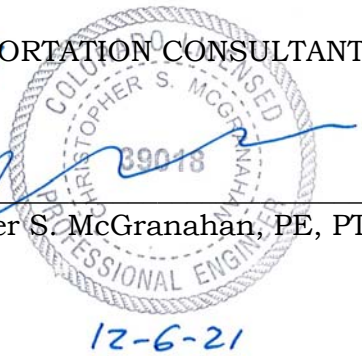
6. The recommended improvements are shown in Figures 8a through 9b and in Tables 3 and 4.

* * * * *

We trust our findings will assist you in gaining approval of the Canyons South development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.



By _____
Christopher S. McGranahan, PE, PTOE
Principal

CSM/wc

Enclosures: Tables 1 - 4
Figures 1 - 9b
CDOT Straight Line Diagram
Traffic Counts
2019 Traffic Volumes provided by Town Staff
Figure 3 from 2020 *Pine Canyon TIA* by Kimley Horn
2040 Traffic Projections provided by Town Staff
Figure 7a from 2017 *Pine Canyon TIA* by LSC
Buildout Lane Geometry of Founders Parkway/Ridge Road/5th Street/SH 86 provided by Town Staff
Figure 12 from 2020 *Pine Canyon TIA* by Kimley Horn
Level of Service Definitions
Level of Service Reports
Queuing Reports

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Table 1 (Page 1 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic		2025 Background Traffic		2025 Total Traffic		2041 Background Traffic		2041 Background Mitigated [1]		2041 Total Traffic	
		Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM	Level of Service AM	Level of Service PM
1) Founders Parkway/Allen Way	Signalized												
EB Left		E	E	D	E	E	E	E	E			E	E
EB Through/Right		A	B	A	C	B	C	B	E			B	E
WB Left		A	A	A	B	A	B	A	B			A	B
WB Through		C	B	C	C	B	C	D	C			D	C
WB Right		A	A	A	A	A	A	A	A			A	A
NB Left		D	E	D	D	E	E	E	E			E	E
NB Through/Right		C	D	C	C	C	C	C	D			C	D
SB Left		D	D	D	D	D	E	D	E			D	E
SB Through		D	E	D	D	D	D	D	D			D	D
SB Right		E	E	B	C	C	D	D	D			D	D
Entire Intersection Delay (sec /veh)		26.3	30.0	19.9	32.2	20.1	33.4	31.5	46.2			39.6	49.7
Entire Intersection LOS		C	C	B	C	C	D	C	D			D	D
2) Founders Parkway/Front Street	Signalized												
SEB Left		B	B	C	D	C	D	C	E			C	E
SEB Through/Right		B	B	B	D	B	D	B	E			C	E
NWB Left		A	E	A	D	A	D	A	E			B	E
NWB Through/Right		B	B	B	C	B	B	C	B			C	B
NEB Left		E	F	D	E	D	E	D	E			D	E
NEB Through		D	E	D	D	D	D	D	D			D	D
NEB Right		A	D	A	C	A	C	A	C			A	C
SWB Left		D	D	D	C	C	D	C	D			C	D
SWB Right or Through/Right		C	D	C	D	C	D	C	D			C	D
Entire Intersection Delay (sec /veh)		20.0	47.4	19.1	41.2	20.2	42.9	26.6	51.0			30.4	54.1
Entire Intersection LOS		C	D	B	D	C	D	C	D			C	D
3) Founders Parkway/Woodlands Boulevard	Signalized												
EB Left		A	A	A	A	A	A	A	A	A	A	A	A
EB Through		B	B	B	C	B	D	--	--	--	--	--	--
EB Through/Right or Right		A	A	A	A	A	A	C	D	C	D	C	D
WB Left		B	D	B	D	B	D	D	E	D	D	D	D
WB Through		B	A	B	B	B	B	--	--	--	--	--	--
WB Through/Right or Right		A	A	A	A	A	A	B	B	B	A	B	A
NB Left		D	D	D	D	D	D	D	D	E	E	E	E
NB Through or Through/Right		D	E	D	D	D	E	B	F	D	E	D	E
NB Right		B	A	A	A	A	D	--	--	A	E	A	E
SB Left		D	E	D	E	D	D	D	E	D	E	D	E
SB Through/Right		D	D	D	D	D	D	D	D	D	D	D	D
Entire Intersection Delay (sec /veh)		14.2	16.4	15.1	23.5	15.7	32.6	24.3	66.4	22.8	34.2	23.7	41.7
Entire Intersection LOS		B	B	B	C	B	C	C	E	C	C	C	D

(1) Recommended mitigation is a short 75-foot northbound right-turn lane with overlap phasing with the westbound left-turn movement.

Table 1 (Page 2 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2025 Background Traffic Level of Service AM	2025 Background Traffic Level of Service PM	2025 Total Traffic Level of Service AM	2025 Total Traffic Level of Service PM	2041 Background Traffic Level of Service AM	2041 Background Traffic Level of Service PM	2041 Background Mitigated [1] Level of Service AM	2041 Background Mitigated [1] Level of Service PM	2041 Total Traffic Level of Service AM	2041 Total Traffic Level of Service PM
4) Founders Parkway/Crowfoot Valley Road	Signalized												
EB Left		D	D	D	D	E	D	E	D			E	D
EB Through		A	A	A	A	A	A	A	A			A	A
WB Through		B	C	C	C	C	C	D	D			D	D
WB Right		A	A	A	A	A	A	A	A			A	A
SB Left		E	C	C	C	C	C	D	C			D	C
SB Right		A	A	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		20.7	18.4	21.3	20.6	22.3	20.4	31.0	24.5			36.1	27.4
Entire Intersection LOS		C	B	C	C	C	C	C	C			D	C
5) Connector Collector Roadway/Internal Collector Roadway	Roundabout												
EB Approach		--	--	A	A	A	A	A	A			A	A
WB Approach		--	--	A	A	A	A	A	A			A	A
NB Approach		--	--	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		--	--	3.2	3.3	4.4	4.6	3.5	3.8			4.8	5.2
Entire Intersection LOS		--	--	A	A	A	A	A	A			A	A
6) Founders Parkway/Pioneer Ranch Access/ Connector Collector Roadway	Signalized												
EB Left		--	--	A	A	A	B	B	A			D	D
EB Through		--	--	A	A	A	A	A	A			B	B
EB Right		--	--	--	--	--	--	A	A			A	A
WB Left		--	--	--	--	--	--	A	A			A	A
WB Through		--	--	A	A	B	B	B	B			D	C
WB Right		--	--	A	A	A	A	A	A			A	A
NB Left		--	--	--	--	--	--	E	E			D	D
NB Through/Right		--	--	--	--	--	--	A	A			C	D
SB Left		--	--	E	E	D	E	D	D			C	D
SB Right or Through/Right		--	--	A	A	D	B	B	A			D	C
Entire Intersection Delay (sec /veh)		--	--	4.9	4.0	15.2	11.6	16.5	10.3			32.0	21.0
Entire Intersection LOS		--	--	A	A	B	B	B	B			C	C
7) Castle Oaks Drive/Internal Community Collector	Roundabout												
EB Approach		--	--	A	A	A	A	A	A			A	A
NB Approach		--	--	A	A	A	A	A	A			A	A
SB Approach		--	--	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		--	--	4.1	4.1	4.2	4.2	5.1	5.1			5.2	5.2
Entire Intersection LOS		--	--	A	A	A	A	A	A			A	A

Table 1 (Page 3 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2025 Background Traffic Level of Service AM	2025 Background Traffic Level of Service PM	2025 Total Traffic Level of Service AM	2025 Total Traffic Level of Service PM	2041 Background Traffic Level of Service AM	2041 Background Traffic Level of Service PM	2041 Background Mitigated [1] Level of Service AM	2041 Background Mitigated [1] Level of Service PM	2041 Total Traffic Level of Service AM	2041 Total Traffic Level of Service PM
8) Founders Parkway/Ridge Road/5th Street/SH 86	Signalized												
EB Left		B	C	C	C	C	C	B	C			B	C
EB Through		C	D	C	E	C	E	C	D			C	D
EB Right		A	A	A	A	A	A	A	A			A	A
WB Left		B	C	B	E	B	E	B	C			B	D
WB Through		C	D	C	D	D	D	C	C			C	C
WB Right		A	A	A	A	A	A	A	A			A	A
NB Left		C	C	C	C	C	C	E	D			E	D
NB Through		D	D	D	E	D	E	D	D			D	D
NB Right		A	A	A	A	A	A	A	A			A	A
SB Left		C	E	D	E	D	E	E	D			E	D
SB Through		D	D	D	C	D	C	D	C			D	C
SB Right		A	A	A	A	A	A	A	A			A	A
Entire Intersection Delay (sec /veh)		24.3	31.9	26.0	37.9	26.8	38.4	27.4	30.9			27.6	31.1
Entire Intersection LOS		C	C	C	D	C	D	C	C			C	C
9) Connector Collector Roadway/Commercial Access	TWSC												
WB Left		--	--	--	--	B	B	--	--			B	C
WB Right		--	--	--	--	A	A	--	--			A	B
SB Left		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	11.5	14.0	--	--			12.4	15.8
10) Internal Collector Roadway/Site Access #10	TWSC												
WB Approach		--	--	--	--	A	A	--	--			B	A
SB Left/Through		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	9.9	9.3	--	--			10.3	9.5
11) Internal Collector Roadway/Site Access #11	TWSC												
NB Left		--	--	--	--	A	A	--	--			A	A
EB Approach		--	--	--	--	A	B	--	--			A	B
WB Approach		--	--	--	--	B	B	--	--			B	B
SB Left		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	11.2	11.8	--	--			11.7	12.6
12) Internal Collector Roadway/Site Access #12	TWSC												
WB Approach		--	--	--	--	B	A	--	--			B	A
SB Left		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	10.2	9.6	--	--			10.6	9.9

Table 1 (Page 4 of 4)
Intersection Levels of Service Analysis
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Traffic Control	Existing Traffic Level of Service AM	Existing Traffic Level of Service PM	2025 Background Traffic Level of Service AM	2025 Background Traffic Level of Service PM	2025 Total Traffic Level of Service AM	2025 Total Traffic Level of Service PM	2041 Background Traffic Level of Service AM	2041 Background Traffic Level of Service PM	2041 Background Mitigated [1] Level of Service AM	2041 Background Mitigated [1] Level of Service PM	2041 Total Traffic Level of Service AM	2041 Total Traffic Level of Service PM
13) Internal Collector Roadway/Site Access #13	TWSC												
EB Left		--	--	--	--	A	A	--	--			A	A
SB Approach		--	--	--	--	A	A	--	--			B	A
Critical Movement Delay (sec/veh)		--	--	--	--	9.9	9.4	--	--			10.3	9.7
14) Internal Collector Roadway/Site Access #14	TWSC												
NB Approach		--	--	--	--	B	B	--	--			B	B
WB Left/Through		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	10.1	10.4	--	--			10.7	11.2
15) Internal Collector Roadway/Site Access #15	TWSC												
NB Approach		--	--	--	--	A	A	--	--			A	A
EB Approach		--	--	--	--	A	B	--	--			B	B
WB Approach		--	--	--	--	B	A	--	--			B	A
SB Approach		--	--	--	--	A	A	--	--			A	A
Critical Movement Delay (sec/veh)		--	--	--	--	10.3	10.2	--	--			10.8	10.6

Table 2
ESTIMATED TRAFFIC GENERATION
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

		Trip Generation Rates [1]					Total Trips Generated				
		Average	AM Peak-Hour		PM Peak-Hour		Average	AM Peak-Hour		PM Peak-Hour	
Trip Generating Category	Quantity	Weekday	In	Out	In	Out	Weekday	In	Out	In	Out
CURRENTLY PROPOSED LAND USE											
Single-Family Detached [2]	474 DU [3]	9.44	0.185	0.555	0.624	0.366	4,475	88	263	296	174
Shopping Center [4]	30 KSF [5]	88.38	0.583	0.357	3.567	3.864	2,651	17	11	107	116
Office [6]	20 KSF [5]	9.74	0.998	0.162	0.184	0.966	195	20	3	4	19
						Total =	**7,321**	**125**	**277**	**407**	**309**
						Passby Trips [7] =	901	5	5	38	38
						Net External Trips =	**6,420**	**120**	**272**	**369**	**271**

Notes:
(1) Source: *Trip Generation*, Institute of Transportation Engineers, 10th Edition, 2017.
(2) ITE Land Use No. 210 - Single-Family Detached Housing
(3) DU = Dwelling Unit
(4) ITE Land Use No. 820 - Shopping Center - formula rates for daily and afternoon peak-hour; average rates for morning peak-hour
(5) KSF = 1,000 square feet
(6) ITE Land Use No. 710 - General Office Building
(7) A passby rate of 34% was assumed for the shopping center land use.

Table 3
95th Percentile Queue Lengths
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Intersection No. & Location	Existing Turn Lane Lengths (feet)	2025 Queue Length AM Peak (feet)	2025 Queue Length PM Peak (feet)	2025 Queue Length Recommended Lane Length (feet)	2041 Queue Length AM Peak (feet)	2041 Queue Length PM Peak (feet)	2041 Queue Length Recommended Lane Length (feet)
1) Founders Parkway/Allen Way							
EB Left	2 @ 290	154	309		198	260	
EB Through/Right	--	263	1,146		317	1,295	
WB Left	320	m9	m15		m6	m11	
WB Through	--	910	* m712		1,107	m780	
WB Right	175	m6	m18		m1	m9	
NB Left	100	65	87	2 @100	90	139	2 @ 100
NB Through/Right	--	63	98		68	125	
SB Left	140	84	143		98	210	
SB Through	--	31	60		33	67	
SB Right	1 @ 105; 1 @ 265	83	147		143	175	
2) Founders Parkway/Front Street							
SEB Left	465	76	m132		82	m135	
SEB Through/Right	--	150	m544		357	m522	
NWB Left	195	34	207		39	195	
NWB Through/Right	--	530	411		993	464	
NEB Left	1 @ 285; 1 Continuous	210	381		258	297	
NEB Through	--	77	136		103	187	
NEB Right	Continuous	9	166		0	171	
SWB Left	225	14	52		13	59	
SWB Right or Through/Right	--	48	71		65	102	
3) Founders Parkway/Woodlands Boulevard							
EB Left	450	6	7		6	6	
EB Through or Through/Right	--	264	960		279	887	
EB Right	Continuous	17	46		--	--	
WB Left	500	192	290		564	293	
WB Through or Through/Right	--	1,066	600		629	331	
WB Right	Continuous	20	20		--	--	
NB Left	220	157	127		240	184	2 @ 250
NB Through or Through/Right	--	52	74		57	74	
NB Right	Continuous	0	0		77	582	75
SB Left	125	59	201	200	65	202	200
SB Through/Right	--	18	42		19	41	
4) Founders Parkway/Crowfoot Valley Road							
EB Left	1 @ 475; 1 Continuous	195	494		288	553	
EB Through	--	122	367		122	466	
WB Through	--	865	510		998	735	
WB Right	Continuous	56	40		62	69	
SB Left	1 @ 140; 1 Continuous	168	115		249	240	
SB Right	Continuous	0	0		0	0	
6) Founders Parkway/Pioneer Ranch Access/Connector Collector Roadway							
EB Left	--	25	247	655	143	443	655
EB Through	--	36	281		218	676	
EB Right	--	--	--		0	28	380
WB Left	--	--	--		6	9	400
WB Through	--	476	372		881	521	
WB Right	--	14	24	380	0	21	380
NB Left	--	--	--		129	92	150
NB Through/Right	--	--	--		20	24	
SB Left	--	103	131	150	94	121	150
SB Through/Right	--	0	0		252	109	
8) Founders Parkway/Ridge Road/5th Street/SH 86							
EB Left	360	74	153		52	155	300
EB Through	--	229	560		83	281	
EB Right	410	0	0		0	0	300
WB Left	600	80	154		78	146	250
WB Through	--	444	265		178	146	
WB Right	450	0	0		0	0	Continuous
NB Left	425	285	135		186	131	2 @ 250
NB Through	--	429	473		287	266	
NB Right	450	0	0		0	0	Continuous
SB Left	600	265	661	675	176	414	2 @ 600
SB Through	--	180	469		96	311	
SB Right	Continuous	0	0		0	0	600

m = metered by adjacent intersection

Table 4 (Page 1 of 2)
Recommended Improvements to Public Street Network
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

Inter-section No.	Intersection Location	Recommended Improvements by 2025 (1)	Responsibility	Recommended Improvements by 2041 (1)	Responsibility
#1	Founders Parkway/Allen Way	NB LT - Add second left-turn lane (2 @ 100 feet)	Others		
#2	Founders Parkway/Front Street	None			
#3	Founders Parkway/Woodlands Boulevard	SB LT - Restripe from 125 feet to 200 feet	Others	NB LT - Add second lane (2 @ 250 feet)	Others
				NB RT - construct lane - 1 @ 75 feet + Overlap Phasing	Others
#4	Founders Parkway/Crowfoot Valley Road	None			
#5	Connector Collector Roadway/ Internal Collector Roadway	Construct single-lane modern roundabout	Applicant		
#6	Founders Parkway/Pioneer Ranch Access/Connector Collector Roadway	EB LT - construct lane - 1 @ 655 feet and 180-foot transition taper	Applicant	WB LT - construct lane - 1 @ 400 feet and 180-foot transition taper	Others
		WB RT - construct lane - 1 @ 320 feet and 180-foot transition taper	Applicant	EB RT - construct lane - 1 @ 320 feet and 180-foot transition taper	Others
		SB LT - construct lane - 1 @ 150 feet and 120-foot transition taper	Applicant	NB LT - construct lane - 1 @ 150 feet and 120-foot transition taper	Others
		SB to WB Accel Lane - 1 @ 580 feet and 180-foot transition taper	Applicant	NB to EB Accel Lane - 580 feet and 180-foot transition taper	Others
		Traffic signal installation when warranted	Applicant/Others		
#7	Castle Oaks Drive/Connector Collector	Construct single-lane modern roundabout	Applicant/Others		
#8	Founders Parkway/Ridge Road/ 5th Street/SH 86	SB LT - lengthen lane from 600' to 675'	Others	Intersection Reconstruction by Town including:	
				EB LT - construct lane - 1 @ 300 feet	Others
				EB Through - construct 2 lanes	Others
				EB RT - construct lane - 1 @ 300 feet	Others
				WB LT - construct lane - 1 @ 250 feet	Others
				WB Through - construct 2 lanes	Others
				WB RT - construct continuous lane	Others
				NB LT - construct lanes - 2 @ 250 feet	Others
				NB Through - construct 2 lanes	Others
				NB RT - construct continuous lane	Others
				SB LT - construct lanes - 2 @ 600 feet	Others
				SB Through - construct 2 lanes	Others
				SB RT - construct lane - 1 @ 600 feet	Others
				Traffic Signal Modification	Others

(1) An appropriate redirect taper for 50 mph is 50:1; for 35 mph is 20:1, and for 30 mph or less is 15:1.
(2) Percent indicate the site's percentage of the movement or intersection based on the 2041 volumes.

Table 4 (Page 2 of 2)
Recommended Improvements to Public Street Network
Canyons South
Castle Rock, CO
LSC #210310; December, 2021

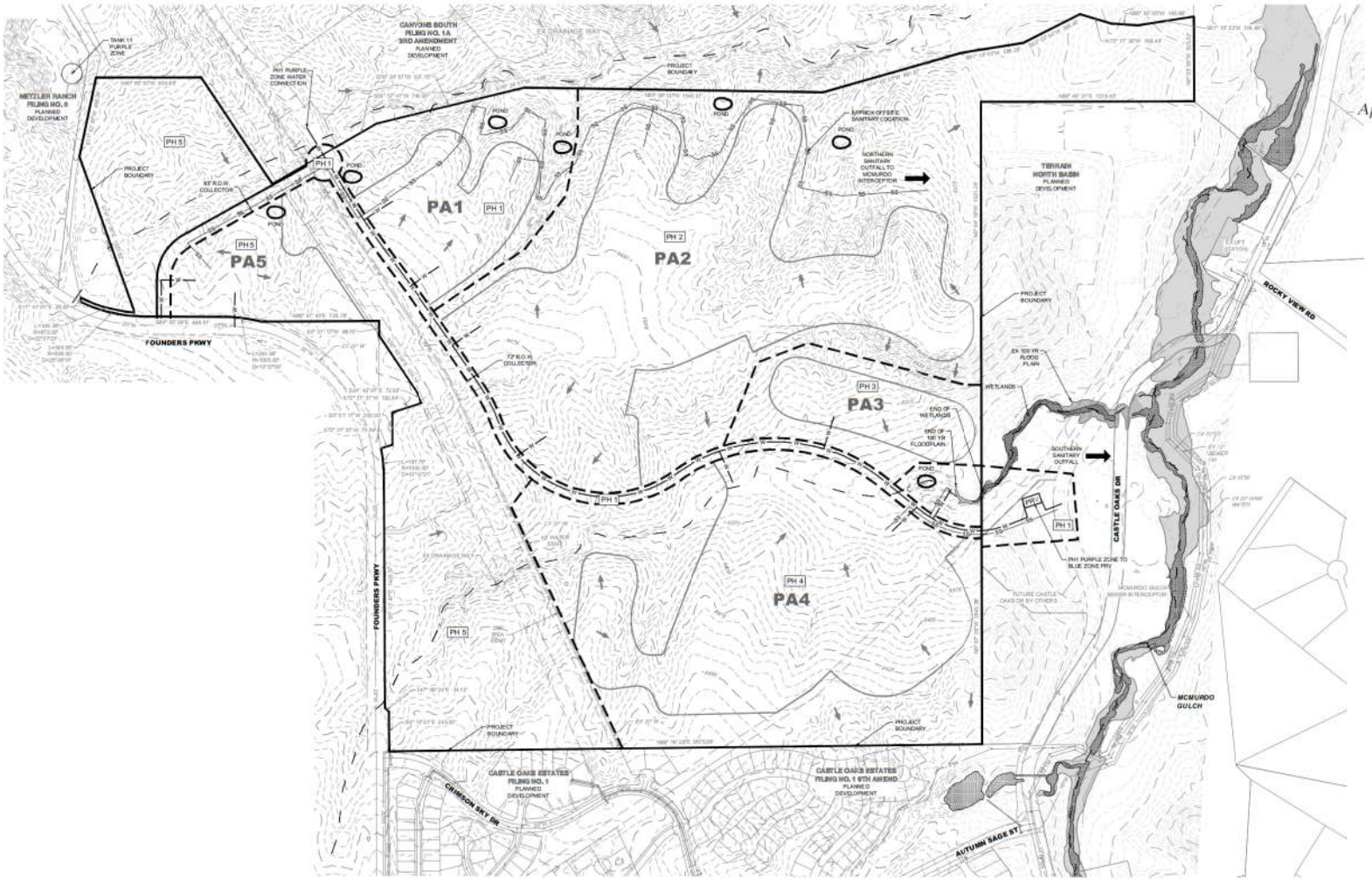
Inter-section No.	Intersection Location	Recommended Improvements by 2025 (1)	Responsibility	Recommended Improvements by 2041 (1)	Responsibility
#9	Connector Collector Roadway/ Commercial Access	NB RT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
		SB LT - construct lane - 1 @ 220 feet and 120-foot transition taper	Applicant		
		WB LT - construct lane - 1 @ 150 feet and 90-foot transition taper	Applicant		
#10	Internal Connector Collector Roadway/Site Access #10	None			
#11	Internal Connector Collector Roadway/Site Access #11	EB LT - construct lane - 1 @ 205 feet and 120-foot transition taper	Applicant		
		WB LT - construct lane - 1 @ 250 feet and 120-foot transition taper	Applicant		
#12	Internal Connector Collector Roadway/Site Access #15	EB LT - construct lane - 1 @ 245 feet and 120-foot transition taper	Applicant		
#13	Internal Connector Collector Roadway/Site Access #13	EB LT - construct lane - 1 @ 265 feet and 120-foot transition taper	Applicant		
#14	Internal Connector Collector Roadway/Site Access #14	EB RT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
#15	Internal Connector Collector Roadway/Site Access #15	None			

(1) An appropriate redirect taper for 50 mph is 50:1; for 35 mph is 20:1, and for 30 mph or less is 15:1.

Figure 1

Vicinity Map

Canyons South (LSC #210310)

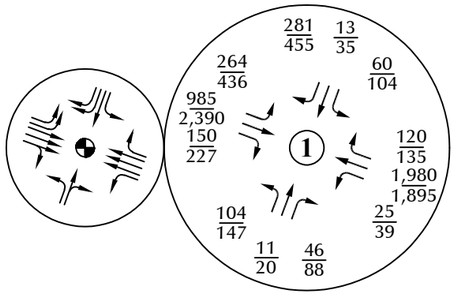


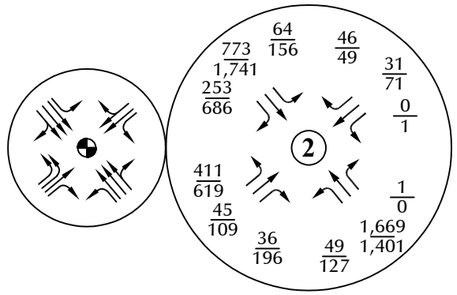
Approximate Scale
Scale: NTS

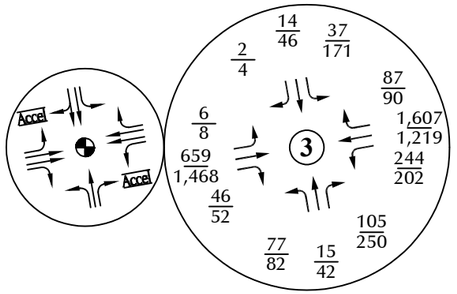
Figure 2

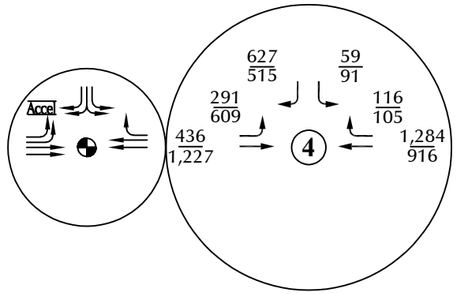
Site Plan

Canyons South (LSC #210310)









Intentionally

5

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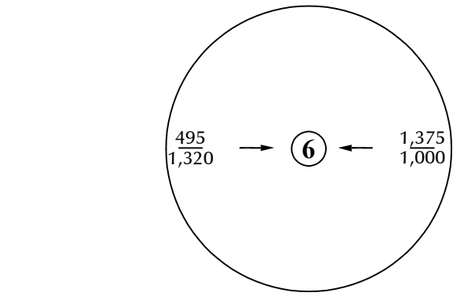

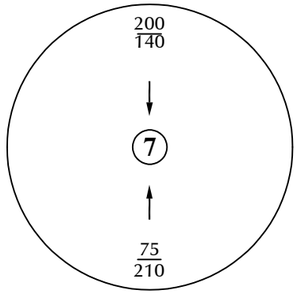

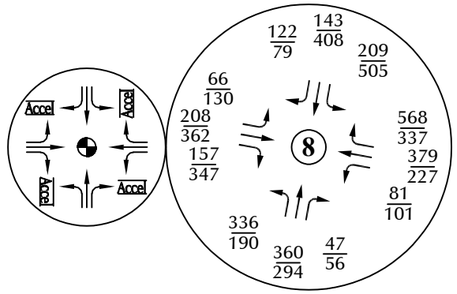

Intentionally

9

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LEGEND:

= Stop Sign

= Traffic Signal

= Speed Limit

26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic

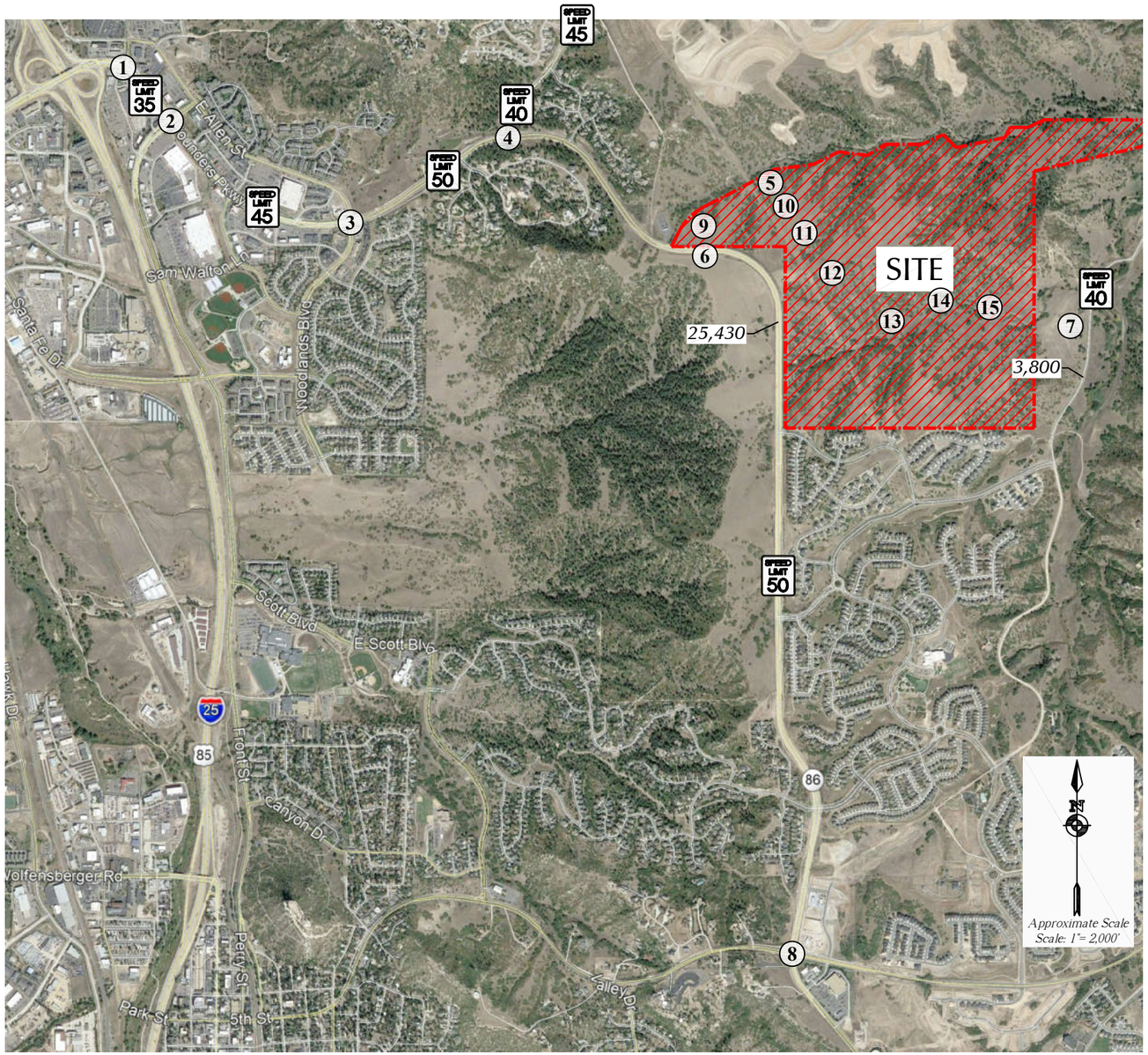
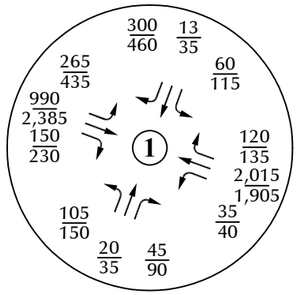


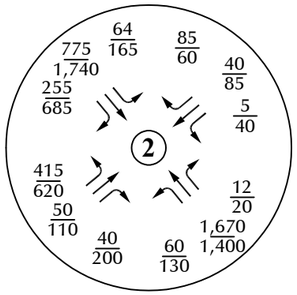
Figure 3a

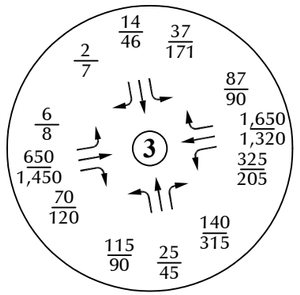
May, 2021 Existing Traffic, Lane Geometry and Traffic Control

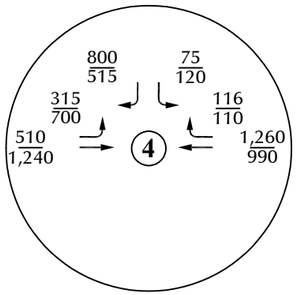
Canyons South (LSC #210310)

TRANSPORTATION CONSULTANTS, INC.









Intentionally

5

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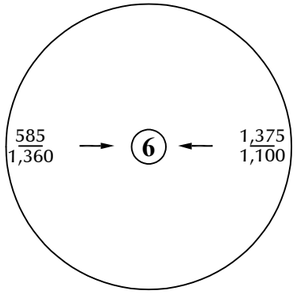

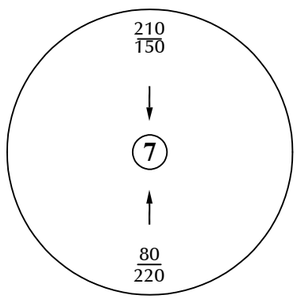

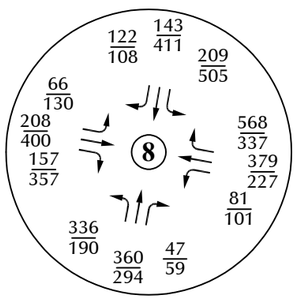

Intentionally

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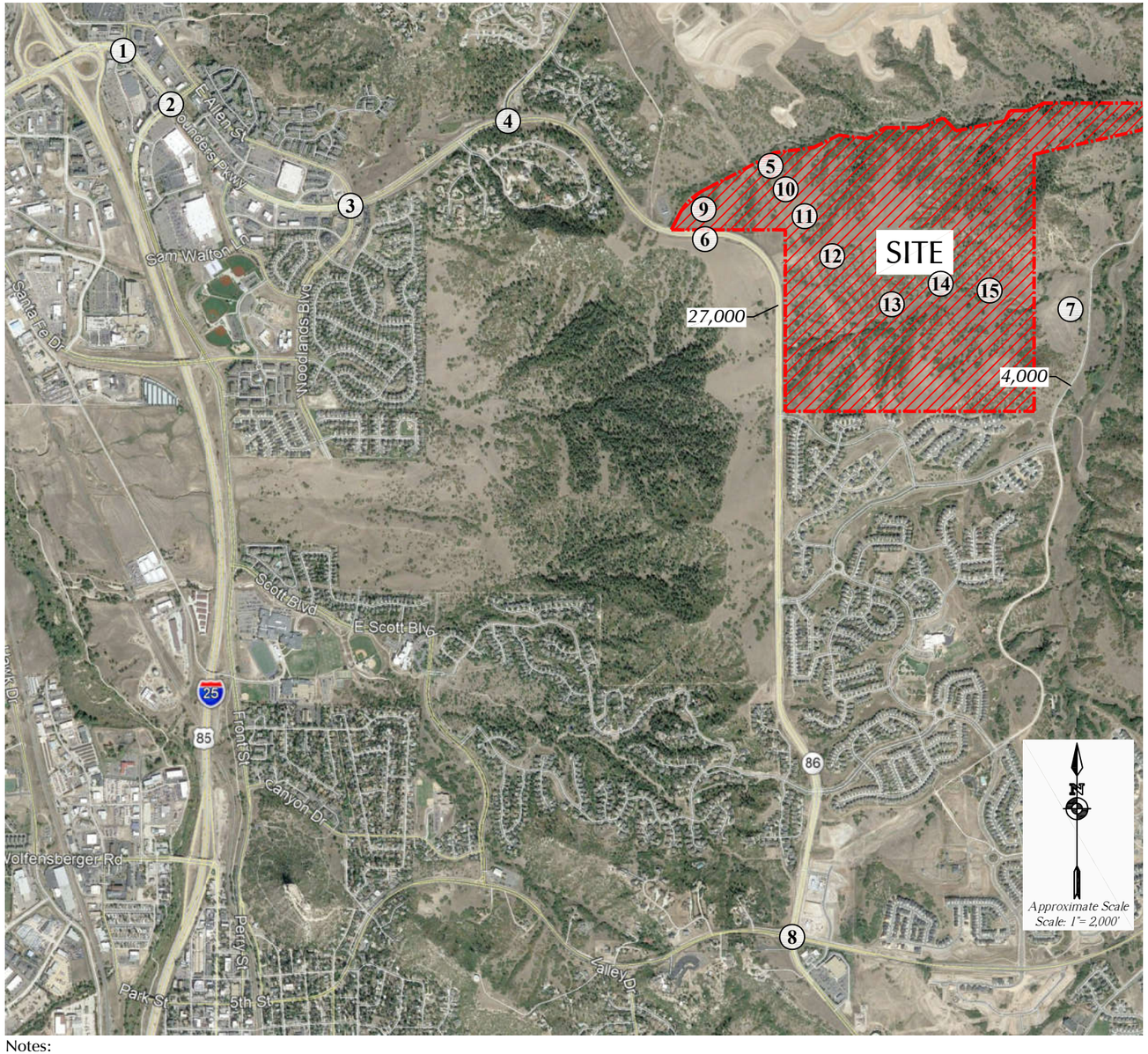

LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic

Notes:

1. Volumes at #8 are based on the higher of the volumes in Figure 3a and the 2019 volumes provided by Town staff grown for two years at an annual rate of four percent.
2. Volumes at #7 were increased by five percent to maintain a conservative analysis because the volumes at #8 were generally higher than the historic 2019 counts.
3. Intersections #1, #2, #3, #4 and #6 were adjusted based on the higher of the volumes in Figure 3a and the 2018 volumes in Figure 3 from the 2020 Pine Canyon TIA by Kimley Horn grown for three years at an annual rate of three percent.

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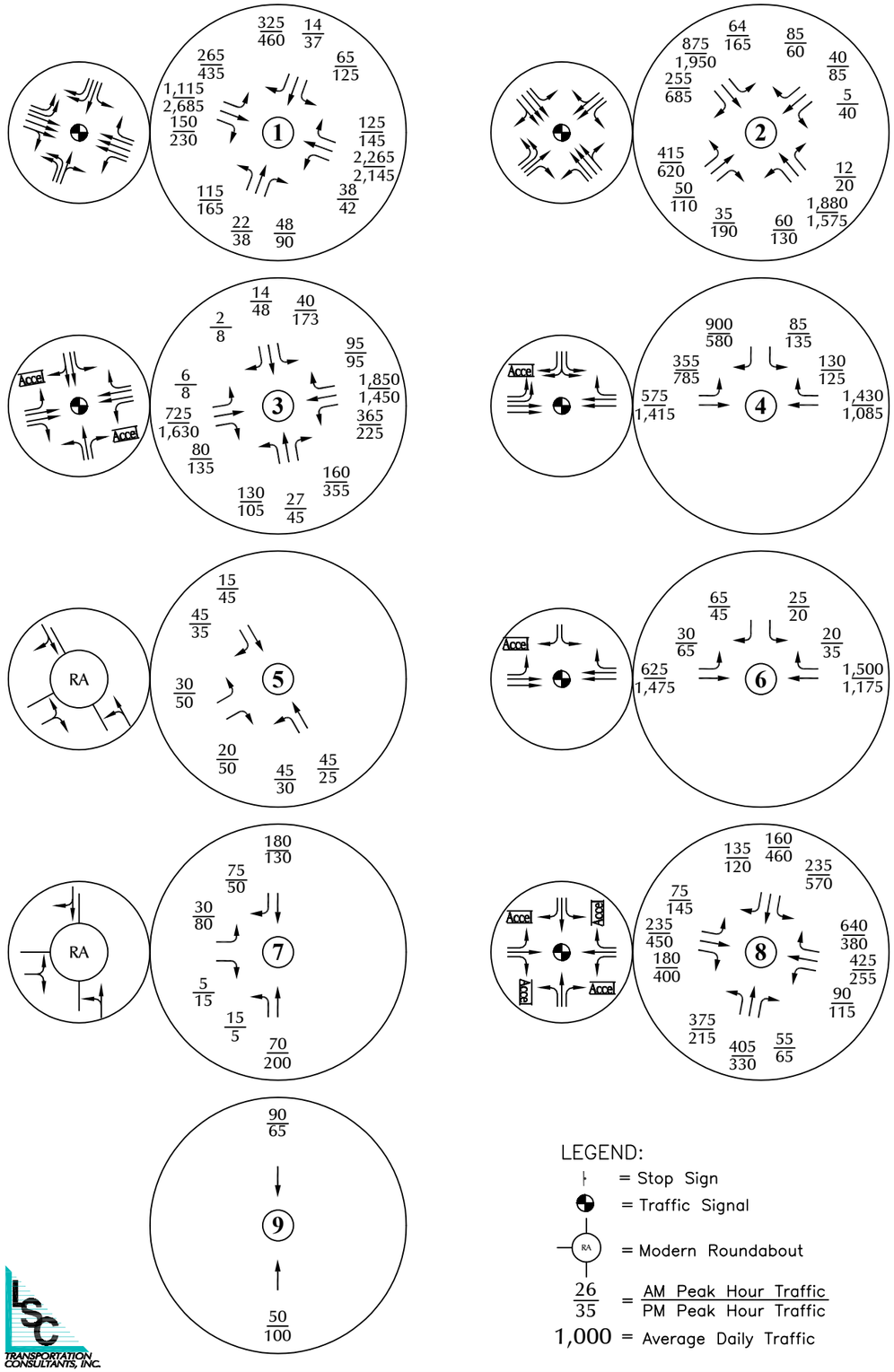
Figure 3b

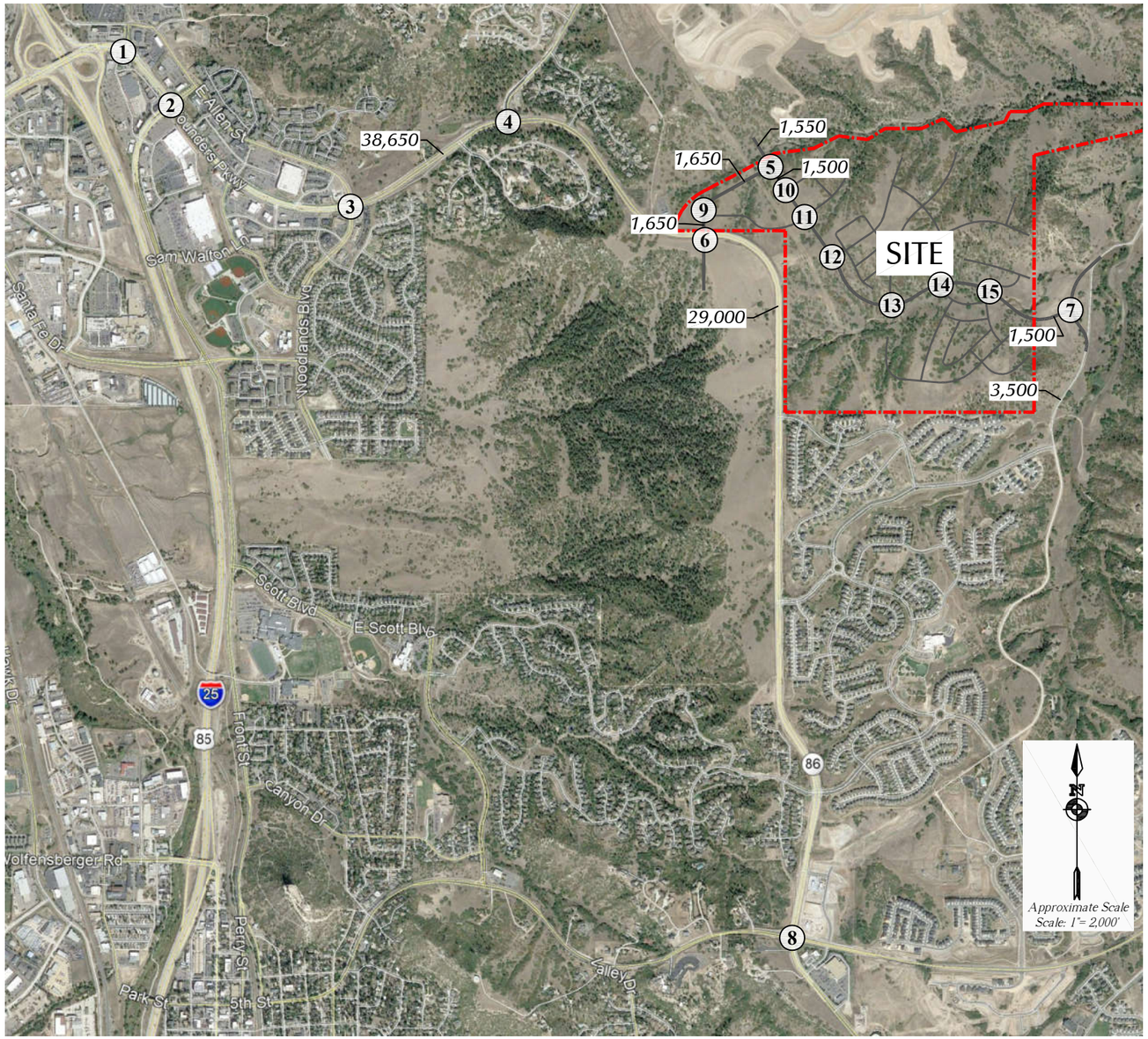
Existing Traffic Adjusted for Pandemic

Canyons South (LSC #210310)



LEGEND:

- = Stop Sign
- = Traffic Signal
- = Modern Roundabout
- 26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1,000 = Average Daily Traffic



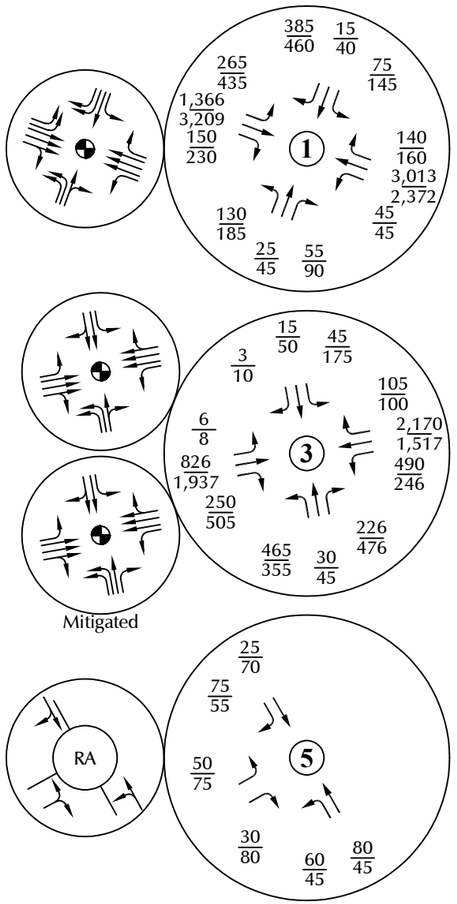
Note: Assumes four years of growth at an annual rate of three percent plus a portion of the 2041 Background traffic passing through the site. Little or no growth was assumed for movements serving built-out developments.

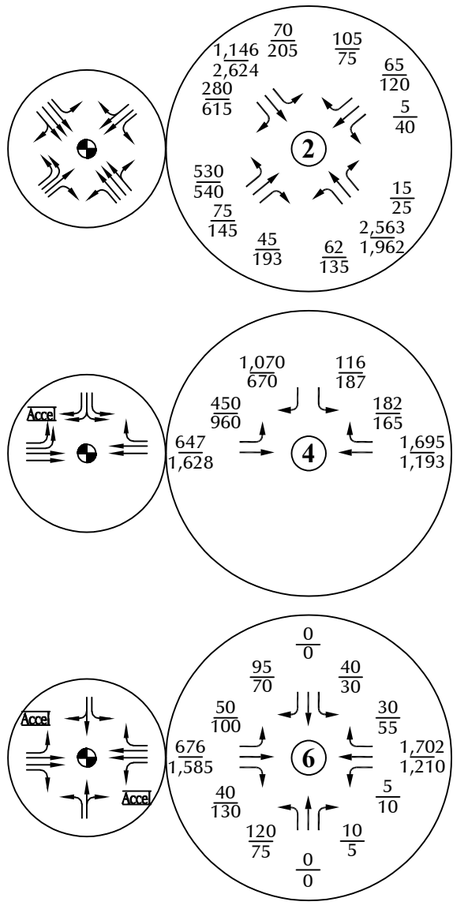
Figure 4

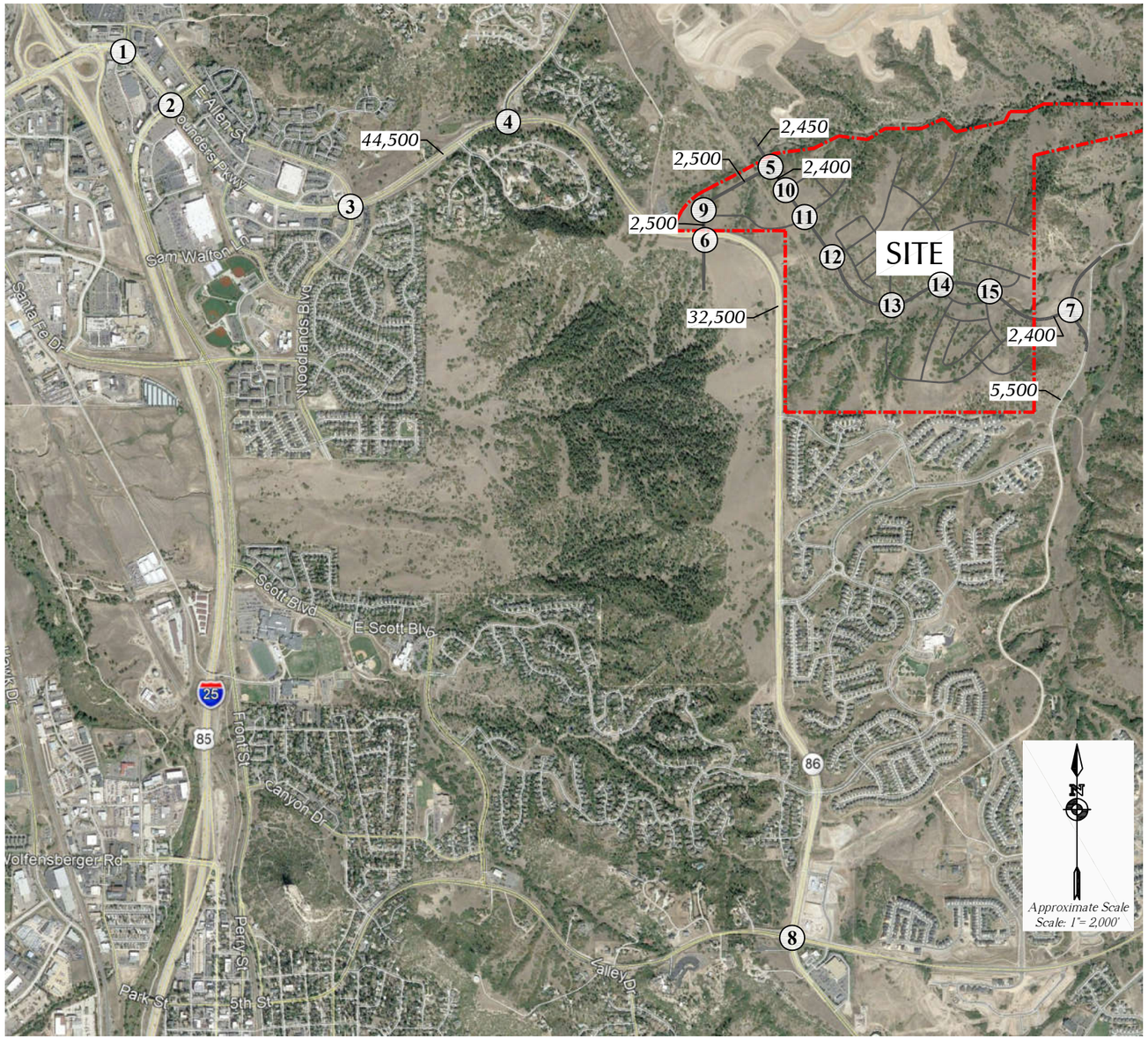
Year 2025 Background Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)

TRANSPORTATION CONSULTANTS, INC.







LEGEND:

= Stop Sign

= Traffic Signal

= Modern Roundabout

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

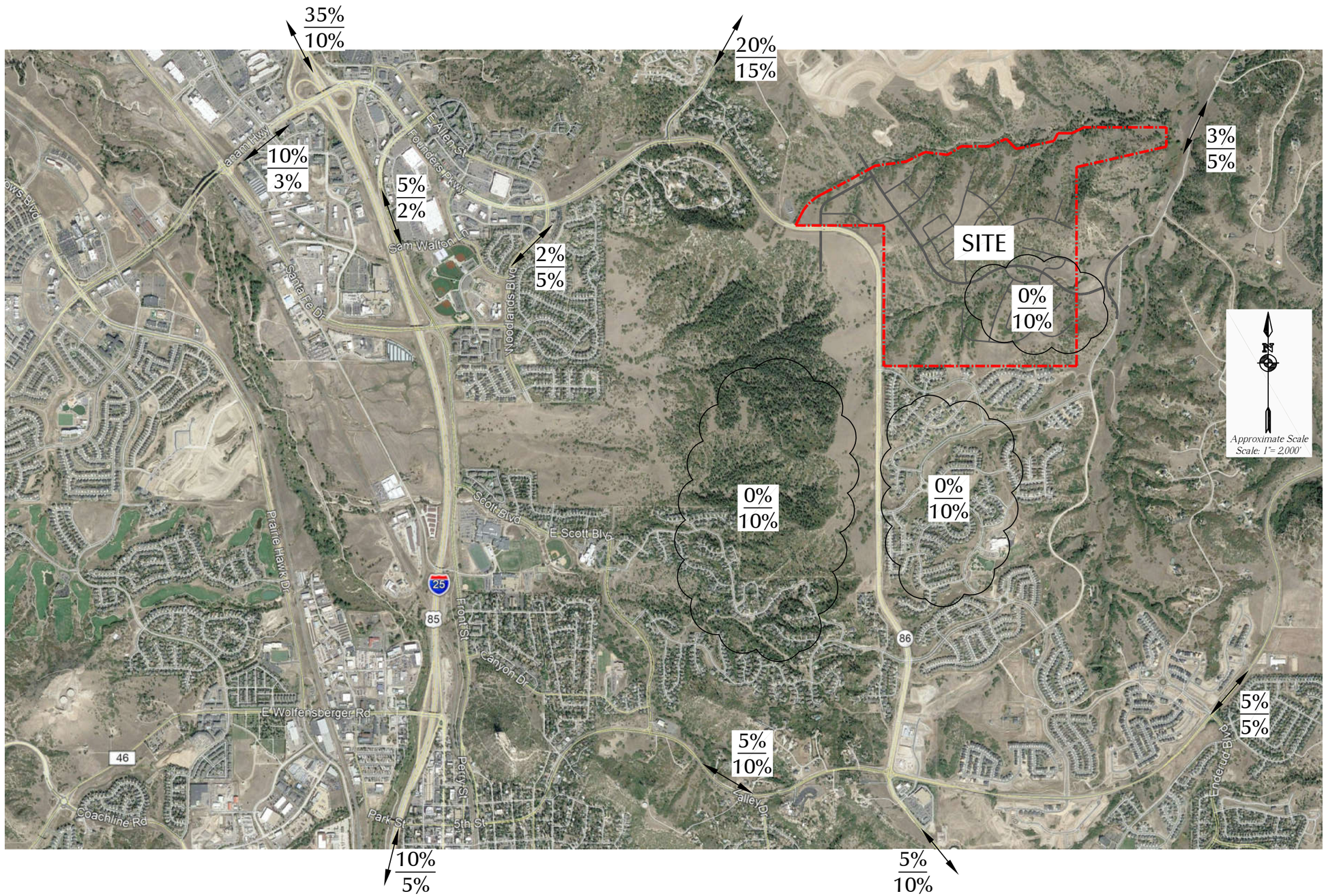
Notes:
1. These volumes are the 2041 total traffic volumes in Figure 9 less the total site-generated trips in Figure 7d with the exception of Note 2 below.
2. Intersection #8 is based on the 2040 projections provided by Town staff grown for one year at an annual rate of three percent.

Figure 5

Year 2041 Background Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)

LSC TRANSPORTATION CONSULTANTS, INC.



LEGEND:

5% / 5% = Residential Percent Directional Distribution / Commercial Percent Directional Distribution

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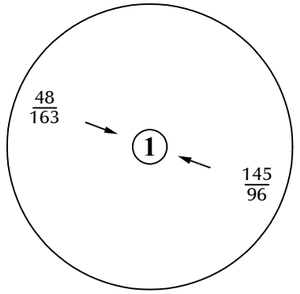
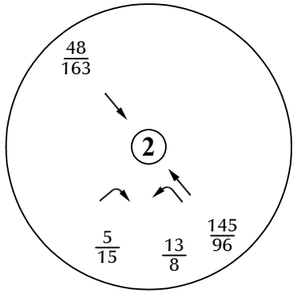
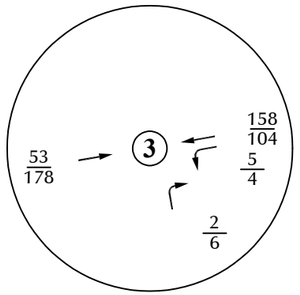
Figure 6

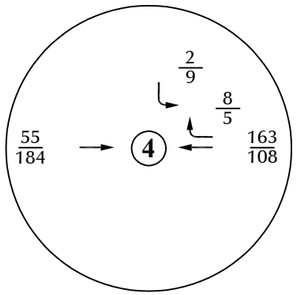
Directional Distribution of Primary Site-Generated Traffic

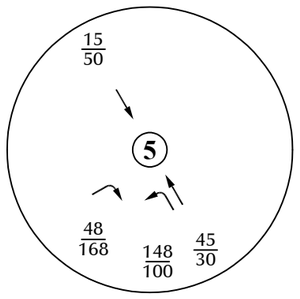
Canyons South (LSC #210310)

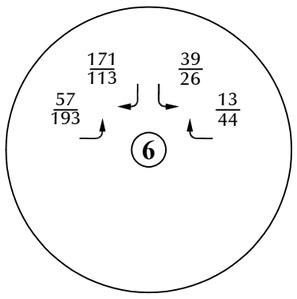


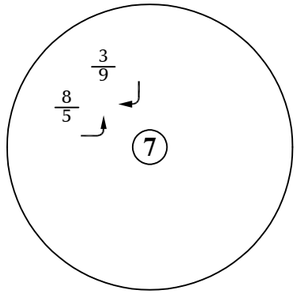


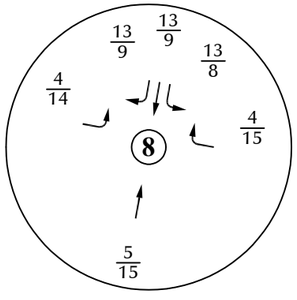


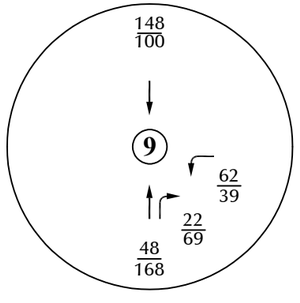


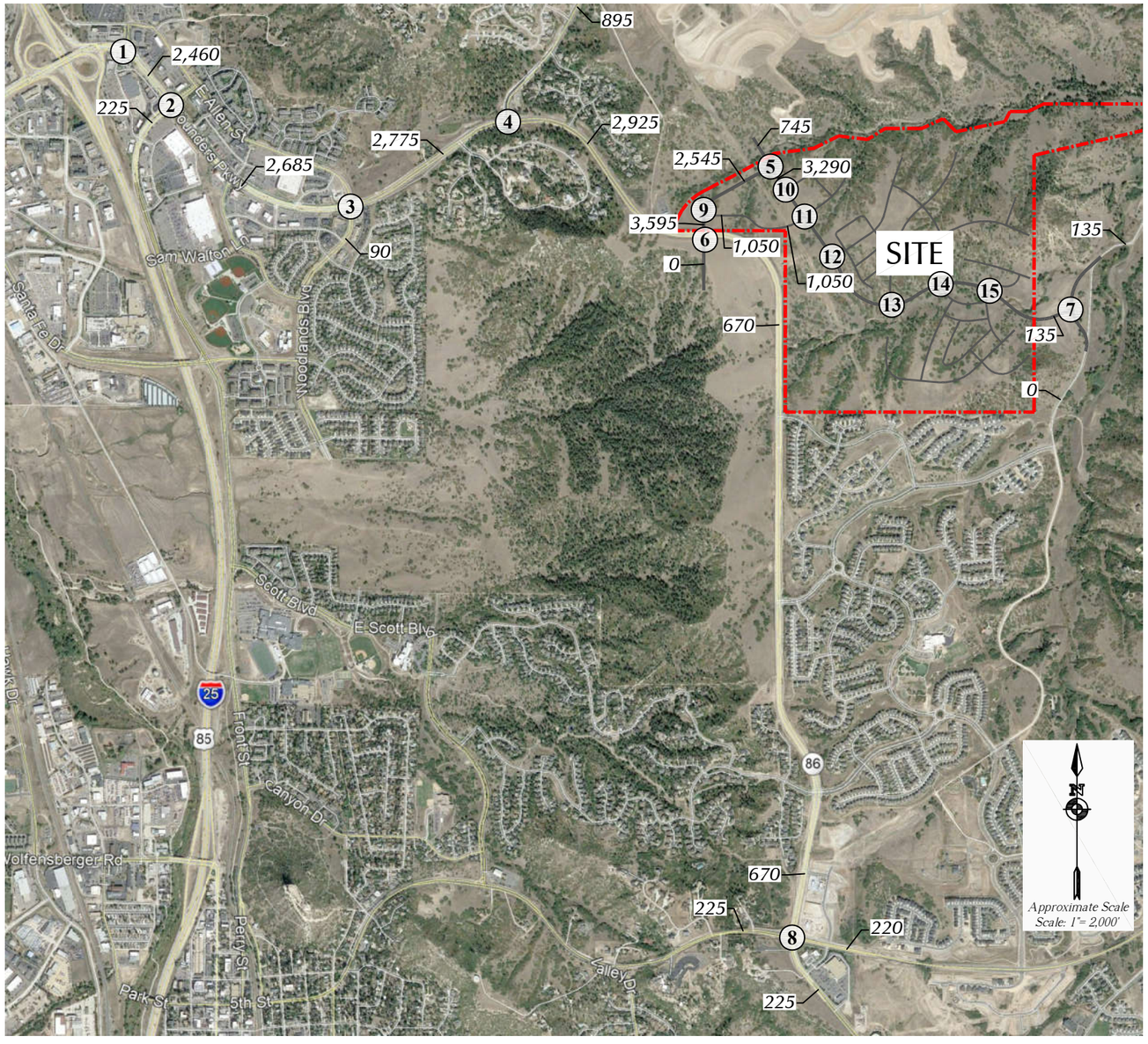












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

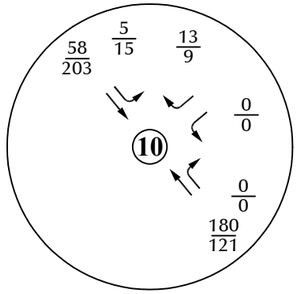
1,000 = Average Daily Traffic

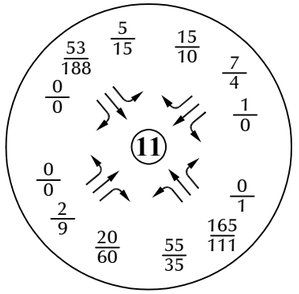
TRANSPORTATION CONSULTANTS, INC.

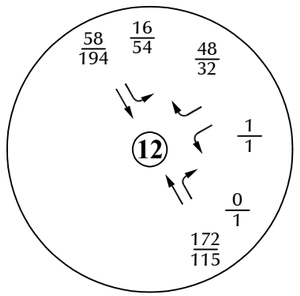
Figure 7a

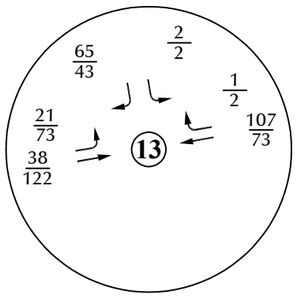
Major Intersections - Assignment of Residential Site-Generated Traffic

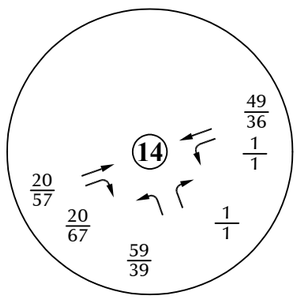
Canyons South (LSC #210310)

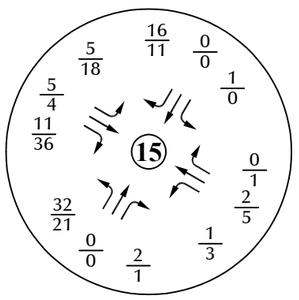


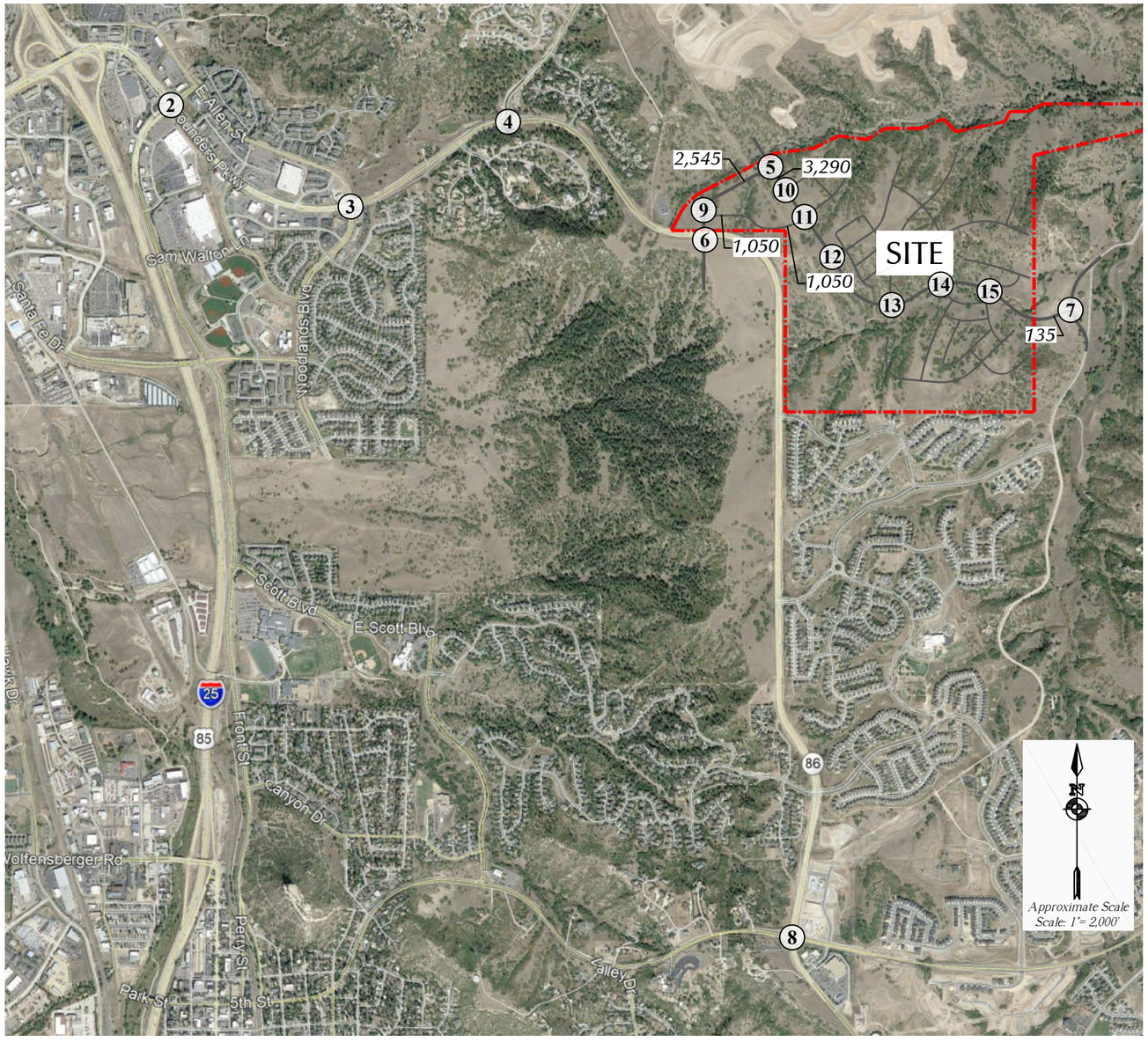












LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

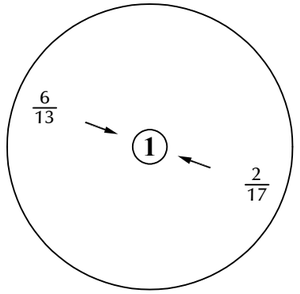
1,000 = Average Daily Traffic

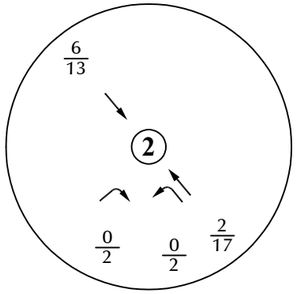
LSC TRANSPORTATION CONSULTANTS, INC.

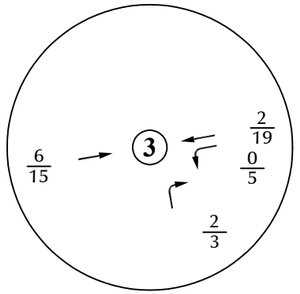
Figure 7b

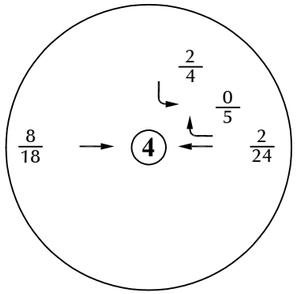
Access/Minor Intersections - Assignment of Residential Site-Generated Traffic

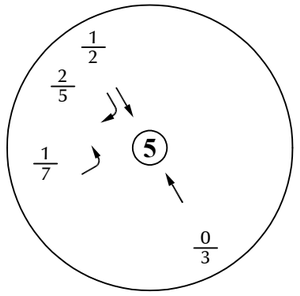
Canyons South (LSC #210310)

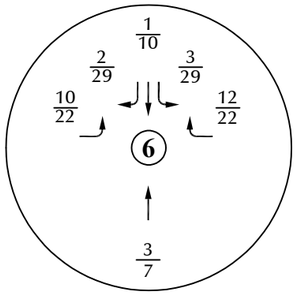


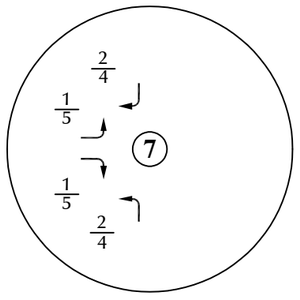


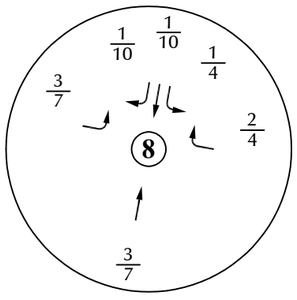


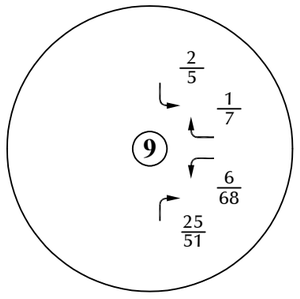


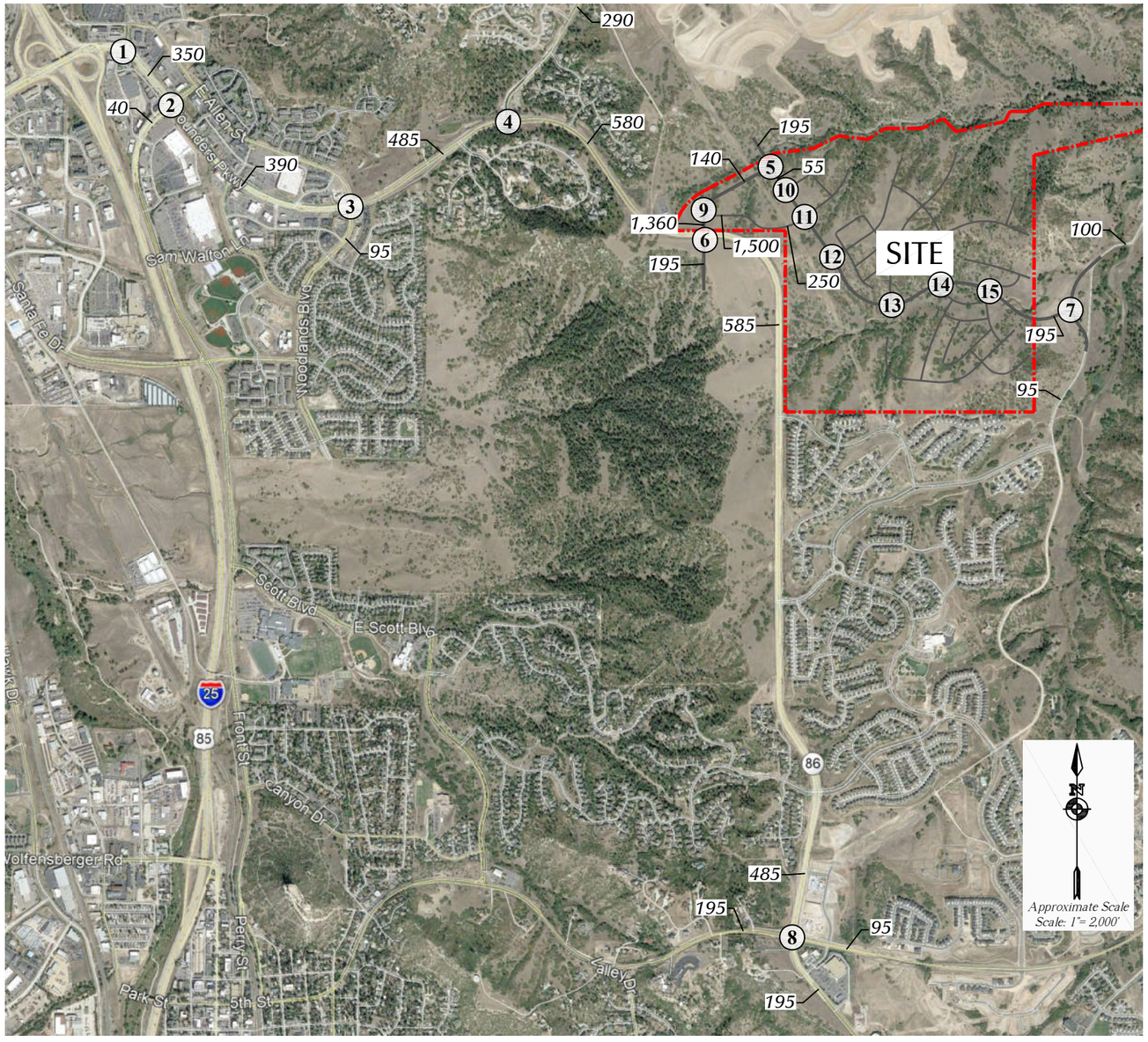












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

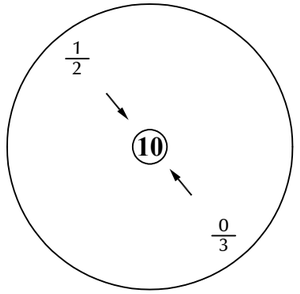
1,000 = Average Daily Traffic

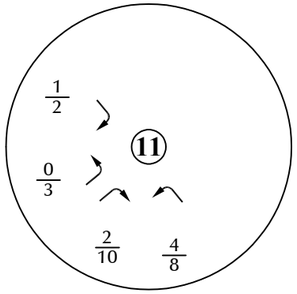
LSC TRANSPORTATION CONSULTANTS, INC.

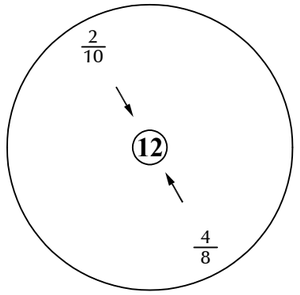
Figure 7c

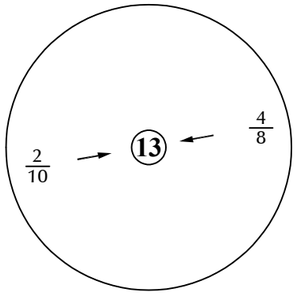
Major Intersections - Assignment of Primary Non-Residential Site-Generated Traffic

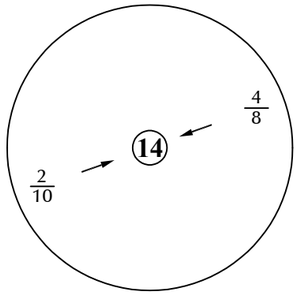
Canyons South (LSC #210310)

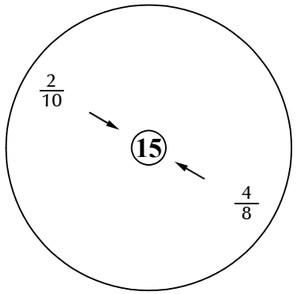


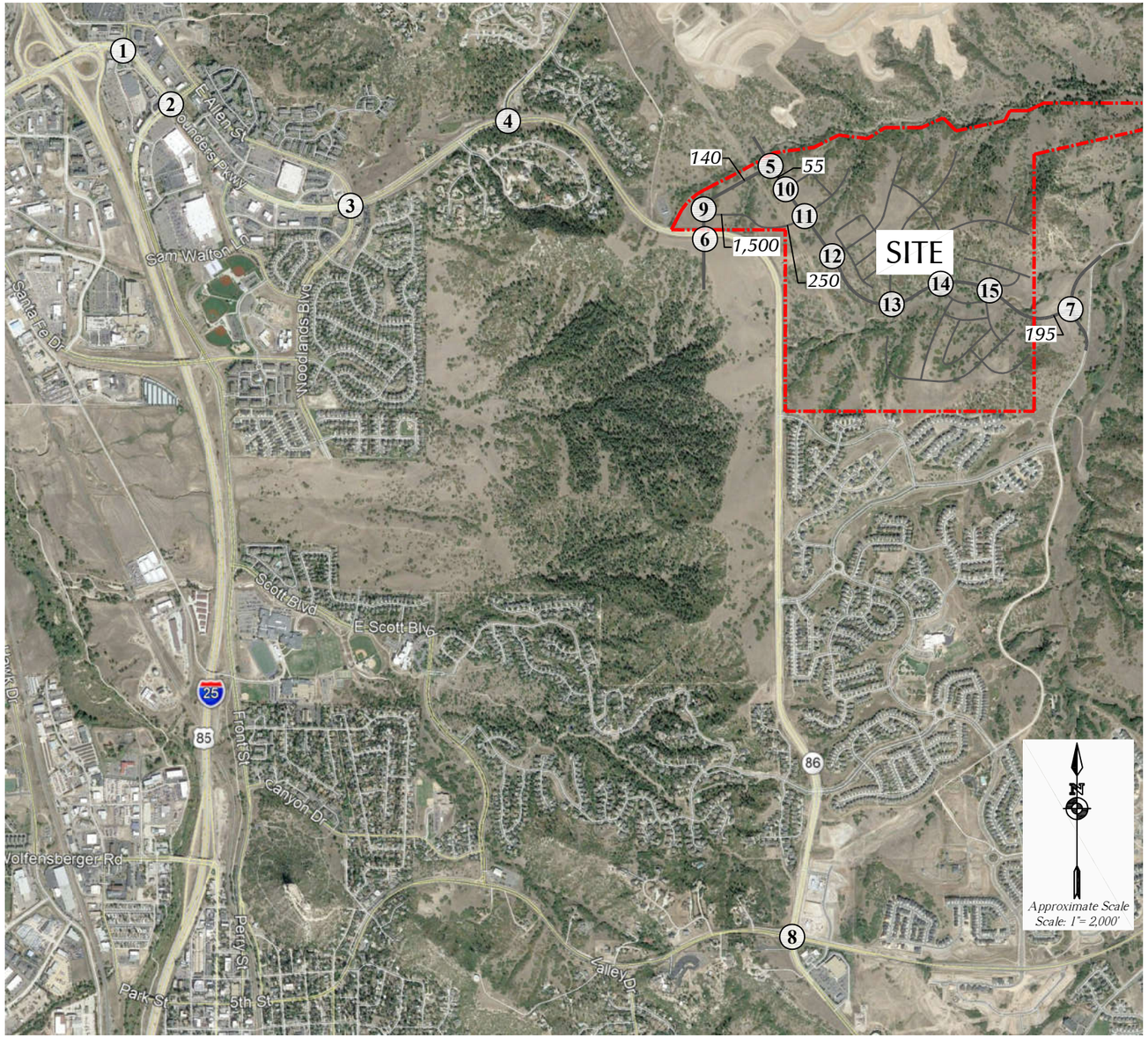












LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

1,000 = Average Daily Traffic

LSC TRANSPORTATION CONSULTANTS, INC.

Figure 7d

Access/Minor Intersections - Assignment of Primary Non-Residential Site-Generated Traffic

Canyons South (LSC #210310)

Intentionally
1
Left Blank

Intentionally
2
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Intentionally
3
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Intentionally
4
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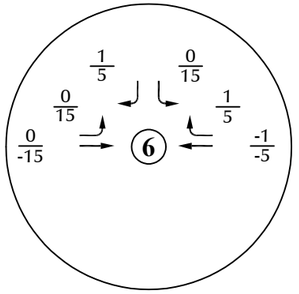
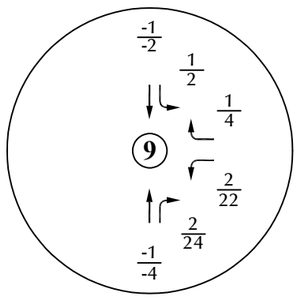
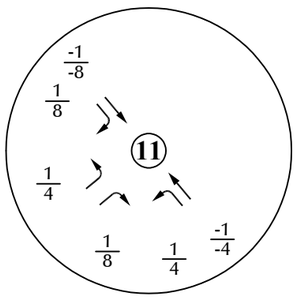
Intentionally
5
Left Blank

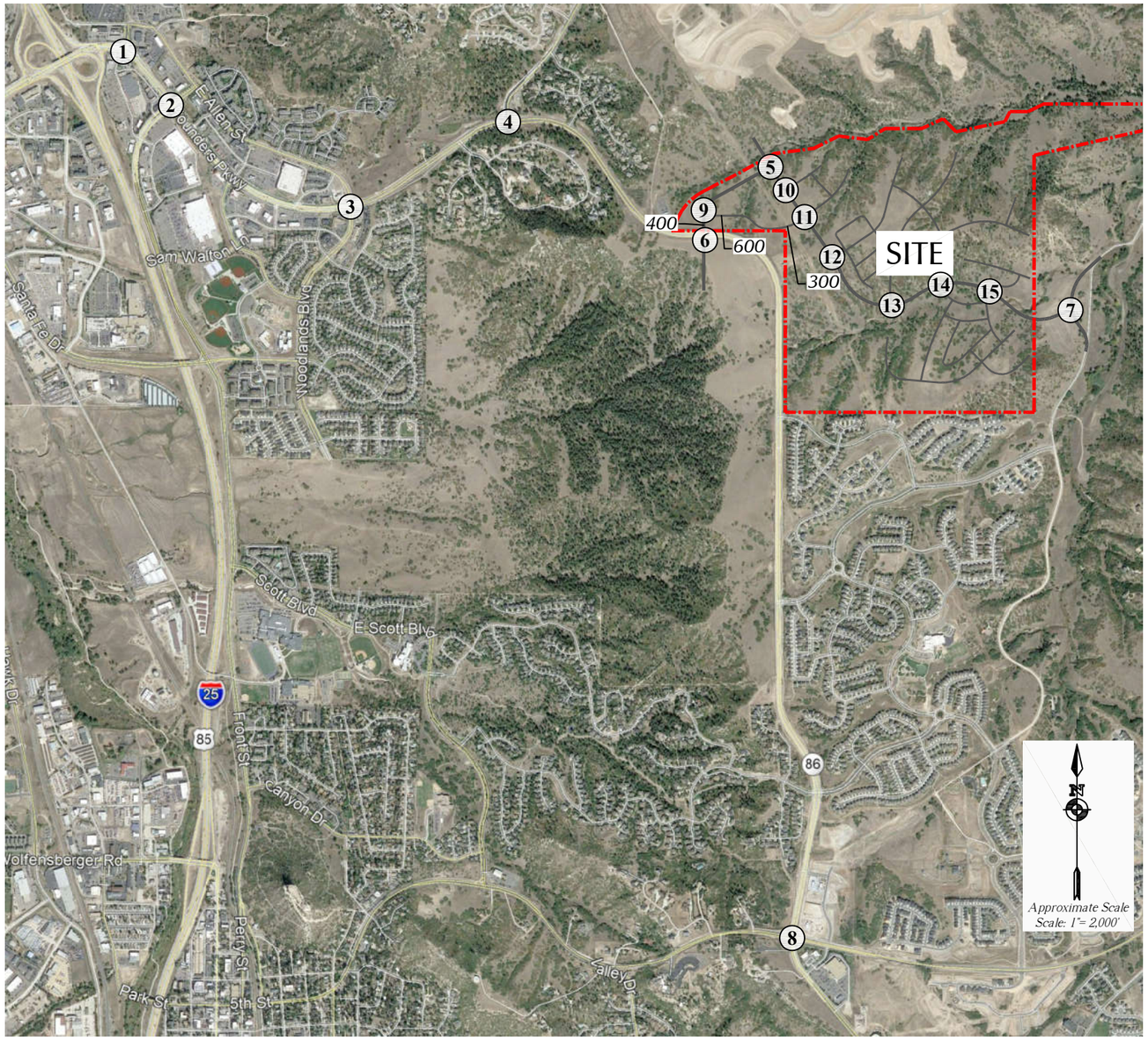


Intentionally
7
Left Blank

Intentionally
8
Left Blank







LEGEND:

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

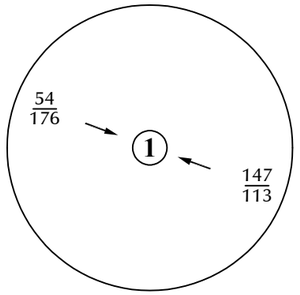
1,000 = Average Daily Traffic

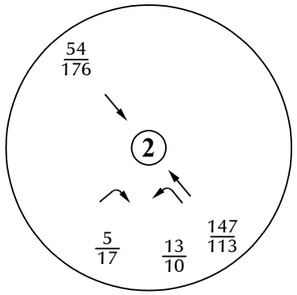
TRANSPORTATION CONSULTANTS, INC.

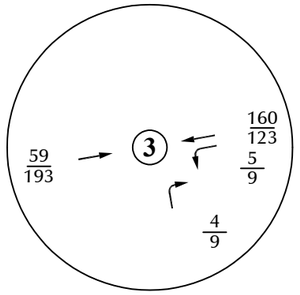
Figure 7e

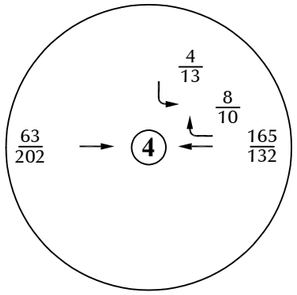
Assignment of Passby Site-Generated Traffic

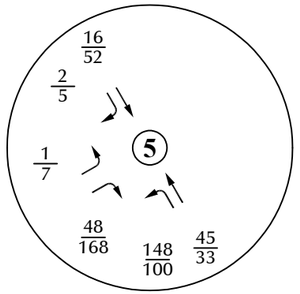
Canyons South (LSC #210310)

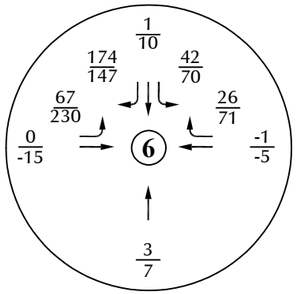


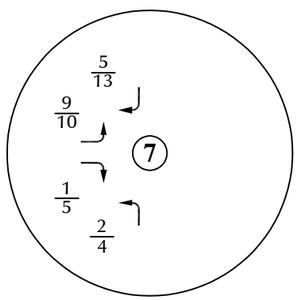


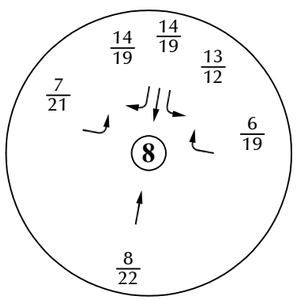


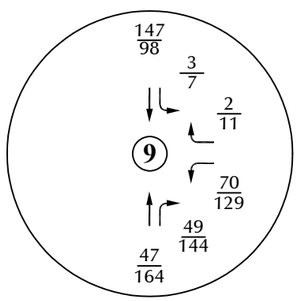


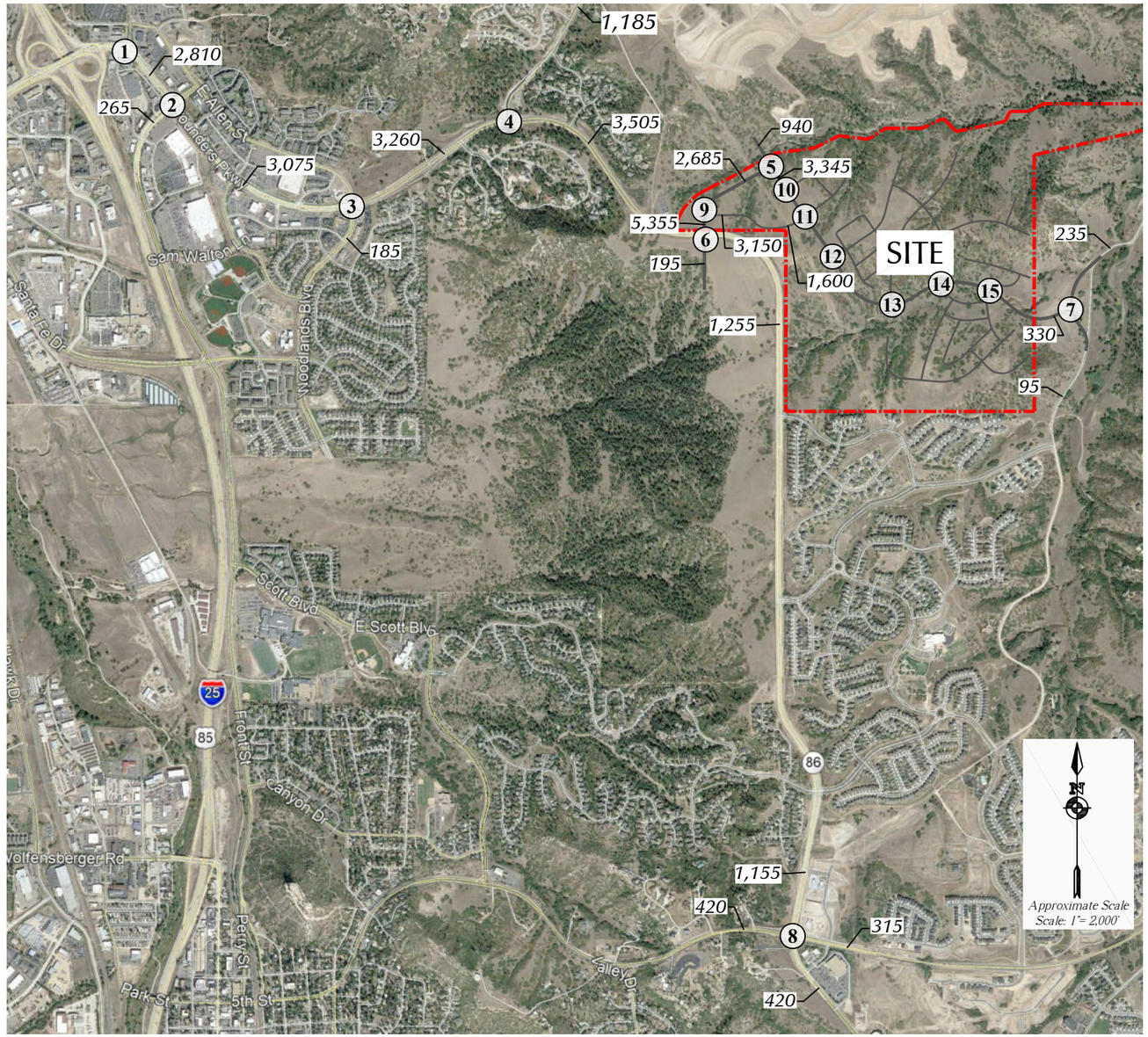












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

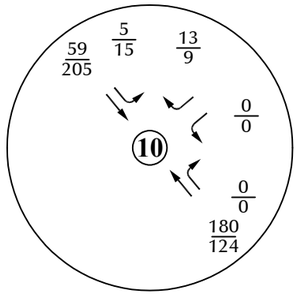
1,000 = Average Daily Traffic

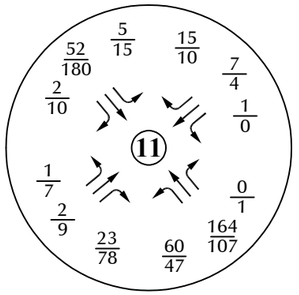
TRANSPORTATION CONSULTANTS, INC.

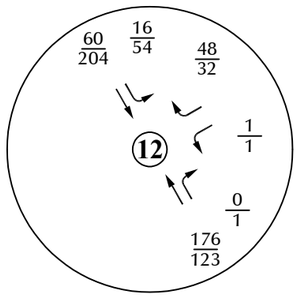
Figure 7f

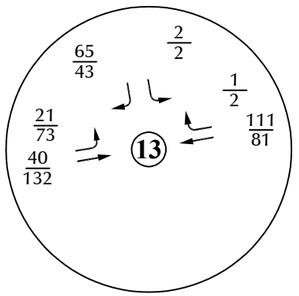
Major Intersections - Assignment of Total Site-Generated Traffic

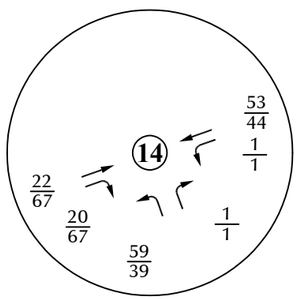
Canyons South (LSC #210310)

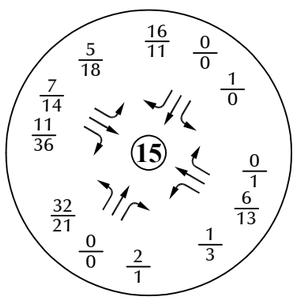


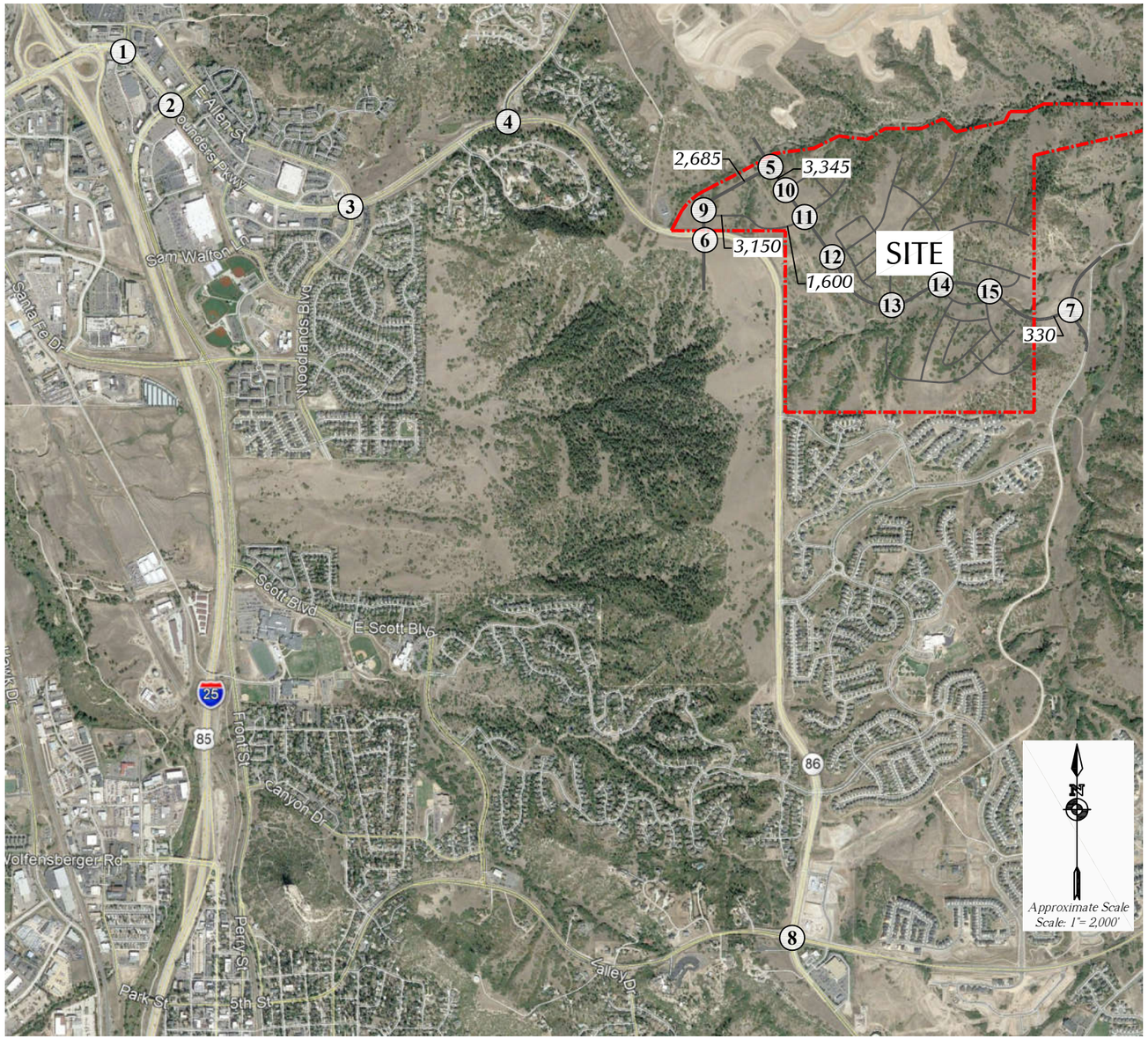












LEGEND:

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

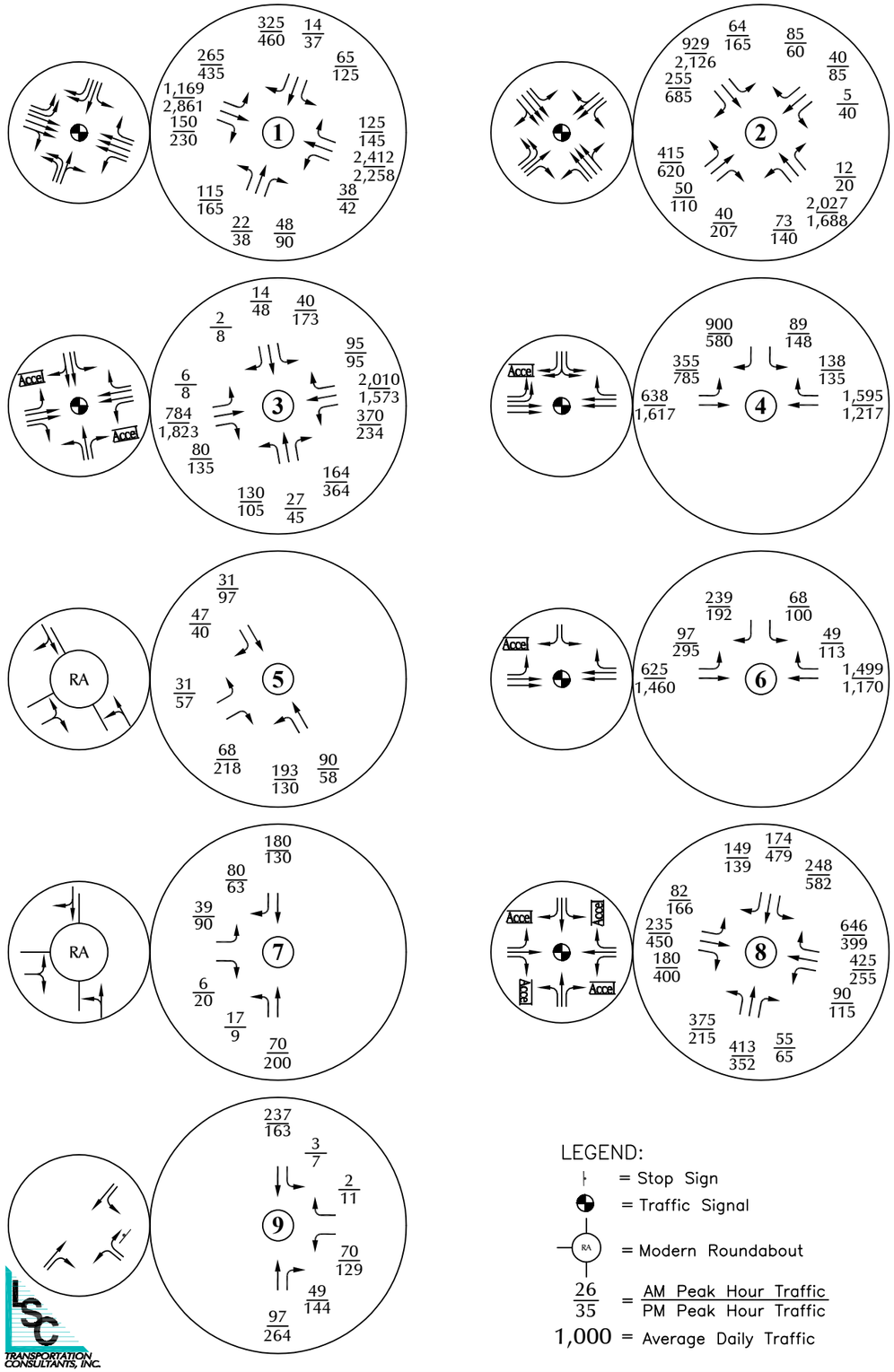
1,000 = Average Daily Traffic

TRANSPORTATION CONSULTANTS, INC.

Figure 7g

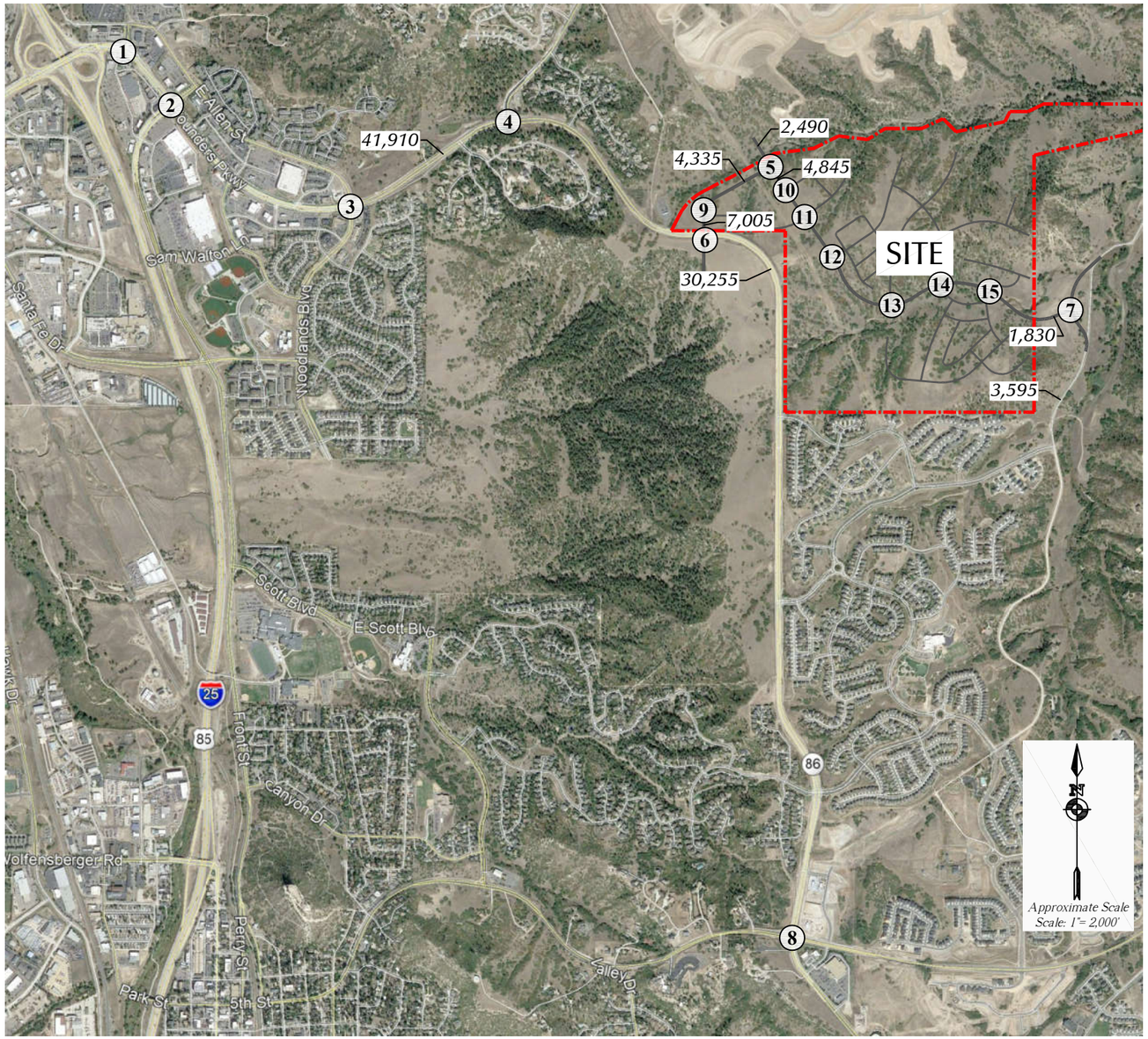
Access/Minor Intersections - Assignment of Total Site-Generated Traffic

Canyons South (LSC #210310)



LEGEND:

- = Stop Sign
- = Traffic Signal
- = Modern Roundabout
- 26/35 = AM Peak Hour Traffic / PM Peak Hour Traffic
- 1,000 = Average Daily Traffic



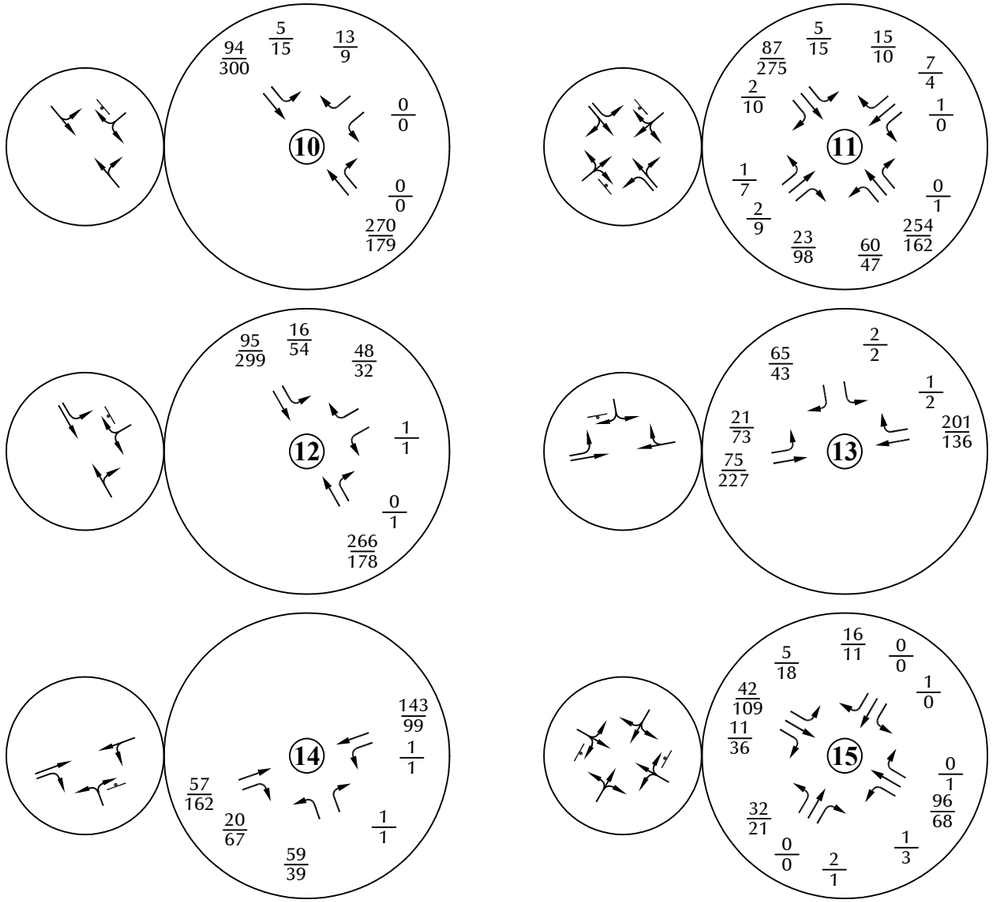
Note: These volumes are the sum of the volumes in Figure 4 and Figure 7f.

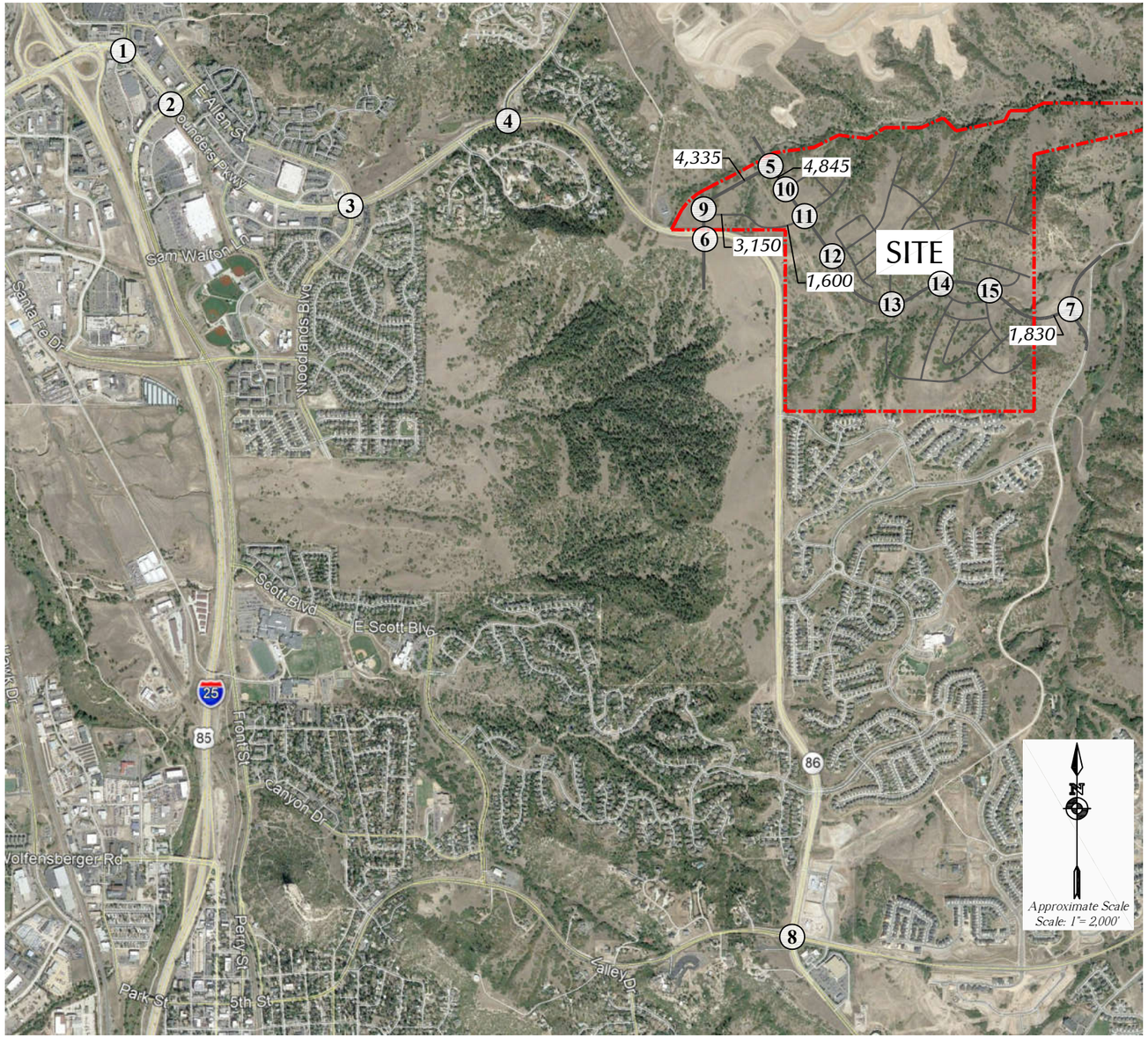
Figure 8a

Major Intersections - Year 2025 Total Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)

LSC TRANSPORTATION CONSULTANTS, INC.





Note: These volumes are the sum of the volumes in Figure 4 and Figure 7g.

LEGEND:

= Stop Sign

= Traffic Signal

= Modern Roundabout

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

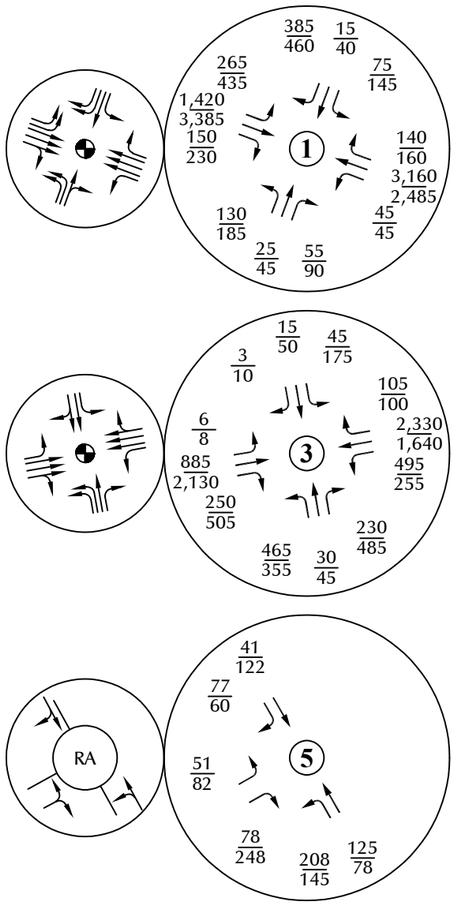
1,000 = Average Daily Traffic

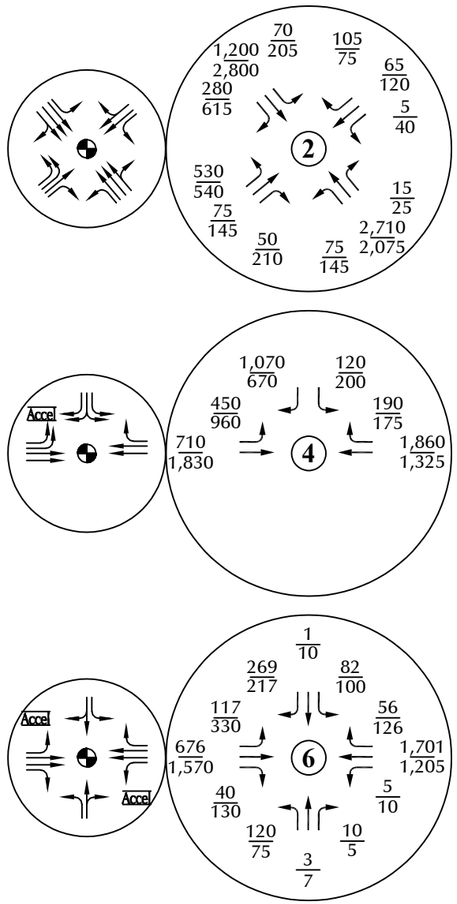
LSC TRANSPORTATION CONSULTANTS, INC.

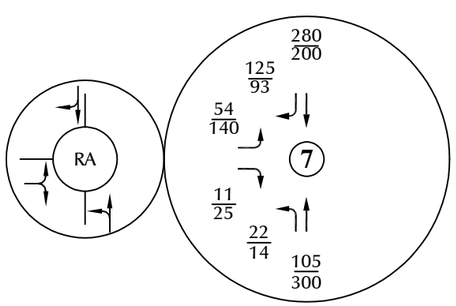
Figure 8b

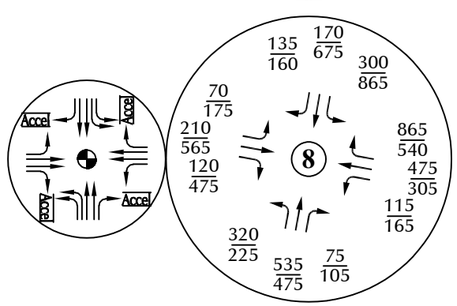
Access/Minor Intersections - Year 2025 Total Traffic, Lane Geometry and Traffic Control

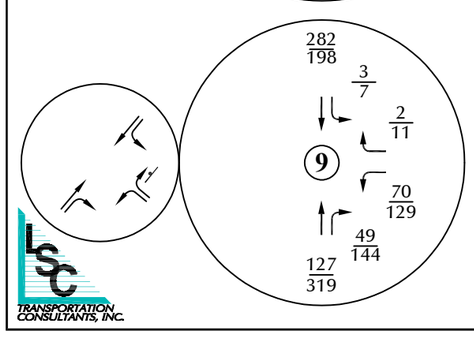
Canyons South (LSC #210310)

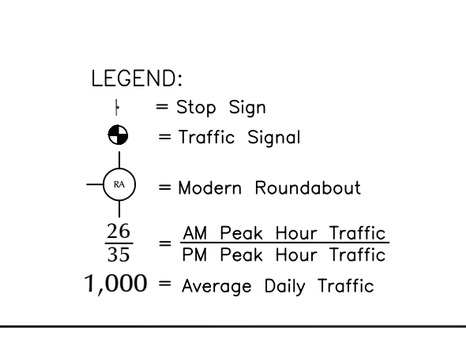












LEGEND:

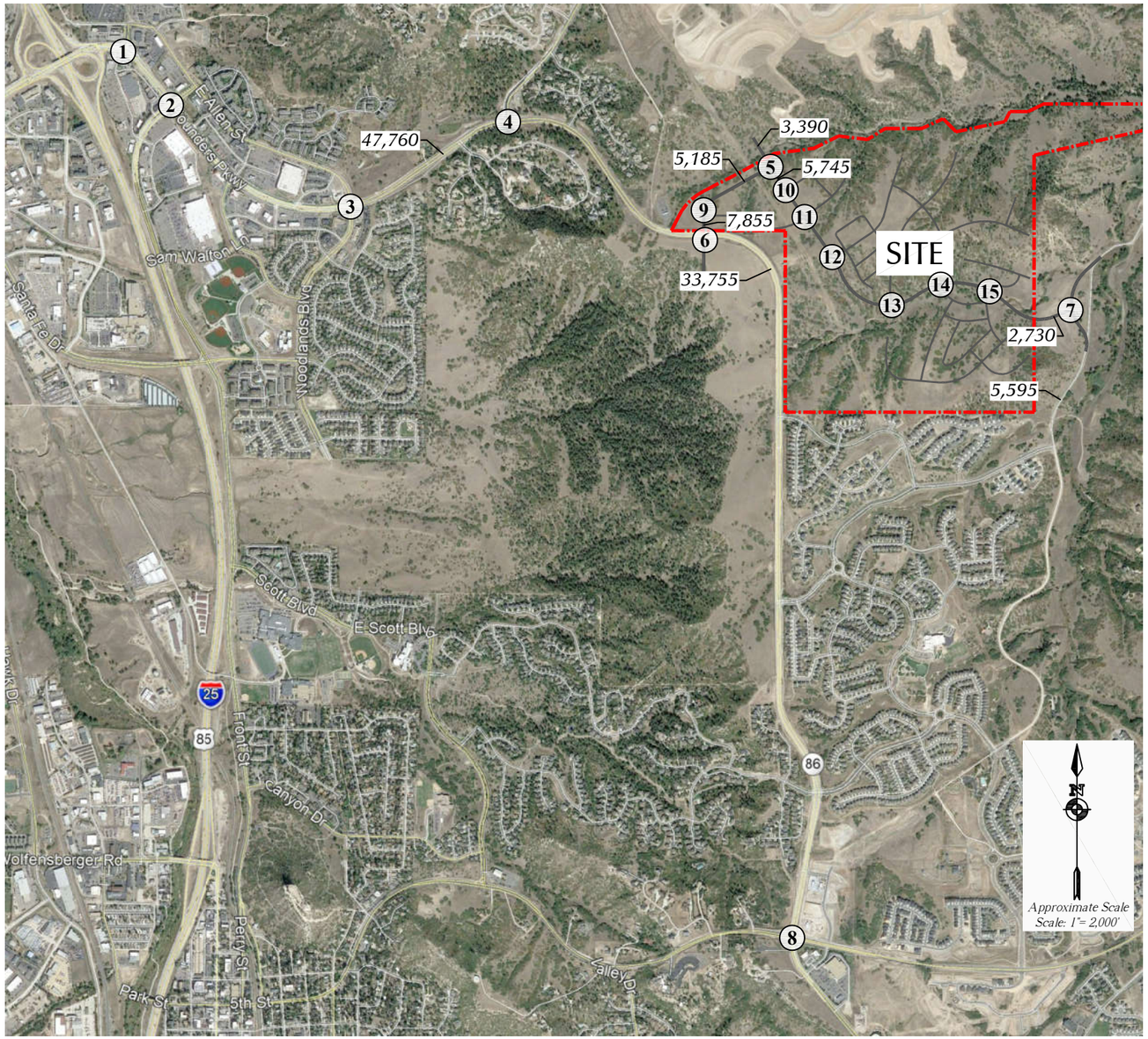
= Stop Sign

= Traffic Signal

= Modern Roundabout

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic



Notes:

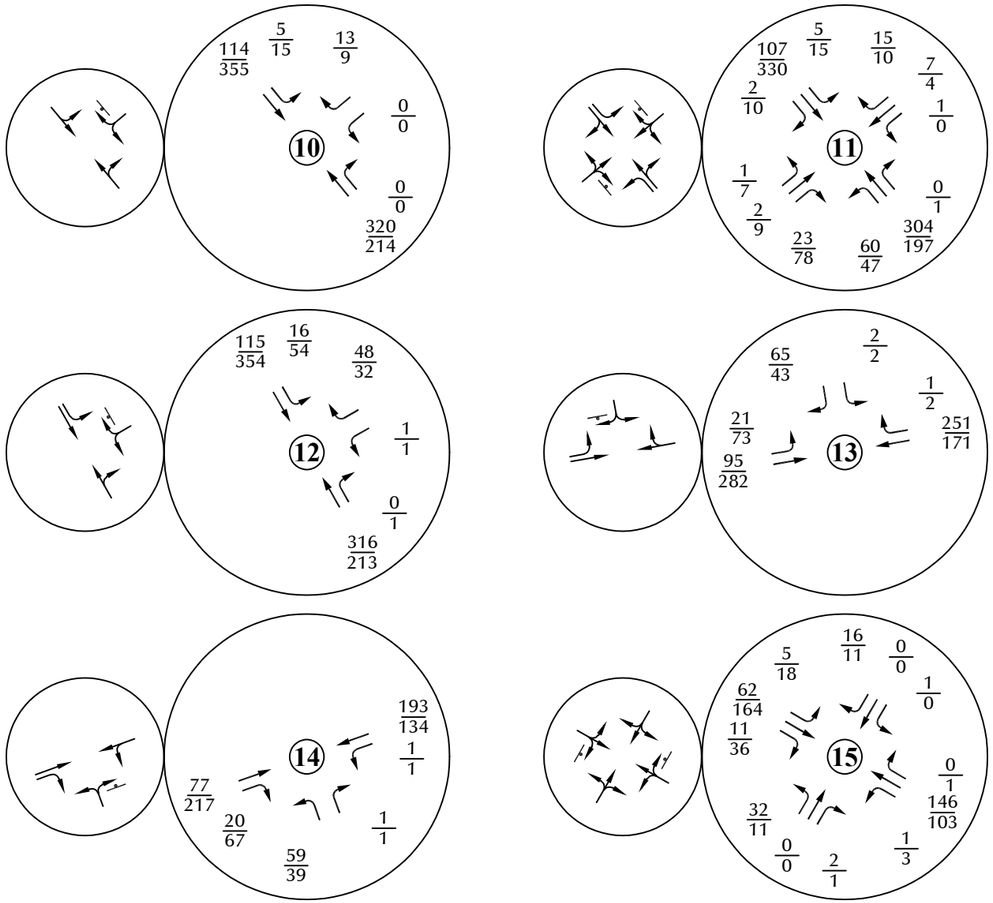
1. #8 based on 2040 projections from Town grown for one year at an annual rate of three percent plus site-generated trips.
2. South leg of #6 based on build-out volumes from Figure 7a of the 2017 Pine Canyon Update TIA by LSC.
3. Side Road volumes at #1, #2, #3 and #4 are based on the 2040 total traffic volumes from Figure 12 of the 2020 Pine Canyon TIA by Kimley Horn with some adjustments based on the recent traffic counts.
4. Through traffic at #7 based on three percent annual growth rate.
5. These volumes are the sum of the volumes in Figure 5 and Figure 7f.

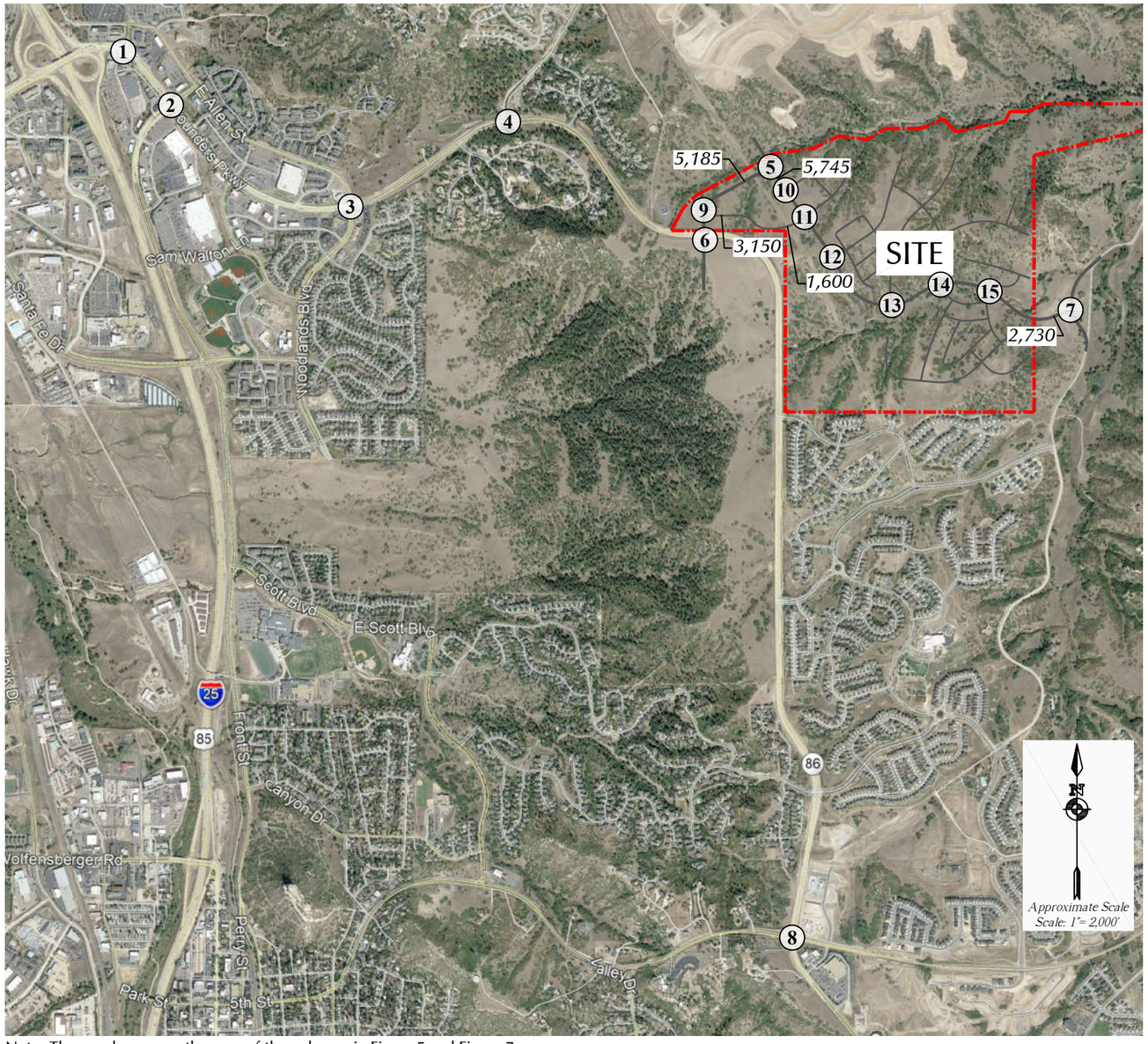
LSC TRANSPORTATION CONSULTANTS, INC.

Figure 9a

Major Intersections - Year 2041 Total Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)





Note: These volumes are the sum of the volumes in Figure 5 and Figure 7g.

LEGEND:

= Stop Sign

= Traffic Signal

= Modern Roundabout

$\frac{26}{35}$ = $\frac{\text{AM Peak Hour Traffic}}{\text{PM Peak Hour Traffic}}$

1,000 = Average Daily Traffic

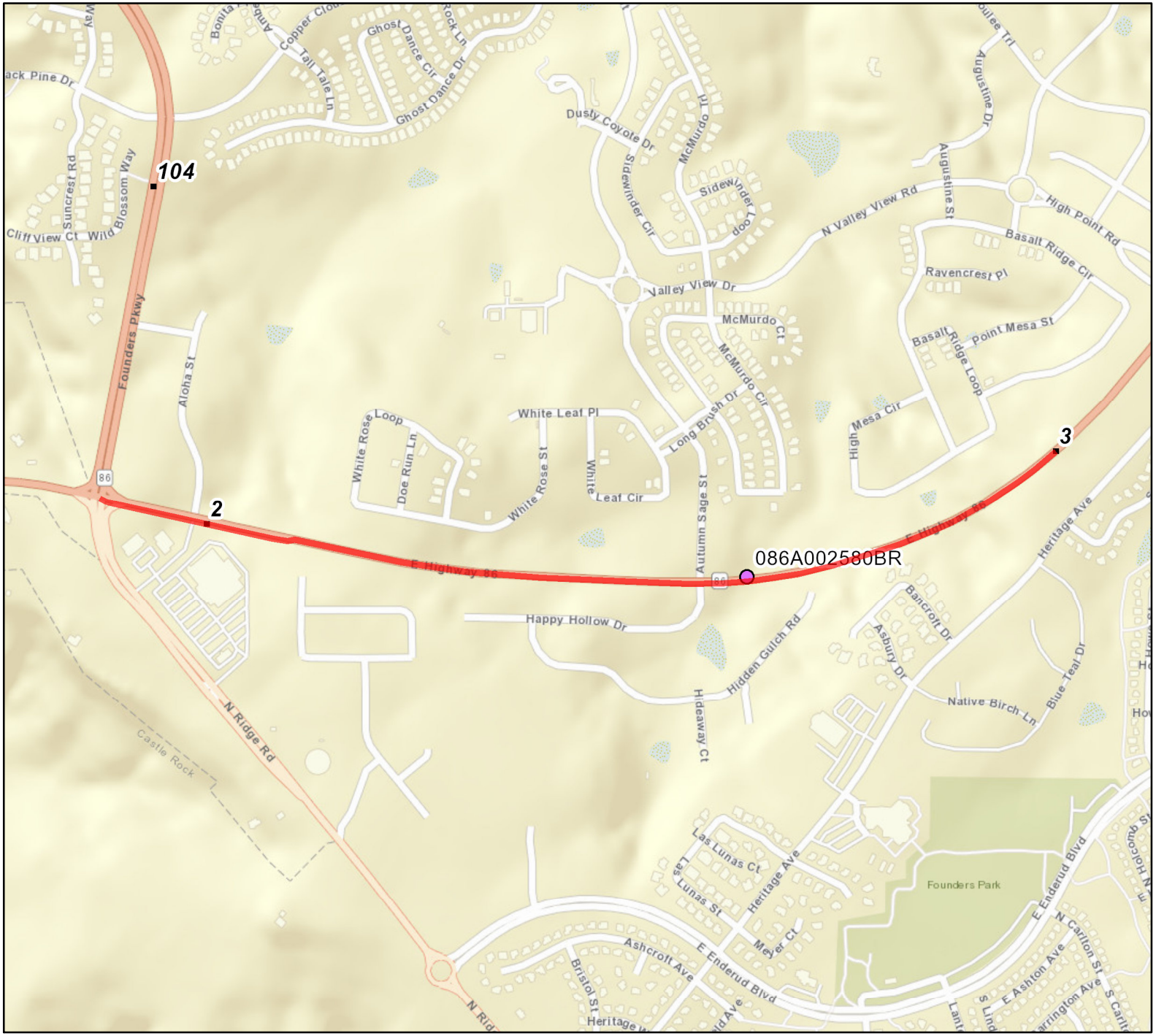
TRANSPORTATION CONSULTANTS, INC.

Figure 9b

Access/Minor Intersections - Year 2041 Total Traffic, Lane Geometry and Traffic Control

Canyons South (LSC #210310)

Route 086A From 1 to 3



Legend

- Route
- Milepoint

Structures

- Major Structure
- Minor Structure

Created:

Date: 6/17/2021

Time: 9:52:59 AM

0 0.08 0.16 0.24 0.32

Miles

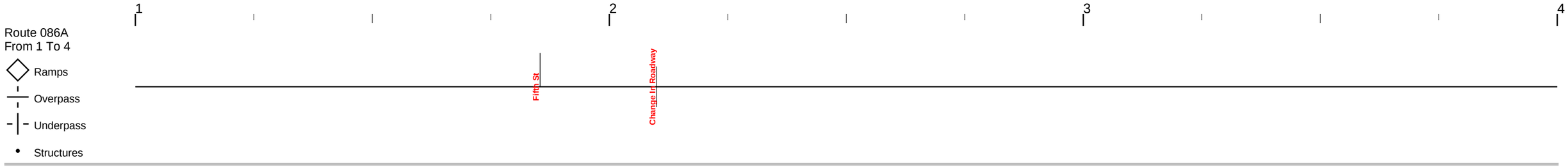
N

W E

S

CDOT

The information contained in this map is based on the most currently available data and has been checked for accuracy. CDOT does not guarantee the accuracy of any information presented, is not liable in any respect for any errors or omissions, and is not responsible for determining "fitness for use".



CLASSIFICATION

Access Control	NR-A: Non-Rural Principal Highway	

SAFETY

Primary Speed Limit	45	55

TRAFFIC

AADT	15000	9900
V/C Ratio 20	0.97	0.47
Year 20 Factor	1.17	1.14

It may appear that information is missing from the straight line diagram. If so, reduce the number of miles/page and re-submit the request.

COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN WAY
E/W STREET: FOUNDERS PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLEN WAY FOUNDERS PKWY 6-3-21
Site Code : 00000022
Start Date : 6/3/2021
Page No : 1

Groups Printed- VEHICLES

	ALLEN WAY Southbound				FOUNDERS PKWY Westbound				ALLEN WAY Northbound				FOUNDERS PKWY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	15	2	37	0	5	292	28	0	14	2	11	0	35	131	18	0	590
06:45 AM	10	3	47	0	11	344	28	0	22	0	11	0	60	155	35	0	726
Total	25	5	84	0	16	636	56	0	36	2	22	0	95	286	53	0	1316
07:00 AM	6	2	73	0	10	324	53	0	22	7	14	0	37	145	30	0	723
07:15 AM	13	5	76	0	8	352	43	1	19	1	12	0	74	167	20	0	791
07:30 AM	15	3	72	0	3	430	30	0	26	1	12	0	64	186	29	0	871
07:45 AM	17	3	63	0	7	402	26	0	20	3	14	0	71	279	55	0	960
Total	51	13	284	0	28	1508	152	1	87	12	52	0	246	777	134	0	3345
08:00 AM	17	2	80	0	5	360	33	0	30	5	12	1	64	227	36	0	872
08:15 AM	11	5	66	1	10	356	31	0	28	2	8	0	65	233	30	0	846
Total	28	7	146	1	15	716	64	0	58	7	20	1	129	460	66	0	1718
04:00 PM	35	9	122	0	7	399	45	1	39	10	19	0	111	513	74	0	1384
04:15 PM	20	11	117	0	9	449	37	0	43	3	20	0	107	440	50	0	1306
04:30 PM	23	8	107	0	7	363	34	0	40	12	22	0	112	504	54	0	1286
04:45 PM	33	7	103	0	1	458	31	0	35	2	33	0	117	517	55	0	1392
Total	111	35	449	0	24	1669	147	1	157	27	94	0	447	1974	233	0	5368
05:00 PM	22	13	137	0	14	402	31	0	34	5	19	0	111	536	65	0	1389
05:15 PM	26	7	108	0	17	439	39	0	38	1	14	0	96	549	53	0	1387
05:30 PM	19	7	121	0	10	383	45	0	39	11	11	0	89	470	47	0	1252
05:45 PM	14	13	114	0	8	391	24	0	34	10	14	0	105	424	48	1	1200
Total	81	40	480	0	49	1615	139	0	145	27	58	0	401	1979	213	1	5228
Grand Total	296	100	1443	1	132	6144	558	2	483	75	246	1	1318	5476	699	1	16975
Apprch %	16.1	5.4	78.4	0.1	1.9	89.9	8.2	0.0	60.0	9.3	30.6	0.1	17.6	73.1	9.3	0.0	
Total %	1.7	0.6	8.5	0.0	0.8	36.2	3.3	0.0	2.8	0.4	1.4	0.0	7.8	32.3	4.1	0.0	

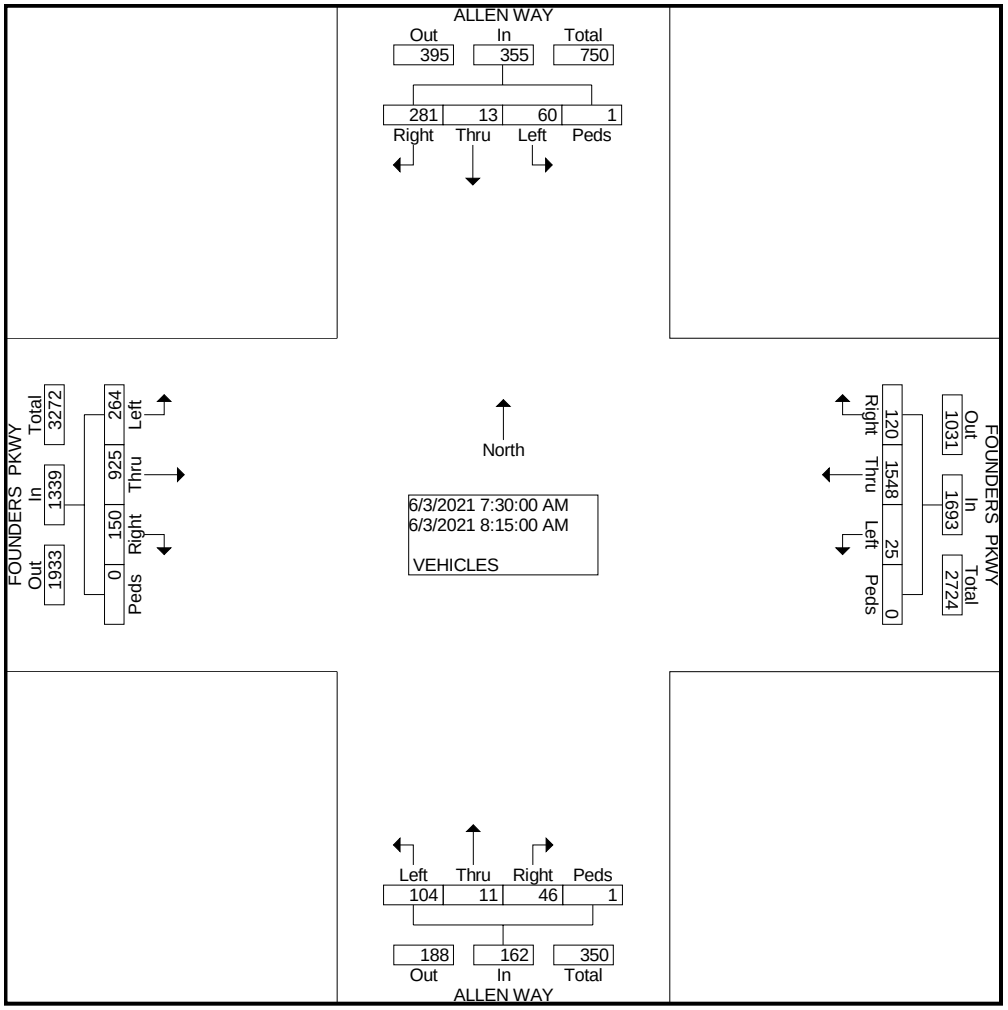
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN WAY
E/W STREET: FOUNDERS PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLEN WAY FOUNDERS PKWY 6-3-21
Site Code : 00000022
Start Date : 6/3/2021
Page No : 2

	ALLEN WAY Southbound					FOUNDERS PKWY Westbound					ALLEN WAY Northbound					FOUNDERS PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	60	13	281	1	355	25	1548	120	0	1693	104	11	46	1	162	264	925	150	0	1339	3549
Percent	16.9	3.7	79.2	0.3		1.5	91.4	7.1	0.0		64.2	6.8	28.4	0.6		19.7	69.1	11.2	0.0		
07:45 Volume	17	3	63	0	83	7	402	26	0	435	20	3	14	0	37	71	279	55	0	405	960
Peak Factor																					0.924
High Int.	08:00 AM					07:30 AM					08:00 AM					07:45 AM					
Volume	17	2	80	0	99	3	430	30	0	463	30	5	12	1	48	71	279	55	0	405	
Peak Factor					0.896					0.914					0.844					0.827	



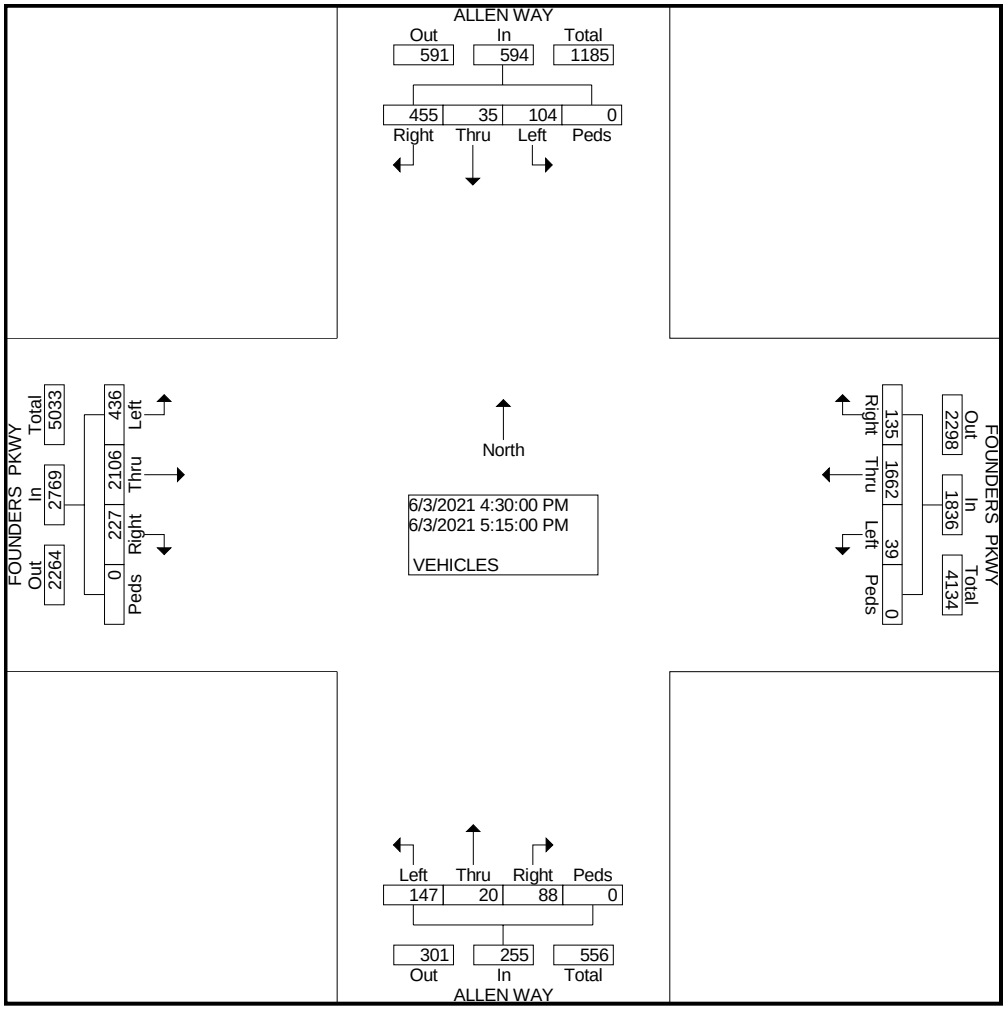
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN WAY
E/W STREET: FOUNDERS PKWY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLEN WAY FOUNDERS PKWY 6-3-21
Site Code : 00000022
Start Date : 6/3/2021
Page No : 2

	ALLEN WAY Southbound					FOUNDERS PKWY Westbound					ALLEN WAY Northbound					FOUNDERS PKWY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	104	35	455	0	594	39	1662	135	0	1836	147	20	88	0	255	436	2106	227	0	2769	5454
Percent	17.5	5.9	76.6	0.0		2.1	90.5	7.4	0.0		57.6	7.8	34.5	0.0		15.7	76.1	8.2	0.0		
04:45 Volume	33	7	103	0	143	1	458	31	0	490	35	2	33	0	70	117	517	55	0	689	1392
Peak Factor																					0.980
High Int.	05:00 PM					05:15 PM					04:30 PM					05:00 PM					
Volume	22	13	137	0	172	17	439	39	0	495	40	12	22	0	74	111	536	65	0	712	
Peak Factor					0.863					0.927					0.861					0.972	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: FRONT STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FRONTFOUND
Site Code : 00000020
Start Date : 5/4/2021
Page No : 1

Groups Printed- VEHICLES

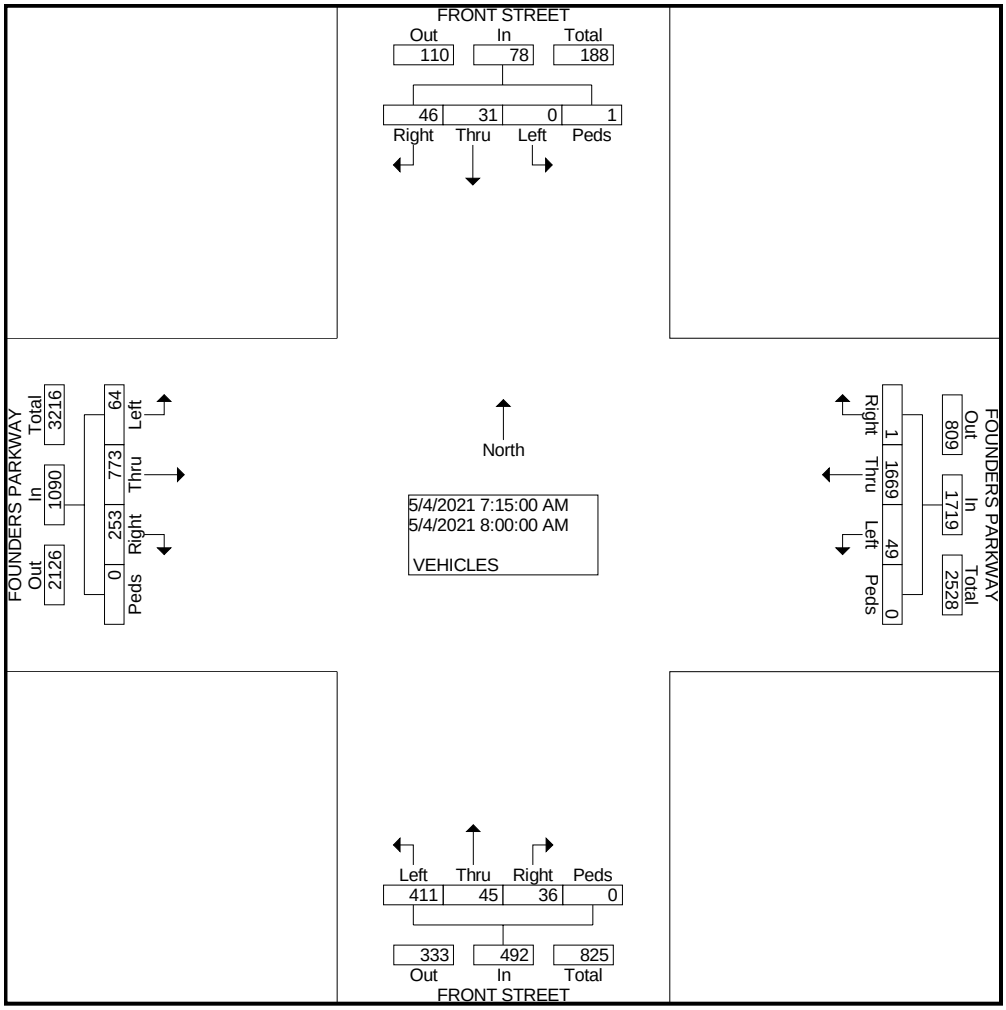
	FRONT STREET Southbound				FOUNDERS PARKWAY Westbound				FRONT STREET Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	1	2	13	0	8	282	0	0	55	3	4	0	7	105	42	0	522
06:45 AM	0	0	11	0	9	339	0	0	62	6	5	0	5	148	49	4	638
Total	1	2	24	0	17	621	0	0	117	9	9	0	12	253	91	4	1160
07:00 AM	0	0	14	0	12	343	0	0	78	8	6	0	3	126	44	0	634
07:15 AM	0	11	11	0	13	448	0	0	107	12	5	0	10	142	70	0	829
07:30 AM	0	6	12	1	10	458	1	0	106	14	13	0	8	180	51	0	860
07:45 AM	0	6	10	0	11	418	0	0	107	9	6	0	26	231	69	0	893
Total	0	23	47	1	46	1667	1	0	398	43	30	0	47	679	234	0	3216
08:00 AM	0	8	13	0	15	345	0	0	91	10	12	0	20	220	63	0	797
08:15 AM	0	9	17	0	8	331	0	0	64	9	8	0	12	230	73	4	765
Total	0	17	30	0	23	676	0	0	155	19	20	0	32	450	136	4	1562
04:00 PM	0	20	14	0	25	316	0	0	163	30	38	0	41	410	167	0	1224
04:15 PM	1	18	12	1	37	373	0	0	157	34	50	0	38	437	187	0	1345
04:30 PM	0	22	9	0	31	340	0	0	139	20	44	0	33	408	163	1	1210
04:45 PM	0	17	15	1	33	339	0	0	175	23	49	0	48	443	172	0	1315
Total	1	77	50	2	126	1368	0	0	634	107	181	0	160	1698	689	1	5094
05:00 PM	0	14	13	1	26	349	0	0	148	32	53	0	37	453	164	0	1290
05:15 PM	0	18	14	0	31	317	0	0	143	27	48	0	40	400	173	0	1211
05:30 PM	0	23	9	0	25	279	0	0	176	34	45	0	43	514	169	0	1317
05:45 PM	0	14	7	0	23	306	0	0	126	23	48	0	37	410	145	0	1139
Total	0	69	43	1	105	1251	0	0	593	116	194	0	157	1777	651	0	4957
Grand Total	2	188	194	4	317	5583	1	0	1897	294	434	0	408	4857	1801	9	15989
Apprch %	0.5	48.5	50.0	1.0	5.4	94.6	0.0	0.0	72.3	11.2	16.5	0.0	5.8	68.7	25.5	0.1	
Total %	0.0	1.2	1.2	0.0	2.0	34.9	0.0	0.0	11.9	1.8	2.7	0.0	2.6	30.4	11.3	0.1	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: FRONT STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FRONTFOUND
Site Code : 00000020
Start Date : 5/4/2021
Page No : 2

	FRONT STREET Southbound					FOUNDERS PARKWAY Westbound					FRONT STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	0	31	46	1	78	49	1669	1	0	1719	411	45	36	0	492	64	773	253	0	1090	3379
Percent	0.0	39.7	59.0	1.3		2.9	97.1	0.1	0.0		83.5	9.1	7.3	0.0		5.9	70.9	23.2	0.0		
07:45 Volume	0	6	10	0	16	11	418	0	0	429	107	9	6	0	122	26	231	69	0	326	893
Peak Factor																					0.946
High Int.	07:15 AM					07:30 AM					07:30 AM					07:45 AM					
Volume	0	11	11	0	22	10	458	1	0	469	106	14	13	0	133	26	231	69	0	326	
Peak Factor					0.886					0.916					0.925					0.836	

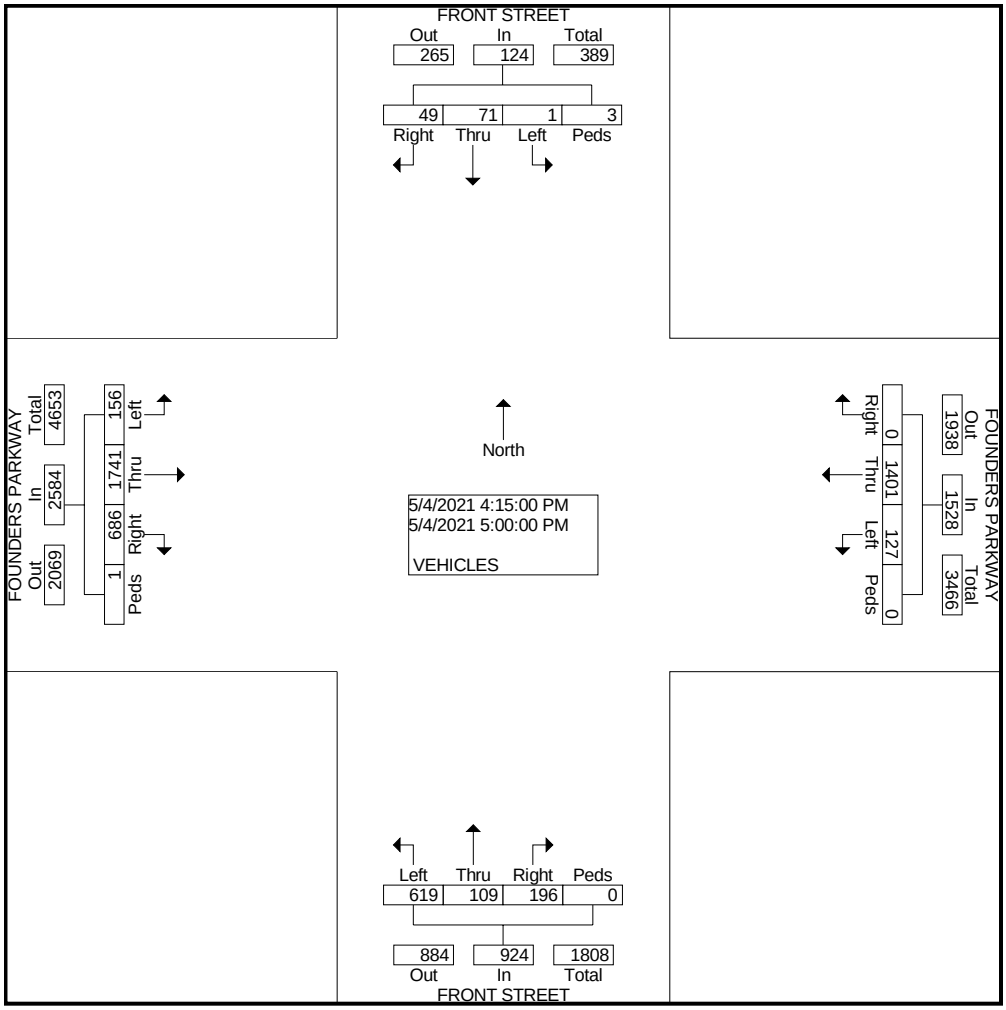


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: FRONT STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FRONTFOUND
Site Code : 00000020
Start Date : 5/4/2021

	FRONT STREET Southbound					FOUNDERS PARKWAY Westbound					FRONT STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	1	71	49	3	124	127	1401	0	0	1528	619	109	196	0	924	156	1741	686	1	2584	5160
Percent	0.8	57.3	39.5	2.4		8.3	91.7	0.0	0.0		67.0	11.8	21.2	0.0		6.0	67.4	26.5	0.0		
04:15 Volume	1	18	12	1	32	37	373	0	0	410	157	34	50	0	241	38	437	187	0	662	1345
Peak Factor																					0.959
High Int.	04:45 PM					04:15 PM					04:45 PM					04:45 PM					
Volume	0	17	15	1	33	37	373	0	0	410	175	23	49	0	247	48	443	172	0	663	
Peak Factor					0.939					0.932					0.935					0.974	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021
Page No : 1

Groups Printed- 1 - VEHICLES

	CROWFOOT VALLEY ROAD Southbound				FOUNDERS PARKWAY Westbound				Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	8	0	71	0	0	252	11	0	0	0	0	0	50	65	0	0	457
06:45 AM	15	0	122	0	0	242	18	0	0	0	0	0	53	92	0	0	542
Total	23	0	193	0	0	494	29	0	0	0	0	0	103	157	0	0	999
07:00 AM	19	0	144	0	0	273	26	0	0	0	0	0	61	77	0	0	600
07:15 AM	10	0	187	0	0	310	31	0	0	0	0	0	48	87	0	0	673
07:30 AM	12	0	162	0	0	389	46	0	0	0	0	0	91	100	0	0	800
07:45 AM	23	0	154	1	0	284	18	0	0	0	0	0	65	121	0	0	666
Total	64	0	647	1	0	1256	121	0	0	0	0	0	265	385	0	0	2739
08:00 AM	14	0	124	0	0	301	21	0	0	0	0	0	87	128	0	0	675
08:15 AM	28	0	108	0	0	250	19	0	0	0	0	0	80	137	0	0	622
Total	42	0	232	0	0	551	40	0	0	0	0	0	167	265	0	0	1297
04:00 PM	22	0	109	0	0	217	47	0	0	0	0	0	164	286	0	0	845
04:15 PM	23	0	149	0	0	271	27	0	0	0	0	0	129	270	0	0	869
04:30 PM	20	1	130	0	0	225	27	0	0	0	0	0	167	344	0	0	914
04:45 PM	32	0	123	1	0	226	25	0	0	0	0	0	137	263	0	0	807
Total	97	1	511	1	0	939	126	0	0	0	0	0	597	1163	0	0	3435
05:00 PM	16	0	113	0	0	194	26	0	0	0	0	0	176	350	0	0	875
05:15 PM	22	0	132	0	0	199	25	0	0	0	0	0	167	335	0	0	880
05:30 PM	30	0	119	0	0	182	18	0	0	0	0	0	195	336	0	0	880
05:45 PM	18	0	125	0	0	191	21	0	0	0	0	0	132	319	0	0	806
Total	86	0	489	0	0	766	90	0	0	0	0	0	670	1340	0	0	3441
Grand Total	312	1	2072	2	0	4006	406	0	0	0	0	0	1802	3310	0	0	11911
Apprch %	13.1	0.0	86.8	0.1	0.0	90.8	9.2	0.0	0.0	0.0	0.0	0.0	35.3	64.7	0.0	0.0	
Total %	2.6	0.0	17.4	0.0	0.0	33.6	3.4	0.0	0.0	0.0	0.0	0.0	15.1	27.8	0.0	0.0	

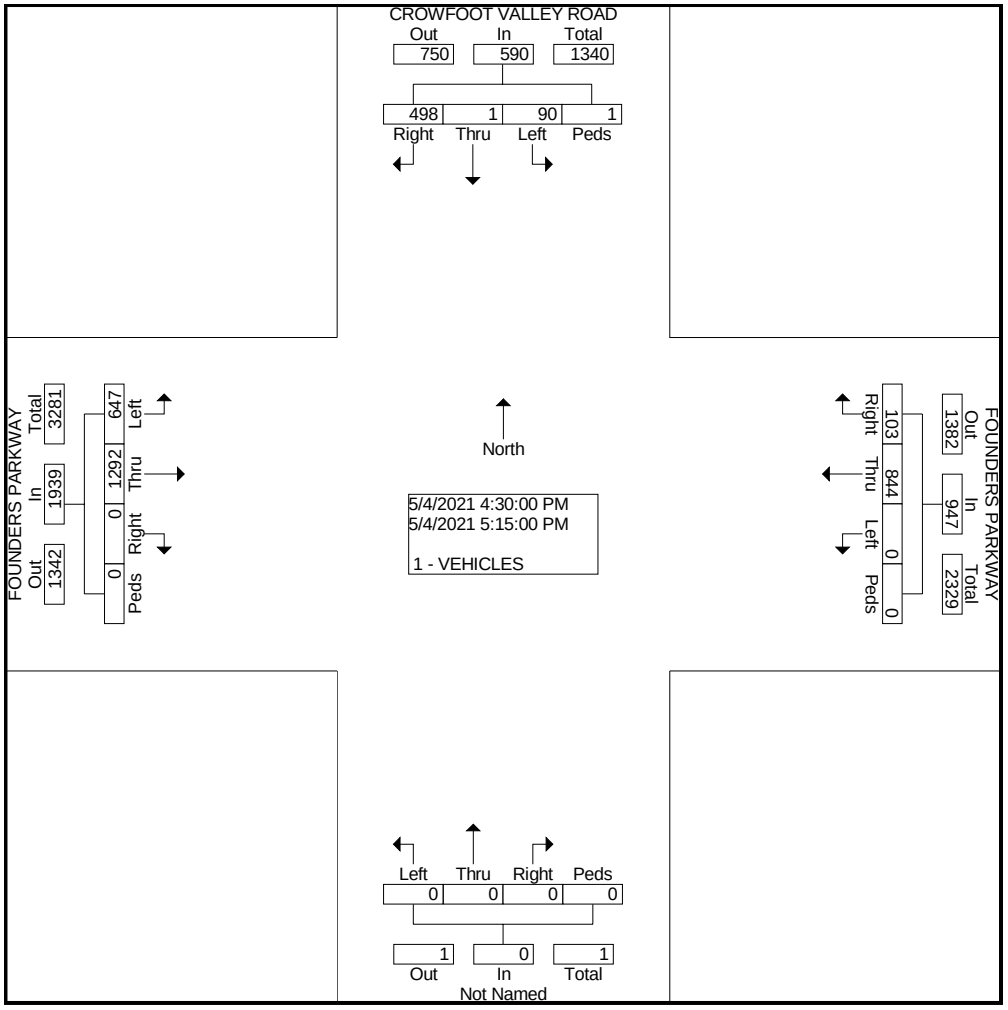
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021
Page No : 2

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersection	04:30 PM																				
Volume	90	1	498	1	590	0	844	103	0	947	0	0	0	0	0	647	1292	0	0	1939	3476
Percent	15.3	0.2	84.4	0.2		0.0	89.1	10.9	0.0		0.0	0.0	0.0	0.0		33.4	66.6	0.0	0.0		
04:30 Volume	20	1	130	0	151	0	225	27	0	252	0	0	0	0	0	167	344	0	0	511	914
Peak Factor																					0.951
High Int.	04:45 PM					04:30 PM										05:00 PM					
Volume	32	0	123	1	156	0	225	27	0	252	0	0	0	0	0	176	350	0	0	526	
Peak Factor					0.946					0.939										0.922	

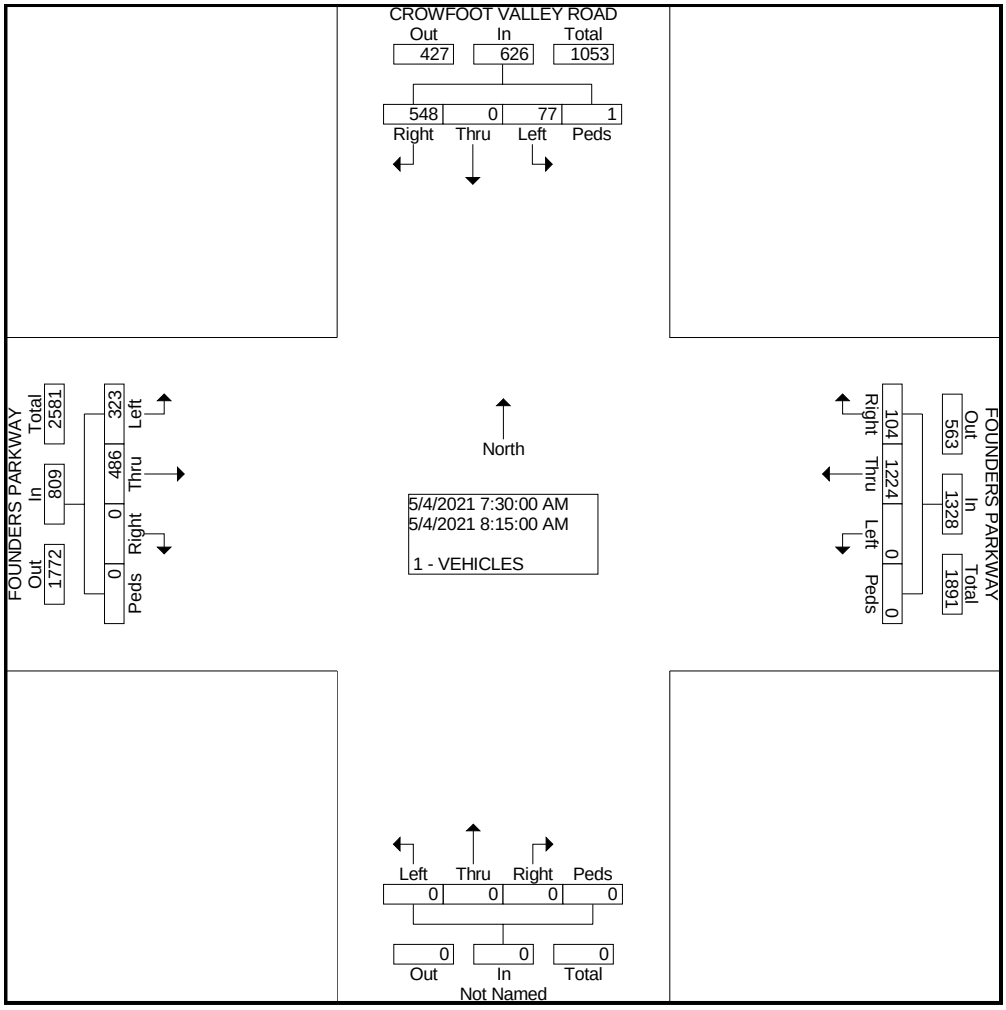


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	77	0	548	1	626	0	1224	104	0	1328	0	0	0	0	0	323	486	0	0	809	2763
Percent	12.3	0.0	87.5	0.2		0.0	92.2	7.8	0.0		0.0	0.0	0.0	0.0		39.9	60.1	0.0	0.0		
07:30 Volume	12	0	162	0	174	0	389	46	0	435	0	0	0	0	0	91	100	0	0	191	800
Peak Factor																					0.863
High Int.	07:45 AM					07:30 AM										08:15 AM					
Volume	23	0	154	1	178	0	389	46	0	435	0	0	0	0	0	80	137	0	0	217	
Peak Factor					0.879					0.763										0.932	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021
Page No : 1

Groups Printed- VEHICLES

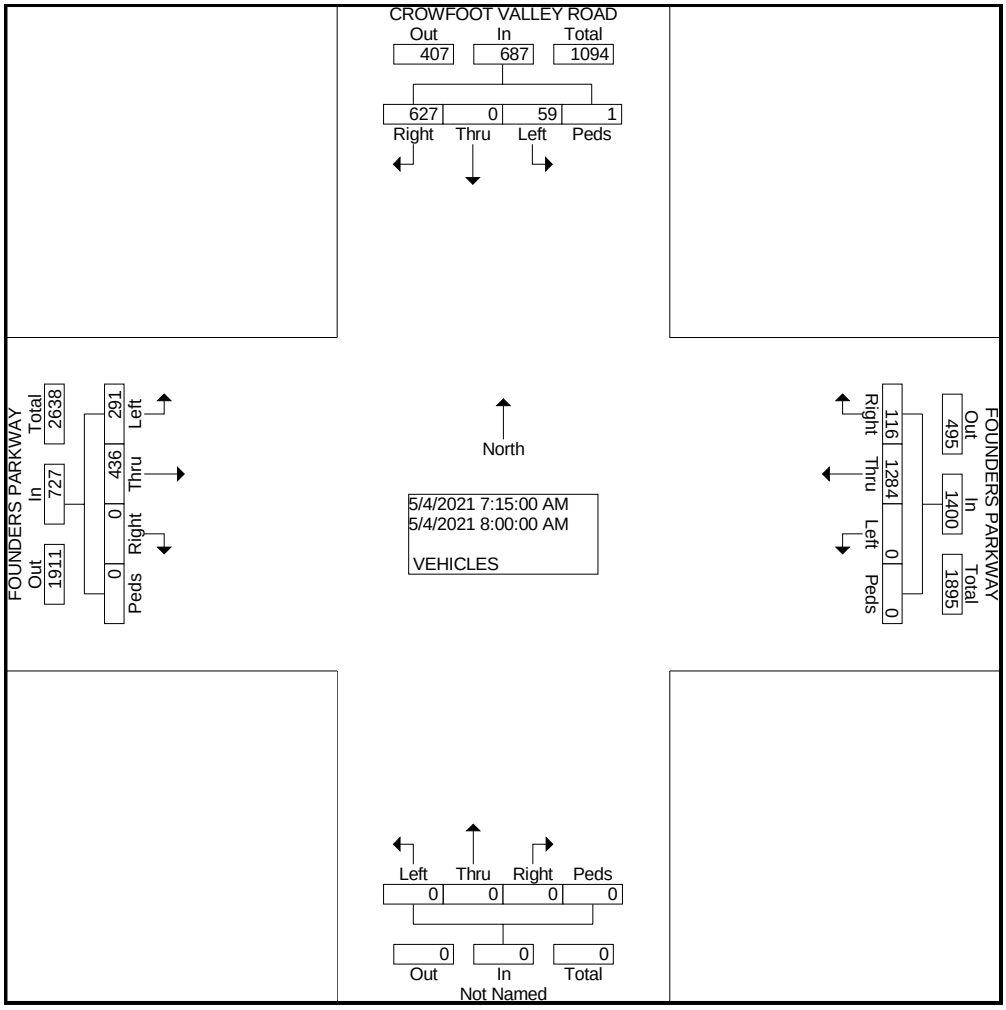
	CROWFOOT VALLEY ROAD Southbound				FOUNDERS PARKWAY Westbound				Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	8	0	71	0	0	252	11	0	0	0	0	0	50	65	0	0	457
06:45 AM	15	0	122	0	0	242	18	0	0	0	0	0	53	92	0	0	542
Total	23	0	193	0	0	494	29	0	0	0	0	0	103	157	0	0	999
07:00 AM	19	0	144	0	0	273	26	0	0	0	0	0	61	77	0	0	600
07:15 AM	10	0	187	0	0	310	31	0	0	0	0	0	48	87	0	0	673
07:30 AM	12	0	162	0	0	389	46	0	0	0	0	0	91	100	0	0	800
07:45 AM	23	0	154	1	0	284	18	0	0	0	0	0	65	121	0	0	666
Total	64	0	647	1	0	1256	121	0	0	0	0	0	265	385	0	0	2739
08:00 AM	14	0	124	0	0	301	21	0	0	0	0	0	87	128	0	0	675
08:15 AM	28	0	108	0	0	250	19	0	0	0	0	0	80	137	0	0	622
Total	42	0	232	0	0	551	40	0	0	0	0	0	167	265	0	0	1297
04:00 PM	22	0	109	0	0	217	47	0	0	0	0	0	164	286	0	0	845
04:15 PM	23	0	149	0	0	271	27	0	0	0	0	0	129	270	0	0	869
04:30 PM	20	1	130	0	0	225	27	0	0	0	0	0	167	344	0	0	914
04:45 PM	32	0	123	1	0	226	25	0	0	0	0	0	137	263	0	0	807
Total	97	1	511	1	0	939	126	0	0	0	0	0	597	1163	0	0	3435
05:00 PM	16	0	113	0	0	194	26	0	0	0	0	0	176	350	0	0	875
05:15 PM	22	0	132	0	0	199	25	0	0	0	0	0	167	335	0	0	880
05:30 PM	30	0	119	0	0	182	18	0	0	0	0	0	195	336	0	0	880
05:45 PM	18	0	125	0	0	191	21	0	0	0	0	0	132	319	0	0	806
Total	86	0	489	0	0	766	90	0	0	0	0	0	670	1340	0	0	3441
Grand Total	312	1	2072	2	0	4006	406	0	0	0	0	0	1802	3310	0	0	11911
Apprch %	13.1	0.0	86.8	0.1	0.0	90.8	9.2	0.0	0.0	0.0	0.0	0.0	35.3	64.7	0.0	0.0	
Total %	2.6	0.0	17.4	0.0	0.0	33.6	3.4	0.0	0.0	0.0	0.0	0.0	15.1	27.8	0.0	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	59	0	627	1	687	0	1284	116	0	1400	0	0	0	0	0	291	436	0	0	727	2814
Percent	8.6	0.0	91.3	0.1		0.0	91.7	8.3	0.0		0.0	0.0	0.0	0.0		40.0	60.0	0.0	0.0		
07:30 Volume	12	0	162	0	174	0	389	46	0	435	0	0	0	0	0	91	100	0	0	191	800
Peak Factor																					0.879
High Int.	07:15 AM					07:30 AM										08:00 AM					
Volume	10	0	187	0	197	0	389	46	0	435	0	0	0	0	0	87	128	0	0	215	
Peak Factor					0.872					0.805										0.845	

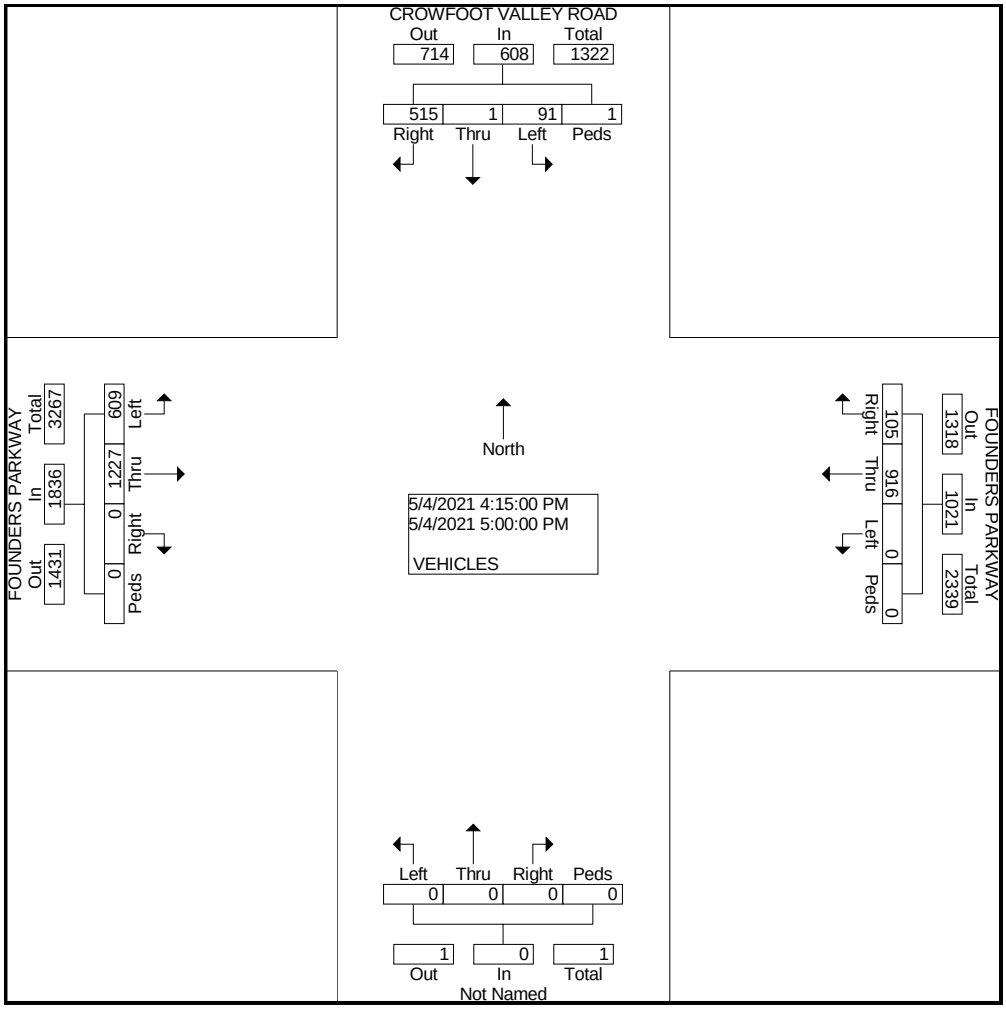


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CROWFOOT VALLEY ROAD
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : CROWFOUND
Site Code : 00000016
Start Date : 5/4/2021

	CROWFOOT VALLEY ROAD Southbound					FOUNDERS PARKWAY Westbound					Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	91	1	515	1	608	0	916	105	0	1021	0	0	0	0	0	609	1227	0	0	1836	3465
Percent	15.0	0.2	84.7	0.2		0.0	89.7	10.3	0.0		0.0	0.0	0.0	0.0		33.2	66.8	0.0	0.0		
04:30 Volume	20	1	130	0	151	0	225	27	0	252	0	0	0	0	0	167	344	0	0	511	914
Peak Factor																					0.948
High Int. Volume	04:15 PM 23	0	149	0	172	04:15 PM 0	271	27	0	298	0	0	0	0	0	05:00 PM 176	350	0	0	526	
Peak Factor					0.884					0.857										0.873	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLENSTFOUND
Site Code : 00000016
Start Date : 4/29/2021
Page No : 1

Groups Printed- VEHICLES

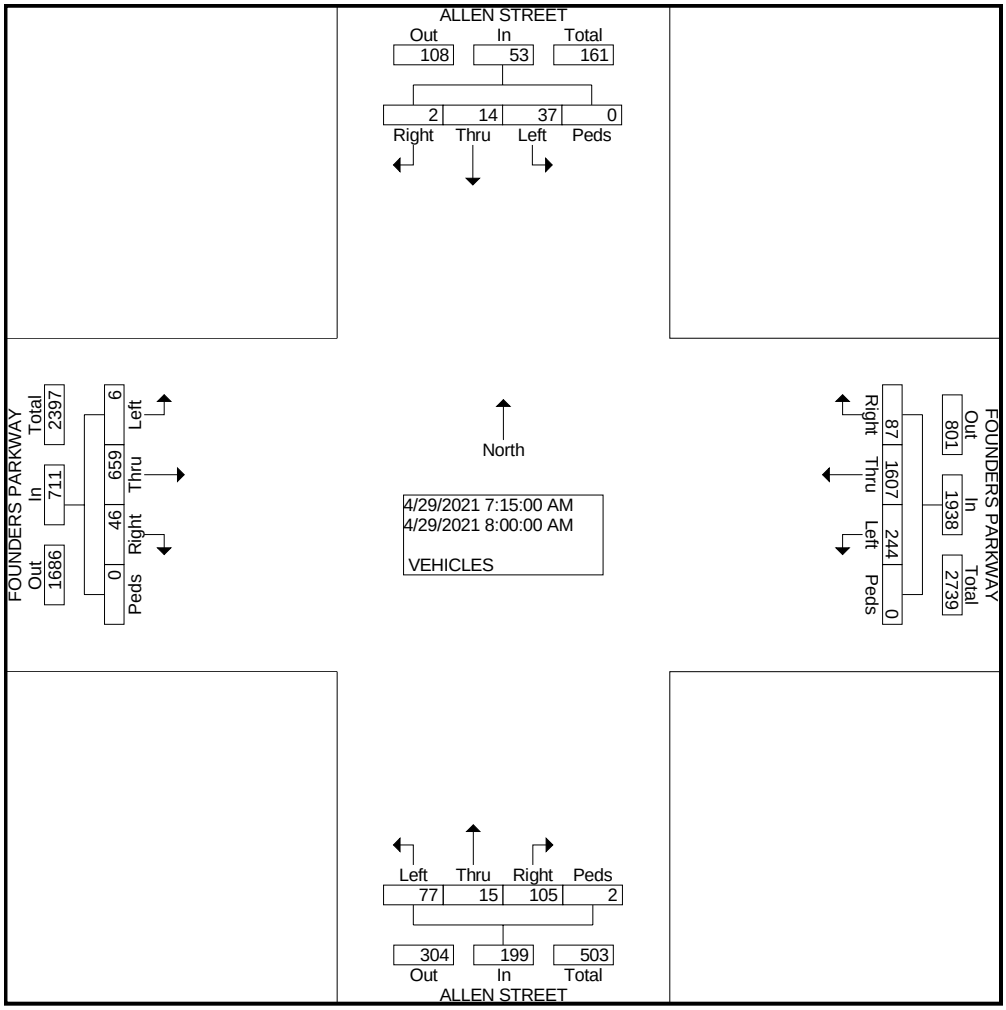
	ALLEN STREET Southbound				FOUNDERS PARKWAY Westbound				ALLEN STREET Northbound				FOUNDERS PARKWAY Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	7	1	1	0	17	261	8	0	12	1	19	0	1	112	2	0	442
06:45 AM	13	1	2	0	43	339	19	0	11	1	20	0	0	106	4	0	559
Total	20	2	3	0	60	600	27	0	23	2	39	0	1	218	6	0	1001
07:00 AM	8	1	0	0	49	311	15	0	13	5	23	0	0	124	6	0	555
07:15 AM	10	0	0	0	91	442	25	0	16	1	23	0	1	134	3	0	746
07:30 AM	5	5	2	0	36	434	22	0	23	5	38	0	1	165	5	0	741
07:45 AM	7	4	0	0	64	432	27	0	14	5	19	0	3	176	16	0	767
Total	30	10	2	0	240	1619	89	0	66	16	103	0	5	599	30	0	2809
08:00 AM	15	5	0	0	53	299	13	0	24	4	25	2	1	184	22	0	647
08:15 AM	8	7	1	0	71	321	24	0	13	3	41	0	1	195	20	1	706
Total	23	12	1	0	124	620	37	0	37	7	66	2	2	379	42	1	1353
04:00 PM	46	15	2	0	43	284	19	0	22	9	100	2	4	386	15	0	947
04:15 PM	45	7	2	0	57	330	23	0	16	8	38	3	0	371	5	2	907
04:30 PM	43	12	0	0	43	319	21	0	24	12	90	0	3	362	11	0	940
04:45 PM	28	10	0	0	54	302	20	0	21	9	61	0	4	363	26	0	898
Total	162	44	4	0	197	1235	83	0	83	38	289	5	11	1482	57	2	3692
05:00 PM	55	17	2	0	48	268	26	1	21	13	61	2	1	372	10	0	897
05:15 PM	46	18	0	0	38	356	23	0	27	13	51	0	2	367	16	0	957
05:30 PM	36	16	1	0	42	279	27	0	19	10	57	0	2	337	27	0	853
05:45 PM	24	7	0	0	44	248	23	0	8	4	38	0	3	367	26	0	792
Total	161	58	3	0	172	1151	99	1	75	40	207	2	8	1443	79	0	3499
Grand Total	396	126	13	0	793	5225	335	1	284	103	704	9	27	4121	214	3	12354
Apprch %	74.0	23.6	2.4	0.0	12.5	82.2	5.3	0.0	25.8	9.4	64.0	0.8	0.6	94.4	4.9	0.1	
Total %	3.2	1.0	0.1	0.0	6.4	42.3	2.7	0.0	2.3	0.8	5.7	0.1	0.2	33.4	1.7	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLENSTFOUND
Site Code : 00000016
Start Date : 4/29/2021
Page No : 2

	ALLEN STREET Southbound					FOUNDERS PARKWAY Westbound					ALLEN STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	37	14	2	0	53	244	1607	87	0	1938	77	15	105	2	199	6	659	46	0	711	2901
Percent	69.8	26.4	3.8	0.0		12.6	82.9	4.5	0.0		38.7	7.5	52.8	1.0		0.8	92.7	6.5	0.0		
07:45 Volume	7	4	0	0	11	64	432	27	0	523	14	5	19	0	38	3	176	16	0	195	767
Peak Factor																					0.946
High Int.	08:00 AM					07:15 AM					07:30 AM					08:00 AM					
Volume	15	5	0	0	20	91	442	25	0	558	23	5	38	0	66	1	184	22	0	207	
Peak Factor					0.663					0.868					0.754					0.859	

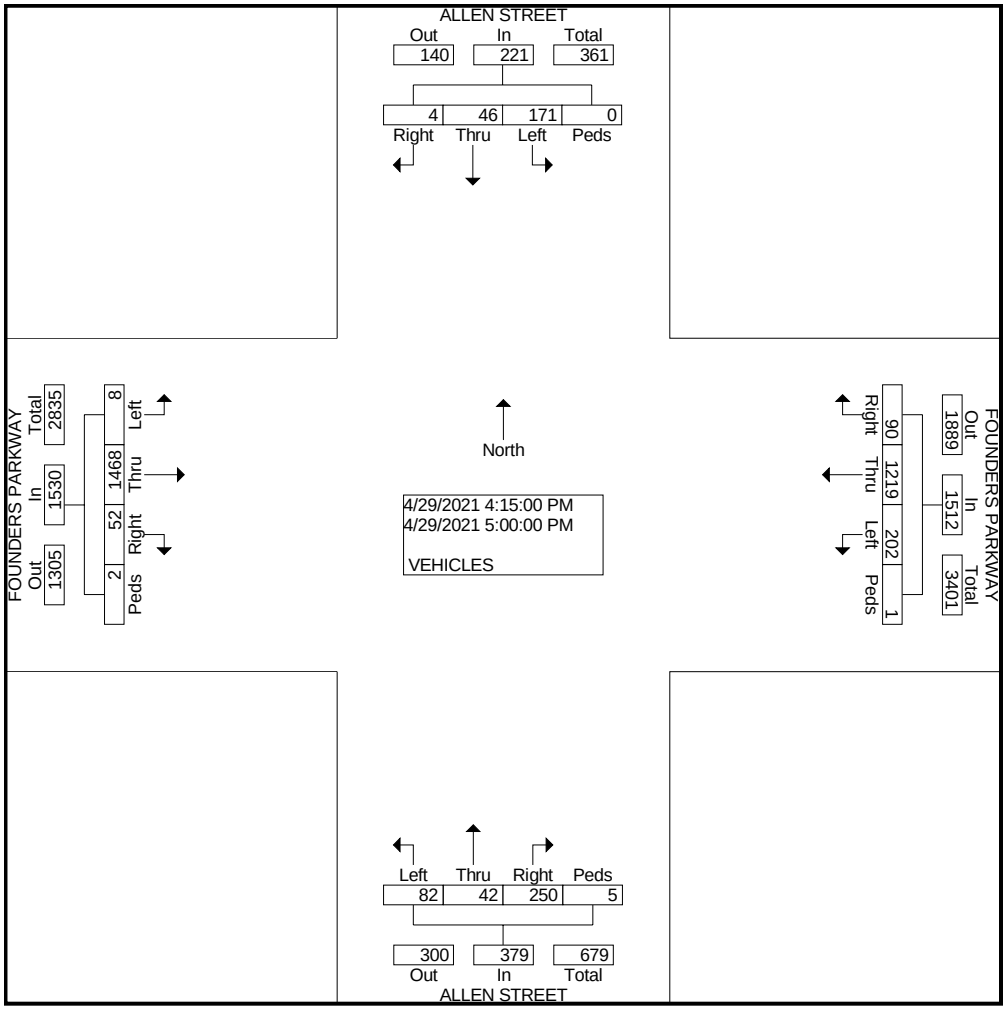


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: ALLEN STREET
E/W STREET: FOUNDERS PARKWAY
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : ALLENSTFOUND
Site Code : 00000016
Start Date : 4/29/2021
Page No : 2

	ALLEN STREET Southbound					FOUNDERS PARKWAY Westbound					ALLEN STREET Northbound					FOUNDERS PARKWAY Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	171	46	4	0	221	202	1219	90	1	1512	82	42	250	5	379	8	1468	52	2	1530	3642
Percent	77.4	20.8	1.8	0.0		13.4	80.6	6.0	0.1		21.6	11.1	66.0	1.3		0.5	95.9	3.4	0.1		
04:30 Volume	43	12	0	0	55	43	319	21	0	383	24	12	90	0	126	3	362	11	0	376	940
Peak Factor																					0.969
High Int.	05:00 PM					04:15 PM					04:30 PM					04:45 PM					
Volume	55	17	2	0	74	57	330	23	0	410	24	12	90	0	126	4	363	26	0	393	
Peak Factor					0.747					0.922					0.752					0.973	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:FOUNDERS PARKWAY
E/W STREET: 5TH ST/STATE ROAD 86
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FOUNDSR86
Site Code : 00000017
Start Date : 4/27/2021
Page No : 1

Groups Printed- VEHICLES

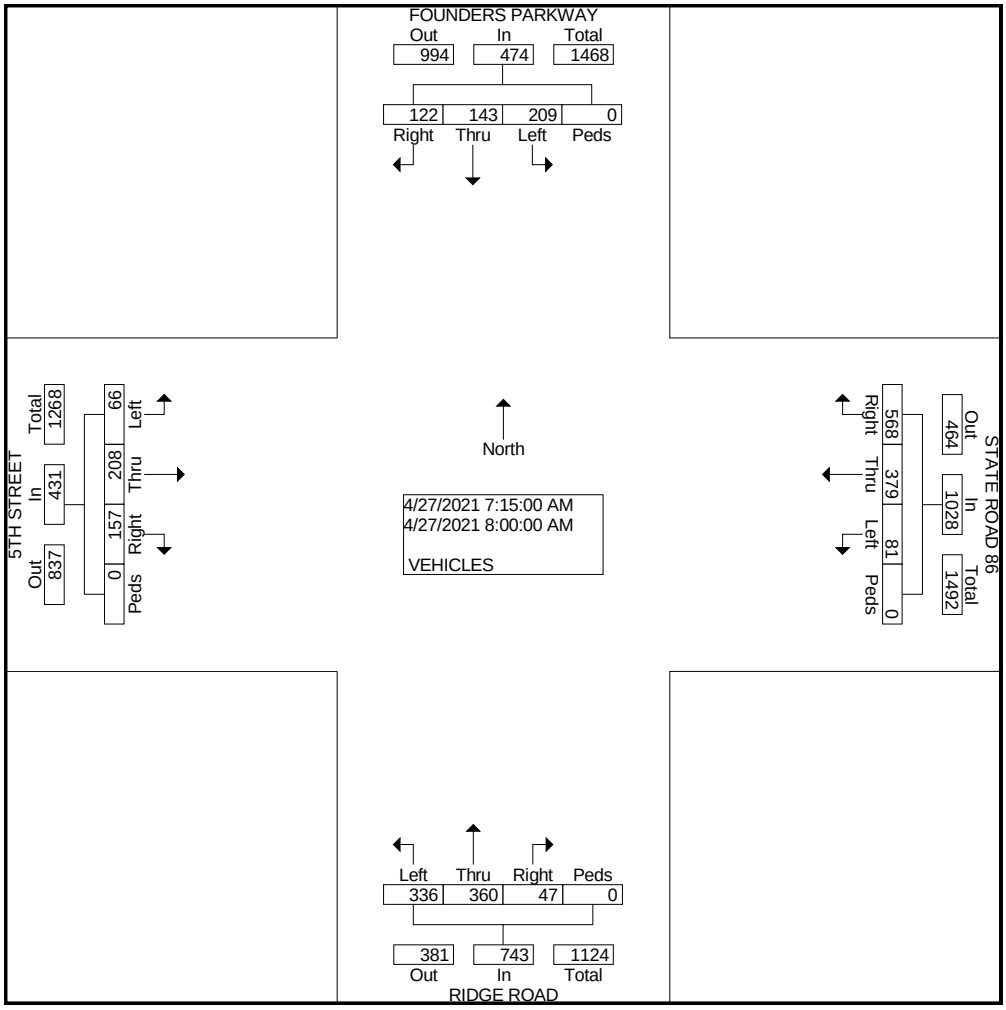
	FOUNDERS PARKWAY Southbound				STATE ROAD 86 Westbound				RIDGE ROAD Northbound				5TH STREET Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	41	19	14	0	12	75	107	0	37	59	8	0	10	24	22	0	428
06:45 AM	59	17	18	0	11	70	103	0	46	68	7	0	14	51	10	0	474
Total	100	36	32	0	23	145	210	0	83	127	15	0	24	75	32	0	902
07:00 AM	75	19	31	0	13	86	100	0	81	95	4	0	12	37	21	0	574
07:15 AM	52	37	39	0	22	118	147	0	132	95	9	0	15	52	35	0	753
07:30 AM	60	30	41	0	13	109	167	0	87	103	10	0	19	49	51	0	739
07:45 AM	49	30	22	0	24	93	124	0	79	81	13	0	17	53	38	0	623
Total	236	116	133	0	72	406	538	0	379	374	36	0	63	191	145	0	2689
08:00 AM	48	46	20	0	22	59	130	0	38	81	15	0	15	54	33	0	561
08:15 AM	49	29	24	0	19	77	129	0	58	84	12	0	19	42	28	0	570
Total	97	75	44	0	41	136	259	0	96	165	27	0	34	96	61	0	1131
04:00 PM	123	98	30	0	18	62	98	0	39	68	4	0	32	89	76	0	737
04:15 PM	122	108	17	0	32	63	87	0	53	85	15	0	35	88	66	0	771
04:30 PM	116	92	22	0	30	56	88	0	44	74	13	0	28	91	86	0	740
04:45 PM	148	121	22	0	22	56	84	0	40	69	14	0	36	93	116	0	821
Total	509	419	91	0	102	237	357	0	176	296	46	0	131	361	344	0	3069
05:00 PM	119	87	18	0	17	52	78	0	53	66	14	0	31	90	79	1	705
05:15 PM	114	105	15	4	34	62	60	0	49	80	10	0	33	89	97	0	752
05:30 PM	138	93	11	0	19	57	76	0	33	69	16	0	25	89	82	0	708
05:45 PM	96	76	23	0	31	57	56	0	38	56	6	0	37	79	62	0	617
Total	467	361	67	4	101	228	270	0	173	271	46	0	126	347	320	1	2782
Grand Total	1409	1007	367	4	339	1152	1634	0	907	1233	170	0	378	1070	902	1	10573
Apprch %	50.6	36.1	13.2	0.1	10.8	36.9	52.3	0.0	39.3	53.4	7.4	0.0	16.1	45.5	38.4	0.0	
Total %	13.3	9.5	3.5	0.0	3.2	10.9	15.5	0.0	8.6	11.7	1.6	0.0	3.6	10.1	8.5	0.0	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:FOUNDERS PARKWAY
E/W STREET: 5TH ST/STATE ROAD 86
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FOUNDSR86
Site Code : 00000017
Start Date : 4/27/2021
Page No : 2

	FOUNDERS PARKWAY Southbound					STATE ROAD 86 Westbound					RIDGE ROAD Northbound					5TH STREET Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Intersection	07:15 AM																				
Volume	209	143	122	0	474	81	379	568	0	1028	336	360	47	0	743	66	208	157	0	431	2676
Percent	44.1	30.2	25.7	0.0		7.9	36.9	55.3	0.0		45.2	48.5	6.3	0.0		15.3	48.3	36.4	0.0		
07:15 Volume	52	37	39	0	128	22	118	147	0	287	132	95	9	0	236	15	52	35	0	102	753
Peak Factor																					0.888
High Int.	07:30 AM					07:30 AM					07:15 AM					07:30 AM					
Volume	60	30	41	0	131	13	109	167	0	289	132	95	9	0	236	19	49	51	0	119	
Peak Factor					0.905					0.889					0.787					0.905	

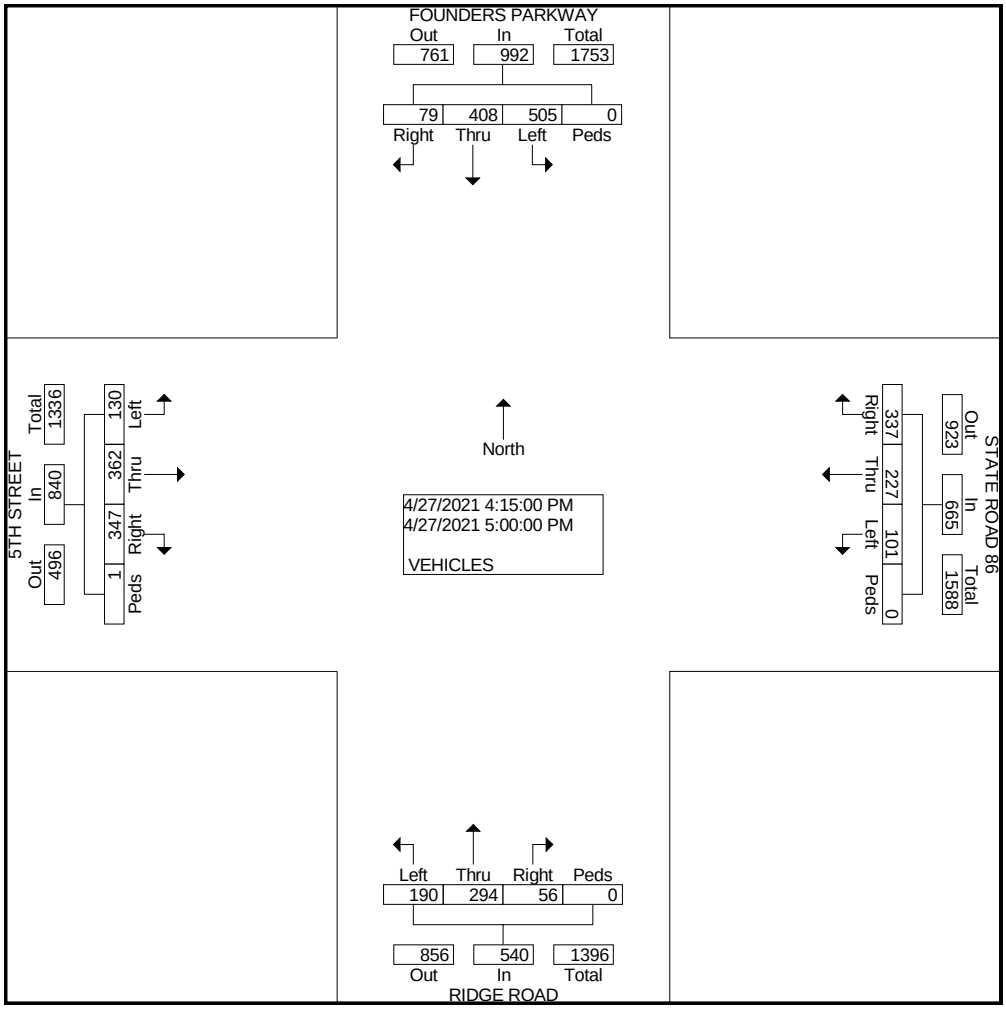


COUNTER MEASURES INC.
1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET:FOUNDERS PARKWAY
E/W STREET: 5TH ST/STATE ROAD 86
CITY: CASTLE ROCK
COUNTY: DOUGLAS

File Name : FOUNDSR86
Site Code : 00000017
Start Date : 4/27/2021
Page No : 2

	FOUNDERS PARKWAY Southbound					STATE ROAD 86 Westbound					RIDGE ROAD Northbound					5TH STREET Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Intersection	04:15 PM																				
Volume	505	408	79	0	992	101	227	337	0	665	190	294	56	0	540	130	362	347	1	840	3037
Percent	50.9	41.1	8.0	0.0		15.2	34.1	50.7	0.0		35.2	54.4	10.4	0.0		15.5	43.1	41.3	0.1		
04:45 Volume	148	121	22	0	291	22	56	84	0	162	40	69	14	0	123	36	93	116	0	245	821
Peak Factor																					0.925
High Int.	04:45 PM					04:15 PM					04:15 PM					04:45 PM					
Volume	148	121	22	0	291	32	63	87	0	182	53	85	15	0	153	36	93	116	0	245	
Peak Factor					0.852					0.913					0.882					0.857	



Location: CASTLE OAKS DR S-O ROCKY VIEW RD
City: CASTLE ROCK
County: DOUGLAS
Direction: NORTH/SOUTH

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 210314
Station ID: 210314

Start Time	04-May-21 Tue	NORTHBOU	SOUTHBOU							Total
12:00 AM		5	3							8
01:00		1	1							2
02:00		0	0							0
03:00		1	3							4
04:00		1	14							15
05:00		3	47							50
06:00		22	136							158
07:00		70	**202**							**272**
08:00		89	160							249
09:00		91	117							208
10:00		78	106							184
11:00		**105**	137							242
12:00 PM		121	120							241
01:00		104	109							213
02:00		121	116							237
03:00		167	127							294
04:00		203	132							335
05:00		**218**	**147**							**365**
06:00		177	105							282
07:00		118	69							187
08:00		97	44							141
09:00		53	18							71
10:00		23	9							32
11:00		9	8							17
Total		1877	1930							3807
Percent		49.3%	50.7%							
AM Peak	-	11:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	105	202	-	-	-	-	-	-	272
PM Peak	-	17:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	218	147	-	-	-	-	-	-	365

Location: CASTLE OAKS DR S-O ROCKY VIEW RD
City: CASTLE ROCK
County: DOUGLAS
Direction: NORTH/SOUTH

COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 210314
Station ID: 210314

Start Time	05-May-21 Wed	NORTHBOU	SOUTHBOU							Total
12:00 AM		6	5							11
01:00		1	2							3
02:00		1	1							2
03:00		2	3							5
04:00		2	9							11
05:00		4	58							62
06:00		29	136							165
07:00		72	**217**							**289**
08:00		**99**	183							282
09:00		23	25							48
10:00		0	0							0
11:00		0	0							0
12:00 PM		0	0							0
01:00		0	0							0
02:00		0	0							0
03:00		0	0							0
04:00		0	0							0
05:00		0	0							0
06:00		0	0							0
07:00		0	0							0
08:00		0	0							0
09:00		0	0							0
10:00		0	0							0
11:00		0	0							0
Total		239	639							878
Percent		27.2%	72.8%							
AM Peak	-	08:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	99	217	-	-	-	-	-	-	289
PM Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
Grand Total		2116	2569							4685
Percent		45.2%	54.8%							
ADT		ADT 2,342		AADT 2,342						

Location: FOUNDERS PKWY E-O CROWFOOT VALLEY RD
City: CASTLE ROCK
County: DOUGLAS
Direction: EAST/WEST

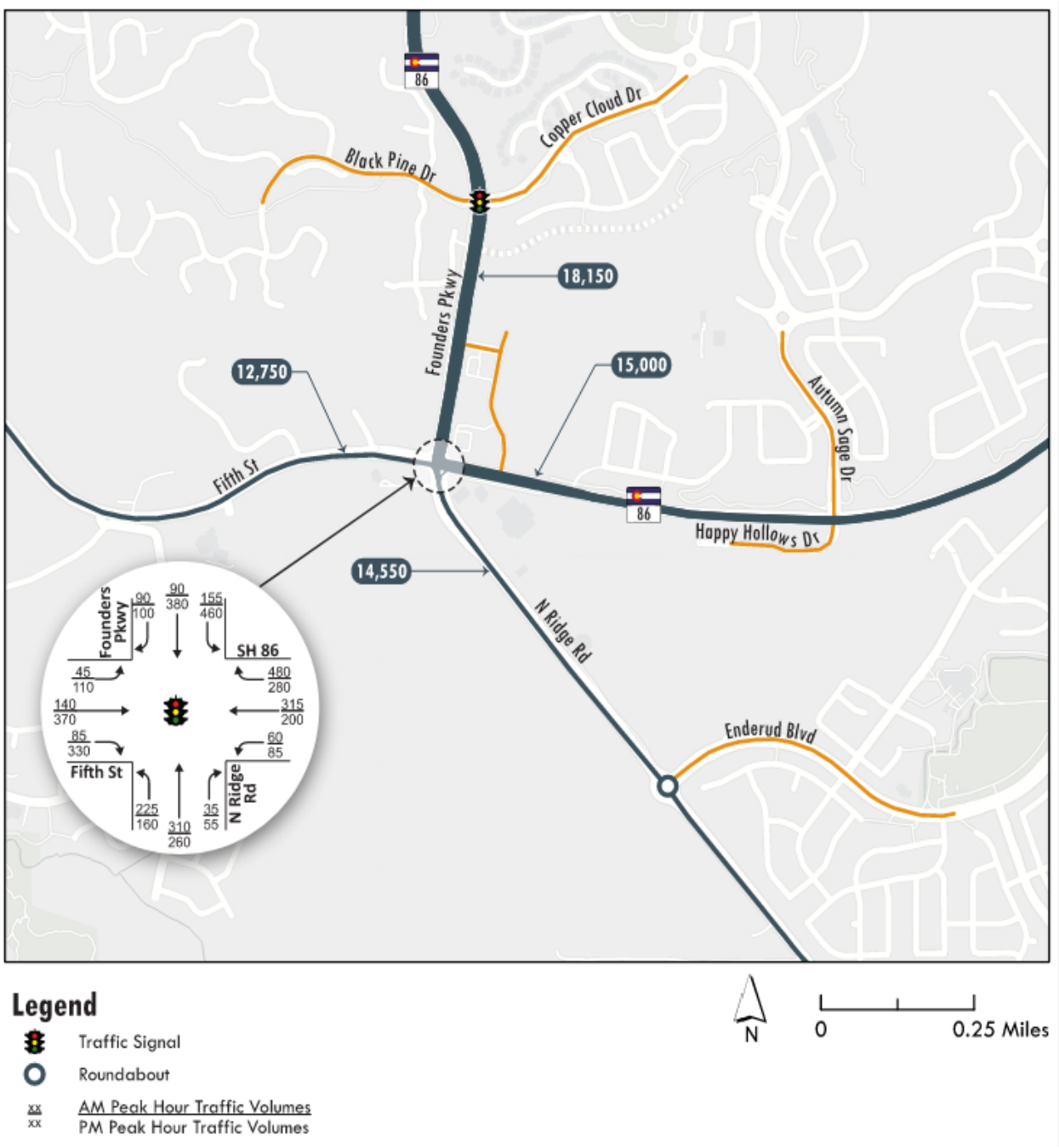
COUNTER MEASURES INC.
1889 YORK STREET
DENVER,COLORADO 80206
303-333-7409

Site Code: 210310
Station ID: 210310

Start Time	04-May-21 Tue	EASTBOUN	WESTBOUN							Total
12:00 AM		50	23							73
01:00		15	12							27
02:00		3	18							21
03:00		12	48							60
04:00		27	130							157
05:00		46	394							440
06:00		252	885							1137
07:00		467	**1360**							**1827**
08:00		632	1126							1758
09:00		461	908							1369
10:00		564	824							1388
11:00		**682**	856							1538
12:00 PM		756	783							1539
01:00		780	802							1582
02:00		833	796							1629
03:00		1141	826							1967
04:00		1232	**1056**							**2288**
05:00		**1386**	854							2240
06:00		1002	634							1636
07:00		700	377							1077
08:00		534	279							813
09:00		360	150							510
10:00		176	61							237
11:00		79	40							119
Total		12190	13242							25432
Percent		47.9%	52.1%							
AM Peak	-	11:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	682	1360	-	-	-	-	-	-	1827
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	1386	1056	-	-	-	-	-	-	2288
Grand Total		12190	13242							25432
Percent		47.9%	52.1%							
ADT		ADT 25,432		AADT 25,432						

Traffic Data for Canyons Far South Proposal

Figure 1: Existing 2019 counts from the Town's Founders/SH-86/Ridge Rd/5th St. intersection improvement project



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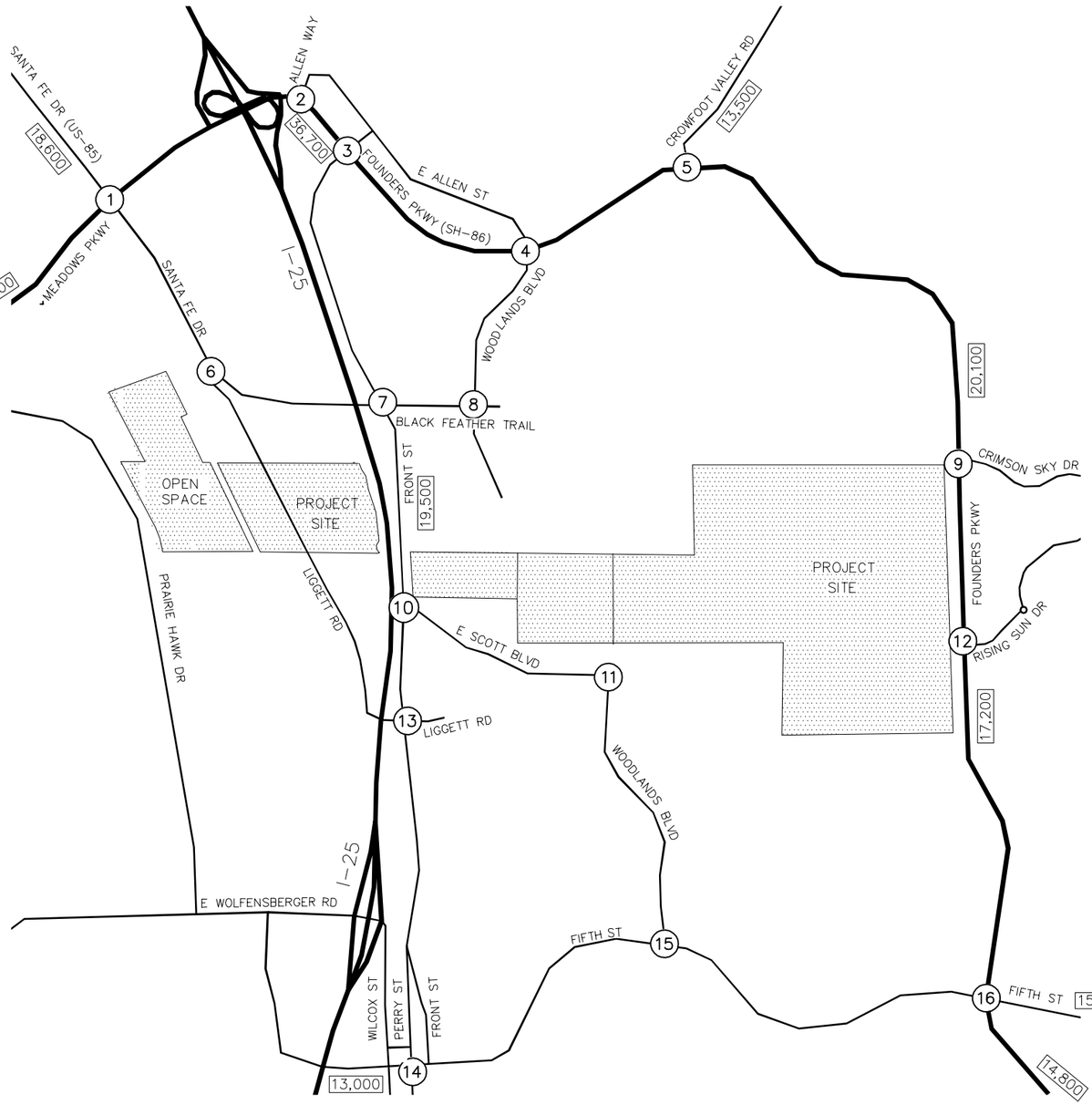
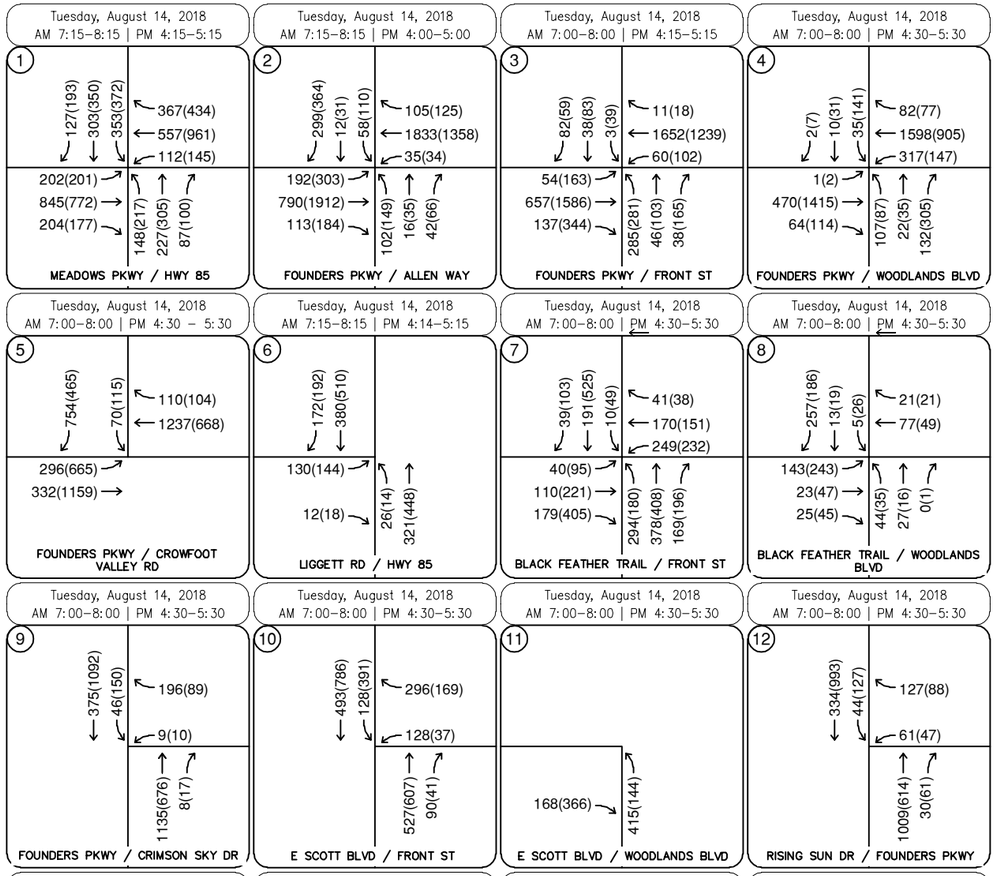
NORTH
NTS 096628001





LEGEND

(X) Study Area Key Intersection

XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes

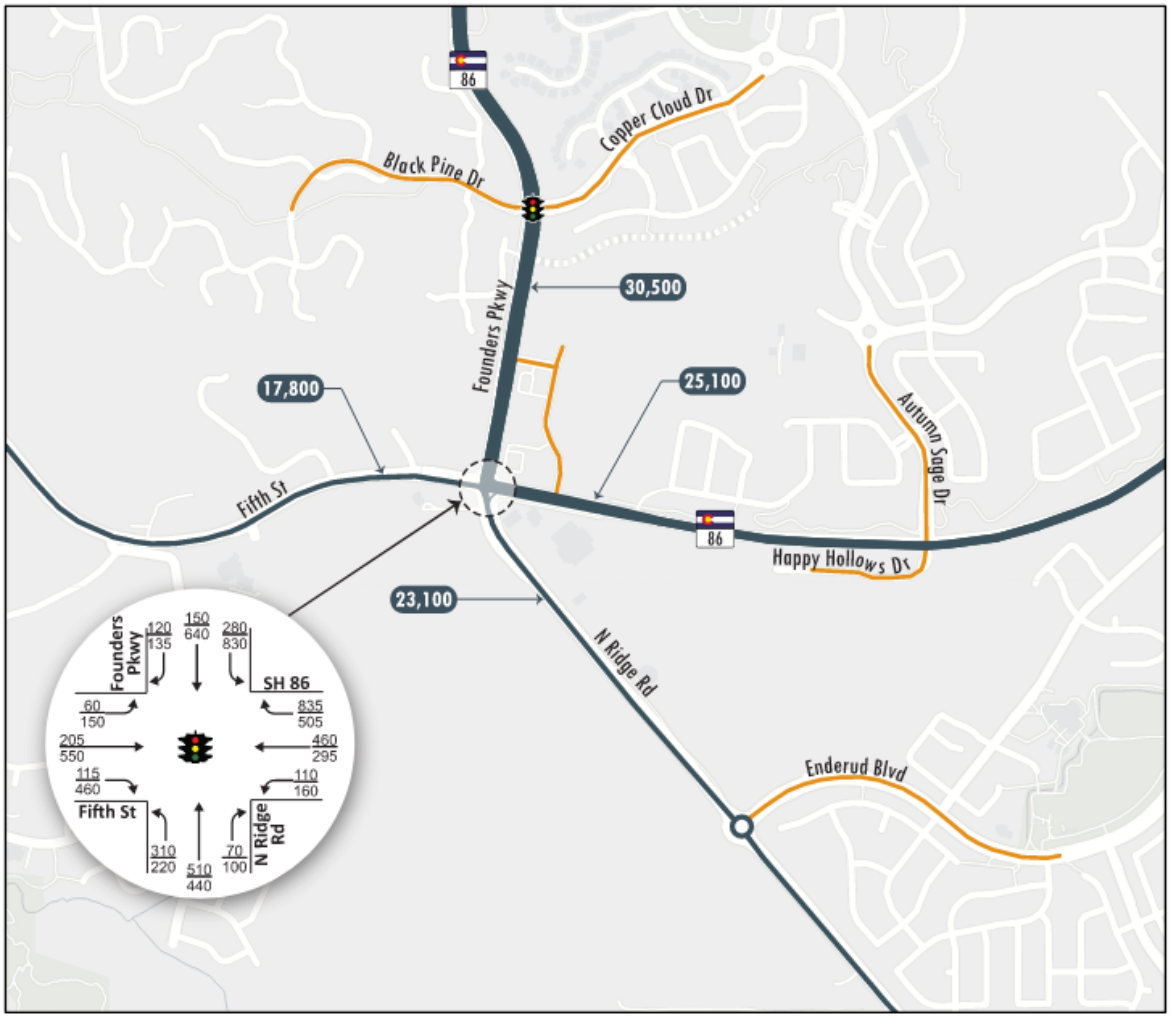
XX,X00 Estimated Daily Traffic Volume

PINE CANYON
DOUGLAS COUNTY, CO
EXISTING TRAFFIC VOLUMES

FIGURE 3

Kimley»Horn

Figure 2: 2040 counts from the Town's Founders/SH-86/Ridge Rd/5th St. intersection improvement project

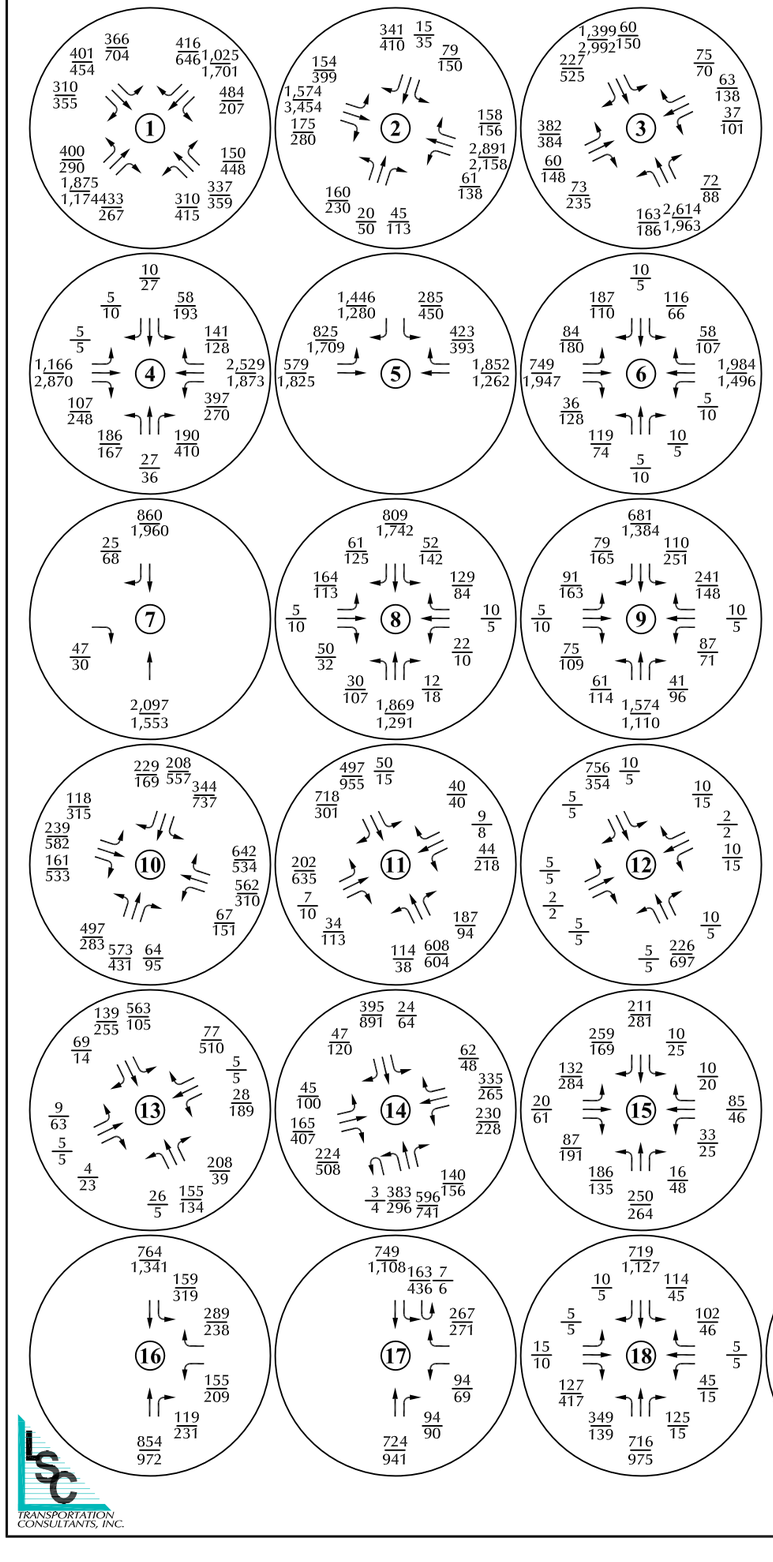


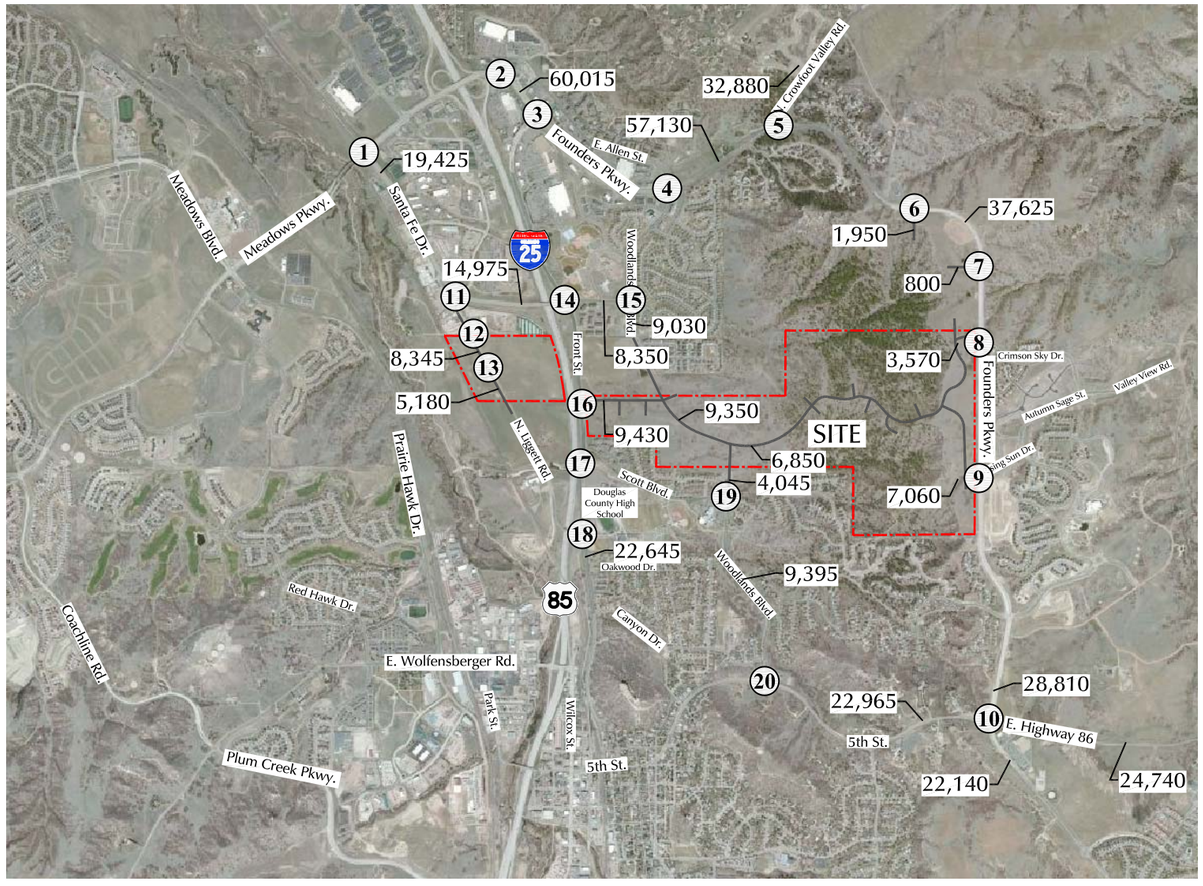
LEGEND:

(#) = Intersection Location

$\frac{26}{35}$ = AM Peak Hour Traffic / PM Peak Hour Traffic

2,500 = Average Daily Traffic





Approximate Scale
Scale: 1"=3,000'

TRANSPORTATION CONSULTANTS, INC.

Figure 7a

Year 2035 Total Traffic Volumes

Pine Canyon Update (LSC #160590)

009

Kimley»Horn
NORTH
NTS 096628001

1 — MEADOWS PKWY / HWY 85

158(240) ↘	485(516) ↓	482(567) ↙ 536(614) ← 828(1319) ← 355(260)
251(250) →	293(424) ↑	364(488) ↑ 183(299) ↑
1121(1130) →		
408(326) ↘		

2 — FOUNDERS PKWY / ALLEN WAY

387(458) ↘	15(39) ↓	76(144) ↙ 138(161) ← 3050(2418) ← 44(42)
244(391) →	127(185) ↑	20(44) ↑ 52(82) ↑
1419(3229) →		
141(229) ↘		

3 — FOUNDERS PKWY / FRONT ST

102(73) ↘	63(119) ↓	4(49) ↙ 14(22) ← 2615(2060) ← 75(127)
67(203) →	530(537) ↑	74(144) ↑ 47(205) ↑
1151(2636) →		
278(612) ↘		

4 — FOUNDERS PKWY / WOODLANDS BLVD

2(9) ↘	12(39) ↓	44(176) ↙ 102(96) ← 2254(1372) ← 494(254)
1(2) →	463(356) ↑	27(44) ↑ 231(486) ↑
716(2096) →		
247(504) ↘		

5 — FOUNDERS PKWY / CROWFOOT VALLEY RD

1038(650) ↘	114(191) ↙	185(161) ← 1805(1077)
435(934) →		
544(1778) →		

6 — LIGGETT RD / HWY 85

633(401) ↘	601(918) ↓	
324(548) →	32(17) ↑	639(761) ↑
41(94) ↘		

7 — BLACK FEATHER TRAIL / FRONT ST

49(128) ↘	384(807) ↓	24(82) ↙ 72(61) ← 281(234) ← 387(314)
63(154) →	401(247) ↑	593(679) ↑ 223(280) ↑
189(380) →		
242(538) ↘		

8 — BLACK FEATHER TRAIL / WOODLANDS BLVD

397(257) ↘	205(432) ↓	6(32) ↙ 26(26) ← 96(61)
204(374) →	1145(103) ↑	404(300) ↑ 0(1) ↑
29(59) →		
81(145) ↘		

9 — FOUNDERS PKWY / CRIMSON SKY DR

57(120) ↘	502(1406) ↓	57(187) ↙ 244(111) ← 11(12)
106(80) →	52(118) ↑	1451(884) ↑ 10(21) ↑
98(82) ↘		

10 — E SCOTT BLVD / FRONT ST

690(1076) ↓	119(397) ↓	258(120) ← 159(46)
	740(845) ↑	112(51) ↑

11 — E SCOTT BLVD / WOODLANDS BLVD

10(5) ↓	251(316) ↓	
5(10) →	407(139) ↑	282(279) ↑
169(366) ↘		

12 — RISING SUN DR / FOUNDERS PKWY

15(27) ↘	539(1343) ↓	55(158) ↙ 158(110) ← 76(59)
28(18) →	12(21) ↑	1318(912) ↑ 37(76) ↑
21(14) ↘		

13 — LIGGETT RD / FRONT ST

9(6) ↘	519(1075) ↓	117(34) ↙ 111(78) ← 17(7) ← 68(41)
20(5) →	244(143) ↑	757(796) ↑ 229(39) ↑
30(7) →		
145(331) ↘		

14 — FIFTH ST / PERRY ST

204(308) ↘	168(338) ↓	19(72) ↙ 20(11) ← 895(628) ← 76(97)
194(242) →	32(56) ↑	200(334) ↑ 42(162) ↑
383(916) →		
55(61) ↘		

15 — FIFTH ST / WOODLANDS BLVD

196(162) ↓	275(476) ↙	592(233) ← 807(481)
120(229) →		
291(873) →		

16 — FIFTH ST / FOUNDERS PKWY

225(177) ↘	191(603) ↓	279(664) ↙ 695(409) ← 565(288) ← 81(107)
105(217) →	556(270) ↑	530(403) ↑ 51(67) ↑
278(523) →		
217(583) ↘		

17 — SITE ACCESS / LIGGETT RD

38(12) ↘	246(256) ↓	380(150) ↙ 175(405) ← 21(58)
13(36) →	15(5) ↑	193(132) ↑ 62(20) ↑
5(14) ↘		

18 — SITE ACCESS / FRONT ST

161(52) ↘	750(1400) ↓	120(252) ↙ 238(163) ← 112(48) ← 58(48)
42(115) →	54(17) ↑	969(946) ↑ 30(72) ↑
45(106) →		
18(50) ↘		

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

PINE CANYON
DOUGLAS COUNTY, CO
2040 TOTAL TRAFFIC VOLUMES

FIGURE 12

Kimley»Horn

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

LOS	Average Vehicle Delay sec/vehicle	Operational Characteristics
A	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
F	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

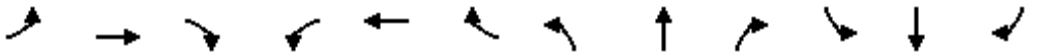
LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	Operational Characteristics
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. The delay could be up to 15 seconds. Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.
D	25 to 35 seconds	This is the point at which a traffic signal may be warranted for this intersection. The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. There is a high probability that this intersection will meet traffic signal warrants. The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. The only remedy for these long delays is installing a traffic signal or restricting the accesses. The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	990	150	35	2015	120	105	20	45	60	13	300
Future Volume (vph)	265	990	150	35	2015	120	105	20	45	60	13	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	1		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.980				0.850		0.896				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4984	0	1770	5085	1583	1770	1669	0	1770	1863	2787
Flt Permitted	0.950			0.209			0.569			0.711		
Satd. Flow (perm)	3433	4984	0	389	5085	1583	1060	1669	0	1324	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				118		49				192
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	1076	163	38	2190	130	114	22	49	65	14	326
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1239	0	38	2190	130	114	71	0	65	14	326
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	15.0	83.0		11.0	79.0	79.0	14.0	13.0		13.0	12.0	12.0
Total Split (%)	12.5%	69.2%		9.2%	65.8%	65.8%	11.7%	10.8%		10.8%	10.0%	10.0%
Maximum Green (s)	10.0	77.0		6.0	73.0	73.0	9.0	7.0		8.0	6.0	6.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	0.0		0.0	0.0	-1.0	0.0	0.0		0.0	-2.0	-1.0
Total Lost Time (s)	3.0	6.0		5.0	6.0	5.0	5.0	6.0		5.0	4.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	12.0	81.4		79.9	73.0	74.0	17.8	9.6		14.8	8.3	7.3
Actuated g/C Ratio	0.10	0.68		0.67	0.61	0.62	0.15	0.08		0.12	0.07	0.06
v/c Ratio	0.84	0.36		0.12	0.71	0.13	0.55	0.40		0.34	0.11	0.93
Control Delay	74.6	8.7		8.6	24.3	7.1	54.6	29.7		47.9	54.8	57.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	74.6	8.7		8.6	24.3	7.1	54.6	29.7		47.9	54.8	57.6
LOS	E	A		A	C	A	D	C		D	D	E
Approach Delay		21.1			23.1			45.1			56.0	
Approach LOS		C			C			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 26.3		Intersection LOS: C	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

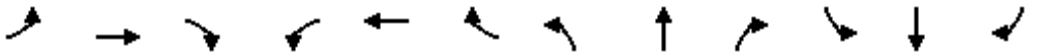
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	64	775	255	60	1670	12	415	50	40	5	40	85
Future Volume (vph)	64	775	255	60	1670	12	415	50	40	5	40	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.963			0.999				0.850		0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4897	0	1770	5080	0	3433	1863	1583	1770	3178	0
Flt Permitted	0.077			0.214			0.443			0.722		
Satd. Flow (perm)	143	4897	0	399	5080	0	1601	1863	1583	1345	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			2				73		81	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	842	277	65	1815	13	451	54	43	5	43	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1119	0	65	1828	0	451	54	43	5	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	9.0	10.0	21.0	
Total Split (s)	10.0	80.0		10.0	80.0		18.0	19.0	10.0	11.0	12.0	
Total Split (%)	8.3%	66.7%		8.3%	66.7%		15.0%	15.8%	8.3%	9.2%	10.0%	
Maximum Green (s)	5.0	74.0		5.0	74.0		13.0	13.0	5.0	6.0	6.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	3.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	81.1	76.1		81.1	76.1		24.9	21.7	32.8	12.6	5.9	
Actuated g/C Ratio	0.68	0.63		0.68	0.63		0.21	0.18	0.27	0.10	0.05	
v/c Ratio	0.42	0.36		0.20	0.57		0.85	0.16	0.09	0.03	0.58	
Control Delay	12.8	13.0		6.8	13.8		59.8	45.0	3.2	38.8	34.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	12.8	13.0		6.8	13.8		59.8	45.0	3.2	38.8	34.9	
LOS	B	B		A	B		E	D	A	D	C	
Approach Delay		13.0			13.5			53.9			35.0	
Approach LOS		B			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 42 (35%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 20.0		Intersection LOS: C	
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

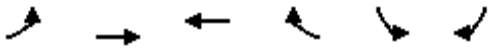


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	650	70	325	1650	87	115	25	140	37	14	2
Future Volume (vph)	6	650	70	325	1650	87	115	25	140	37	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3476	0
Flt Permitted	0.075			0.328			0.541					
Satd. Flow (perm)	140	3539	1583	611	3539	1583	1008	1863	1583	1863	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			164			164			152		2	
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			9.5			11.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	707	76	353	1793	95	125	27	152	40	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	707	76	353	1793	95	125	27	152	40	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		

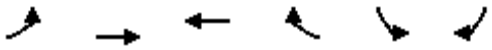
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0	
Total Split (s)	10.0	80.0	80.0	10.0	80.0	80.0	18.0	19.0	19.0	11.0	12.0	
Total Split (%)	8.3%	66.7%	66.7%	8.3%	66.7%	66.7%	15.0%	15.8%	15.8%	9.2%	10.0%	
Maximum Green (s)	5.0	74.0	74.0	5.0	74.0	74.0	13.0	13.0	13.0	6.0	6.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	83.1	76.8	76.8	89.9	87.9	87.9	19.1	9.3	10.3	8.7	5.8	
Actuated g/C Ratio	0.69	0.64	0.64	0.75	0.73	0.73	0.16	0.08	0.09	0.07	0.05	
v/c Ratio	0.04	0.31	0.07	0.66	0.69	0.08	0.50	0.19	0.55	0.31	0.10	
Control Delay	5.5	10.7	0.1	15.0	12.3	0.1	50.9	53.3	15.7	50.5	51.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.5	10.7	0.1	15.0	12.3	0.1	50.9	53.3	15.7	50.5	51.3	
LOS	A	B	A	B	B	A	D	D	B	D	D	
Approach Delay		9.6			12.2			33.5			50.8	
Approach LOS		A			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 42 (35%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 14.2		Intersection LOS: B	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	315	510	1260	116	75	800
Future Volume (vph)	315	510	1260	116	75	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	125	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.874	0.850
Flt Protected	0.950				0.992	
Satd. Flow (prot)	3433	3539	3539	1583	3133	1441
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	3433	3539	3539	1583	3133	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				126	279	341
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	554	1370	126	82	870
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	342	554	1370	126	517	435
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

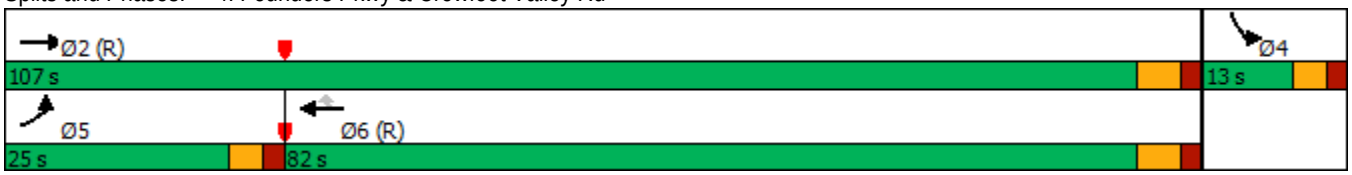


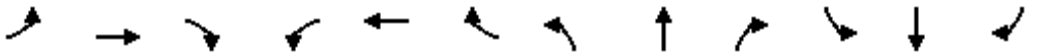
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.0	10.0	10.0	9.0	
Total Split (s)	25.0	107.0	82.0	82.0	13.0	
Total Split (%)	20.8%	89.2%	68.3%	68.3%	10.8%	
Maximum Green (s)	20.0	101.0	76.0	76.0	8.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	18.8	103.0	81.2	81.2	10.0	120.0
Actuated g/C Ratio	0.16	0.86	0.68	0.68	0.08	1.00
v/c Ratio	0.64	0.18	0.57	0.11	1.12dr	0.30
Control Delay	52.8	1.6	11.7	1.5	65.6	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	1.6	11.7	1.5	65.6	0.5
LOS	D	A	B	A	E	A
Approach Delay		21.1	10.9		35.9	
Approach LOS		C	B		D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 93 (78%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



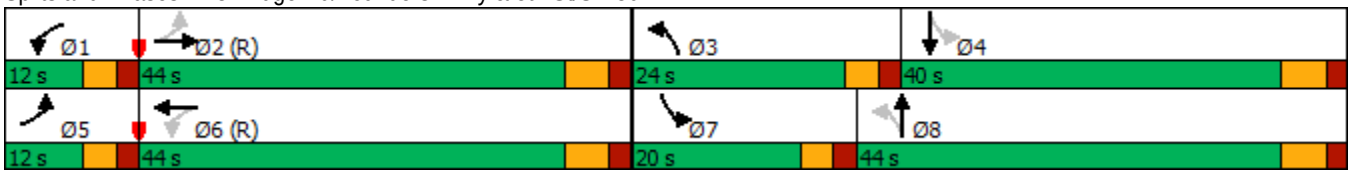


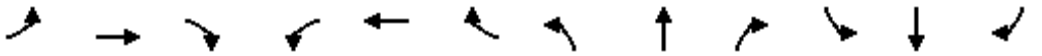
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	208	157	81	379	568	336	360	47	209	143	122
Future Volume (vph)	66	208	157	81	379	568	336	360	47	209	143	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.375			0.535			0.492			0.231		
Satd. Flow (perm)	699	1863	1583	997	1863	1583	916	1863	1583	430	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			510			173			173
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	226	171	88	399	617	365	391	51	227	155	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	226	171	88	399	617	365	391	51	227	155	133
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	44.0		20.0	40.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		20.0%	36.7%		16.7%	33.3%	
Maximum Green (s)	7.0	38.0		7.0	38.0		19.0	38.0		15.0	34.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	54.0	45.6	120.0	55.8	48.1	120.0	51.6	31.3	120.0	43.1	26.8	120.0
Actuated g/C Ratio	0.45	0.38	1.00	0.46	0.40	1.00	0.43	0.26	1.00	0.36	0.22	1.00
v/c Ratio	0.19	0.32	0.11	0.17	0.53	0.39	0.68	0.81	0.03	0.70	0.37	0.08
Control Delay	19.6	29.9	0.1	19.2	33.6	0.7	30.8	54.3	0.0	34.0	40.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	29.9	0.1	19.2	33.6	0.7	30.8	54.3	0.0	34.0	40.6	0.1
LOS	B	C	A	B	C	A	C	D	A	C	D	A
Approach Delay		17.5			14.1			40.2			27.2	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 24.3		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	2385	230	40	1905	135	150	35	90	115	35	450
Future Volume (vph)	435	2385	230	40	1905	135	150	35	90	115	35	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	1		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Frt		0.986				0.850		0.892				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5014	0	1770	5085	1583	1770	1662	0	1770	1863	2787
Flt Permitted	0.950			0.059			0.732			0.444		
Satd. Flow (perm)	3433	5014	0	110	5085	1583	1364	1662	0	827	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				164		82				279
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.96	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	453	2511	250	43	1944	147	163	38	98	125	38	489
Shared Lane Traffic (%)												
Lane Group Flow (vph)	453	2761	0	43	1944	147	163	136	0	125	38	489
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			12			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	13.0		9.0	13.0	13.0
Total Split (s)	20.0	83.0		11.0	74.0	74.0	13.0	13.0		13.0	13.0	13.0
Total Split (%)	16.7%	69.2%		9.2%	61.7%	61.7%	10.8%	10.8%		10.8%	10.8%	10.8%
Maximum Green (s)	15.0	77.0		6.0	68.0	68.0	8.0	7.0		8.0	7.0	7.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	4.0		3.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	0.0		0.0	0.0	-1.0	-2.0	0.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	6.0		5.0	6.0	5.0	3.0	6.0		3.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	17.0	79.2		74.9	68.0	69.0	20.0	7.0		20.0	9.0	9.0
Actuated g/C Ratio	0.14	0.66		0.62	0.57	0.58	0.17	0.06		0.17	0.08	0.08
v/c Ratio	0.93	0.83		0.29	0.67	0.15	0.62	0.78		0.58	0.27	1.05
Control Delay	78.2	18.7		9.3	19.5	3.2	55.3	53.4		54.0	57.8	77.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	78.2	18.7		9.3	19.5	3.2	55.3	53.4		54.0	57.8	77.6
LOS	E	B		A	B	A	E	D		D	E	E
Approach Delay		27.1			18.2			54.4			72.0	
Approach LOS		C			B			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 85.8%		ICU Level of Service E	
Analysis Period (min) 15			

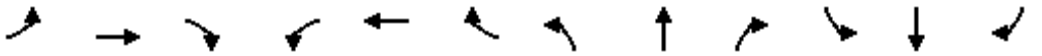
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	165	1740	685	130	1400	20	620	110	200	40	85	60
Future Volume (vph)	165	1740	685	130	1400	20	620	110	200	40	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.957			0.998				0.850		0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4867	0	1770	5075	0	3433	1863	1583	1770	3320	0
Flt Permitted	0.133			0.055			0.546			0.519		
Satd. Flow (perm)	248	4867	0	102	5075	0	1973	1863	1583	967	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		170			3				164		65	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	1832	745	141	1429	22	674	120	217	43	92	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	2577	0	141	1451	0	674	120	217	43	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	20.0	83.0		11.0	74.0		13.0	13.0	13.0	13.0	13.0	
Total Split (%)	16.7%	69.2%		9.2%	61.7%		10.8%	10.8%	10.8%	10.8%	10.8%	
Maximum Green (s)	15.0	77.0		6.0	68.0		8.0	7.0	7.0	8.0	7.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0	4.0	3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		-2.0	-2.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		3.0	4.0	6.0	5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	86.9	77.0		81.1	73.8		20.6	11.6	9.6	15.0	6.7	
Actuated g/C Ratio	0.72	0.64		0.68	0.62		0.17	0.10	0.08	0.12	0.06	
v/c Ratio	0.60	0.81		0.90	0.46		1.47	0.67	0.79	0.26	0.64	
Control Delay	19.1	12.2		78.1	13.3		256.4	72.6	36.3	46.1	44.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	19.1	12.2		78.1	13.3		256.4	72.6	36.3	46.1	44.4	
LOS	B	B		E	B		F	E	D	D	D	
Approach Delay		12.6			19.0			187.4			44.8	
Approach LOS		B			B			F			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 112 (93%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.47			
Intersection Signal Delay: 47.4		Intersection LOS: D	
Intersection Capacity Utilization 95.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

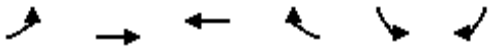


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1450	120	205	1320	90	90	45	315	171	46	7
Future Volume (vph)	8	1450	120	205	1320	90	90	45	315	171	46	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3465	0
Flt Permitted	0.170			0.106			0.717			0.725		
Satd. Flow (perm)	317	3539	1583	197	3539	1583	1336	1863	1583	1350	3465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			130			164			218		8	
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			9.5			11.3	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1526	130	223	1347	98	98	49	342	186	50	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1526	130	223	1347	98	98	49	342	186	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	13.0		9.0	13.0	
Total Split (s)	20.0	83.0	83.0	11.0	74.0	74.0	13.0	13.0		13.0	13.0	
Total Split (%)	16.7%	69.2%	69.2%	9.2%	61.7%	61.7%	10.8%	10.8%		10.8%	10.8%	
Maximum Green (s)	15.0	77.0	77.0	6.0	68.0	68.0	8.0	7.0		8.0	7.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	-2.0	0.0	0.0	-2.0	-1.0		-2.0	-2.0	
Total Lost Time (s)	5.0	6.0	6.0	3.0	6.0	6.0	3.0	5.0		3.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	85.7	79.0	79.0	93.0	88.4	88.4	18.0	7.7	120.0	18.0	8.7	
Actuated g/C Ratio	0.71	0.66	0.66	0.78	0.74	0.74	0.15	0.06	1.00	0.15	0.07	
v/c Ratio	0.03	0.65	0.12	0.84	0.52	0.08	0.42	0.41	0.22	0.78	0.22	
Control Delay	4.4	14.5	1.6	41.6	8.6	0.2	48.1	64.5	0.3	68.9	47.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.4	14.5	1.6	41.6	8.6	0.2	48.1	64.5	0.3	68.9	47.8	
LOS	A	B	A	D	A	A	D	E	A	E	D	
Approach Delay		13.4			12.5			16.3			63.9	
Approach LOS		B			B			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 112 (93%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy

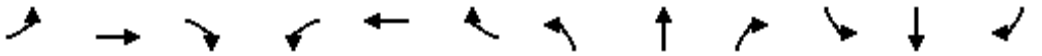


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	700	1240	990	110	120	515
Future Volume (vph)	700	1240	990	110	120	515
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	125	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.898	0.850
Flt Protected	0.950				0.984	
Satd. Flow (prot)	3433	3539	3539	1583	3193	1441
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	3433	3539	3539	1583	3193	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				120	280	280
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	1348	1076	120	130	560
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	761	1348	1076	120	410	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.0	10.0	10.0	9.0	
Total Split (s)	37.0	92.0	55.0	55.0	28.0	
Total Split (%)	30.8%	76.7%	45.8%	45.8%	23.3%	
Maximum Green (s)	32.0	86.0	49.0	49.0	23.0	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	33.8	100.2	63.3	63.3	12.8	120.0
Actuated g/C Ratio	0.28	0.84	0.53	0.53	0.11	1.00
v/c Ratio	0.79	0.46	0.58	0.13	0.69	0.19
Control Delay	45.8	3.5	22.4	3.8	22.4	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	3.5	22.4	3.8	22.4	0.3
LOS	D	A	C	A	C	A
Approach Delay		18.8	20.5		13.4	
Approach LOS		B	C		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 101 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

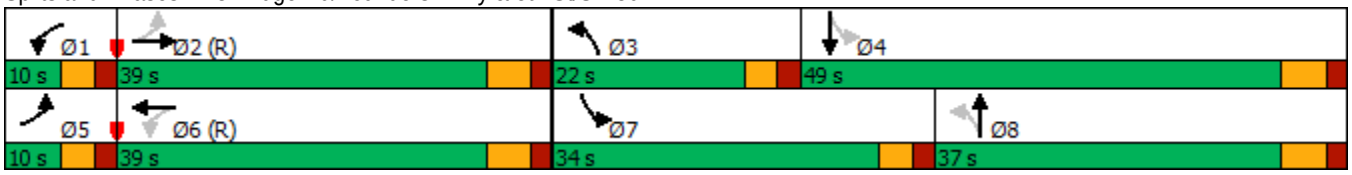


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	400	357	101	227	337	190	294	59	505	411	108
Future Volume (vph)	130	400	357	101	227	337	190	294	59	505	411	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.467			0.223			0.397			0.210		
Satd. Flow (perm)	870	1863	1583	415	1863	1583	740	1863	1583	391	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			388			366			218			218
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.92	0.92
Adj. Flow (vph)	141	435	388	110	247	366	207	320	64	532	447	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	435	388	110	247	366	207	320	64	532	447	117
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	10.0	39.0		10.0	39.0		22.0	37.0		34.0	49.0	
Total Split (%)	8.3%	32.5%		8.3%	32.5%		18.3%	30.8%		28.3%	40.8%	
Maximum Green (s)	5.0	33.0		5.0	33.0		17.0	31.0		29.0	43.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	4.0		3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	47.4	37.5	120.0	46.6	37.1	120.0	41.6	27.2	120.0	62.0	41.6	120.0
Actuated g/C Ratio	0.40	0.31	1.00	0.39	0.31	1.00	0.35	0.23	1.00	0.52	0.35	1.00
v/c Ratio	0.34	0.75	0.25	0.43	0.43	0.23	0.54	0.76	0.04	0.96	0.69	0.07
Control Delay	26.4	47.4	0.4	29.3	37.0	0.3	23.4	54.8	0.1	57.1	39.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	47.4	0.4	29.3	37.0	0.3	23.4	54.8	0.1	57.1	39.8	0.1
LOS	C	D	A	C	D	A	C	D	A	E	D	A
Approach Delay		25.4			17.3			37.9			43.9	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 31.9		Intersection LOS: C	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1115	150	38	2265	125	115	22	48	65	14	325
Future Volume (vph)	265	1115	150	38	2265	125	115	22	48	65	14	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.982				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4994	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.180			0.670			0.690		
Satd. Flow (perm)	3433	4994	0	335	5085	1583	2421	1671	0	1285	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				109		52				277
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	288	1212	163	41	2384	136	125	24	52	71	15	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1375	0	41	2384	136	125	76	0	71	15	342
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	15.0	68.0		12.0	65.0	65.0	12.0	28.0		12.0	28.0	28.0
Total Split (%)	12.5%	56.7%		10.0%	54.2%	54.2%	10.0%	23.3%		10.0%	23.3%	23.3%
Maximum Green (s)	10.0	61.5		7.0	58.5	58.5	7.0	23.0		7.0	23.0	23.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.5		3.0	3.5	4.5	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	17.4	81.3		78.7	70.0	69.0	20.7	13.5		20.0	11.1	11.1
Actuated g/C Ratio	0.14	0.68		0.66	0.58	0.58	0.17	0.11		0.17	0.09	0.09
v/c Ratio	0.58	0.41		0.13	0.80	0.14	0.25	0.32		0.29	0.09	0.67
Control Delay	52.4	9.7		5.3	21.4	2.0	40.9	23.6		42.5	48.3	18.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	52.4	9.7		5.3	21.4	2.0	40.9	23.6		42.5	48.3	18.1
LOS	D	A		A	C	A	D	C		D	D	B
Approach Delay		17.1			20.1			34.4			23.2	
Approach LOS		B			C			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	64	875	255	66	1880	12	415	50	35	5	40	85
Future Volume (vph)	64	875	255	66	1880	12	415	50	35	5	40	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.966			0.999				0.850		0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4912	0	1770	5080	0	3433	1863	1583	1770	3178	0
Flt Permitted	0.058			0.181			0.487			0.722		
Satd. Flow (perm)	108	4912	0	337	5080	0	1760	1863	1583	1345	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		87			1				77		92	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	951	277	72	2043	13	451	54	38	5	43	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1228	0	72	2056	0	451	54	38	5	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	9.0	10.0	21.0	
Total Split (s)	12.0	65.0		12.0	65.0		18.0	31.0	12.0	12.0	25.0	
Total Split (%)	10.0%	54.2%		10.0%	54.2%		15.0%	25.8%	10.0%	10.0%	20.8%	
Maximum Green (s)	7.0	58.5		7.0	58.5		13.0	26.0	7.0	7.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.5		4.0	5.5		4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	82.5	74.3		82.3	74.2		26.4	24.1	36.1	15.2	8.4	
Actuated g/C Ratio	0.69	0.62		0.69	0.62		0.22	0.20	0.30	0.13	0.07	
v/c Ratio	0.38	0.40		0.22	0.65		0.78	0.14	0.07	0.03	0.44	
Control Delay	25.1	10.2		7.2	16.9		52.0	41.9	0.9	36.2	24.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	25.1	10.2		7.2	16.9		52.0	41.9	0.9	36.2	24.1	
LOS	C	B		A	B		D	D	A	D	C	
Approach Delay		11.0			16.5			47.5			24.5	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 19.1		Intersection LOS: B	
Intersection Capacity Utilization 70.4%		ICU Level of Service C	
Analysis Period (min) 15			

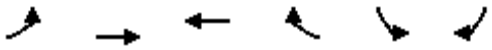
Splits and Phases: 2: Front St & Founder Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	725	80	365	1850	95	130	27	160	40	14	2
Future Volume (vph)	6	725	80	365	1850	95	130	27	160	40	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3476	0
Flt Permitted	0.061			0.278			0.513					
Satd. Flow (perm)	114	3539	1583	518	3539	1583	956	1863	1583	1863	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			174		2	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	788	87	397	2011	103	141	29	174	43	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	788	87	397	2011	103	141	29	174	43	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		

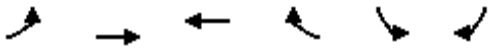
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0		9.0	20.0	
Total Split (s)	12.0	68.0	68.0	12.0	68.0	68.0	17.0	25.0		15.0	23.0	
Total Split (%)	10.0%	56.7%	56.7%	10.0%	56.7%	56.7%	14.2%	20.8%		12.5%	19.2%	
Maximum Green (s)	7.0	61.5	61.5	7.0	61.5	61.5	12.0	20.0		10.0	18.0	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	5.5	5.5	4.0	5.5	6.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	76.5	68.3	68.3	93.0	89.3	88.3	18.4	9.4	120.0	13.2	7.2	
Actuated g/C Ratio	0.64	0.57	0.57	0.78	0.74	0.74	0.15	0.08	1.00	0.11	0.06	
v/c Ratio	0.04	0.39	0.09	0.66	0.76	0.09	0.58	0.20	0.11	0.22	0.08	
Control Delay	6.3	15.9	1.8	10.8	13.9	1.6	54.6	54.9	0.1	45.5	49.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.3	15.9	1.8	10.8	13.9	1.6	54.6	54.9	0.1	45.5	49.2	
LOS	A	B	A	B	B	A	D	D	A	D	D	
Approach Delay		14.5			12.9			27.1			46.5	
Approach LOS		B			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	355	575	1430	130	85	900
Future Volume (vph)	355	575	1430	130	85	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.874	0.850
Flt Protected	0.950				0.992	
Satd. Flow (prot)	3433	3539	3539	1583	3133	1441
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	3433	3539	3539	1583	3133	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				109	303	489
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	386	625	1554	141	92	978
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	386	625	1554	141	581	489
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

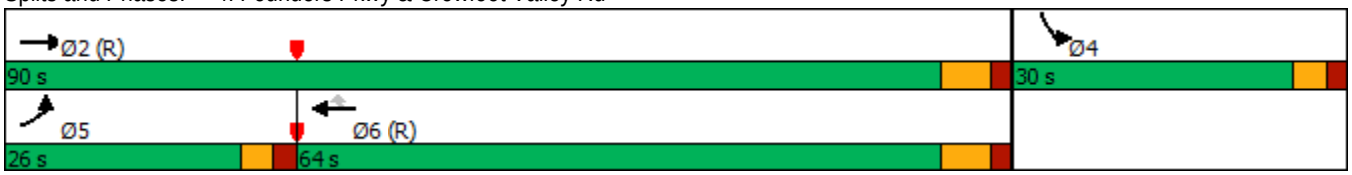


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.5	10.5	10.5	9.0	
Total Split (s)	26.0	90.0	64.0	64.0	30.0	
Total Split (%)	21.7%	75.0%	53.3%	53.3%	25.0%	
Maximum Green (s)	21.0	83.5	57.5	57.5	25.0	
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	0.0	-2.0	0.0	0.0	
Total Lost Time (s)	4.0	6.5	4.5	6.5	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.2	91.3	70.1	68.1	17.2	120.0
Actuated g/C Ratio	0.16	0.76	0.58	0.57	0.14	1.00
v/c Ratio	0.70	0.23	0.75	0.15	1.01dr	0.34
Control Delay	54.8	4.9	23.1	5.1	33.2	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	4.9	23.1	5.1	33.2	0.6
LOS	D	A	C	A	C	A
Approach Delay		23.9	21.6		18.3	
Approach LOS		C	C		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 21.3		Intersection LOS: C	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

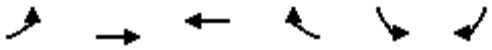
Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



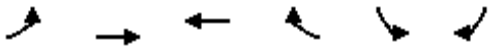
Intersection	
Intersection Delay, s/veh	3.2
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	65	98	55
Demand Flow Rate, veh/h	66	100	56
Vehicles Circulating, veh/h	50	34	16
Vehicles Exiting, veh/h	84	38	100
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.2	3.4	3.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	66	100	56
Cap Entry Lane, veh/h	1311	1333	1358
Entry HV Adj Factor	0.980	0.980	0.982
Flow Entry, veh/h	65	98	55
Cap Entry, veh/h	1285	1306	1333
V/C Ratio	0.050	0.075	0.041
Control Delay, s/veh	3.2	3.4	3.0
LOS	A	A	A
95th %tile Queue, veh	0	0	0



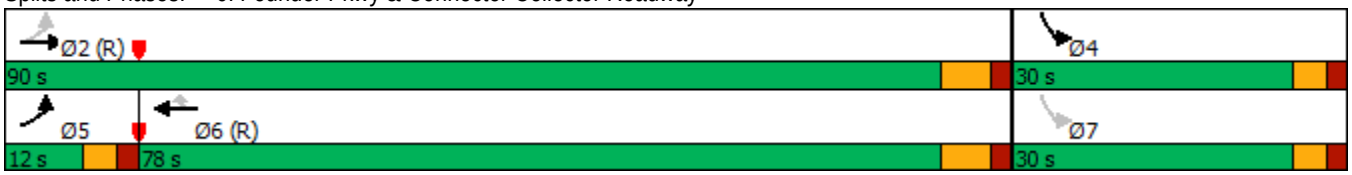
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Lane Configurations							
Traffic Volume (vph)	30	625	1500	20	25	65	
Future Volume (vph)	30	625	1500	20	25	65	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.128				0.950		
Satd. Flow (perm)	238	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				22		71	
Link Speed (mph)		50	50		35		
Link Distance (ft)		483	546		1305		
Travel Time (s)		6.6	7.4		25.4		
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.92	
Adj. Flow (vph)	33	679	1579	22	27	71	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	33	679	1579	22	27	71	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Free	
Protected Phases	5	2	6		4		7
Permitted Phases	2			6	7	Free	
Detector Phase	5	2	6	6	4		
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0		20.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0		30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%		25%
Maximum Green (s)	7.0	83.5	71.5	71.5	25.0		25.0
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	6.5	6.5	6.5	5.0		
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Max	C-Max	C-Max	None		None
Act Effct Green (s)	107.0	108.1	101.5	101.5	7.3	120.0	
Actuated g/C Ratio	0.89	0.90	0.85	0.85	0.06	1.00	
v/c Ratio	0.12	0.21	0.53	0.02	0.25	0.04	
Control Delay	2.2	1.6	5.7	1.6	58.8	0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.2	1.6	5.7	1.6	58.8	0.0	
LOS	A	A	A	A	E	A	
Approach Delay		1.6	5.7		16.2		
Approach LOS		A	A		B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 4.9		Intersection LOS: A	
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

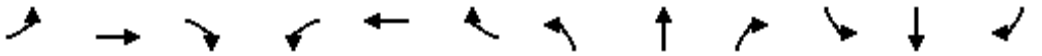
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	38	92	278
Demand Flow Rate, veh/h	39	94	284
Vehicles Circulating, veh/h	200	34	16
Vehicles Exiting, veh/h	100	205	112
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.3	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	39	94	284
Cap Entry Lane, veh/h	1125	1333	1358
Entry HV Adj Factor	0.974	0.984	0.979
Flow Entry, veh/h	38	92	278
Cap Entry, veh/h	1096	1311	1329
V/C Ratio	0.035	0.071	0.209
Control Delay, s/veh	3.6	3.3	4.5
LOS	A	A	A
95th %tile Queue, veh	0	0	1

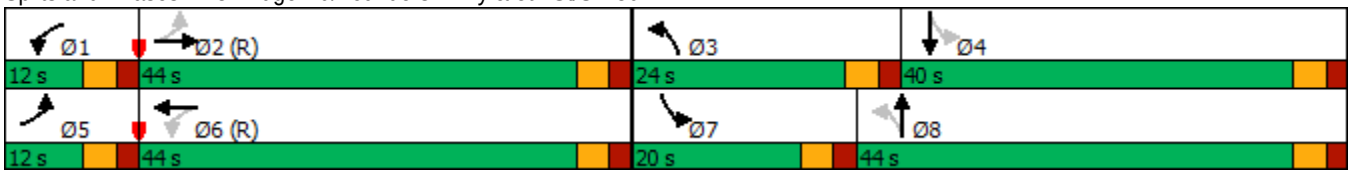


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	235	180	90	425	640	375	405	55	235	160	135
Future Volume (vph)	75	235	180	90	425	640	375	405	55	235	160	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.299			0.478			0.459			0.171		
Satd. Flow (perm)	557	1863	1583	890	1863	1583	855	1863	1583	319	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			514			155			155
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	255	196	98	447	696	408	440	60	255	174	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	255	196	98	447	696	408	440	60	255	174	147
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	44.0		20.0	40.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		20.0%	36.7%		16.7%	33.3%	
Maximum Green (s)	7.0	39.0		7.0	39.0		19.0	39.0		15.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	54.3	45.8	120.0	55.6	48.2	120.0	53.4	33.8	120.0	45.0	29.4	120.0
Actuated g/C Ratio	0.45	0.38	1.00	0.46	0.40	1.00	0.44	0.28	1.00	0.38	0.24	1.00
v/c Ratio	0.24	0.36	0.12	0.21	0.60	0.44	0.77	0.84	0.04	0.83	0.38	0.09
Control Delay	20.3	30.1	0.2	19.6	35.0	0.9	33.9	54.9	0.0	48.2	38.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	30.1	0.2	19.6	35.0	0.9	33.9	54.9	0.0	48.2	38.9	0.1
LOS	C	C	A	B	C	A	C	D	A	D	D	A
Approach Delay		17.6			14.6			41.8			33.1	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 26.0		Intersection LOS: C	
Intersection Capacity Utilization 74.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	2685	230	42	2145	145	165	38	90	125	37	460
Future Volume (vph)	435	2685	230	42	2145	145	165	38	90	125	37	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	330		200	0		0	125		0
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.988				0.850		0.894				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5024	0	1770	5085	1583	3433	1665	0	1770	1863	2787
Flt Permitted	0.950			0.067			0.731			0.462		
Satd. Flow (perm)	3433	5024	0	125	5085	1583	2642	1665	0	861	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				155		86				305
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	473	2826	250	46	2258	158	179	41	98	136	40	500
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3076	0	46	2258	158	179	139	0	136	40	500
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6	8			4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	20.0	74.0		11.0	65.0	65.0	11.0	24.0		11.0	24.0	24.0
Total Split (%)	16.7%	61.7%		9.2%	54.2%	54.2%	9.2%	20.0%		9.2%	20.0%	20.0%
Maximum Green (s)	15.0	67.5		6.0	58.5	58.5	6.0	19.0		6.0	19.0	19.0
Yellow Time (s)	3.0	4.5		3.0	4.5	4.5	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.5		4.0	4.5	5.5	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	20.0	76.1		68.6	61.1	60.1	22.4	15.4		22.4	15.4	15.4
Actuated g/C Ratio	0.17	0.63		0.57	0.51	0.50	0.19	0.13		0.19	0.13	0.13
v/c Ratio	0.83	0.96		0.28	0.87	0.18	0.33	0.48		0.64	0.17	0.80
Control Delay	62.4	31.7		12.1	28.1	3.0	39.3	25.0		53.7	45.9	29.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.4	31.7		12.1	28.1	3.0	39.3	25.0		53.7	45.9	29.4
LOS	E	C		B	C	A	D	C		D	D	C
Approach Delay		35.8			26.2			33.1			35.3	
Approach LOS		D			C			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 32.2		Intersection LOS: C	
Intersection Capacity Utilization 88.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	165	1950	685	130	1575	20	620	110	190	40	85	60
Future Volume (vph)	165	1950	685	130	1575	20	620	110	190	40	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	210		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.959			0.998				0.850		0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4877	0	1770	5075	0	3433	1863	1583	1770	3320	0
Flt Permitted	0.075			0.066			0.950			0.680		
Satd. Flow (perm)	140	4877	0	123	5075	0	3433	1863	1583	1267	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		121			2				91		65	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			12.6			9.0	
Peak Hour Factor	0.92	0.98	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	1990	745	141	1658	22	674	120	207	43	92	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	2735	0	141	1680	0	674	120	207	43	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6					8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	9.0	10.0	14.0	
Total Split (s)	11.0	68.0		10.0	67.0		27.0	29.0	10.0	13.0	15.0	
Total Split (%)	9.2%	56.7%		8.3%	55.8%		22.5%	24.2%	8.3%	10.8%	12.5%	
Maximum Green (s)	6.0	62.0		5.0	61.0		22.0	24.0	5.0	8.0	10.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.5		-1.0	-2.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	3.5		4.0	4.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	72.6	64.5		70.6	63.0		24.0	26.4	38.0	17.5	9.4	
Actuated g/C Ratio	0.60	0.54		0.59	0.52		0.20	0.22	0.32	0.15	0.08	
v/c Ratio	0.89	1.02		0.80	0.63		0.98	0.29	0.37	0.20	0.49	
Control Delay	51.6	44.6		54.2	21.5		78.4	42.3	20.5	32.9	35.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	51.6	44.6		54.2	21.5		78.4	42.3	20.5	32.9	35.9	
LOS	D	D		D	C		E	D	C	C	D	
Approach Delay		45.1			24.1			62.1			35.2	
Approach LOS		D			C			E			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 41.2 Intersection LOS: D
Intersection Capacity Utilization 95.5% ICU Level of Service F
Analysis Period (min) 15

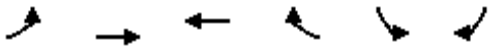
Splits and Phases: 2: Front St & Founder Pkwy

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1630	135	225	1450	95	105	45	355	173	48	8
Future Volume (vph)	8	1630	135	225	1450	95	105	45	355	173	48	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		400	220		0	120		140
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	3461	0
Flt Permitted	0.135			0.060			0.615			0.725		
Satd. Flow (perm)	251	3539	1583	112	3539	1583	1146	1863	1583	1350	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			114			109			198		9	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1716	147	245	1576	103	114	49	386	188	52	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1716	147	245	1576	103	114	49	386	188	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		Free	4		

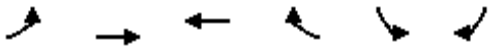
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0	20.0	9.0	20.0	20.0	9.0	20.0		9.0	20.0	
Total Split (s)	11.0	69.0	69.0	11.0	69.0	69.0	17.0	25.0		15.0	23.0	
Total Split (%)	9.2%	57.5%	57.5%	9.2%	57.5%	57.5%	14.2%	20.8%		12.5%	19.2%	
Maximum Green (s)	6.0	62.5	62.5	6.0	62.5	62.5	12.0	20.0		10.0	18.0	
Yellow Time (s)	3.0	4.5	4.5	3.0	4.5	4.5	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0	-1.0	-1.0	-2.0	-1.0	-1.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.5	5.5	4.0	4.5	5.5	4.0	3.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	71.7	64.5	63.5	89.4	86.7	85.7	20.7	10.7	120.0	18.2	8.5	
Actuated g/C Ratio	0.60	0.54	0.53	0.74	0.72	0.71	0.17	0.09	1.00	0.15	0.07	
v/c Ratio	0.04	0.90	0.16	0.67	0.62	0.09	0.44	0.30	0.24	0.77	0.24	
Control Delay	6.2	32.9	4.6	39.3	11.2	1.7	46.1	54.9	0.4	65.6	47.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.2	32.9	4.6	39.3	11.2	1.7	46.1	54.9	0.4	65.6	47.2	
LOS	A	C	A	D	B	A	D	D	A	E	D	
Approach Delay		30.6			14.3			14.7			61.1	
Approach LOS		C			B			B			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 84.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	785	1415	1085	125	135	580
Future Volume (vph)	785	1415	1085	125	135	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.898	0.850
Flt Protected	0.950				0.984	
Satd. Flow (prot)	3433	3539	3539	1583	3193	1441
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	3433	3539	3539	1583	3193	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				136	315	315
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	853	1538	1179	136	147	630
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	853	1538	1179	136	462	315
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	10.5	10.5	10.5	9.0	
Total Split (s)	26.0	90.0	64.0	64.0	30.0	
Total Split (%)	21.7%	75.0%	53.3%	53.3%	25.0%	
Maximum Green (s)	21.0	83.5	57.5	57.5	25.0	
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	0.0	-2.0	0.0	0.0	
Total Lost Time (s)	4.0	6.5	4.5	6.5	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	35.5	97.0	59.5	57.5	11.5	120.0
Actuated g/C Ratio	0.30	0.81	0.50	0.48	0.10	1.00
v/c Ratio	0.84	0.54	0.67	0.16	0.78	0.22
Control Delay	49.1	5.2	25.3	3.3	26.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	5.2	25.3	3.3	26.0	0.3
LOS	D	A	C	A	C	A
Approach Delay		20.8	23.0		15.6	
Approach LOS		C	C		B	

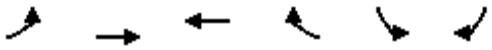
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 20.6		Intersection LOS: C	
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

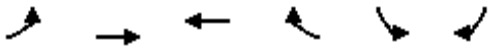
Intersection	
Intersection Delay, s/veh	3.3
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	87	60	108
Demand Flow Rate, veh/h	89	62	110
Vehicles Circulating, veh/h	34	55	50
Vehicles Exiting, veh/h	83	105	73
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.3	3.2	3.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	89	62	110
Cap Entry Lane, veh/h	1333	1305	1311
Entry HV Adj Factor	0.978	0.975	0.982
Flow Entry, veh/h	87	60	108
Cap Entry, veh/h	1303	1272	1287
V/C Ratio	0.067	0.048	0.084
Control Delay, s/veh	3.3	3.2	3.5
LOS	A	A	A
95th %tile Queue, veh	0	0	0



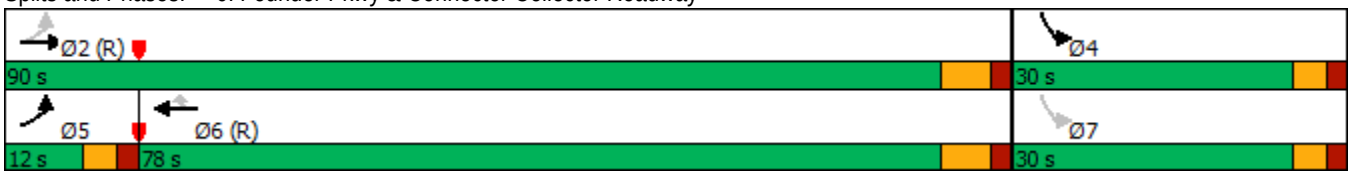
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Lane Configurations							
Traffic Volume (vph)	65	1475	1175	35	20	45	
Future Volume (vph)	65	1475	1175	35	20	45	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.186				0.950		
Satd. Flow (perm)	346	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				38		49	
Link Speed (mph)		50	50		35		
Link Distance (ft)		483	546		1305		
Travel Time (s)		6.6	7.4		25.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	71	1603	1277	38	22	49	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	71	1603	1277	38	22	49	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Free	
Protected Phases	5	2	6		4		7
Permitted Phases	2			6	7	Free	
Detector Phase	5	2	6	6	4		
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø7
Minimum Split (s)	9.0	20.0	20.0	20.0	20.0		20.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0		30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%		25%
Maximum Green (s)	7.0	83.5	71.5	71.5	25.0		25.0
Yellow Time (s)	3.0	4.5	4.5	4.5	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	6.5	6.5	6.5	5.0		
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Max	C-Max	C-Max	None		None
Act Effct Green (s)	107.3	108.4	98.0	98.0	7.0	120.0	
Actuated g/C Ratio	0.89	0.90	0.82	0.82	0.06	1.00	
v/c Ratio	0.19	0.50	0.44	0.03	0.21	0.03	
Control Delay	2.3	2.6	5.2	1.4	58.1	0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.3	2.6	5.2	1.4	58.1	0.0	
LOS	A	A	A	A	E	A	
Approach Delay		2.6	5.1		18.0		
Approach LOS		A	A		B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 4.0		Intersection LOS: A	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

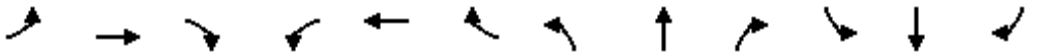
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	103	222	195
Demand Flow Rate, veh/h	105	226	199
Vehicles Circulating, veh/h	144	89	5
Vehicles Exiting, veh/h	60	160	310
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.8	4.4	3.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	105	226	199
Cap Entry Lane, veh/h	1191	1260	1373
Entry HV Adj Factor	0.981	0.981	0.981
Flow Entry, veh/h	103	222	195
Cap Entry, veh/h	1169	1236	1346
V/C Ratio	0.088	0.179	0.145
Control Delay, s/veh	3.8	4.4	3.9
LOS	A	A	A
95th %tile Queue, veh	0	1	1

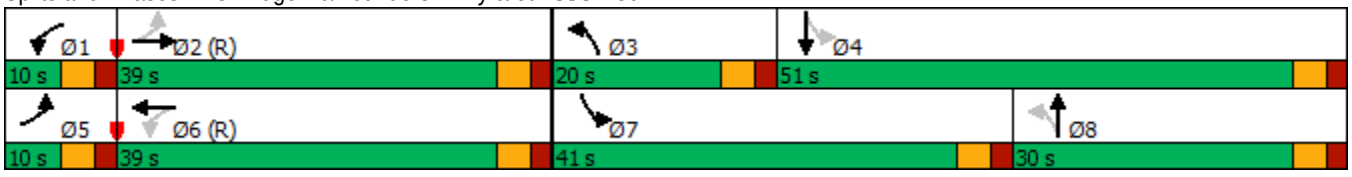


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	450	400	115	255	380	215	330	65	570	460	120
Future Volume (vph)	145	450	400	115	255	380	215	330	65	570	460	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		425	500		0	230		0	600		600
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.398			0.114			0.468			0.137		
Satd. Flow (perm)	741	1863	1583	212	1863	1583	872	1863	1583	255	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			435			413			200			200
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	158	489	435	125	277	413	234	359	71	620	500	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	158	489	435	125	277	413	234	359	71	620	500	130
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	10.0	39.0		10.0	39.0		20.0	30.0		41.0	51.0	
Total Split (%)	8.3%	32.5%		8.3%	32.5%		16.7%	25.0%		34.2%	42.5%	
Maximum Green (s)	5.0	34.0		5.0	34.0		15.0	25.0		36.0	46.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	41.7	35.0	120.0	41.8	35.1	120.0	39.3	26.2	120.0	67.2	48.2	120.0
Actuated g/C Ratio	0.35	0.29	1.00	0.35	0.29	1.00	0.33	0.22	1.00	0.56	0.40	1.00
v/c Ratio	0.50	0.90	0.27	0.78	0.51	0.26	0.60	0.88	0.04	1.00	0.67	0.08
Control Delay	33.5	62.1	0.4	59.3	39.3	0.4	24.7	68.8	0.0	67.9	34.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	62.1	0.4	59.3	39.3	0.4	24.7	68.8	0.0	67.9	34.9	0.1
LOS	C	E	A	E	D	A	C	E	A	E	C	A
Approach Delay		33.1			22.7			45.9			47.7	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 92.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1169	150	38	2412	125	115	22	48	65	14	325
Future Volume (vph)	265	1169	150	38	2412	125	115	22	48	65	14	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.983				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	4999	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.158			0.950			0.708		
Satd. Flow (perm)	3433	4999	0	294	5085	1583	3433	1671	0	1319	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32				120		52				224
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	288	1271	163	41	2461	136	125	24	52	71	15	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1434	0	41	2461	136	125	76	0	71	15	342
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	14.0	74.0		15.0	75.0	75.0	12.0	20.0		11.0	19.0	19.0
Total Split (%)	11.7%	61.7%		12.5%	62.5%	62.5%	10.0%	16.7%		9.2%	15.8%	15.8%
Maximum Green (s)	9.0	68.0		10.0	69.0	69.0	7.0	15.0		6.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0		4.0	4.0	5.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	13.7	78.4		79.2	71.9	70.9	8.0	14.6		18.4	11.4	11.4
Actuated g/C Ratio	0.11	0.65		0.66	0.60	0.59	0.07	0.12		0.15	0.10	0.10
v/c Ratio	0.74	0.44		0.14	0.81	0.14	0.55	0.31		0.31	0.09	0.73
Control Delay	64.0	11.2		4.4	17.2	1.2	63.8	22.9		43.3	48.5	27.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	64.0	11.2		4.4	17.2	1.2	63.8	22.9		43.3	48.5	27.6
LOS	E	B		A	B	A	E	C		D	D	C
Approach Delay		20.0			16.2			48.3			31.0	
Approach LOS		C			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 20.1		Intersection LOS: C	
Intersection Capacity Utilization 74.4%		ICU Level of Service D	
Analysis Period (min) 15			

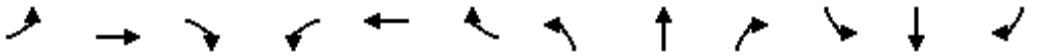
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	64	929	255	73	2027	12	415	50	40	5	40	85
Future Volume (vph)	64	929	255	73	2027	12	415	50	40	5	40	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.968			0.999				0.850		0.898	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4923	0	1770	5080	0	3433	1863	1583	1770	3178	0
Flt Permitted	0.059			0.162			0.527			0.722		
Satd. Flow (perm)	110	4923	0	302	5080	0	1904	1863	1583	1345	3178	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80			1				118		92	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	1010	277	79	2134	13	451	54	43	5	43	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1287	0	79	2147	0	451	54	43	5	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	63.0		12.0	63.0		20.0	33.0	33.0	12.0	25.0	
Total Split (%)	10.0%	52.5%		10.0%	52.5%		16.7%	27.5%	27.5%	10.0%	20.8%	
Maximum Green (s)	7.0	57.0		7.0	57.0		15.0	28.0	28.0	7.0	20.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	80.4	72.7		80.6	72.7		29.3	26.0	26.0	15.2	8.4	
Actuated g/C Ratio	0.67	0.61		0.67	0.61		0.24	0.22	0.22	0.13	0.07	
v/c Ratio	0.38	0.43		0.26	0.70		0.66	0.13	0.10	0.03	0.44	
Control Delay	24.6	14.0		8.3	18.7		44.5	40.1	0.5	34.8	24.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	24.6	14.0		8.3	18.7		44.5	40.1	0.5	34.8	24.1	
LOS	C	B		A	B		D	D	A	C	C	
Approach Delay		14.6			18.3			40.6			24.5	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 20.2		Intersection LOS: C	
Intersection Capacity Utilization 72.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

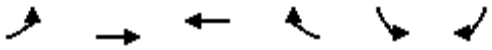


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	784	80	370	2010	95	130	27	164	40	14	2
Future Volume (vph)	6	784	80	370	2010	95	130	27	164	40	14	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	3476	0
Flt Permitted	0.062			0.258			0.500					
Satd. Flow (perm)	115	3539	1583	481	3539	1583	1807	1863	1583	1863	3476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			118			178		2	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	825	87	402	2116	103	141	29	178	43	15	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	825	87	402	2116	103	141	29	178	43	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6	8		8	4		

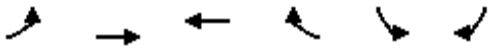
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	9.0	20.0	10.0	9.0	20.0	
Total Split (s)	15.0	57.0	57.0	21.0	63.0	63.0	19.0	25.0	21.0	17.0	23.0	
Total Split (%)	12.5%	47.5%	47.5%	17.5%	52.5%	52.5%	15.8%	20.8%	17.5%	14.2%	19.2%	
Maximum Green (s)	9.0	51.0	51.0	15.0	57.0	57.0	14.0	20.0	15.0	12.0	18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-2.0	-1.0	-1.0	-2.0	-2.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	4.0	5.0	5.0	3.0	3.0	5.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	73.9	67.2	67.2	94.1	90.7	90.7	18.3	9.8	31.4	12.8	7.4	
Actuated g/C Ratio	0.62	0.56	0.56	0.78	0.76	0.76	0.15	0.08	0.26	0.11	0.06	
v/c Ratio	0.04	0.42	0.09	0.66	0.79	0.08	0.30	0.19	0.33	0.23	0.08	
Control Delay	8.2	18.2	1.7	11.2	14.5	1.3	44.1	54.1	5.7	46.0	48.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.2	18.2	1.7	11.2	14.5	1.3	44.1	54.1	5.7	46.0	48.9	
LOS	A	B	A	B	B	A	D	D	A	D	D	
Approach Delay		16.6			13.4			25.3			46.8	
Approach LOS		B			B			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 80.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	355	638	1595	138	89	900
Future Volume (vph)	355	638	1595	138	89	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.875	0.850
Flt Protected	0.950				0.992	
Satd. Flow (prot)	3433	3539	3539	1583	3137	1441
Flt Permitted	0.950				0.992	
Satd. Flow (perm)	3433	3539	3539	1583	3137	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				120	246	443
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	386	693	1679	150	97	947
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	386	693	1679	150	571	473
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

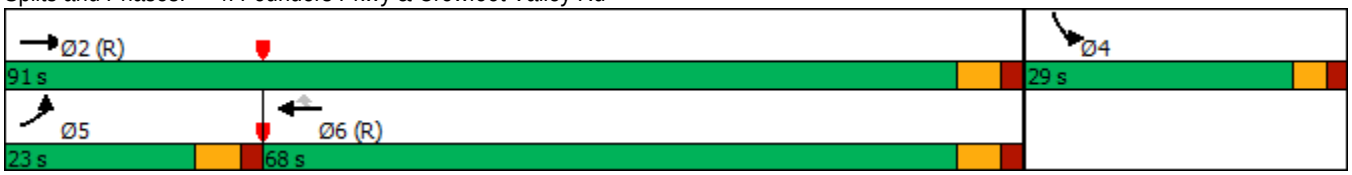


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	23.0	91.0	68.0	68.0	29.0	
Total Split (%)	19.2%	75.8%	56.7%	56.7%	24.2%	
Maximum Green (s)	17.0	85.0	62.0	62.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.1	92.6	69.5	69.5	20.4	120.0
Actuated g/C Ratio	0.16	0.77	0.58	0.58	0.17	1.00
v/c Ratio	0.71	0.25	0.82	0.16	1.00dr	0.33
Control Delay	55.3	4.5	25.7	4.2	34.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.3	4.5	25.7	4.2	34.0	0.6
LOS	E	A	C	A	C	A
Approach Delay		22.7	23.9		18.8	
Approach LOS		C	C		B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 22.3		Intersection LOS: C	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

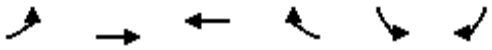
Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



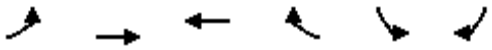
Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	108	308	85
Demand Flow Rate, veh/h	110	314	87
Vehicles Circulating, veh/h	35	35	214
Vehicles Exiting, veh/h	266	110	135
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.4	4.8	4.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	110	314	87
Cap Entry Lane, veh/h	1331	1331	1109
Entry HV Adj Factor	0.982	0.981	0.981
Flow Entry, veh/h	108	308	85
Cap Entry, veh/h	1307	1306	1088
V/C Ratio	0.083	0.236	0.078
Control Delay, s/veh	3.4	4.8	4.0
LOS	A	A	A
95th %tile Queue, veh	0	1	0



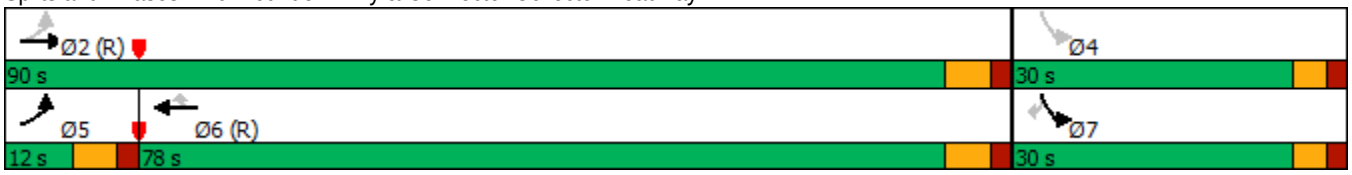
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4
Lane Configurations							
Traffic Volume (vph)	97	625	1499	49	68	239	
Future Volume (vph)	97	625	1499	49	68	239	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	400			400	200	0	
Storage Lanes	1			1	0	1	
Taper Length (ft)	100				100		
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00	
Frt				0.850		0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583	
Flt Permitted	0.097				0.950		
Satd. Flow (perm)	181	3539	3539	1583	1770	1583	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)				53		114	
Link Speed (mph)		50	50		35		
Link Distance (ft)		483	546		622		
Travel Time (s)		6.6	7.4		12.1		
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.92	
Adj. Flow (vph)	105	679	1578	53	74	260	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	105	679	1578	53	74	260	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2	1	1	1	
Detector Template	Left	Thru	Thru	Right	Left	Right	
Leading Detector (ft)	20	100	100	20	20	20	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	6	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	pm+pt	NA	NA	Perm	pm+pt	Perm	
Protected Phases	5	2	6		7		4
Permitted Phases	2			6	4	7	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø4
Detector Phase	5	2	6	6	7	7	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	20.0	20.0	20.0	9.0	9.0	20.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0	30.0	30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%	25.0%	25%
Maximum Green (s)	6.0	84.0	72.0	72.0	25.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	4.0	4.0	
Lead/Lag	Lead		Lag	Lag			
Lead-Lag Optimize?	Yes		Yes	Yes			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None	None
Act Effct Green (s)	93.1	93.1	80.4	80.4	17.9	17.9	
Actuated g/C Ratio	0.78	0.78	0.67	0.67	0.15	0.15	
v/c Ratio	0.43	0.25	0.67	0.05	0.28	0.78	
Control Delay	9.7	4.5	14.6	2.6	45.7	42.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.7	4.5	14.6	2.6	45.7	42.8	
LOS	A	A	B	A	D	D	
Approach Delay		5.2	14.2		43.4		
Approach LOS		A	B		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 15.2		Intersection LOS: B	
Intersection Capacity Utilization 63.7%		ICU Level of Service B	
Analysis Period (min) 15			

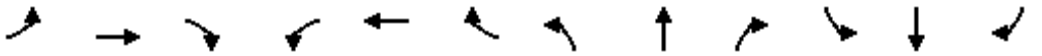
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	49	94	283
Demand Flow Rate, veh/h	50	96	289
Vehicles Circulating, veh/h	200	43	18
Vehicles Exiting, veh/h	107	207	121
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.4	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	50	96	289
Cap Entry Lane, veh/h	1125	1321	1355
Entry HV Adj Factor	0.980	0.984	0.980
Flow Entry, veh/h	49	94	283
Cap Entry, veh/h	1103	1300	1327
V/C Ratio	0.044	0.073	0.213
Control Delay, s/veh	3.6	3.4	4.5
LOS	A	A	A
95th %tile Queue, veh	0	0	1

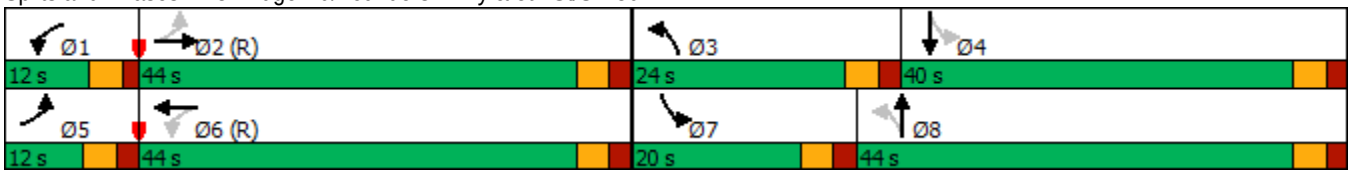


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	235	180	90	425	646	375	413	55	248	174	149
Future Volume (vph)	82	235	180	90	425	646	375	413	55	248	174	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.274			0.493			0.442			0.166		
Satd. Flow (perm)	510	1863	1583	918	1863	1583	823	1863	1583	309	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			196			518			155			162
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	255	196	98	447	702	408	449	60	270	189	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	255	196	98	447	702	408	449	60	270	189	162
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	44.0		12.0	44.0		24.0	44.0		20.0	40.0	
Total Split (%)	10.0%	36.7%		10.0%	36.7%		20.0%	36.7%		16.7%	33.3%	
Maximum Green (s)	7.0	39.0		7.5	39.0		19.0	39.0		15.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		1.5	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		3.5	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	54.0	45.6	120.0	54.7	45.4	120.0	54.1	34.4	120.0	45.9	30.1	120.0
Actuated g/C Ratio	0.45	0.38	1.00	0.46	0.38	1.00	0.45	0.29	1.00	0.38	0.25	1.00
v/c Ratio	0.28	0.36	0.12	0.20	0.63	0.44	0.77	0.84	0.04	0.87	0.40	0.10
Control Delay	21.1	30.2	0.2	19.6	37.0	0.9	33.9	54.7	0.0	54.5	39.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	30.2	0.2	19.6	37.0	0.9	33.9	54.7	0.0	54.5	39.0	0.1
LOS	C	C	A	B	D	A	C	D	A	D	D	A
Approach Delay		17.8			15.3			41.9			35.6	
Approach LOS		B			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 26.8		Intersection LOS: C	
Intersection Capacity Utilization 75.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	2	97	49	3	237
Future Vol, veh/h	70	2	97	49	3	237
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	2	105	53	3	258

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	369	105	0	0	158	0
Stage 1	105	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	631	949	-	-	1422	-
Stage 1	919	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	630	949	-	-	1422	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	778	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	630	949	1422	-
HCM Lane V/C Ratio	-	-	0.121	0.002	0.002	-
HCM Control Delay (s)	-	-	11.5	8.8	7.5	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	270	0	5	94
Future Vol, veh/h	0	13	270	0	5	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	293	0	5	102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	405	293	0	0	293	0
Stage 1	293	-	-	-	-	-
Stage 2	112	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	602	746	-	-	1269	-
Stage 1	757	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	600	746	-	-	1269	-
Mov Cap-2 Maneuver	600	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	746	1269	-
HCM Lane V/C Ratio	-	-	0.019	0.004	-
HCM Control Delay (s)	-	-	9.9	7.8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	1	2	23	1	7	15	60	254	0	5	87	2
Future Vol, veh/h	1	2	23	1	7	15	60	254	0	5	87	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	2	25	1	8	16	65	276	0	5	95	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	524	512	96	526	513	276	97	0	0	276	0	0
Stage 1	106	106	-	406	406	-	-	-	-	-	-	-
Stage 2	418	406	-	120	107	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	464	465	960	462	465	763	1496	-	-	1287	-	-
Stage 1	900	807	-	622	598	-	-	-	-	-	-	-
Stage 2	612	598	-	884	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	432	443	960	432	443	763	1496	-	-	1287	-	-
Mov Cap-2 Maneuver	432	443	-	432	443	-	-	-	-	-	-	-
Stage 1	861	804	-	595	572	-	-	-	-	-	-	-
Stage 2	565	572	-	855	804	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	11.2	1.4	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1496	-	-	844	609	1287	-	-
HCM Lane V/C Ratio	0.044	-	-	0.033	0.041	0.004	-	-
HCM Control Delay (s)	7.5	-	-	9.4	11.2	7.8	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	48	266	0	16	95
Future Vol, veh/h	1	48	266	0	16	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	52	289	0	17	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	426	289	0	0	289	0
Stage 1	289	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	585	750	-	-	1273	-
Stage 1	760	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	577	750	-	-	1273	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	760	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	745	1273	-
HCM Lane V/C Ratio	-	-	0.071	0.014	-
HCM Control Delay (s)	-	-	10.2	7.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	75	201	1	2	65
Future Vol, veh/h	21	75	201	1	2	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	82	218	1	2	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	219	0	-	0	347	219
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	128	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1350	-	-	-	650	821
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	898	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1350	-	-	-	639	821
Mov Cap-2 Maneuver	-	-	-	-	639	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	898	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1350	-	-	-	814
HCM Lane V/C Ratio	0.017	-	-	-	0.089
HCM Control Delay (s)	7.7	-	-	-	9.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	20	1	143	59	1
Future Vol, veh/h	57	20	1	143	59	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	22	1	155	64	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	84	0	219	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	157	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1513	-	769	1003
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1513	-	768	1003
Mov Cap-2 Maneuver	-	-	-	-	768	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	870	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	771	-	-	1513	-
HCM Lane V/C Ratio	0.085	-	-	0.001	-
HCM Control Delay (s)	10.1	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

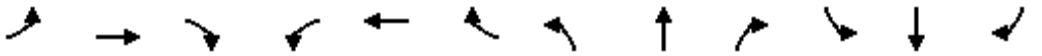
Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	42	11	1	96	0	32	0	2	1	0	16
Future Vol, veh/h	5	42	11	1	96	0	32	0	2	1	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	46	12	1	104	0	35	0	2	1	0	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	134	83	9	111	90	1	17	0	0	2	0	0
Stage 1	11	11	-	71	71	-	-	-	-	-	-	-
Stage 2	123	72	-	40	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	838	807	1073	867	800	1084	1600	-	-	1620	-	-
Stage 1	1010	886	-	939	836	-	-	-	-	-	-	-
Stage 2	881	835	-	975	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	739	788	1073	805	782	1084	1600	-	-	1620	-	-
Mov Cap-2 Maneuver	739	788	-	805	782	-	-	-	-	-	-	-
Stage 1	988	885	-	918	818	-	-	-	-	-	-	-
Stage 2	752	817	-	913	879	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.3	6.9	0.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	825	782	1620	-	-
HCM Lane V/C Ratio	0.022	-	-	0.076	0.135	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.7	10.3	7.2	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.5	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	2861	230	42	2258	145	165	38	90	125	37	460
Future Volume (vph)	435	2861	230	42	2258	145	165	38	90	125	37	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.989				0.850		0.894				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5029	0	1770	5085	1583	3433	1665	0	1770	1863	2787
Flt Permitted	0.950			0.061			0.950			0.423		
Satd. Flow (perm)	3433	5029	0	114	5085	1583	3433	1665	0	788	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				155		82				294
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	473	3110	250	46	2304	158	179	41	98	136	40	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3360	0	46	2304	158	179	139	0	136	40	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	22.0	81.0		10.0	69.0	69.0	12.0	18.0		11.0	17.0	17.0
Total Split (%)	18.3%	67.5%		8.3%	57.5%	57.5%	10.0%	15.0%		9.2%	14.2%	14.2%
Maximum Green (s)	17.0	75.0		5.0	63.0	63.0	7.0	13.0		6.0	12.0	12.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0	-1.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0		3.0	4.0	5.0	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	19.0	80.8		73.9	65.8	64.8	9.0	14.2		21.2	13.2	13.2
Actuated g/C Ratio	0.16	0.67		0.62	0.55	0.54	0.08	0.12		0.18	0.11	0.11
v/c Ratio	0.87	0.99		0.28	0.83	0.17	0.70	0.52		0.67	0.20	0.85
Control Delay	66.7	33.5		12.8	24.4	2.3	69.1	29.0		58.1	50.5	35.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.7	33.5		12.8	24.4	2.3	69.1	29.0		58.1	50.5	35.6
LOS	E	C		B	C	A	E	C		E	D	D
Approach Delay		37.6			22.8			51.5			41.1	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 33.4		Intersection LOS: C	
Intersection Capacity Utilization 91.5%		ICU Level of Service F	
Analysis Period (min) 15			

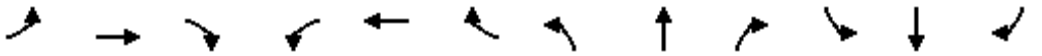
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	165	2126	685	140	1688	20	620	110	207	40	85	60
Future Volume (vph)	165	2126	685	140	1688	20	620	110	207	40	85	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.963			0.998				0.850		0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4897	0	1770	5075	0	3433	1863	1583	1770	3320	0
Flt Permitted	0.070			0.057			0.359			0.680		
Satd. Flow (perm)	130	4897	0	106	5075	0	1297	1863	1583	1267	3320	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		113			2				160		65	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	2311	745	152	1835	22	633	120	225	43	92	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	3056	0	152	1857	0	633	120	225	43	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	72.0		15.0	75.0		22.0	21.0	21.0	12.0	11.0	
Total Split (%)	10.0%	60.0%		12.5%	62.5%		18.3%	17.5%	17.5%	10.0%	9.2%	
Maximum Green (s)	7.0	66.0		10.0	69.0		17.0	16.0	16.0	7.0	6.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.6		-2.0	-2.0		-2.0	-1.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.4		3.0	4.0		3.0	4.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	77.0	69.5		83.2	71.0		29.9	19.4	20.4	16.6	7.9	
Actuated g/C Ratio	0.64	0.58		0.69	0.59		0.25	0.16	0.17	0.14	0.07	
v/c Ratio	0.93	1.06		0.67	0.62		0.96	0.40	0.56	0.20	0.56	
Control Delay	48.9	54.9		37.5	16.9		68.3	51.1	21.0	38.0	39.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	48.9	54.9		37.5	16.9		68.3	51.1	21.0	38.0	39.8	
LOS	D	D		D	B		E	D	C	D	D	
Approach Delay		54.5			18.4			55.3			39.4	
Approach LOS		D			B			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 42.9		Intersection LOS: D	
Intersection Capacity Utilization 99.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

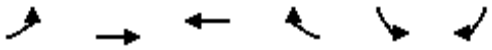


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1823	135	234	1573	95	105	45	364	173	48	8
Future Volume (vph)	8	1823	135	234	1573	95	105	45	364	173	48	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	1.00	0.95	0.95
Frt			0.850			0.850			0.850		0.978	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1770	3461	0
Flt Permitted	0.109			0.059			0.715			0.573		
Satd. Flow (perm)	203	3539	1583	110	3539	1583	2584	1863	1583	1067	3461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			173			118			73		9	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	1919	147	254	1656	103	114	49	396	188	52	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1919	147	254	1656	103	114	49	396	188	61	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2		2	6		6	8		8	4		

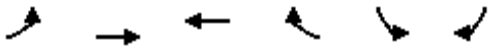
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	9.0	20.0	10.0	9.0	20.0	
Total Split (s)	10.0	66.0	66.0	18.0	74.0	74.0	13.0	20.0	18.0	16.0	23.0	
Total Split (%)	8.3%	55.0%	55.0%	15.0%	61.7%	61.7%	10.8%	16.7%	15.0%	13.3%	19.2%	
Maximum Green (s)	4.0	60.0	60.0	12.0	68.0	68.0	8.0	15.0	12.0	11.0	18.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0	-1.0	-3.0	-3.0	-1.0	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.0	5.0	3.0	3.0	5.0	3.0	3.0	4.0	3.0	3.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	72.2	65.5	63.5	89.6	87.1	85.1	19.6	10.5	31.5	24.4	13.0	
Actuated g/C Ratio	0.60	0.55	0.53	0.75	0.73	0.71	0.16	0.09	0.26	0.20	0.11	
v/c Ratio	0.04	0.99	0.16	0.68	0.64	0.09	0.23	0.30	0.85	0.64	0.16	
Control Delay	6.6	46.9	1.8	39.3	11.6	1.5	39.0	55.2	50.9	52.1	41.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.6	46.9	1.8	39.3	11.6	1.5	39.0	55.2	50.9	52.1	41.4	
LOS	A	D	A	D	B	A	D	E	D	D	D	
Approach Delay		43.5			14.6			48.9			49.4	
Approach LOS		D			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 32.6		Intersection LOS: C	
Intersection Capacity Utilization 92.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	785	1617	1217	135	148	580
Future Volume (vph)	785	1617	1217	135	148	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.902	0.850
Flt Protected	0.950				0.983	
Satd. Flow (prot)	3433	3539	3539	1583	3204	1441
Flt Permitted	0.950				0.983	
Satd. Flow (perm)	3433	3539	3539	1583	3204	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				123	306	305
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	853	1758	1281	147	161	611
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	853	1758	1281	147	467	305
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	39.0	93.0	54.0	54.0	27.0	
Total Split (%)	32.5%	77.5%	45.0%	45.0%	22.5%	
Maximum Green (s)	33.0	87.0	48.0	48.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	36.3	99.0	58.7	58.7	14.0	120.0
Actuated g/C Ratio	0.30	0.82	0.49	0.49	0.12	1.00
v/c Ratio	0.82	0.60	0.74	0.18	0.73	0.21
Control Delay	46.1	5.2	29.3	5.8	23.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	5.2	29.3	5.8	23.6	0.3
LOS	D	A	C	A	C	A
Approach Delay		18.5	26.9		14.4	
Approach LOS		B	C		B	

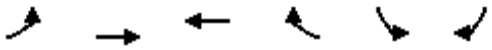
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

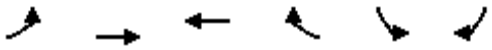
Intersection	
Intersection Delay, s/veh	4.6
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	299	204	148
Demand Flow Rate, veh/h	305	208	151
Vehicles Circulating, veh/h	107	63	144
Vehicles Exiting, veh/h	188	349	127
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.2	4.2	4.2
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	305	208	151
Cap Entry Lane, veh/h	1237	1294	1191
Entry HV Adj Factor	0.980	0.980	0.979
Flow Entry, veh/h	299	204	148
Cap Entry, veh/h	1213	1268	1167
V/C Ratio	0.247	0.161	0.127
Control Delay, s/veh	5.2	4.2	4.2
LOS	A	A	A
95th %tile Queue, veh	1	1	0



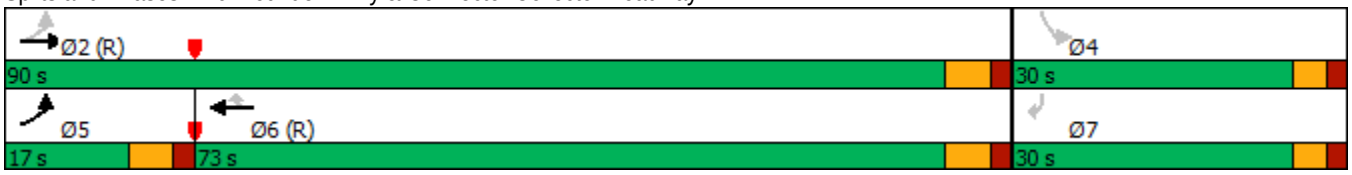
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	295	1460	1170	113	100	192
Future Volume (vph)	295	1460	1170	113	100	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400			400	200	0
Storage Lanes	1			1	0	1
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.159				0.950	
Satd. Flow (perm)	296	3539	3539	1583	1770	1583
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				123		205
Link Speed (mph)		50	50		35	
Link Distance (ft)		483	546		622	
Travel Time (s)		6.6	7.4		12.1	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.92
Adj. Flow (vph)	321	1587	1232	123	109	209
Shared Lane Traffic (%)						
Lane Group Flow (vph)	321	1587	1232	123	109	209
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Perm	Perm
Protected Phases	5	2	6			
Permitted Phases	2			6	4	7



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	7
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	9.0
Total Split (s)	17.0	90.0	73.0	73.0	30.0	30.0
Total Split (%)	14.2%	75.0%	60.8%	60.8%	25.0%	25.0%
Maximum Green (s)	11.0	84.0	67.0	67.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0	-1.0	-1.0	-2.0	-1.0
Total Lost Time (s)	4.0	5.0	5.0	5.0	3.0	4.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	98.3	97.3	75.3	75.3	14.7	13.7
Actuated g/C Ratio	0.82	0.81	0.63	0.63	0.12	0.11
v/c Ratio	0.69	0.55	0.56	0.12	0.50	0.58
Control Delay	18.1	5.1	15.0	2.3	56.6	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	5.1	15.0	2.3	56.6	13.5
LOS	B	A	B	A	E	B
Approach Delay		7.3	13.9		28.3	
Approach LOS		A	B		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 65.1%		ICU Level of Service C	
Analysis Period (min) 15			

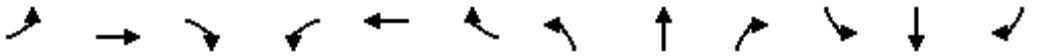
Splits and Phases: 6: Founder Pkwy & Connector Collector Roadway



Intersection	
Intersection Delay, s/veh	4.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	120	227	209
Demand Flow Rate, veh/h	122	231	213
Vehicles Circulating, veh/h	144	100	10
Vehicles Exiting, veh/h	79	166	321
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.9	4.5	4.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	122	231	213
Cap Entry Lane, veh/h	1191	1246	1366
Entry HV Adj Factor	0.984	0.981	0.982
Flow Entry, veh/h	120	227	209
Cap Entry, veh/h	1172	1223	1341
V/C Ratio	0.102	0.185	0.156
Control Delay, s/veh	3.9	4.5	4.0
LOS	A	A	A
95th %tile Queue, veh	0	1	1

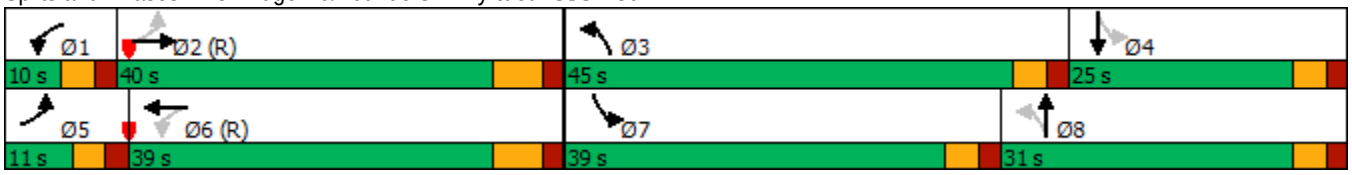


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	450	400	115	255	399	215	352	65	582	479	139
Future Volume (vph)	166	450	400	115	255	399	215	352	65	582	479	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	3539	1583
Flt Permitted	0.397			0.119			0.459			0.132		
Satd. Flow (perm)	740	1863	1583	222	1863	1583	855	1863	1583	246	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			435			434			214			214
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.95	0.92	0.92
Adj. Flow (vph)	180	489	435	125	268	434	234	383	71	613	521	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	489	435	125	268	434	234	383	71	613	521	151
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free	pm+pt	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free	8		Free	4		Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	11.0	40.0		10.0	39.0		45.0	31.0		39.0	25.0	
Total Split (%)	9.2%	33.3%		8.3%	32.5%		37.5%	25.8%		32.5%	20.8%	
Maximum Green (s)	6.0	33.5		5.0	32.5		40.0	26.0		34.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.5		4.0	4.5		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	43.6	35.5	120.0	41.6	34.5	120.0	44.3	27.4	120.0	66.4	43.4	120.0
Actuated g/C Ratio	0.36	0.30	1.00	0.35	0.29	1.00	0.37	0.23	1.00	0.55	0.36	1.00
v/c Ratio	0.54	0.89	0.27	0.77	0.50	0.27	0.52	0.90	0.04	1.03	0.41	0.10
Control Delay	33.4	59.9	0.4	58.2	39.5	0.4	20.9	70.4	0.0	79.0	30.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	59.9	0.4	58.2	39.5	0.4	20.9	70.4	0.0	79.0	30.7	0.1
LOS	C	E	A	E	D	A	C	E	A	E	C	A
Approach Delay		32.1			21.8			46.3			50.2	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 38.4		Intersection LOS: D	
Intersection Capacity Utilization 94.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	129	11	264	144	7	163
Future Vol, veh/h	129	11	264	144	7	163
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	12	287	157	8	177

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	480	287	0	0	444	0
Stage 1	287	-	-	-	-	-
Stage 2	193	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	545	752	-	-	1116	-
Stage 1	762	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	752	-	-	1116	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	762	-	-	-	-	-
Stage 2	834	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	541	752	1116	-
HCM Lane V/C Ratio	-	-	0.259	0.016	0.007	-
HCM Control Delay (s)	-	-	14	9.9	8.2	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	1	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	179	0	15	300
Future Vol, veh/h	0	9	179	0	15	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	195	0	16	326

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	553	195	0	0	195	0
Stage 1	195	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	494	846	-	-	1378	-
Stage 1	838	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	487	846	-	-	1378	-
Mov Cap-2 Maneuver	487	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	697	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	846	1378	-
HCM Lane V/C Ratio	-	-	0.012	0.012	-
HCM Control Delay (s)	-	-	9.3	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	9	98	0	4	10	47	162	1	15	275	10
Future Vol, veh/h	7	9	98	0	4	10	47	162	1	15	275	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	10	107	0	4	11	51	176	1	16	299	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	623	616	305	674	621	177	310	0	0	177	0	0
Stage 1	337	337	-	279	279	-	-	-	-	-	-	-
Stage 2	286	279	-	395	342	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	398	406	735	368	403	866	1250	-	-	1399	-	-
Stage 1	677	641	-	728	680	-	-	-	-	-	-	-
Stage 2	721	680	-	630	638	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	374	385	735	296	382	866	1250	-	-	1399	-	-
Mov Cap-2 Maneuver	374	385	-	296	382	-	-	-	-	-	-	-
Stage 1	649	634	-	698	652	-	-	-	-	-	-	-
Stage 2	678	652	-	524	631	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	10.8	1.8	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1250	-	-	650	636	1399	-	-
HCM Lane V/C Ratio	0.041	-	-	0.191	0.024	0.012	-	-
HCM Control Delay (s)	8	-	-	11.8	10.8	7.6	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	32	178	1	54	299
Future Vol, veh/h	1	32	178	1	54	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	35	193	1	59	325

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	637	194	0	0	194	0
Stage 1	194	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	441	847	-	-	1379	-
Stage 1	839	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	422	847	-	-	1379	-
Mov Cap-2 Maneuver	422	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	822	1379	-
HCM Lane V/C Ratio	-	-	0.044	0.043	-
HCM Control Delay (s)	-	-	9.6	7.7	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	73	227	136	2	2	43
Future Vol, veh/h	73	227	136	2	2	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	247	148	2	2	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	150	0	-	0	554	149
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	405	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1431	-	-	-	493	898
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	1431	-	-	-	466	898
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1431	-	-	-	862
HCM Lane V/C Ratio	0.055	-	-	-	0.057
HCM Control Delay (s)	7.7	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	162	67	1	99	39	1
Future Vol, veh/h	162	67	1	99	39	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	176	73	1	108	42	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	249	0	286	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	110	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1317	-	704	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1317	-	703	867
Mov Cap-2 Maneuver	-	-	-	-	703	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	914	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	706	-	-	1317	-
HCM Lane V/C Ratio	0.062	-	-	0.001	-
HCM Control Delay (s)	10.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

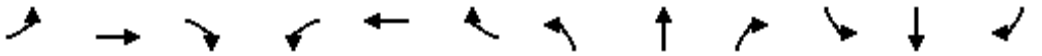
Intersection	
Int Delay, s/veh	9.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	18	109	36	3	68	1	21	0	1	0	0	11
Future Vol, veh/h	18	109	36	3	68	1	21	0	1	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	118	39	3	74	1	23	0	1	0	0	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	90	53	6	132	59	1	12	0	0	1	0	0
Stage 1	6	6	-	47	47	-	-	-	-	-	-	-
Stage 2	84	47	-	85	12	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	895	838	1077	840	832	1084	1607	-	-	1622	-	-
Stage 1	1016	891	-	967	856	-	-	-	-	-	-	-
Stage 2	924	856	-	923	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	823	826	1077	713	820	1084	1607	-	-	1622	-	-
Mov Cap-2 Maneuver	823	826	-	713	820	-	-	-	-	-	-	-
Stage 1	1002	891	-	953	844	-	-	-	-	-	-	-
Stage 2	830	844	-	771	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.9	6.9	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	870	818	1622	-	-
HCM Lane V/C Ratio	0.014	-	-	0.204	0.096	-	-	-
HCM Control Delay (s)	7.3	0	-	10.2	9.9	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1366	150	45	3013	140	130	25	55	75	15	385
Future Volume (vph)	265	1366	150	45	3013	140	130	25	55	75	15	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.985				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5009	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.119			0.950			0.701		
Satd. Flow (perm)	3433	5009	0	222	5085	1583	3433	1671	0	1306	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27				109		60				217
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	1438	163	49	3074	152	141	27	60	82	16	418
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1601	0	49	3074	152	141	87	0	82	16	418
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	14.0	74.0		15.0	75.0	75.0	12.0	20.0		11.0	19.0	19.0
Total Split (%)	11.7%	61.7%		12.5%	62.5%	62.5%	10.0%	16.7%		9.2%	15.8%	15.8%
Maximum Green (s)	9.0	68.0		10.0	69.0	69.0	7.0	15.0		6.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0		4.0	4.0	5.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	12.1	76.1		78.8	71.4	70.4	8.0	16.7		20.5	13.5	13.5
Actuated g/C Ratio	0.10	0.63		0.66	0.60	0.59	0.07	0.14		0.17	0.11	0.11
v/c Ratio	0.83	0.50		0.20	1.02	0.16	0.62	0.31		0.33	0.08	0.83
Control Delay	73.9	12.9		4.8	36.5	1.2	66.8	21.5		42.6	47.5	39.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	73.9	12.9		4.8	36.5	1.2	66.8	21.5		42.6	47.5	39.1
LOS	E	B		A	D	A	E	C		D	D	D
Approach Delay		22.2			34.4			49.6			39.9	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 31.5 Intersection LOS: C
Intersection Capacity Utilization 86.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Allen Way & Founder Pkwy

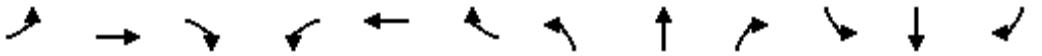
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	70	1146	280	62	2563	15	530	75	45	5	65	105
Future Volume (vph)	70	1146	280	62	2563	15	530	75	45	5	65	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.970			0.999				0.850		0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4933	0	1770	5080	0	3433	1863	1583	1770	3214	0
Flt Permitted	0.060			0.116			0.449			0.704		
Satd. Flow (perm)	112	4933	0	216	5080	0	1623	1863	1583	1311	3214	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		71			1				118		109	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1206	304	67	2615	16	576	82	49	5	71	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	1510	0	67	2631	0	576	82	49	5	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	63.0		12.0	63.0		20.0	33.0	33.0	12.0	25.0	
Total Split (%)	10.0%	52.5%		10.0%	52.5%		16.7%	27.5%	27.5%	10.0%	20.8%	
Maximum Green (s)	7.0	57.0		7.0	57.0		15.0	28.0	28.0	7.0	20.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	79.8	71.7		79.0	71.4		30.4	27.1	27.1	16.3	9.4	
Actuated g/C Ratio	0.66	0.60		0.66	0.60		0.25	0.23	0.23	0.14	0.08	
v/c Ratio	0.40	0.51		0.27	0.87		0.86	0.19	0.11	0.02	0.53	
Control Delay	26.1	18.1		9.5	25.9		54.5	39.7	0.5	33.6	27.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	26.1	18.1		9.5	25.9		54.5	39.7	0.5	33.6	27.8	
LOS	C	B		A	C		D	D	A	C	C	
Approach Delay		18.5			25.5			49.0			27.9	
Approach LOS		B			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 26.6 Intersection LOS: C
Intersection Capacity Utilization 88.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: Front St & Founder Pkwy

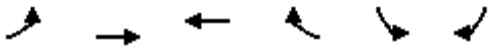


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Future Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.964			0.993			0.868			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4902	0	1770	5050	0	3433	1617	0	1770	3454	0
Flt Permitted	0.082			0.147			0.512			0.714		
Satd. Flow (perm)	153	4902	0	274	5050	0	1850	1617	0	1330	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83			9			246			3	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	869	272	533	2214	114	505	33	246	49	16	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1141	0	533	2328	0	505	279	0	49	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		

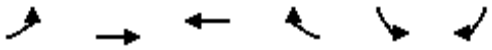
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	15.0	57.0		21.0	63.0		19.0	25.0		17.0	23.0	
Total Split (%)	12.5%	47.5%		17.5%	52.5%		15.8%	20.8%		14.2%	19.2%	
Maximum Green (s)	9.0	51.0		15.0	57.0		14.0	20.0		12.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-2.0	-1.0		-2.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	58.7	52.0		88.1	84.6		24.9	12.7		14.3	9.0	
Actuated g/C Ratio	0.49	0.43		0.73	0.70		0.21	0.11		0.12	0.08	
v/c Ratio	0.04	0.53		0.91	0.65		0.81	0.71		0.26	0.07	
Control Delay	9.5	24.0		46.4	12.9		54.0	19.9		43.1	44.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	24.0		46.4	12.9		54.0	19.9		43.1	44.2	
LOS	A	C		D	B		D	B		D	D	
Approach Delay		23.9			19.2			41.8			43.4	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 24.3		Intersection LOS: C	
Intersection Capacity Utilization 81.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	450	647	1695	182	116	1070
Future Volume (vph)	450	647	1695	182	116	1070
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.877	0.850
Flt Protected	0.950				0.991	
Satd. Flow (prot)	3433	3539	3539	1583	3141	1441
Flt Permitted	0.950				0.991	
Satd. Flow (perm)	3433	3539	3539	1583	3141	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				144	242	440
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	703	1842	198	126	1163
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	489	703	1842	198	708	581
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

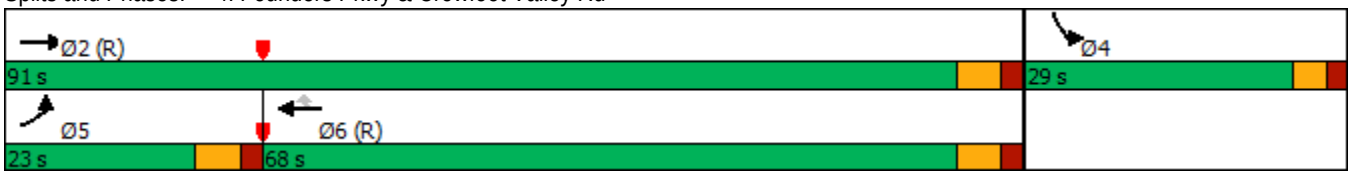


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	23.0	91.0	68.0	68.0	29.0	
Total Split (%)	19.2%	75.8%	56.7%	56.7%	24.2%	
Maximum Green (s)	17.0	85.0	62.0	62.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.7	88.9	65.2	65.2	24.1	120.0
Actuated g/C Ratio	0.16	0.74	0.54	0.54	0.20	1.00
v/c Ratio	0.87	0.27	0.96	0.21	1.14dr	0.40
Control Delay	65.7	5.5	39.8	5.0	41.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.7	5.5	39.8	5.0	41.4	0.8
LOS	E	A	D	A	D	A
Approach Delay		30.2	36.4		23.1	
Approach LOS		C	D		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 31.0		Intersection LOS: C	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



Intersection	
Intersection Delay, s/veh	3.5
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	109	130	87
Demand Flow Rate, veh/h	112	132	89
Vehicles Circulating, veh/h	66	55	28
Vehicles Exiting, veh/h	121	62	150
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.6	3.3
Approach LOS	A	A	A

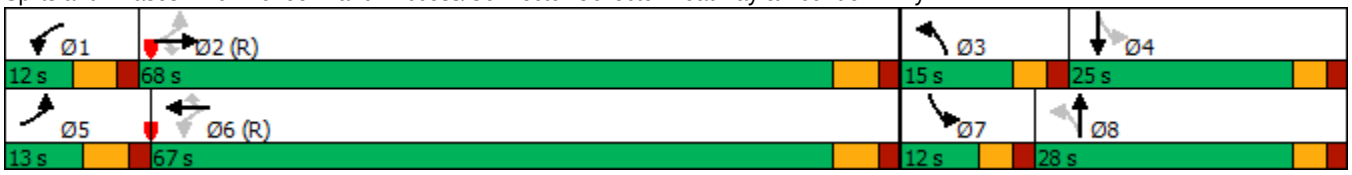
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	112	132	89
Cap Entry Lane, veh/h	1290	1305	1341
Entry HV Adj Factor	0.977	0.983	0.978
Flow Entry, veh/h	109	130	87
Cap Entry, veh/h	1261	1282	1311
V/C Ratio	0.087	0.101	0.066
Control Delay, s/veh	3.6	3.6	3.3
LOS	A	A	A
95th %tile Queue, veh	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	676	40	5	1702	30	120	0	10	40	0	95
Future Volume (vph)	50	676	40	5	1702	30	120	0	10	40	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1583	0	1770	1583	0
Flt Permitted	0.051			0.361			0.520			0.750		
Satd. Flow (perm)	95	3539	1583	672	3539	1583	969	1583	0	1397	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			118		310			141	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			1305	
Travel Time (s)		6.6			7.4			7.6			25.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	735	43	5	1792	33	130	0	11	43	0	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	735	43	5	1792	33	130	11	0	43	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	13.0	68.0	68.0	12.0	67.0	67.0	15.0	28.0		12.0	25.0	
Total Split (%)	10.8%	56.7%	56.7%	10.0%	55.8%	55.8%	12.5%	23.3%		10.0%	20.8%	
Maximum Green (s)	7.0	62.0	62.0	6.0	61.0	61.0	10.0	23.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	88.7	87.0	87.0	84.5	79.2	79.2	17.2	13.2		17.4	6.9	
Actuated g/C Ratio	0.74	0.72	0.72	0.70	0.66	0.66	0.14	0.11		0.14	0.06	
v/c Ratio	0.31	0.29	0.04	0.01	0.77	0.03	0.62	0.02		0.18	0.46	
Control Delay	12.0	6.6	0.1	4.4	17.9	0.1	61.2	0.1		42.9	10.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	12.0	6.6	0.1	4.4	17.9	0.1	61.2	0.1		42.9	10.0	
LOS	B	A	A	A	B	A	E	A		D	B	
Approach Delay		6.6			17.6			56.5			19.7	
Approach LOS		A			B			E			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 16.5		Intersection LOS: B	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

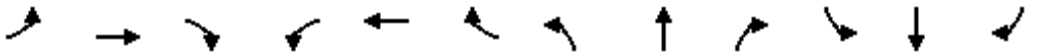
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	60	136	434
Demand Flow Rate, veh/h	61	138	443
Vehicles Circulating, veh/h	310	50	22
Vehicles Exiting, veh/h	155	321	166
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.2	3.6	5.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	61	138	443
Cap Entry Lane, veh/h	1006	1311	1349
Entry HV Adj Factor	0.984	0.984	0.980
Flow Entry, veh/h	60	136	434
Cap Entry, veh/h	989	1290	1322
V/C Ratio	0.061	0.105	0.328
Control Delay, s/veh	4.2	3.6	5.7
LOS	A	A	A
95th %tile Queue, veh	0	0	1

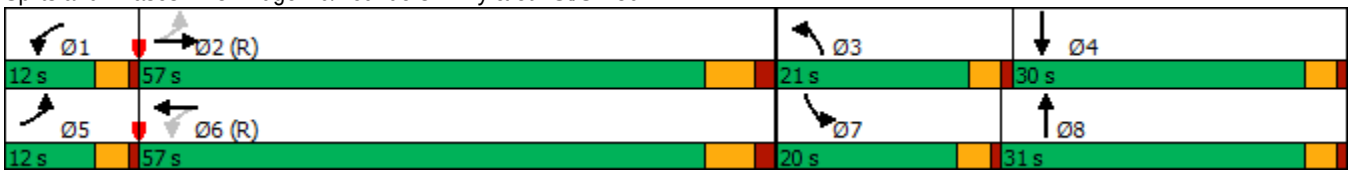


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	210	120	115	475	859	320	527	75	287	156	121
Future Volume (vph)	63	210	120	115	475	859	320	527	75	287	156	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.448			0.588			0.950			0.950		
Satd. Flow (perm)	835	3539	1583	1095	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			719			141			141
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	228	130	125	500	934	348	573	82	312	170	132
Shared Lane Traffic (%)												
Lane Group Flow (vph)	68	228	130	125	500	934	348	573	82	312	170	132
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	57.0		12.0	57.0		21.0	31.0		20.0	30.0	
Total Split (%)	10.0%	47.5%		10.0%	47.5%		17.5%	25.8%		16.7%	25.0%	
Maximum Green (s)	8.0	50.5		8.0	50.5		17.0	27.0		16.0	26.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	64.2	54.5	120.0	66.5	57.3	120.0	15.9	24.1	120.0	14.9	23.1	120.0
Actuated g/C Ratio	0.54	0.45	1.00	0.55	0.48	1.00	0.13	0.20	1.00	0.12	0.19	1.00
v/c Ratio	0.14	0.14	0.08	0.19	0.30	0.59	0.77	0.81	0.05	0.74	0.25	0.08
Control Delay	13.3	20.5	0.1	13.5	21.2	1.6	62.0	55.0	0.1	61.5	41.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	20.5	0.1	13.5	21.2	1.6	62.0	55.0	0.1	61.5	41.3	0.1
LOS	B	C	A	B	C	A	E	D	A	E	D	A
Approach Delay		13.1			8.9			52.9			42.7	
Approach LOS		B			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	3209	230	45	2372	160	185	45	90	145	40	460
Future Volume (vph)	435	3209	230	45	2372	160	185	45	90	145	40	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.990				0.850		0.900				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5034	0	1770	5085	1583	3433	1676	0	1770	1863	2787
Flt Permitted	0.950			0.061			0.950			0.397		
Satd. Flow (perm)	3433	5034	0	114	5085	1583	3433	1676	0	740	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				155		69				291
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	473	3378	250	49	2420	174	201	49	98	158	43	500
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3628	0	49	2420	174	201	147	0	158	43	500
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	22.0	81.0		10.0	69.0	69.0	12.0	18.0		11.0	17.0	17.0
Total Split (%)	18.3%	67.5%		8.3%	57.5%	57.5%	10.0%	15.0%		9.2%	14.2%	14.2%
Maximum Green (s)	17.0	75.0		5.0	63.0	63.0	7.0	13.0		6.0	12.0	12.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0	-1.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0		3.0	4.0	5.0	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	19.0	80.6		73.7	65.6	64.6	9.0	14.4		21.4	13.4	13.4
Actuated g/C Ratio	0.16	0.67		0.61	0.55	0.54	0.08	0.12		0.18	0.11	0.11
v/c Ratio	0.87	1.07		0.29	0.87	0.19	0.78	0.56		0.79	0.21	0.88
Control Delay	66.7	59.6		11.6	23.8	2.1	75.6	35.4		69.8	50.8	39.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.7	59.6		11.6	23.8	2.1	75.6	35.4		69.8	50.8	39.4
LOS	E	E		B	C	A	E	D		E	D	D
Approach Delay		60.4			22.2			58.6			46.9	
Approach LOS		E			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 46.2		Intersection LOS: D	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Allen Way & Founder Pkwy

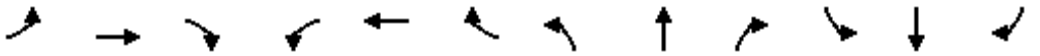
Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	205	2624	615	135	1962	25	540	145	193	40	120	75
Future Volume (vph)	205	2624	615	135	1962	25	540	145	193	40	120	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.971			0.998				0.850		0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4938	0	1770	5075	0	3433	1863	1583	1770	3334	0
Flt Permitted	0.055			0.056			0.333			0.657		
Satd. Flow (perm)	102	4938	0	104	5075	0	1203	1863	1583	1224	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		91			3				122		82	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	2762	668	147	2002	27	587	158	210	43	130	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	3430	0	147	2029	0	587	158	210	43	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	13.0	78.0		11.0	76.0		20.0	21.0	21.0	10.0	11.0	
Total Split (%)	10.8%	65.0%		9.2%	63.3%		16.7%	17.5%	17.5%	8.3%	9.2%	
Maximum Green (s)	8.0	72.0		6.0	70.0		15.0	16.0	16.0	5.0	6.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	85.0	75.0		81.0	72.0		28.0	20.0	20.0	15.0	8.0	
Actuated g/C Ratio	0.71	0.62		0.68	0.60		0.23	0.17	0.17	0.12	0.07	
v/c Ratio	1.06	1.10		0.81	0.67		0.98	0.51	0.58	0.23	0.71	
Control Delay	67.9	66.9		57.4	17.3		77.0	53.2	27.2	40.3	47.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	67.9	66.9		57.4	17.3		77.0	53.2	27.2	40.3	47.3	
LOS	E	E		E	B		E	D	C	D	D	
Approach Delay		66.9			20.0			62.1			46.1	
Approach LOS		E			C			E			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 51.0 Intersection LOS: D
Intersection Capacity Utilization 106.4% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 2: Front St & Founder Pkwy

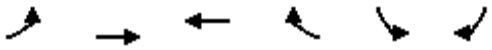


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Future Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.968			0.990			0.863			0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4923	0	1770	5034	0	3433	1608	0	1770	3451	0
Flt Permitted	0.118			0.060			0.649			0.244		
Satd. Flow (perm)	220	4923	0	112	5034	0	2345	1608	0	455	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			17			107			11	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	2039	549	267	1548	109	386	49	517	190	54	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	2588	0	267	1657	0	386	566	0	190	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		

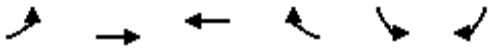
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	10.0	68.0		18.0	76.0		11.0	20.0		14.0	23.0	
Total Split (%)	8.3%	56.7%		15.0%	63.3%		9.2%	16.7%		11.7%	19.2%	
Maximum Green (s)	4.0	62.0		12.0	70.0		6.0	15.0		9.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	70.0	65.0		83.0	81.0		26.2	17.0		27.0	17.5	
Actuated g/C Ratio	0.58	0.54		0.69	0.68		0.22	0.14		0.22	0.15	
v/c Ratio	0.04	0.96		0.94	0.49		0.62	1.77		0.85	0.13	
Control Delay	7.1	35.4		74.0	10.3		44.3	386.5		72.2	36.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.1	35.4		74.0	10.3		44.3	386.5		72.2	36.3	
LOS	A	D		E	B		D	F		E	D	
Approach Delay		35.3			19.1			247.8			63.1	
Approach LOS		D			B			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.77			
Intersection Signal Delay: 66.4		Intersection LOS: E	
Intersection Capacity Utilization 117.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	960	1628	1193	165	187	670
Future Volume (vph)	960	1628	1193	165	187	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.904	0.850
Flt Protected	0.950				0.982	
Satd. Flow (prot)	3433	3539	3539	1583	3208	1441
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	3433	3539	3539	1583	3208	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				148	341	364
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1043	1770	1297	179	203	728
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	1043	1770	1297	179	567	364
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	39.0	93.0	54.0	54.0	27.0	
Total Split (%)	32.5%	77.5%	45.0%	45.0%	22.5%	
Maximum Green (s)	33.0	87.0	48.0	48.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	42.2	96.2	50.0	50.0	16.8	120.0
Actuated g/C Ratio	0.35	0.80	0.42	0.42	0.14	1.00
v/c Ratio	0.86	0.62	0.88	0.24	0.76	0.25
Control Delay	45.8	6.5	40.5	6.3	26.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	6.5	40.5	6.3	26.1	0.4
LOS	D	A	D	A	C	A
Approach Delay		21.1	36.4		16.0	
Approach LOS		C	D		B	

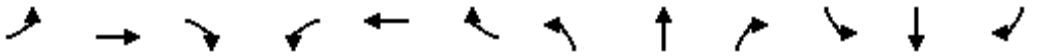
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 24.5		Intersection LOS: C	
Intersection Capacity Utilization 82.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

Intersection	
Intersection Delay, s/veh	3.8
Intersection LOS	A

Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	136	98	169
Demand Flow Rate, veh/h	139	100	173
Vehicles Circulating, veh/h	50	84	78
Vehicles Exiting, veh/h	134	167	111
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.7	3.5	4.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	139	100	173
Cap Entry Lane, veh/h	1311	1267	1274
Entry HV Adj Factor	0.982	0.980	0.977
Flow Entry, veh/h	136	98	169
Cap Entry, veh/h	1287	1241	1245
V/C Ratio	0.106	0.079	0.136
Control Delay, s/veh	3.7	3.5	4.0
LOS	A	A	A
95th %tile Queue, veh	0	0	0

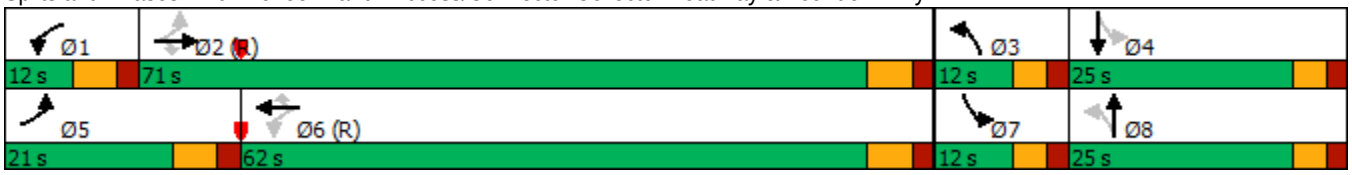


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	1585	130	10	1210	55	75	0	5	30	0	70
Future Volume (vph)	100	1585	130	10	1210	55	75	0	5	30	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1583	0	1770	1583	0
Flt Permitted	0.146			0.095			0.714			0.503		
Satd. Flow (perm)	272	3539	1583	177	3539	1583	1330	1583	0	937	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			173		185			219	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			1305	
Travel Time (s)		6.6			7.4			7.6			25.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	1723	141	11	1315	60	82	0	5	33	0	76
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	1723	141	11	1315	60	82	5	0	33	76	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	21.0	71.0	71.0	12.0	62.0	62.0	12.0	25.0		12.0	25.0	
Total Split (%)	17.5%	59.2%	59.2%	10.0%	51.7%	51.7%	10.0%	20.8%		10.0%	20.8%	
Maximum Green (s)	15.0	65.0	65.0	6.0	56.0	56.0	7.0	20.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	98.0	95.6	95.6	90.0	83.3	83.3	11.3	8.9		14.4	6.5	
Actuated g/C Ratio	0.82	0.80	0.80	0.75	0.69	0.69	0.09	0.07		0.12	0.05	
v/c Ratio	0.32	0.61	0.11	0.05	0.54	0.05	0.53	0.02		0.17	0.26	
Control Delay	5.4	8.2	1.1	4.0	11.3	0.1	63.3	0.2		46.2	2.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	5.4	8.2	1.1	4.0	11.3	0.1	63.3	0.2		46.2	2.2	
LOS	A	A	A	A	B	A	E	A		D	A	
Approach Delay		7.6			10.8			59.7			15.5	
Approach LOS		A			B			E			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 10.3		Intersection LOS: B	
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

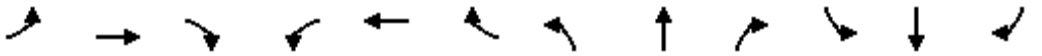
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	163	337	304
Demand Flow Rate, veh/h	166	344	310
Vehicles Circulating, veh/h	221	144	11
Vehicles Exiting, veh/h	100	243	477
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.7	5.8	4.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	166	344	310
Cap Entry Lane, veh/h	1101	1191	1364
Entry HV Adj Factor	0.982	0.981	0.980
Flow Entry, veh/h	163	337	304
Cap Entry, veh/h	1081	1169	1337
V/C Ratio	0.151	0.289	0.227
Control Delay, s/veh	4.7	5.8	4.6
LOS	A	A	A
95th %tile Queue, veh	1	1	1



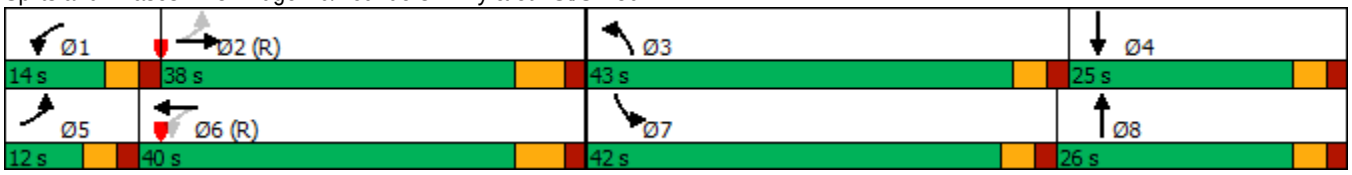
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	565	475	165	305	521	225	453	105	853	656	141
Future Volume (vph)	154	565	475	165	305	521	225	453	105	853	656	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.505			0.234			0.950			0.950		
Satd. Flow (perm)	941	3539	1583	436	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			516			566			168			168
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	614	516	179	332	566	245	492	114	927	713	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	167	614	516	179	332	566	245	492	114	927	713	153
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

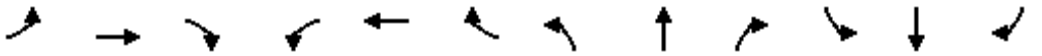
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	38.0		14.0	40.0		43.0	26.0		42.0	25.0	
Total Split (%)	10.0%	31.7%		11.7%	33.3%		35.8%	21.7%		35.0%	20.8%	
Maximum Green (s)	7.0	31.5		9.0	33.5		38.0	21.0		37.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.5		4.0	4.5		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	44.4	35.0	120.0	47.5	36.5	120.0	14.9	22.7	120.0	37.3	43.1	120.0
Actuated g/C Ratio	0.37	0.29	1.00	0.40	0.30	1.00	0.12	0.19	1.00	0.31	0.36	1.00
v/c Ratio	0.41	0.60	0.33	0.62	0.31	0.36	0.57	0.74	0.07	0.87	0.56	0.10
Control Delay	27.6	39.7	0.5	34.2	33.4	0.6	54.6	53.2	0.1	48.7	33.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	39.7	0.5	34.2	33.4	0.6	54.6	53.2	0.1	48.7	33.0	0.1
LOS	C	D	A	C	C	A	D	D	A	D	C	A
Approach Delay		22.6			16.3			46.5			38.3	
Approach LOS		C			B			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 30.9 Intersection LOS: C
Intersection Capacity Utilization 75.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



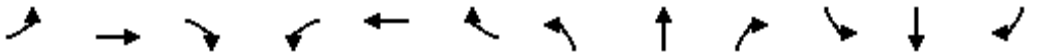


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Future Volume (vph)	6	826	250	490	2170	105	465	30	226	45	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		75	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.964			0.993				0.850		0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4902	0	1770	5050	0	3433	1863	1583	1770	3454	0
Flt Permitted	0.082			0.147			0.519					
Satd. Flow (perm)	153	4902	0	274	5050	0	1876	1863	1583	1863	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83			9				227		3	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	869	272	533	2214	114	505	33	246	49	16	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1141	0	533	2328	0	505	33	246	49	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	15.0	57.0		21.0	63.0		19.0	25.0	21.0	17.0	23.0	
Total Split (%)	12.5%	47.5%		17.5%	52.5%		15.8%	20.8%	17.5%	14.2%	19.2%	
Maximum Green (s)	9.0	51.0		15.0	57.0		14.0	20.0	15.0	12.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-2.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		3.0	4.0	5.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	58.7	52.0		90.9	87.5		22.1	10.9	45.4	13.7	7.1	
Actuated g/C Ratio	0.49	0.43		0.76	0.73		0.18	0.09	0.38	0.11	0.06	
v/c Ratio	0.04	0.53		0.85	0.63		0.88	0.20	0.33	0.24	0.09	
Control Delay	9.0	24.0		37.8	10.6		64.3	53.9	5.8	44.8	48.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	9.0	24.0		37.8	10.6		64.3	53.9	5.8	44.8	48.1	
LOS	A	C		D	B		E	D	A	D	D	
Approach Delay		23.9			15.6			45.5			45.7	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 22.8		Intersection LOS: C	
Intersection Capacity Utilization 79.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy

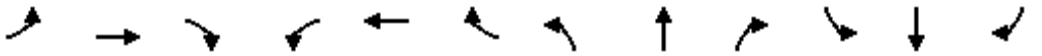


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Future Volume (vph)	8	1937	505	246	1517	100	355	45	476	175	50	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.968			0.990				0.850		0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4923	0	1770	5034	0	3433	1863	1583	1770	3451	0
Flt Permitted	0.137			0.060			0.712			0.572		
Satd. Flow (perm)	255	4923	0	112	5034	0	2573	1863	1583	1065	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			17				73		11	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.98	0.92	0.92	0.92	0.95	0.92	0.92	0.92
Adj. Flow (vph)	9	2039	549	267	1548	109	386	49	501	190	54	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	2588	0	267	1657	0	386	49	501	190	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	10.0	68.0		18.0	76.0		11.0	20.0	18.0	14.0	23.0	
Total Split (%)	8.3%	56.7%		15.0%	63.3%		9.2%	16.7%	15.0%	11.7%	19.2%	
Maximum Green (s)	4.0	62.0		12.0	70.0		6.0	15.0	12.0	9.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0	4.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	71.7	65.0		91.6	89.2		17.6	10.5	34.0	22.4	12.9	
Actuated g/C Ratio	0.60	0.54		0.76	0.74		0.15	0.09	0.28	0.19	0.11	
v/c Ratio	0.04	0.96		0.65	0.44		0.88	0.30	1.00	0.72	0.17	
Control Delay	6.0	35.4		37.5	7.4		67.7	55.2	78.0	59.5	40.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	6.0	35.4		37.5	7.4		67.7	55.2	78.0	59.5	40.5	
LOS	A	D		D	A		E	E	E	E	D	
Approach Delay		35.3			11.6			72.5			54.7	
Approach LOS		D			B			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 34.2		Intersection LOS: C	
Intersection Capacity Utilization 97.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	1420	150	45	3160	140	130	25	55	75	15	385
Future Volume (vph)	265	1420	150	45	3160	140	130	25	55	75	15	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.986				0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5014	0	1770	5085	1583	3433	1671	0	1770	1863	2787
Flt Permitted	0.950			0.103			0.950			0.701		
Satd. Flow (perm)	3433	5014	0	192	5085	1583	3433	1671	0	1306	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				109		60				217
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	288	1543	163	49	3224	152	141	27	60	82	16	405
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	1706	0	49	3224	152	141	87	0	82	16	405
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	14.0	74.0		15.0	75.0	75.0	12.0	20.0		11.0	19.0	19.0
Total Split (%)	11.7%	61.7%		12.5%	62.5%	62.5%	10.0%	16.7%		9.2%	15.8%	15.8%
Maximum Green (s)	9.0	68.0		10.0	69.0	69.0	7.0	15.0		6.0	14.0	14.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-1.0		-1.0	-2.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	5.0		4.0	4.0	5.0	4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	12.3	76.4		79.0	71.5	70.5	8.0	16.4		20.2	13.2	13.2
Actuated g/C Ratio	0.10	0.64		0.66	0.60	0.59	0.07	0.14		0.17	0.11	0.11
v/c Ratio	0.82	0.53		0.22	1.06	0.16	0.62	0.31		0.33	0.08	0.81
Control Delay	72.7	13.3		4.6	52.4	0.9	66.8	21.6		42.8	47.6	37.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	72.7	13.3		4.6	52.4	0.9	66.8	21.6		42.8	47.6	37.1
LOS	E	B		A	D	A	E	C		D	D	D
Approach Delay		21.9			49.4			49.6			38.3	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 39.6		Intersection LOS: D	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

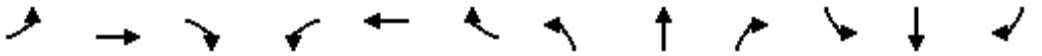
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	70	1200	280	75	2710	15	530	75	50	5	65	105
Future Volume (vph)	70	1200	280	75	2710	15	530	75	50	5	65	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.972			0.999				0.850		0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4943	0	1770	5080	0	3433	1863	1583	1770	3214	0
Flt Permitted	0.061			0.098			0.450			0.704		
Satd. Flow (perm)	114	4943	0	183	5080	0	1626	1863	1583	1311	3214	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			1				118		109	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	1304	304	82	2853	16	576	82	54	5	71	114
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	1608	0	82	2869	0	576	82	54	5	185	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	12.0	63.0		12.0	63.0		20.0	33.0	33.0	12.0	25.0	
Total Split (%)	10.0%	52.5%		10.0%	52.5%		16.7%	27.5%	27.5%	10.0%	20.8%	
Maximum Green (s)	7.0	57.0		7.0	57.0		15.0	28.0	28.0	7.0	20.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		3.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	79.2	71.2		79.5	71.3		30.5	27.2	27.2	16.3	9.5	
Actuated g/C Ratio	0.66	0.59		0.66	0.59		0.25	0.23	0.23	0.14	0.08	
v/c Ratio	0.40	0.54		0.35	0.95		0.86	0.19	0.12	0.02	0.52	
Control Delay	25.4	20.1		10.9	32.5		54.3	39.7	0.5	33.6	27.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	25.4	20.1		10.9	32.5		54.3	39.7	0.5	33.6	27.7	
LOS	C	C		B	C		D	D	A	C	C	
Approach Delay		20.3			31.9			48.5			27.9	
Approach LOS		C			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 30.4		Intersection LOS: C	
Intersection Capacity Utilization 91.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

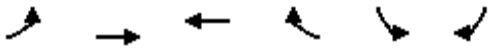


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	885	250	495	2330	105	465	30	230	45	15	3
Future Volume (vph)	6	885	250	495	2330	105	465	30	230	45	15	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.966			0.993				0.850		0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4912	0	1770	5050	0	3433	1863	1583	1770	3454	0
Flt Permitted	0.082			0.131			0.519					
Satd. Flow (perm)	153	4912	0	244	5050	0	1876	1863	1583	1863	3454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		77			8				216		3	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	932	272	538	2453	114	505	33	250	49	16	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1204	0	538	2567	0	505	33	250	49	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

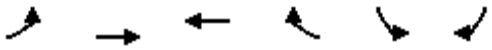
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	15.0	57.0		21.0	63.0		19.0	25.0	21.0	17.0	23.0	
Total Split (%)	12.5%	47.5%		17.5%	52.5%		15.8%	20.8%	17.5%	14.2%	19.2%	
Maximum Green (s)	9.0	51.0		15.0	57.0		14.0	20.0	15.0	12.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-2.0	-1.0		-2.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		4.0	5.0		3.0	4.0	5.0	4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	58.7	52.0		90.9	87.5		22.1	10.9	45.4	13.7	7.1	
Actuated g/C Ratio	0.49	0.43		0.76	0.73		0.18	0.09	0.38	0.11	0.06	
v/c Ratio	0.04	0.55		0.87	0.70		0.88	0.20	0.34	0.24	0.09	
Control Delay	9.0	24.7		42.9	11.9		64.3	53.9	6.8	44.8	48.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	9.0	24.7		42.9	11.9		64.3	53.9	6.8	44.8	48.1	
LOS	A	C		D	B		E	D	A	D	D	
Approach Delay		24.6			17.3			45.6			45.7	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	450	710	1860	190	120	1070
Future Volume (vph)	450	710	1860	190	120	1070
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.878	0.850
Flt Protected	0.950				0.991	
Satd. Flow (prot)	3433	3539	3539	1583	3144	1441
Flt Permitted	0.950				0.991	
Satd. Flow (perm)	3433	3539	3539	1583	3144	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				142	240	438
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	489	772	1958	207	130	1126
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	489	772	1958	207	693	563
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free

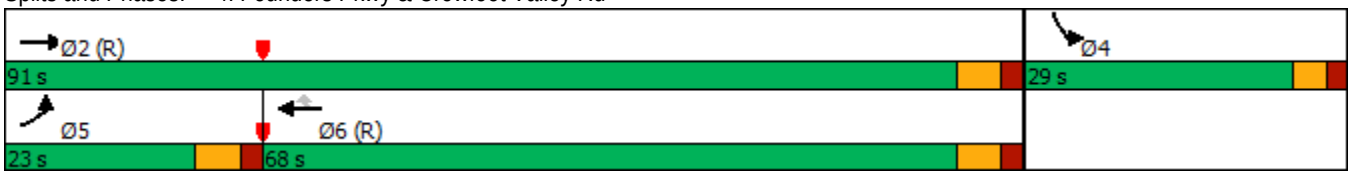


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	23.0	91.0	68.0	68.0	29.0	
Total Split (%)	19.2%	75.8%	56.7%	56.7%	24.2%	
Maximum Green (s)	17.0	85.0	62.0	62.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	19.9	89.2	65.3	65.3	23.8	120.0
Actuated g/C Ratio	0.17	0.74	0.54	0.54	0.20	1.00
v/c Ratio	0.86	0.29	1.02	0.22	1.11dr	0.39
Control Delay	64.7	5.6	52.8	5.5	40.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	5.6	52.8	5.5	40.6	0.8
LOS	E	A	D	A	D	A
Approach Delay		28.5	48.3		22.8	
Approach LOS		C	D		C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 36.1 Intersection LOS: D
Intersection Capacity Utilization 89.0% ICU Level of Service E
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

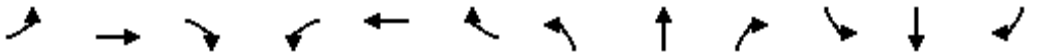
Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd



Intersection	
Intersection Delay, s/veh	4.8
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	129	362	140
Demand Flow Rate, veh/h	132	370	143
Vehicles Circulating, veh/h	56	46	231
Vehicles Exiting, veh/h	318	142	185
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	3.7	5.3	4.5
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	132	370	143
Cap Entry Lane, veh/h	1303	1317	1090
Entry HV Adj Factor	0.977	0.979	0.978
Flow Entry, veh/h	129	362	140
Cap Entry, veh/h	1274	1289	1067
V/C Ratio	0.101	0.281	0.131
Control Delay, s/veh	3.7	5.3	4.5
LOS	A	A	A
95th %tile Queue, veh	0	1	0

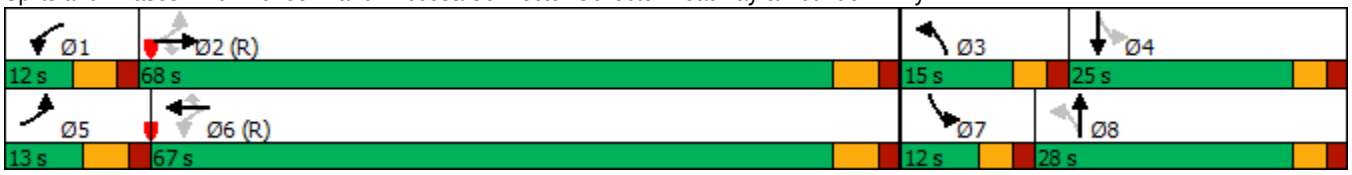


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	675	40	5	1700	55	120	3	10	83	1	270
Future Volume (vph)	118	675	40	5	1700	55	120	3	10	83	1	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.882			0.851	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1643	0	1770	1585	0
Flt Permitted	0.060			0.354			0.267			0.591		
Satd. Flow (perm)	112	3539	1583	659	3539	1583	497	1643	0	1101	1585	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			118		11			129	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			622	
Travel Time (s)		6.6			7.4			7.6			12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	734	43	5	1789	60	130	3	11	90	1	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	734	43	5	1789	60	130	14	0	90	294	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	13.0	68.0	68.0	12.0	67.0	67.0	15.0	28.0		12.0	25.0	
Total Split (%)	10.8%	56.7%	56.7%	10.0%	55.8%	55.8%	12.5%	23.3%		10.0%	20.8%	
Maximum Green (s)	7.0	62.0	62.0	6.0	61.0	61.0	10.0	23.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	77.2	75.6	75.6	71.4	64.7	64.7	23.4	17.3		29.0	18.2	
Actuated g/C Ratio	0.64	0.63	0.63	0.60	0.54	0.54	0.20	0.14		0.24	0.15	
v/c Ratio	0.69	0.33	0.04	0.01	0.94	0.07	0.62	0.06		0.24	0.84	
Control Delay	40.2	11.9	0.1	8.6	37.2	0.1	53.2	22.8		34.0	48.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	40.2	11.9	0.1	8.6	37.2	0.1	53.2	22.8		34.0	48.3	
LOS	D	B	A	A	D	A	D	C		C	D	
Approach Delay		15.4			36.0			50.3			44.9	
Approach LOS		B			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 91.9%		ICU Level of Service F	
Analysis Period (min) 15			

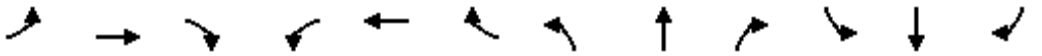
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	71	138	440
Demand Flow Rate, veh/h	72	140	449
Vehicles Circulating, veh/h	310	60	24
Vehicles Exiting, veh/h	163	322	176
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.3	3.7	5.8
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	72	140	449
Cap Entry Lane, veh/h	1006	1298	1346
Entry HV Adj Factor	0.986	0.984	0.980
Flow Entry, veh/h	71	138	440
Cap Entry, veh/h	992	1277	1319
V/C Ratio	0.072	0.108	0.333
Control Delay, s/veh	4.3	3.7	5.8
LOS	A	A	A
95th %tile Queue, veh	0	0	1

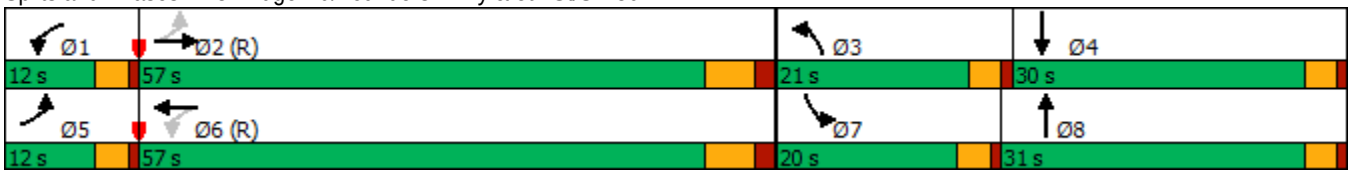


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	210	120	115	475	865	320	535	75	300	170	135
Future Volume (vph)	70	210	120	115	475	865	320	535	75	300	170	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.445			0.590			0.950			0.950		
Satd. Flow (perm)	829	3539	1583	1099	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			708			141			147
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	76	228	130	125	500	940	348	582	82	326	185	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	76	228	130	125	500	940	348	582	82	326	185	147
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	57.0		12.0	57.0		21.0	31.0		20.0	30.0	
Total Split (%)	10.0%	47.5%		10.0%	47.5%		17.5%	25.8%		16.7%	25.0%	
Maximum Green (s)	8.0	50.5		8.0	50.5		17.0	27.0		16.0	26.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.5		4.0	6.5		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	63.8	54.0	120.0	65.9	56.7	120.0	15.9	24.4	120.0	15.0	23.6	120.0
Actuated g/C Ratio	0.53	0.45	1.00	0.55	0.47	1.00	0.13	0.20	1.00	0.12	0.20	1.00
v/c Ratio	0.15	0.14	0.08	0.19	0.30	0.59	0.77	0.81	0.05	0.76	0.27	0.09
Control Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
LOS	B	C	A	B	C	A	E	D	A	E	D	A
Approach Delay		13.2			9.0			52.9			42.8	
Approach LOS		B			A			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 27.6		Intersection LOS: C	
Intersection Capacity Utilization 55.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	2	127	49	3	282
Future Vol, veh/h	70	2	127	49	3	282
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	2	138	53	3	307

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	451	138	0	0	191	0
Stage 1	138	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	566	910	-	-	1383	-
Stage 1	889	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	565	910	-	-	1383	-
Mov Cap-2 Maneuver	565	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	740	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	565	910	1383	-
HCM Lane V/C Ratio	-	-	0.135	0.002	0.002	-
HCM Control Delay (s)	-	-	12.4	9	7.6	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	320	0	5	114
Future Vol, veh/h	0	13	320	0	5	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	348	0	5	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	482	348	0	0	348	0
Stage 1	348	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	543	695	-	-	1211	-
Stage 1	715	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	541	695	-	-	1211	-
Mov Cap-2 Maneuver	541	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	888	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	695	1211	-
HCM Lane V/C Ratio	-	-	0.02	0.004	-
HCM Control Delay (s)	-	-	10.3	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	1	2	23	1	7	15	60	304	0	5	107	2
Future Vol, veh/h	1	2	23	1	7	15	60	304	0	5	107	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	2	25	1	8	16	65	330	0	5	116	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	599	587	117	601	588	330	118	0	0	330	0	0
Stage 1	127	127	-	460	460	-	-	-	-	-	-	-
Stage 2	472	460	-	141	128	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	413	422	935	412	421	712	1470	-	-	1229	-	-
Stage 1	877	791	-	581	566	-	-	-	-	-	-	-
Stage 2	573	566	-	862	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	383	402	935	385	401	712	1470	-	-	1229	-	-
Mov Cap-2 Maneuver	383	402	-	385	401	-	-	-	-	-	-	-
Stage 1	838	788	-	555	541	-	-	-	-	-	-	-
Stage 2	528	541	-	833	787	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	11.7	1.2	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1470	-	-	808	559	1229	-	-
HCM Lane V/C Ratio	0.044	-	-	0.035	0.045	0.004	-	-
HCM Control Delay (s)	7.6	-	-	9.6	11.7	7.9	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	48	316	0	16	115
Future Vol, veh/h	1	48	316	0	16	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	52	343	0	17	125

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	502	343	0	0	343	0
Stage 1	343	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	529	700	-	-	1216	-
Stage 1	719	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	522	700	-	-	1216	-
Mov Cap-2 Maneuver	522	-	-	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	858	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	695	1216	-
HCM Lane V/C Ratio	-	-	0.077	0.014	-
HCM Control Delay (s)	-	-	10.6	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	95	251	1	2	65
Future Vol, veh/h	21	95	251	1	2	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	103	273	1	2	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	274	0	-	0	423	274
Stage 1	-	-	-	-	274	-
Stage 2	-	-	-	-	149	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1289	-	-	-	588	765
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	879	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1289	-	-	-	577	765
Mov Cap-2 Maneuver	-	-	-	-	577	-
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1289	-	-	-	758
HCM Lane V/C Ratio	0.018	-	-	-	0.096
HCM Control Delay (s)	7.8	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	20	1	193	59	1
Future Vol, veh/h	77	20	1	193	59	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	84	22	1	210	64	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	106	0	296	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1485	-	695	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1485	-	694	975
Mov Cap-2 Maneuver	-	-	-	-	694	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	697	-	-	1485	-
HCM Lane V/C Ratio	0.094	-	-	0.001	-
HCM Control Delay (s)	10.7	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

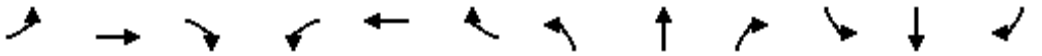
Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	62	11	1	146	0	32	0	2	1	0	16
Future Vol, veh/h	5	62	11	1	146	0	32	0	2	1	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	67	12	1	159	0	35	0	2	1	0	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	162	83	9	121	90	1	17	0	0	2	0	0
Stage 1	11	11	-	71	71	-	-	-	-	-	-	-
Stage 2	151	72	-	50	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	803	807	1073	854	800	1084	1600	-	-	1620	-	-
Stage 1	1010	886	-	939	836	-	-	-	-	-	-	-
Stage 2	851	835	-	963	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	666	788	1073	775	782	1084	1600	-	-	1620	-	-
Mov Cap-2 Maneuver	666	788	-	775	782	-	-	-	-	-	-	-
Stage 1	988	885	-	918	818	-	-	-	-	-	-	-
Stage 2	671	817	-	879	879	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.8	6.9	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	809	782	1620	-	-
HCM Lane V/C Ratio	0.022	-	-	0.105	0.204	0.001	-	-
HCM Control Delay (s)	7.3	0	-	10	10.8	7.2	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.8	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	435	3385	230	45	2485	160	185	45	90	145	40	460
Future Volume (vph)	435	3385	230	45	2485	160	185	45	90	145	40	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	290		0	325		0	75		0	130		110
Storage Lanes	2		0	1		1	2		0	1		2
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	0.97	0.91	0.91	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	0.88
Frt		0.990				0.850		0.900				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5034	0	1770	5085	1583	3433	1676	0	1770	1863	2787
Flt Permitted	0.950			0.061			0.950			0.392		
Satd. Flow (perm)	3433	5034	0	114	5085	1583	3433	1676	0	730	1863	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				155		69				290
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		533			1095			278			392	
Travel Time (s)		10.4			21.3			6.3			8.9	
Peak Hour Factor	0.92	0.98	0.92	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.95
Adj. Flow (vph)	473	3454	250	49	2536	174	201	49	98	158	43	484
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	3704	0	49	2536	174	201	147	0	158	43	484
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		20			20			24			20	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases				6		6				4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	11.0	21.0		9.5	21.0	21.0	9.0	21.0		9.0	21.0	21.0
Total Split (s)	22.0	81.0		10.0	69.0	69.0	12.0	18.0		11.0	17.0	17.0
Total Split (%)	18.3%	67.5%		8.3%	57.5%	57.5%	10.0%	15.0%		9.2%	14.2%	14.2%
Maximum Green (s)	17.0	75.0		5.0	63.0	63.0	7.0	13.0		6.0	12.0	12.0
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0	-1.0	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	3.0	3.0		3.0	4.0	5.0	3.0	3.0		3.0	3.0	3.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	None
Act Effct Green (s)	19.0	80.8		73.9	65.8	64.8	9.0	14.2		21.2	13.2	13.2
Actuated g/C Ratio	0.16	0.67		0.62	0.55	0.54	0.08	0.12		0.18	0.11	0.11
v/c Ratio	0.87	1.09		0.29	0.91	0.19	0.78	0.57		0.80	0.21	0.86
Control Delay	66.7	67.9		10.8	23.8	1.6	75.6	35.6		70.9	50.8	36.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	66.7	67.9		10.8	23.8	1.6	75.6	35.6		70.9	50.8	36.4
LOS	E	E		B	C	A	E	D		E	D	D
Approach Delay		67.8			22.2			58.7			45.3	
Approach LOS		E			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:EBT and 6:WBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 49.7		Intersection LOS: D	
Intersection Capacity Utilization 103.1%		ICU Level of Service G	
Analysis Period (min) 15			

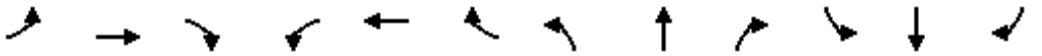
Splits and Phases: 1: Allen Way & Founder Pkwy

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	205	2800	615	145	2075	25	540	145	210	40	120	75
Future Volume (vph)	205	2800	615	145	2075	25	540	145	210	40	120	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	460		0	200		0	285		0	230		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.972			0.998				0.850		0.942	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4943	0	1770	5075	0	3433	1863	1583	1770	3334	0
Flt Permitted	0.054			0.056			0.364			0.657		
Satd. Flow (perm)	101	4943	0	104	5075	0	1315	1863	1583	1224	3334	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88			3				118		82	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		1095			488			556			397	
Travel Time (s)		21.3			9.5			10.8			7.7	
Peak Hour Factor	0.92	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	2857	668	158	2255	27	587	158	228	43	130	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	3525	0	158	2282	0	587	158	228	43	212	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			40			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8		8	4		

Lane Group	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	5	2		1	6		3	8	8	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	9.0	21.0		9.0	21.0		9.0	21.0	21.0	10.0	21.0	
Total Split (s)	13.0	79.0		11.0	77.0		20.0	21.0	21.0	9.0	10.0	
Total Split (%)	10.8%	65.8%		9.2%	64.2%		16.7%	17.5%	17.5%	7.5%	8.3%	
Maximum Green (s)	8.0	73.0		6.0	71.0		15.0	16.0	16.0	4.0	5.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	3.0	3.0		3.0	4.0		3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	86.0	76.0		82.0	73.0		27.0	19.8	19.8	13.0	7.0	
Actuated g/C Ratio	0.72	0.63		0.68	0.61		0.22	0.16	0.16	0.11	0.06	
v/c Ratio	1.06	1.11		0.87	0.74		0.99	0.51	0.64	0.27	0.78	
Control Delay	67.7	73.2		66.8	18.6		78.2	53.4	31.7	42.4	54.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	67.7	73.2		66.8	18.6		78.2	53.4	31.7	42.4	54.2	
LOS	E	E		E	B		E	D	C	D	D	
Approach Delay		72.9			21.7			63.3			52.2	
Approach LOS		E			C			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2:SETL and 6:NWTL, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 54.1		Intersection LOS: D	
Intersection Capacity Utilization 110.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 2: Front St & Founder Pkwy

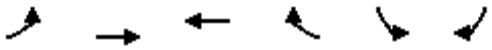


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	2130	505	255	1640	100	355	45	485	175	50	10
Future Volume (vph)	8	2130	505	255	1640	100	355	45	485	175	50	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		0	500		0	300		0	150		0
Storage Lanes	1		0	1		0	2		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.970			0.991				0.850		0.975	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	4933	0	1770	5040	0	3433	1863	1583	1770	3451	0
Flt Permitted	0.113			0.060			0.712			0.572		
Satd. Flow (perm)	210	4933	0	112	5040	0	2573	1863	1583	1065	3451	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		76			15				73		11	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		721			782			419			497	
Travel Time (s)		9.8			10.7			8.2			9.7	
Peak Hour Factor	0.92	0.95	0.92	0.92	0.95	0.92	0.92	0.92	0.95	0.92	0.92	0.92
Adj. Flow (vph)	9	2242	549	277	1726	109	386	49	511	190	54	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	2791	0	277	1835	0	386	49	511	190	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			30			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	5	2		1	6		3	8	1	7	4	
Permitted Phases	2			6			8		8	4		

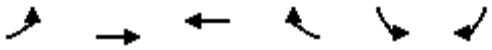
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	20.0		10.0	20.0		9.0	20.0	10.0	9.0	20.0	
Total Split (s)	10.0	68.0		18.0	76.0		11.0	20.0	18.0	14.0	23.0	
Total Split (%)	8.3%	56.7%		15.0%	63.3%		9.2%	16.7%	15.0%	11.7%	19.2%	
Maximum Green (s)	4.0	62.0		12.0	70.0		6.0	15.0	12.0	9.0	18.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-3.0	-3.0		-2.0	-2.0	-3.0	-2.0	-2.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None	None	None	None	
Act Effct Green (s)	71.7	65.0		91.6	89.2		17.6	10.5	35.0	22.4	12.9	
Actuated g/C Ratio	0.60	0.54		0.76	0.74		0.15	0.09	0.29	0.19	0.11	
v/c Ratio	0.04	1.03		0.68	0.49		0.88	0.30	1.00	0.72	0.17	
Control Delay	6.1	53.0		39.1	7.9		67.7	55.2	75.7	59.5	40.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	6.1	53.0		39.1	7.9		67.7	55.2	75.7	59.5	40.5	
LOS	A	D		D	A		E	E	E	E	D	
Approach Delay		52.9			12.0			71.4			54.7	
Approach LOS		D			B			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 37 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 41.7		Intersection LOS: D	
Intersection Capacity Utilization 102.1%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Woodlands Blvd & Founders Pkwy



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	960	1830	1325	175	200	670
Future Volume (vph)	960	1830	1325	175	200	670
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485			0	150	0
Storage Lanes	2			1	2	1
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	0.95	1.00	0.97	0.91
Frt				0.850	0.907	0.850
Flt Protected	0.950				0.981	
Satd. Flow (prot)	3433	3539	3539	1583	3215	1441
Flt Permitted	0.950				0.981	
Satd. Flow (perm)	3433	3539	3539	1583	3215	1441
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				146	308	352
Link Speed (mph)		50	50		35	
Link Distance (ft)		641	617		595	
Travel Time (s)		8.7	8.4		11.6	
Peak Hour Factor	0.92	0.92	0.95	0.92	0.92	0.95
Adj. Flow (vph)	1043	1989	1395	190	217	705
Shared Lane Traffic (%)						50%
Lane Group Flow (vph)	1043	1989	1395	190	570	352
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		24	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (ft)	20	100	100	20	20	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	6	20	20	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	10.0	10.5	10.0	10.0	10.0	
Total Split (s)	39.0	93.0	54.0	54.0	27.0	
Total Split (%)	32.5%	77.5%	45.0%	45.0%	22.5%	
Maximum Green (s)	33.0	87.0	48.0	48.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	3.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	None	
Act Effct Green (s)	41.1	95.1	50.0	50.0	17.9	120.0
Actuated g/C Ratio	0.34	0.79	0.42	0.42	0.15	1.00
v/c Ratio	0.89	0.71	0.95	0.26	0.77	0.24
Control Delay	48.4	8.4	47.9	7.2	29.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	8.4	47.9	7.2	29.1	0.4
LOS	D	A	D	A	C	A
Approach Delay		22.1	43.0		18.1	
Approach LOS		C	D		B	

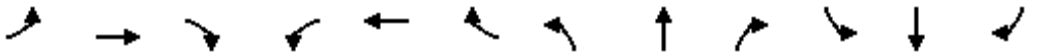
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Founders Pkwy & Crowfoot Valley Rd

Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	359	243	198
Demand Flow Rate, veh/h	366	248	202
Vehicles Circulating, veh/h	136	91	161
Vehicles Exiting, veh/h	227	411	178
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.9	4.6	4.6
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	366	248	202
Cap Entry Lane, veh/h	1201	1258	1171
Entry HV Adj Factor	0.981	0.981	0.982
Flow Entry, veh/h	359	243	198
Cap Entry, veh/h	1178	1234	1150
V/C Ratio	0.305	0.197	0.173
Control Delay, s/veh	5.9	4.6	4.6
LOS	A	A	A
95th %tile Queue, veh	1	1	1

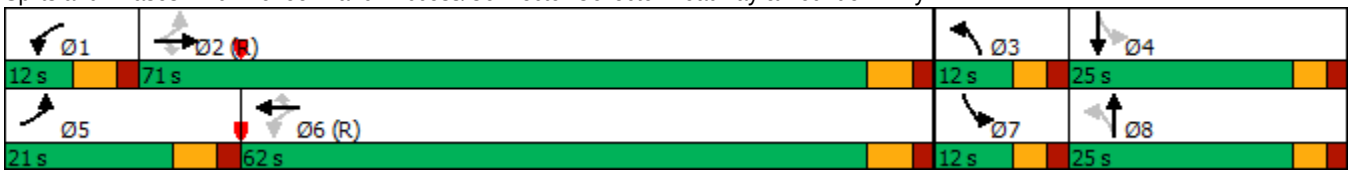


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	1570	130	10	1205	126	75	7	5	100	10	217
Future Volume (vph)	330	1570	130	10	1205	126	75	7	5	100	10	217
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	400		400	200		0	200		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.942			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1755	0	1770	1596	0
Flt Permitted	0.091			0.109			0.548			0.484		
Satd. Flow (perm)	170	3539	1583	203	3539	1583	1021	1755	0	902	1596	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			173		5			216	
Link Speed (mph)		50			50			35			35	
Link Distance (ft)		483			546			392			622	
Travel Time (s)		6.6			7.4			7.6			12.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	1707	141	11	1268	137	82	8	5	109	11	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	359	1707	141	11	1268	137	82	13	0	109	247	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0		9.0	20.0	
Total Split (s)	21.0	71.0	71.0	12.0	62.0	62.0	12.0	25.0		12.0	25.0	
Total Split (%)	17.5%	59.2%	59.2%	10.0%	51.7%	51.7%	10.0%	20.8%		10.0%	20.8%	
Maximum Green (s)	15.0	65.0	65.0	6.0	56.0	56.0	7.0	20.0		7.0	20.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	90.8	87.3	87.3	66.7	60.0	60.0	14.6	10.7		19.6	11.6	
Actuated g/C Ratio	0.76	0.73	0.73	0.56	0.50	0.50	0.12	0.09		0.16	0.10	
v/c Ratio	0.76	0.66	0.12	0.06	0.72	0.16	0.47	0.08		0.45	0.71	
Control Delay	38.3	12.8	1.9	8.1	27.0	1.5	52.6	36.0		47.3	21.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	38.3	12.8	1.9	8.1	27.0	1.5	52.6	36.0		47.3	21.1	
LOS	D	B	A	A	C	A	D	D		D	C	
Approach Delay		16.2			24.4			50.4			29.1	
Approach LOS		B			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

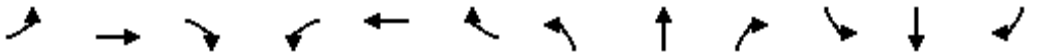
Splits and Phases: 6: Pioneer Ranch Access/Connector Collector Roadway & Founder Pkwy



Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	179	341	318
Demand Flow Rate, veh/h	183	348	324
Vehicles Circulating, veh/h	221	155	15
Vehicles Exiting, veh/h	118	249	488
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.8	5.9	4.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	183	348	324
Cap Entry Lane, veh/h	1101	1178	1359
Entry HV Adj Factor	0.978	0.981	0.980
Flow Entry, veh/h	179	341	318
Cap Entry, veh/h	1077	1156	1332
V/C Ratio	0.166	0.295	0.238
Control Delay, s/veh	4.8	5.9	4.7
LOS	A	A	A
95th %tile Queue, veh	1	1	1

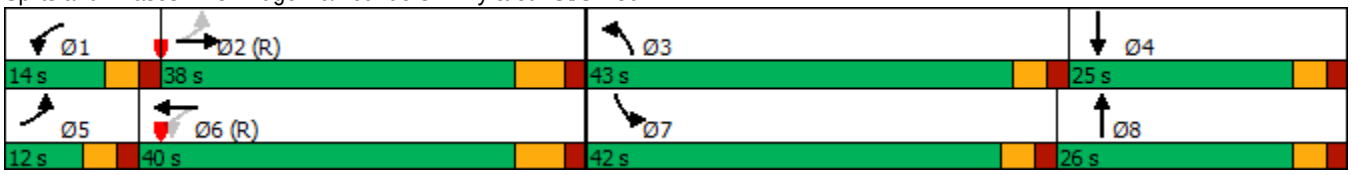


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	565	475	165	305	540	225	475	105	865	675	160
Future Volume (vph)	175	565	475	165	305	540	225	475	105	865	675	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		425	250		0	250		0	600		500
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.513			0.226			0.950			0.950		
Satd. Flow (perm)	956	3539	1583	421	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			516			587			168			174
Link Speed (mph)		35			50			35			50	
Link Distance (ft)		450			848			659			865	
Travel Time (s)		8.8			11.6			12.8			11.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	614	516	179	321	587	245	516	114	940	734	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	614	516	179	321	587	245	516	114	940	734	174
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		18			18			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Free	pm+pt	NA	Free	Prot	NA	Free	Prot	NA	Free
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		Free	6		Free			Free			Free

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	9.0	20.0		9.0	20.0		9.0	20.0		9.0	20.0	
Total Split (s)	12.0	38.0		14.0	40.0		43.0	26.0		42.0	25.0	
Total Split (%)	10.0%	31.7%		11.7%	33.3%		35.8%	21.7%		35.0%	20.8%	
Maximum Green (s)	7.0	31.5		9.0	33.5		38.0	21.0		37.0	20.0	
Yellow Time (s)	3.0	4.5		3.0	4.5		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-2.0		-1.0	-2.0		-1.0	-2.0		-2.0	-1.0	
Total Lost Time (s)	4.0	4.5		4.0	4.5		4.0	3.0		3.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Act Effct Green (s)	43.4	34.1	120.0	46.5	35.7	120.0	14.9	23.5	120.0	37.6	44.1	120.0
Actuated g/C Ratio	0.36	0.28	1.00	0.39	0.30	1.00	0.12	0.20	1.00	0.31	0.37	1.00
v/c Ratio	0.47	0.61	0.33	0.64	0.31	0.37	0.57	0.75	0.07	0.88	0.56	0.11
Control Delay	29.6	40.5	0.5	35.8	33.6	0.7	54.6	53.2	0.1	49.1	32.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	40.5	0.5	35.8	33.6	0.7	54.6	53.2	0.1	49.1	32.7	0.1
LOS	C	D	A	D	C	A	D	D	A	D	C	A
Approach Delay		23.3			16.2			46.7			38.0	
Approach LOS		C			B			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 31.1		Intersection LOS: C	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Ridge Rd/Founders Pkwy & 5th St/SH 86



Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	129	11	319	144	7	198
Future Vol, veh/h	129	11	319	144	7	198
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	190	220	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	12	347	157	8	215

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	578	347	0	0	504	0
Stage 1	347	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	478	696	-	-	1061	-
Stage 1	716	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	474	696	-	-	1061	-
Mov Cap-2 Maneuver	474	-	-	-	-	-
Stage 1	716	-	-	-	-	-
Stage 2	801	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	474	696	1061	-
HCM Lane V/C Ratio	-	-	0.296	0.017	0.007	-
HCM Control Delay (s)	-	-	15.8	10.3	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	214	0	15	355
Future Vol, veh/h	0	9	214	0	15	355
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	233	0	16	386

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	651	233	0	0	233	0
Stage 1	233	-	-	-	-	-
Stage 2	418	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	433	806	-	-	1335	-
Stage 1	806	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	427	806	-	-	1335	-
Mov Cap-2 Maneuver	427	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	806	1335	-
HCM Lane V/C Ratio	-	-	0.012	0.012	-
HCM Control Delay (s)	-	-	9.5	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	9	78	0	4	10	47	197	1	15	330	10
Future Vol, veh/h	7	9	78	0	4	10	47	197	1	15	330	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	10	85	0	4	11	51	214	1	16	359	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	721	714	365	761	719	215	370	0	0	215	0	0
Stage 1	397	397	-	317	317	-	-	-	-	-	-	-
Stage 2	324	317	-	444	402	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	343	357	680	322	354	825	1189	-	-	1355	-	-
Stage 1	629	603	-	694	654	-	-	-	-	-	-	-
Stage 2	688	654	-	593	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	321	338	680	264	335	825	1189	-	-	1355	-	-
Mov Cap-2 Maneuver	321	338	-	264	335	-	-	-	-	-	-	-
Stage 1	602	596	-	664	626	-	-	-	-	-	-	-
Stage 2	645	626	-	505	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	11.4	1.6	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1189	-	-	576	582	1355	-	-
HCM Lane V/C Ratio	0.043	-	-	0.177	0.026	0.012	-	-
HCM Control Delay (s)	8.2	-	-	12.6	11.4	7.7	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	32	213	1	54	354
Future Vol, veh/h	1	32	213	1	54	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	35	232	1	59	385

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	736	233	0	0	233	0
Stage 1	233	-	-	-	-	-
Stage 2	503	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	386	806	-	-	1335	-
Stage 1	806	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	369	806	-	-	1335	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	580	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1335	-
HCM Lane V/C Ratio	-	-	0.046	0.044	-
HCM Control Delay (s)	-	-	9.9	7.8	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	73	282	171	2	2	43
Future Vol, veh/h	73	282	171	2	2	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	307	186	2	2	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	188	0	-	0	652	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	465	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1386	-	-	-	433	855
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1386	-	-	-	408	855
Mov Cap-2 Maneuver	-	-	-	-	408	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	632	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1386	-	-	-	815
HCM Lane V/C Ratio	0.057	-	-	-	0.06
HCM Control Delay (s)	7.8	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	217	67	1	134	39	1
Future Vol, veh/h	217	67	1	134	39	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	236	73	1	146	42	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	309	0	384	236
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1252	-	619	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1252	-	618	803
Mov Cap-2 Maneuver	-	-	-	-	618	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	622	-	-	1252	-
HCM Lane V/C Ratio	0.07	-	-	0.001	-
HCM Control Delay (s)	11.2	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

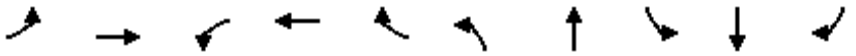
Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	18	164	36	3	103	1	11	0	1	0	0	11
Future Vol, veh/h	18	164	36	3	103	1	11	0	1	0	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	178	39	3	112	1	12	0	1	0	0	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	87	31	6	140	37	1	12	0	0	1	0	0
Stage 1	6	6	-	25	25	-	-	-	-	-	-	-
Stage 2	81	25	-	115	12	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	899	862	1077	830	855	1084	1607	-	-	1622	-	-
Stage 1	1016	891	-	993	874	-	-	-	-	-	-	-
Stage 2	927	874	-	890	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	803	856	1077	668	849	1084	1607	-	-	1622	-	-
Mov Cap-2 Maneuver	803	856	-	668	849	-	-	-	-	-	-	-
Stage 1	1009	891	-	986	868	-	-	-	-	-	-	-
Stage 2	801	868	-	686	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	9.9	6.7	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1607	-	-	881	844	1622	-	-
HCM Lane V/C Ratio	0.007	-	-	0.269	0.138	-	-	-
HCM Control Delay (s)	7.3	0	-	10.6	9.9	0	-	-
HCM Lane LOS	A	A	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.5	0	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	288	1434	41	2622	136	125	76	71	15	353
v/c Ratio	0.60	0.44	0.14	0.92	0.15	0.27	0.33	0.30	0.09	0.71
Control Delay	53.8	11.2	5.5	26.4	1.7	41.4	24.0	43.3	48.6	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	11.2	5.5	26.4	1.7	41.4	24.0	43.3	48.6	21.3
Queue Length 50th (ft)	108	183	6	710	4	42	18	47	11	34
Queue Length 95th (ft)	154	263	m9	#910	m6	65	63	84	31	83
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	300		330		200			125		
Base Capacity (vph)	481	3285	298	2839	931	459	375	235	372	775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.44	0.14	0.92	0.15	0.27	0.20	0.30	0.04	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

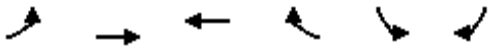
Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	70	1287	79	2216	451	54	43	5	135
v/c Ratio	0.38	0.42	0.25	0.71	0.78	0.14	0.08	0.03	0.44
Control Delay	25.7	10.5	7.6	18.1	52.0	41.9	2.1	36.2	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	10.5	7.6	18.1	52.0	41.9	2.1	36.2	24.1
Queue Length 50th (ft)	21	127	16	415	163	34	0	3	16
Queue Length 95th (ft)	76	150	34	530	210	77	9	14	48
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			210	
Base Capacity (vph)	191	3073	315	3141	581	420	536	211	632
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.42	0.25	0.71	0.78	0.13	0.08	0.02	0.21

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	852	87	402	2185	103	141	29	178	43	17
v/c Ratio	0.04	0.44	0.10	0.67	0.83	0.09	0.58	0.20	0.11	0.22	0.08
Control Delay	6.3	17.9	1.8	13.0	16.2	1.6	54.6	54.9	0.1	45.5	49.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	17.9	1.8	13.0	16.2	1.6	54.6	54.9	0.1	45.5	49.2
Queue Length 50th (ft)	1	211	0	85	525	0	98	22	0	32	5
Queue Length 95th (ft)	6	264	17	192	#1066	20	157	52	0	59	18
Internal Link Dist (ft)		641			702			339			417
Turn Bay Length (ft)	450			500		400	220			120	
Base Capacity (vph)	185	1917	907	598	2634	1193	250	326	1583	218	552
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.44	0.10	0.67	0.83	0.09	0.56	0.09	0.11	0.20	0.03

Intersection Summary

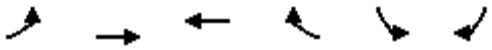
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	386	693	1734	150	586	489
v/c Ratio	0.70	0.26	0.84	0.16	1.01dr	0.34
Control Delay	54.9	5.1	27.0	5.9	33.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	5.1	27.0	5.9	33.9	0.6
Queue Length 50th (ft)	146	72	554	15	114	0
Queue Length 95th (ft)	195	122	#865	56	168	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	629	2683	2059	939	889	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.26	0.84	0.16	0.66	0.34

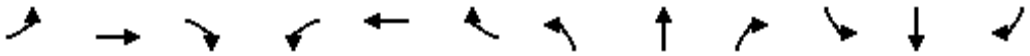
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	107	326	1628	49	74	261
v/c Ratio	0.40	0.11	0.63	0.04	0.49	0.16
Control Delay	6.6	2.3	10.6	2.2	62.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	2.3	10.6	2.2	62.5	0.2
Queue Length 50th (ft)	11	21	304	0	56	0
Queue Length 95th (ft)	25	36	476	14	103	0
Internal Link Dist (ft)		403	466		1225	
Turn Bay Length (ft)						
Base Capacity (vph)	271	3002	2594	1173	368	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.11	0.63	0.04	0.20	0.16

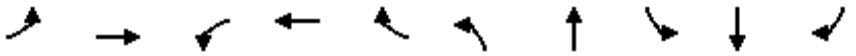
Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	89	255	196	98	462	702	408	449	60	270	189	162
v/c Ratio	0.29	0.36	0.12	0.21	0.66	0.44	0.77	0.84	0.04	0.87	0.40	0.10
Control Delay	21.3	30.4	0.2	20.0	37.7	0.9	33.9	54.7	0.0	54.5	39.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	30.4	0.2	20.0	37.7	0.9	33.9	54.7	0.0	54.5	39.0	0.1
Queue Length 50th (ft)	37	147	0	41	303	0	217	324	0	137	121	0
Queue Length 95th (ft)	74	229	0	80	444	0	285	429	0	#265	180	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	375		425	500			230			600		600
Base Capacity (vph)	309	702	1583	473	705	1583	529	621	1583	313	558	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.36	0.12	0.21	0.66	0.44	0.77	0.72	0.04	0.86	0.34	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	473	3262	46	2377	158	179	139	136	40	500
v/c Ratio	0.83	1.02	0.28	0.92	0.18	0.33	0.48	0.64	0.17	0.80
Control Delay	62.4	44.7	11.9	29.3	2.5	39.3	25.0	53.7	45.9	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	44.7	11.9	29.3	2.5	39.3	25.0	53.7	45.9	29.5
Queue Length 50th (ft)	185	~1026	10	655	8	58	37	88	28	82
Queue Length 95th (ft)	#309	#1146	m15	m712	m18	87	98	143	60	147
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	300		330		200			125		
Base Capacity (vph)	571	3196	169	2588	870	539	349	213	310	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.02	0.27	0.92	0.18	0.33	0.40	0.64	0.13	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	179	2868	152	1799	646	120	225	43	157
v/c Ratio	0.94	1.05	0.86	0.67	0.98	0.30	0.41	0.20	0.49
Control Delay	55.1	54.8	64.7	22.1	79.8	42.7	24.4	33.8	35.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	54.8	64.7	22.1	79.8	42.7	24.4	33.8	35.9
Queue Length 50th (ft)	115	~544	65	357	259	80	90	24	36
Queue Length 95th (ft)	m#132	m#544	#207	411	#381	136	166	52	71
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			210	
Base Capacity (vph)	191	2721	176	2686	657	412	547	217	363
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.05	0.86	0.67	0.98	0.29	0.41	0.20	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

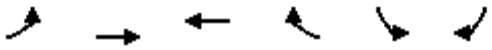
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	1919	147	254	1710	103	114	49	396	188	61
v/c Ratio	0.04	1.01	0.17	0.70	0.67	0.09	0.44	0.30	0.25	0.77	0.24
Control Delay	6.4	50.9	5.0	41.1	12.3	1.7	46.1	54.9	0.4	65.6	47.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	50.9	5.0	41.1	12.3	1.7	46.1	54.9	0.4	65.6	47.2
Queue Length 50th (ft)	2	~773	14	136	335	0	75	36	0	130	20
Queue Length 95th (ft)	7	#960	46	#290	600	20	127	74	0	201	42
Internal Link Dist (ft)		641			702			339			417
Turn Bay Length (ft)	450			500		400	220			120	
Base Capacity (vph)	209	1902	888	364	2555	1161	272	341	1583	243	555
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.01	0.17	0.70	0.67	0.09	0.42	0.14	0.25	0.77	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

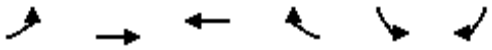
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	853	1758	1323	147	476	315
v/c Ratio	0.86	0.62	0.75	0.18	0.79	0.22
Control Delay	50.6	6.3	27.8	4.2	27.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.6	6.3	27.8	4.2	27.2	0.3
Queue Length 50th (ft)	321	224	421	5	62	0
Queue Length 95th (ft)	#494	367	510	40	115	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	997	2842	1754	828	914	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.62	0.75	0.18	0.52	0.22

Intersection Summary

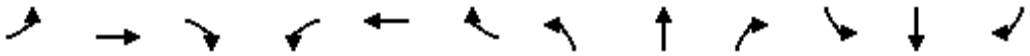
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	326	1582	1266	121	103	214
v/c Ratio	0.70	0.56	0.60	0.12	0.58	0.14
Control Delay	22.6	5.4	16.8	2.1	63.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	5.4	16.8	2.1	63.5	0.2
Queue Length 50th (ft)	86	185	306	0	77	0
Queue Length 95th (ft)	#247	281	372	24	131	0
Internal Link Dist (ft)		403	466		1225	
Turn Bay Length (ft)						
Base Capacity (vph)	464	2840	2108	992	368	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.56	0.60	0.12	0.28	0.14

Intersection Summary

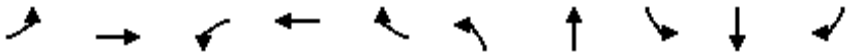
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	180	489	435	125	277	434	234	383	71	613	521	151
v/c Ratio	0.59	0.90	0.27	0.81	0.51	0.27	0.62	0.92	0.04	0.99	0.69	0.10
Control Delay	37.1	62.1	0.4	65.5	39.3	0.4	25.4	74.7	0.0	65.1	35.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	62.1	0.4	65.5	39.3	0.4	25.4	74.7	0.0	65.1	35.5	0.1
Queue Length 50th (ft)	96	364	0	64	179	0	88	291	0	415	329	0
Queue Length 95th (ft)	153	#560	0	#154	265	0	135	#473	0	#661	469	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	375		425	500			230			600		600
Base Capacity (vph)	307	543	1583	154	543	1583	408	419	1583	622	756	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.90	0.27	0.81	0.51	0.27	0.57	0.91	0.04	0.99	0.69	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	288	1706	49	3224	152	141	87	82	16	405
v/c Ratio	0.82	0.53	0.22	1.06	0.16	0.62	0.31	0.33	0.08	0.81
Control Delay	72.7	13.3	4.6	52.4	0.9	66.8	21.6	42.8	47.6	37.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.7	13.3	4.6	52.4	0.9	66.8	21.6	42.8	47.6	37.1
Queue Length 50th (ft)	115	267	5	~1018	5	55	19	52	11	80
Queue Length 95th (ft)	#198	317	m6	#1107	m1	90	68	98	33	143
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	290		325			75		130		110
Base Capacity (vph)	350	3201	276	3029	974	228	287	247	232	538
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.53	0.18	1.06	0.16	0.62	0.30	0.33	0.07	0.75

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	76	1608	82	2869	576	82	54	5	185
v/c Ratio	0.40	0.54	0.35	0.95	0.86	0.19	0.12	0.02	0.52
Control Delay	25.4	20.1	10.9	32.5	54.3	39.7	0.5	33.6	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	20.1	10.9	32.5	54.3	39.7	0.5	33.6	27.7
Queue Length 50th (ft)	34	275	19	744	207	50	0	3	30
Queue Length 95th (ft)	82	357	39	#993	258	103	0	13	65
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			230	
Base Capacity (vph)	195	2956	238	3018	668	456	477	221	652
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.54	0.34	0.95	0.86	0.18	0.11	0.02	0.28

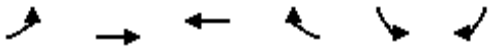
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	1204	538	2567	505	33	250	49	19
v/c Ratio	0.04	0.55	0.87	0.70	0.88	0.20	0.34	0.24	0.09
Control Delay	9.0	24.7	42.9	11.9	64.3	53.9	6.8	44.8	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	24.7	42.9	11.9	64.3	53.9	6.8	44.8	48.1
Queue Length 50th (ft)	1	234	297	334	192	25	17	36	6
Queue Length 95th (ft)	6	279	#564	629	240	57	77	65	19
Internal Link Dist (ft)		641		702		339			417
Turn Bay Length (ft)	450		500		300			150	
Base Capacity (vph)	213	2172	615	3683	571	326	733	245	549
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.55	0.87	0.70	0.88	0.10	0.34	0.20	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



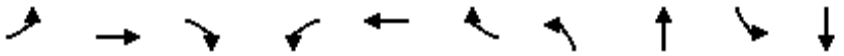
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	489	772	1958	207	693	563
v/c Ratio	0.86	0.29	1.02	0.22	1.11dr	0.39
Control Delay	64.7	5.6	52.8	5.5	40.6	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	5.6	52.8	5.5	40.6	0.8
Queue Length 50th (ft)	193	96	~860	24	176	0
Queue Length 95th (ft)	#288	122	#998	62	249	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	569	2630	1925	926	869	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.29	1.02	0.22	0.80	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

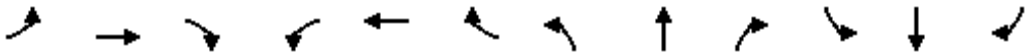
dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	734	43	5	1789	60	130	14	90	294
v/c Ratio	0.68	0.33	0.04	0.01	0.93	0.07	0.62	0.06	0.25	0.85
Control Delay	39.3	11.8	0.1	8.6	36.5	0.1	53.3	22.8	34.3	50.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	11.8	0.1	8.6	36.5	0.1	53.3	22.8	34.3	50.1
Queue Length 50th (ft)	45	129	0	1	688	0	100	2	52	125
Queue Length 95th (ft)	#143	218	0	6	#881	0	129	20	94	#252
Internal Link Dist (ft)		403			466			312		1225
Turn Bay Length (ft)	400		400	400		400	200		200	
Base Capacity (vph)	188	2242	1046	461	1918	911	213	338	363	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.33	0.04	0.01	0.93	0.07	0.61	0.04	0.25	0.77

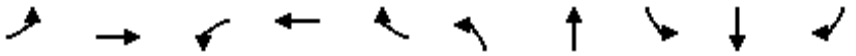
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	76	228	130	125	500	940	348	582	82	326	185	147
v/c Ratio	0.15	0.14	0.08	0.19	0.30	0.59	0.77	0.81	0.05	0.76	0.27	0.09
Control Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	20.6	0.1	13.7	21.5	1.6	62.0	54.8	0.1	62.8	41.3	0.1
Queue Length 50th (ft)	26	56	0	45	132	0	134	224	0	126	63	0
Queue Length 95th (ft)	52	83	0	78	178	0	186	287	0	176	96	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	300		425	250			250			600		500
Base Capacity (vph)	508	1593	1583	650	1672	1583	486	796	1583	457	766	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.14	0.08	0.19	0.30	0.59	0.72	0.73	0.05	0.71	0.24	0.09

Intersection Summary



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	458	3704	49	2616	174	201	147	158	43	484
v/c Ratio	0.85	1.09	0.29	0.94	0.19	0.78	0.57	0.80	0.21	0.86
Control Delay	64.7	67.9	11.1	26.5	1.6	75.6	35.6	70.9	50.8	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	67.9	11.1	26.5	1.6	75.6	35.6	70.9	50.8	36.4
Queue Length 50th (ft)	179	~1221	8	718	4	80	56	106	31	84
Queue Length 95th (ft)	#260	#1295	m11	m780	m9	#139	125	#210	67	#175
Internal Link Dist (ft)		453		1015			198		312	
Turn Bay Length (ft)	290		325			75		130		110
Base Capacity (vph)	543	3395	167	2792	927	257	269	198	217	581
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	1.09	0.29	0.94	0.19	0.78	0.55	0.80	0.20	0.83

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	SEL	SET	NWL	NWT	NEL	NET	NER	SWL	SWT
Lane Group Flow (vph)	223	3525	158	2211	563	158	228	43	212
v/c Ratio	1.06	1.11	0.87	0.72	0.99	0.51	0.64	0.25	0.71
Control Delay	67.7	73.2	66.8	18.0	79.9	53.4	31.7	41.7	47.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	73.2	66.8	18.0	79.9	53.4	31.7	41.7	47.3
Queue Length 50th (ft)	~155	~1127	69	408	209	115	80	27	52
Queue Length 95th (ft)	m135	m#522	#195	464	#297	187	171	59	#102
Internal Link Dist (ft)		1015		408		476			317
Turn Bay Length (ft)	460		200		285			230	
Base Capacity (vph)	211	3162	182	3088	568	307	359	170	298
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	1.11	0.87	0.72	0.99	0.51	0.64	0.25	0.71

Intersection Summary

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95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	9	2722	274	1835	386	49	505	190	65
v/c Ratio	0.04	1.01	0.67	0.49	0.88	0.30	1.01	0.72	0.17
Control Delay	6.1	45.5	38.6	7.9	67.7	55.2	79.8	59.5	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	45.5	38.6	7.9	67.7	55.2	79.8	59.5	40.5
Queue Length 50th (ft)	2	~742	146	178	139	36	~353	132	20
Queue Length 95th (ft)	6	#887	#293	331	184	74	#582	202	41
Internal Link Dist (ft)		641		702		339			417
Turn Bay Length (ft)	450		500		300			150	
Base Capacity (vph)	225	2708	410	3748	439	263	500	263	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.01	0.67	0.49	0.88	0.19	1.01	0.72	0.11

Intersection Summary

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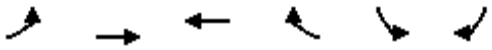

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	1011	1926	1440	190	657	352
v/c Ratio	0.96	0.72	0.98	0.26	0.84	0.24
Control Delay	61.4	10.1	53.3	7.5	41.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	10.1	53.3	7.5	41.6	0.4
Queue Length 50th (ft)	~411	386	568	22	170	0
Queue Length 95th (ft)	#553	466	#735	69	240	0
Internal Link Dist (ft)		561	537		515	
Turn Bay Length (ft)	485				150	
Base Capacity (vph)	1052	2677	1474	742	825	1441
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.72	0.98	0.26	0.80	0.24

Intersection Summary

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95th percentile volume exceeds capacity, queue may be longer.
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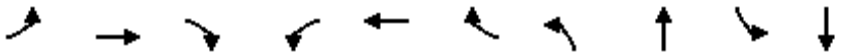
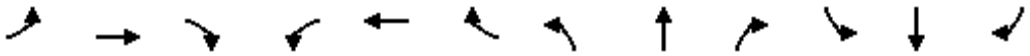


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	364	1701	141	11	1304	142	82	13	114	252
v/c Ratio	0.76	0.66	0.12	0.05	0.76	0.17	0.47	0.08	0.47	0.72
Control Delay	41.6	12.8	1.9	8.1	28.9	1.8	52.5	35.8	47.9	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	12.8	1.9	8.1	28.9	1.8	52.5	35.8	47.9	22.9
Queue Length 50th (ft)	198	303	0	2	430	0	63	6	78	29
Queue Length 95th (ft)	#443	676	28	9	521	21	92	24	121	109
Internal Link Dist (ft)		403			466			312		1225
Turn Bay Length (ft)	400		400	400		400	200		200	
Base Capacity (vph)	476	2571	1189	206	1724	859	175	311	242	455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.66	0.12	0.05	0.76	0.17	0.47	0.04	0.47	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	190	614	516	179	332	587	245	516	114	911	734	174
v/c Ratio	0.47	0.61	0.33	0.63	0.32	0.37	0.57	0.77	0.07	0.86	0.57	0.11
Control Delay	29.7	40.4	0.5	35.1	33.8	0.7	54.6	54.9	0.1	48.0	32.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	40.4	0.5	35.1	33.8	0.7	54.6	54.9	0.1	48.0	32.8	0.1
Queue Length 50th (ft)	98	218	0	91	105	0	93	203	0	332	233	0
Queue Length 95th (ft)	155	281	0	146	146	0	131	266	0	414	311	0
Internal Link Dist (ft)		370			768			579			785	
Turn Bay Length (ft)	300		425	250			250			600		500
Base Capacity (vph)	402	1007	1583	283	1051	1583	1115	675	1583	1115	1294	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.61	0.33	0.63	0.32	0.37	0.22	0.76	0.07	0.82	0.57	0.11

Intersection Summary

Draft Report

Canyons South
Fiscal Impact Analysis

The Economics of Land Use

Prepared for:
Town of Castle Rock

Prepared by:
Economic & Planning Systems, Inc.

December 5, 2022

EPS #223042

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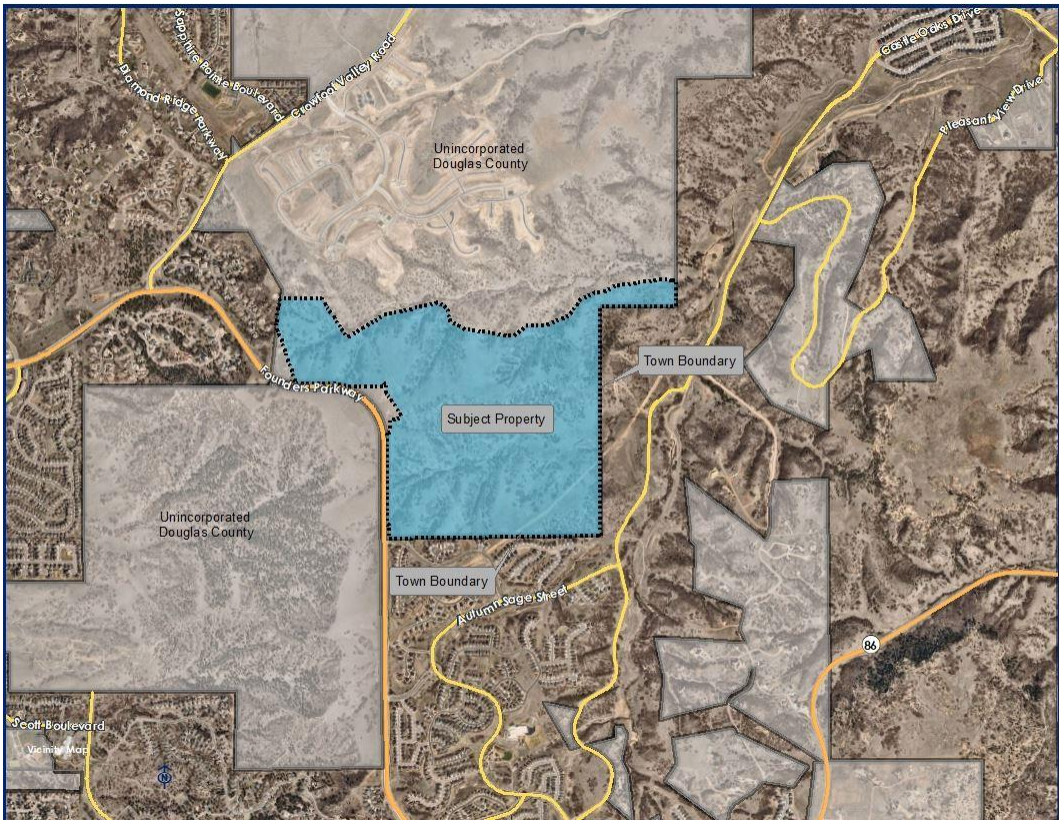
1. Introduction and Summary of Findings

Introduction

This report summarizes the analysis and conclusions of Economic & Planning Systems (EPS) regarding the fiscal impacts of the proposed Canyons Far South Planned Development (Canyons South) on the Town of Castle Rock, Colorado. Canyons South LLC and its affiliates (Developer) is proposing to annex the property into the Town of Castle Rock and zone the property as a Planned Development Plan to permit 474 single family residential units, 60,000 square feet of neighborhood commercial space, and 200 acres of open space.

The Canyons South property consists of approximately 409 acres and is located south of Crowfoot Valley Road, east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive, as shown in **Figure 1**.

Figure 1. Canyons South Vicinity Map



The development plan includes 474 residential dwelling units of varying densities and 60,000 square feet of retail space, as summarized in **Table 1**. The project is also planned to provide 200 acres of open space.

Table 1.Canyons South Development Program

Type	% of Total	Total	2024	2025	2026	2027
Residential For Sale (Sq. Ft.)						
Paired Homes	13%	60	0	6	36	18
Quad/Cluster Units	12%	56	10	46	0	0
Cottage Lots	7%	34	0	8	26	0
Small Lots	20%	97	18	22	43	14
Medium Lots	34%	159	27	66	48	18
Large Lots	14%	68	24	44	0	0
Total	**100%**	**474**	**79**	**192**	**153**	**50**
Nonresidential (Sq. Ft.)						
Retail	100%	60,000	0	30,000	30,000	0
Office	0%	0	0	0	0	0
Hotel	0%	0	0	0	0	0
Industrial	0%	0	0	0	0	0
Total	**100%**	**60,000**	**0**	**30,000**	**30,000**	**0**

Source: Developer; Economic & Planning Systems

Scope of Work

This report and analysis are presented in three sections following this Introduction and Summary of Findings as follows:

- **Development Program and Market Inputs** – This section presents the proposed development program by phase, detailing market inputs including estimated annual absorption and sales and lease values.
- **Fiscal Model Assumptions** – This section describes the public finance model developed by EPS to estimate the fiscal impacts of the proposed development on the Town of Castle Rock. The model was developed using the Town's 2022 adopted budget to identify the major revenues, expenditures, and trends. The model inputs include revenue and expenditure factors by land use category.
- **Fiscal Impacts** – This section provides a summary of the estimated revenues, expenditures, and net fiscal impacts of the proposed development program by in total and by land use category.

Summary of Findings

1. ***The proposed Canyons South development, which is anticipated to deliver predominantly single family detached housing and retail development, is estimated to result in a modest positive fiscal balance for the Town at full buildout.***

   The ongoing annual net fiscal impact of Canyons South on the Town's General Fund, Transportation Fund, and Community Center Fund is estimated at a positive $262,121, $18,783, and $1,450 per year at full stabilization, respectively. The total annual net fiscal impact at full stabilization is estimated at $282,354, which is a modest positive fiscal balance. The inclusion of a requirement for the Development's metro district to impose a 5-mill regional improvement levy accounts for $154,141 in revenues to the General Fund annually at buildout, which is 59 percent of its positive fiscal balance.

2. ***At full stabilization, retail development has the highest net fiscal impact for the Town, followed by medium lot single family housing units.***

   The ongoing net fiscal impact of the retail and medium lot housing land uses totals $115,187 and $78,872, respectively. The quad/cluster units and cottage lots generate the lowest fiscal impact, with ongoing net fiscal impacts of negative $7,337 and negative $1,589, respectively.

3. ***The positive fiscal impact of the development is contingent upon the relatively high average household incomes required to afford the higher value medium density and estate lot single family product types and that support the capture of higher levels of retail sales generating local sales tax revenue.***

   The land uses with the lowest ongoing net fiscal impacts—paired homes, quad/cluster homes, cottage lots, and small lots—also have the lowest household income assumptions. If the assumed household incomes do not materialize, the development may fail to generate sufficient net new retail sales tax to cover the estimated costs of serving the project.

4. ***It should be noted that a fiscal impact analysis provides an order of magnitude estimate of project revenues and expenses based on the current Town budget.***

   The aggregate fiscal impacts could be lower if the estimated household incomes are lower than estimated or if the household sizes are larger resulting in higher service level costs to the Town. The objective of the analysis is not to forecast a precise level of cost and revenues, but rather to determine if the project can be expected to not cause an unreasonable cost burden to the Town government and to the Town's existing residents, businesses, and taxpayers.

   As with any fiscal projection, there is an assumed margin of error associated with the estimates. Results are best interpreted as an estimate of fiscal impacts based on the Town's current budget. To the extent that the Town is providing services at a level below desired levels based on budget constraints, the analysis may underrepresent the future costs of providing services to the project.

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2. Development Program and Market Inputs

This section of the report summarizes the proposed development program by land use category and by phase. The market inputs to the fiscal model are also identified including estimated annual absorption and sales and lease values for the proposed development land uses.

Development Program

Residential Development Program

Canyons South is proposed to contain a total of 474 for-sale housing units including 60 paired homes, 56 quad/cluster units, 34 homes on cottage lots, and 324 homes on small, medium, or large lots, as shown in **Table 2**.

The annual absorption and average sales value of each product type, in current dollars, is also shown. Estimated sales values range from $500,000 for paired homes to $950,000 for the large lot homes. The majority of residential development, medium lot homes, are expected to be priced at $775,000.

Commercial Development Program

The Canyons South development is proposed to contain 60,000 square feet of neighborhood commercial development, all of which is anticipated to be comprised of retail space. The retail space is estimated by the Developer to have a market value of $400 per square foot, also shown in **Table 2**.

Table 2. Residential and Commercial Development Program

Type	Value per SF/Unit	Total Value	% of Total	Total	2024	2025	2026	2027
Residential Development (Units)								
Paired Homes	$500,000	$30.0M	13%	60	0	6	36	18
Quad/Cluster Units	$550,000	$30.8M	12%	56	10	46	0	0
Cottage Lots	$580,000	$19.7M	7%	34	0	8	26	0
Small Lots	$675,000	$65.5M	20%	97	18	22	43	14
Medium Lots	$775,000	$123.2M	34%	159	27	66	48	18
Large Lots	$950,000	$64.6M	14%	68	24	44	0	0
Total/Average	**$704,262**	**$333.8M**	**100%**	**474**	**79**	**192**	**153**	**50**
Commercial Development (Sq. Ft.)								
Retail	$400	$24.0M	100%	60,000	0	30,000	30,000	0
Office	$0	$0.0M	0%	0	0	0	0	0
Hotel	$0	$0.0M	0%	0	0	0	0	0
Industrial	$0	$0.0M	0%	0	0	0	0	0
Total/Average	**$400**	**$24.0M**	**100%**	**60,000**	**0**	**30,000**	**30,000**	**0**

Source: Developer; Economic & Planning Systems

Development Values

Key assumptions for the development, used as inputs to the fiscal impact analysis, are summarized in **Table 3**. Based on sales and construction values, the project is estimated to have a total market value of $357.8 million.

Table 3. Canyons South Property Valuation

Description	Factor	Total Value
Residential Development Value		
Paired Homes	$500,000 per unit	$30.0M
Quad/Cluster Units	$550,000 per unit	$30.8M
Cottage Lots	$580,000 per unit	$19.7M
Small Lots	$675,000 per unit	$65.5M
Medium Lots	$775,000 per unit	$123.2M
Large Lots	$950,000 per unit	$64.6M
Total	**$704,262 per unit**	**$333.8M**
Commercial Development Value		
Retail	$400 per sq. ft.	$24.0M
Office	$0 per sq. ft.	$0.0M
Hotel	$0 per sq. ft.	$0.0M
Industrial	$0 per sq. ft.	$0.0M
Total	**$400 per sq. ft.**	**$24.0M**
Total Development Value		**$357.8M**

Source: Developer; Economic & Planning Systems

Employment is estimated based on an average factor of 650 square feet per employee for retail, 250 square feet for office, 850 square feet for hotel, and 1,000 square feet for industrial. There are expected to be an estimated 92 jobs in the commercial space at Canyons South at buildout, as shown in **Table 4**.

Table 4. Canyons South Employment

Description	Factor	Jobs
Total Employment		
Retail	650 sq. ft. per emp.	92
Office	250 sq. ft. per emp.	0
Hotel	850 sq. ft. per emp.	0
Industrial	1,000 sq. ft. per emp.	0
Total	**650 sq. ft. per emp.**	**92**

Source: Developer; Economic & Planning Systems

Retail sales taxes are an important generator of revenues for the Town. The 60,000 square feet of retail space is estimated to generate an average of $265 per square foot in taxable sales, as shown in **Table 5**. Retail sales levels range from $180 per square foot for large retail support space and $265 per square foot for smaller "main street" retail stores to $536 per square foot for grocery stores. Revenues subject to sales tax range from 75 to 100 percent of the total depending on the store type. Additionally, the percentage of net new retail revenues—revenues that would not otherwise be generated if the development did not occur—ranges from 25 to 50 percent depending on the type of retail.

Table 5.Retail Value and Sales per Sq. Ft. Assumptions

Description	Sq. Ft.	Sales per SF [1]	% Taxable	Taxable Sales per SF	% Net New
Retail					
Large Format Retail	0	$334	100%	$334	50%
Large Support	0	$180	75%	$135	50%
Grocer	0	$536	85%	$455	25%
Grocer Support	0	$536	75%	$402	25%
Mainstreet	60,000	$265	75%	$198	50%
Total/Average	**60,000**	**$265**	**75%**	**$198**	**50%**

[1] Avg. of 2019 and 2020 sales

Source: Economic & Planning Systems

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3. Fiscal Model Assumptions

This section describes the revenue and expenditure factors used in the fiscal impact model to estimate the fiscal impacts of the proposed development on the Town of Castle Rock. The Town's 2022 annual budget was used to identify the major revenues, expenditures, and trends. The calculation of model inputs, including revenue and expenditure factors by land use category, are then estimated.

Demographic Factors

Demographic inputs are used to determine baseline Town service levels on a per resident or per employee basis. For many of the Town's revenues and expenditures, this analysis utilizes a "Proportionate Share" methodology to estimate the cost of providing services to future development based on current expenditures. It also estimates current revenues in a similar manner. This methodology derives demand for Town services, proportional to Town residents and employees over a typical 24-hour period. It provides a basis in the model for computing the cost per service hour for a given population across Town departments providing services to the proposed development. These factors are summarized in **Table 6**, and show an overall service demand split of approximately 77 percent residential/23 percent commercial.

Table 6. Demographic Factors

Description	Factor	Amount
Demographic Factors		
Population		79,364
Households		27,662
Housing Units		29,227
Jobs		24,312
Maintained Lane Miles		715
Retail Area (sf)		4,247,357
Office/Inst. Area (sf)		1,299,529
Industrial Area (sf)		1,242,105
Lodging Area (sf)		N/A
Proportionate Share Estimate		
Residential Conditions		
Population		79,364
Non-Working Residents	55.8%	42,746
Working Residents	44.2%	36,618
Out Commuter Residents	82.5%	29,990
Live/Work Residents	17.5%	6,628
Residential Service Demand		
Non-Working Residents	20 hours per day	854,912
Out Commuter Residents	14 hours per day	419,867
Live/Work Residents	14 hours per day	92,791
Residential Total		**1,367,570**
Commercial Conditions		
Total Jobs		24,312
Less: Mult. Job Holders	5.60%	1,361
Total Employment		**22,951**
In-Commuting Employees	72.05%	16,323
Live/Work Employees	27.95%	6,628
Employment Service Demand		
Non-Working Residents	4 hours per day	170,982
In-Commuting Employees	10 hours per day	163,226
Live/Work Employees	10 hours per day	66,279
Commercial Total		**400,488**
Total Service Demand		**1,768,057**
Residential Service Demand		**1,367,570**
% of Total		77.3%
Commercial Service Demand		**400,488**
% of Total		22.7%

Source: Town of Castle Rock; Economic & Planning Systems

Nexus to Growth Factors

Specific revenues and expenditures are tied to future development through nexus to growth factors, which account for the relationship between revenues/expenditures and new development. Factors used in this model include:

- **Case Studies** – Indicate that a specific revenue or expenditure item was estimated using project-specific data. Case studies used in this analysis include detailed estimates of property tax and sales tax revenues.
- **Residents** – Correlates the specific revenue or expenditure item to future growth in residents.
- **Employees (Commercial)** – Correlates the specific revenue or expenditure item to future growth in employees.
- **Service Population** – Reflects the service demand hours associated with residents and employees in the town. The model shows roughly 77 percent of service demand is attributed to providing services to residential development and 23 percent of service demand is attributed to serving commercial development.
- **Fixed Revenues/Expenditures** – Indicates that a specific revenue or expenditure item does not have a nexus to growth and as a result is not tied to future development. For specific revenue items that are estimated to be fixed, expenditures are adjusted accordingly, thus both the revenues and expenditures are adjusted equally. Net expenditures for individual departments are calculated by subtracting department-specific revenue items or the department's pro rata share of fixed revenues from total department expenditures.

Variability Factors

In addition to nexus to growth factors, the model includes assumptions relating to fixed and variable revenues and expenditures. This is captured in a "variability factor" that enables the model to account for the proportion of revenues or expenditures that are assumed to be variable (i.e., impacted by future development). Generally, revenues are typically assumed to be 100 percent variable and expenditures are estimated to be 25 to 100 percent variable, depending on the department. For example, Town administrative functions are relatively fixed and therefore have a lower variability. Existing staff are able to accommodate a substantial amount of growth without adding staff or other costs. By contrast, other functions, such as streets, have a high variability, reflecting a strong correlation between new growth and the need to expand services.

General Fund

This section summarizes the revenue and expenditure assumptions used to estimate the net fiscal impact of the Canyons South development on the Town's General Fund. The analysis is based on the Town's adopted 2022 budget.

Revenues

The model accounts for General Fund revenue impacts from the Canyons South development by linking each major revenue source to a nexus to growth factor and variability factor, as summarized below and shown in **Table 7**.

Sales Tax – Annual sales tax revenues are estimated based on the adopted 2022 budget and account for 66.6 percent of the Town's General Fund revenue. Of the Town's total 4.0 percent sales tax rate, 70.29 percent of the generated revenue is allotted to the General Fund. Sales tax revenues from the Canyons South development are estimated through a case study, which incorporates two methodologies to estimate sales tax revenue: Point of Sale and Point of Origin.

The Point of Sale methodology relies on an estimate of total sales and corresponding sales tax generated by commercial uses associated with a specific project. The Point of Origin methodology estimates future sales tax revenues based on the spending potential and local capture of households associated with each individual project.

Property Tax – Property taxes represent 2.3 percent of the Town's General Fund revenues and are estimated through a case study based on the total development value of Canyons South. The development values, corresponding with the project's anticipated absorption schedule, are applied the state's residential assessment rate of 7.15 percent and the commercial assessment rate of 29.00 percent, and multiplied by the Town mill levy of 1.196.

Other Revenues – Other revenue sources represent the remaining 31.1 percent of the Town's General Fund revenue. Of these revenue sources, only four were determined to have a nexus to growth, the largest being Motor Vehicle Tax (6.7 percent of total revenue). These revenue streams are primarily estimated based on a service population nexus to growth factor. The remaining revenue sources have no direct nexus to this project and are assumed to be fixed revenue sources. Fixed revenues are netted from the overall estimated revenues for the project.

Expenditures

All departments funded through the Town's General Fund, apart from Parks, are accounted for on a service population basis, as shown in **Table 7**. Based on the anticipated level of future growth in the Town and the current staffing levels in these departments, department expenditures are estimated to range from 25 to 100 variable. Parks are accounted for on a residential population basis, linking all future growth in park expenditures to the additional residents anticipated from the Canyons South development.

Table 7.General Fund Nexus to Growth Factors

Description	Adopted Budget 2022	% of Total	Nexus Factor	Variability	Res. Hourly 1,367,570	Comm. Hourly 400,488	Total Hourly 1,768,057
General Fund Revenues							
Property	$ 1,467,849	2.3%	Case Study	100.0%	$ -	$ -	$ -
Use Tax	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -
Sales Tax	$ 43,106,714	66.6%	Case Study	100.0%	$ -	$ -	$ -
Motor Vehicle Tax	$ 4,331,278	6.7%	Residential	100.0%	$ 3.17	$ -	$ -
Other Taxes	$ 396,730	0.6%	N/A	100.0%	$ -	$ -	$ -
Franchise Fees	$ 2,509,241	3.9%	Service Population	100.0%	$ -	$ -	$ 1.42
Licenses & Permits	$ 133,816	0.2%	Service Population	100.0%	$ -	$ -	$ 0.08
Intergovernmental	$ 2,614,092	4.0%	N/A	100.0%	$ -	$ -	$ -
Charges for Service	$ 2,906,638	4.5%	N/A	100.0%	$ -	$ -	$ -
Management Fees	$ 4,205,990	6.5%	N/A	100.0%	$ -	$ -	$ -
Fines & Forfeitures	$ 391,764	0.6%	Service Population	100.0%	$ -	$ -	$ 0.22
Investment Earnings	$ 368,383	0.6%	Fixed	100.0%	$ -	$ -	$ -
System Development Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -
Contributions & Donations	$ 1,336,000	2.1%	N/A	100.0%	$ -	$ -	$ -
Transfers In	$ 719,259	1.1%	N/A	100.0%	$ -	$ -	$ -
Interfund Loan Revenue	$ 1,112,318	1.7%	N/A	100.0%	$ -	$ -	$ -
Debt & Financing Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -
Other Revenue	$ 245,343	0.4%	N/A	100.0%	$ -	$ -	$ -
Fund Balance Transfer	$ (1,131,160)	-1.7%	Fixed	100.0%	$ -	$ -	$ -
Total	**$ 64,714,255**	**100.0%**			**$ 3.17**	**$ -**	**$ 1.72**
General Fund Expenditures							
Town Council	$ 382,381	0.6%	Service Population	25.0%	$ -	$ -	$ 0.04
Town Manager	$ 1,045,192	1.6%	Service Population	25.0%	$ -	$ -	$ 0.12
Human Resources	$ 807,103	1.2%	Service Population	50.0%	$ -	$ -	$ 0.18
Community Relations	$ 1,009,388	1.6%	Service Population	50.0%	$ -	$ -	$ 0.23
DoIT	$ 3,910,294	6.0%	Service Population	50.0%	$ -	$ -	$ 0.89
Facilities	$ 1,392,413	2.2%	Service Population	50.0%	$ -	$ -	$ 0.32
Town Attorney	$ 1,145,619	1.8%	Service Population	50.0%	$ -	$ -	$ 0.26
Town Clerk	$ 452,775	0.7%	Service Population	50.0%	$ -	$ -	$ 0.10
Municipal Court	$ 467,163	0.7%	Service Population	50.0%	$ -	$ -	$ 0.11
Finance - Departmental	$ 3,401,247	5.3%	Service Population	50.0%	$ -	$ -	$ 0.77
Police	$ 19,865,933	30.7%	Service Population	100.0%	$ -	$ -	$ 9.02
Fire	$ 18,494,264	28.6%	Service Population	100.0%	$ -	$ -	$ 8.40
Development Services	$ 690,788	1.1%	Service Population	50.0%	$ -	$ -	$ 0.16
Parks	$ 10,389,061	16.1%	Residential	100.0%	$ 6.10	$ -	$ -
Finance Non-Departmental	$ 1,260,634	1.9%	Service Population	50.0%	$ -	$ -	$ 0.29
Total	**$ 64,714,255**	**100.0%**			**$ 6.10**	**$ -**	**$ 20.88**

Source: Town of Castle Rock; Economic & Planning Systems

Transportation Fund

This section summarizes the revenue and expenditure assumptions used to estimate the net fiscal impact of the Canyons South development on the Town's Transportation Fund. The analysis is based on the Town's adopted 2022 budget.

Revenues

Variable revenue sources for the Transportation Fund are primarily attributable to sales tax, use tax, and motor vehicle tax, as shown in **Table 8**.

Sales Tax – The Town of Castle Rock's sales tax rate is 4.0 percent, of which 24.46 percent is allotted for the Transportation Fund. Similar to the General Fund, sales tax revenue generation from the Canyons South development is estimated through a case study, which incorporates the Point of Sale and Point of Origin methodology. Sales tax revenues account for 40.8 percent of the fund's total revenue.

Motor Vehicle Tax – Motor vehicle tax accounts for roughly 6.4 percent of the Town's Transportation Fund revenues. It is estimated using a residential nexus factor.

Use Tax – Roughly 36 percent of the Town's residential use tax revenues are allotted to the Transportation Fund. Use tax revenues are estimated on a one-time basis based on the estimated development value and corresponding material value associated with each use. The total material value is multiplied by the Town's 4.0 percent use tax rate to provide an estimate of revenues attributable to the Canyons South development. Use tax revenues account for 7.6 percent of the fund's total revenue.

Expenditures

Transportation Fund expenditures are estimated based on a Cost per Lane Mile case study. This approach applies the average cost of maintaining one lane mile in the town to the estimated number of new lane miles associated with Canyons South. The development is anticipated to require 12.6 new miles of 2 lane roads.

Table 8. Transportation Fund Nexus to Growth Factors

Description	Adopted Budget 2022	% of Total	Nexus Factor	Variability	Res. Hourly 1,367,570	Comm. Hourly 400,488	Total Hourly 1,768,057	Per Ln Mile 715
Transportation Fund Revenues								
Property Tax	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Use Tax	$ 2,803,639	7.6%	Case Study	100.0%	$ -	$ -	$ -	$ -
Sales Tax	$ 14,998,011	40.8%	Case Study	100.0%	$ -	$ -	$ -	$ -
Motor Vehicle Tax	$ 2,348,951	6.4%	Residential	100.0%	$ 1.72	$ -	$ -	$ -
Other Taxes	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Franchise Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Licenses & Permits	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Intergovernmental	$ 8,069,414	22.0%	Fixed	100.0%	$ -	$ -	$ -	$ -
Charges for Service	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Management Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Fines & Forfeitures	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Investment Earnings	$ 112,865	0.3%	Fixed	100.0%	$ -	$ -	$ -	$ -
Impact Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
System Development Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Contributions & Donations	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Transfers In	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Interfund Loan Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Debt & Financing Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Other Revenue	$ 5,155	0.0%	Fixed	100.0%	$ -	$ -	$ -	$ -
Fund Balance Transfer	$ 8,390,148	22.8%	Fixed	100.0%	$ -	$ -	$ -	$ -
Total	**$ 36,728,183**	**100.0%**			**$ 1.72**	**$ -**	**$ -**	**$ -**
Transportation Fund Expenditures								
Personnel	$ 5,362,650	14.6%	Per Lane Mile	50.0%	$ -	$ -	$ -	$ 2,057
Services & Other	$ 23,273,286	63.4%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 17,858
Supplies	$ 814,487	2.2%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 625
Capital	$ 1,115,950	3.0%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 856
Debt & Financing	$ 907,400	2.5%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 696
Interfund Loan	$ -	0.0%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ -
Transfers Out	$ 5,254,410	14.3%	Per Lane Mile	100.0%	$ -	$ -	$ -	$ 4,032
Total	**$ 36,728,183**	**100.0%**			**$ -**	**$ -**	**$ -**	**$ 26,125**

Source: Town of Castle Rock; Economic & Planning Systems

Community Center Fund

This section summarizes the revenue and expenditure assumptions used to estimate the net fiscal impact of the Canyons South development to the Town's Community Center Fund. The analysis is based on the Town's adopted 2022 budget.

Revenues

Variable revenue sources for the Community Center Fund are primarily attributable to sales tax, use tax, and motor vehicle tax, as shown in **Table 9** below.

Sales Tax – Of Castle Rock's 4.0 percent sales tax rate, 5.25 percent is allotted to the Community Center Fund. Similar to the General Fund and Transportation Fund, sales tax revenue generation from the Canyons South development is estimated through a case study that incorporates the Point of Sale and Point of Origin methodology. Sales tax revenues account for 38.1 percent of the fund's total revenue.

Motor Vehicle Tax – Motor vehicle tax accounts for 5.0 percent of the Town's Community Center Fund revenues. It is estimated using a residential nexus factor.

Use Tax – Approximately 6 percent of the Town's residential use tax revenues are allotted to the Community Center Fund. Use tax revenues are estimated on a one-time basis based on the estimated development value and corresponding material value associated with each use. The total material value is multiplied by the Town's 4.0 percent use tax rate to provide an estimate of revenues attributable to the Canyons South development. Use tax revenues account for 5.1 percent of the fund's total revenue.

Expenditures

Community Center Fund expenditures are estimated based on the Town's service population and all expenditure line items are estimated based on a variability factor of 100 percent, apart from Personnel, which is assumed to be 80 percent variable.

Table 9. Community Center Fund Nexus to Growth Factors

Description	Adopted Budget 2022	% of Total	Nexus Factor	Variability	Res. Hourly 1,367,570	Comm. Hourly 400,488	Total Hourly 1,768,057	Per Ln Mile 715
Community Center Fund Revenues								
Property Tax	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Use Tax	$ 433,409	5.1%	Case Study	100.0%	$ -	$ -	$ -	$ -
Sales Tax	$ 3,219,305	38.1%	Case Study	100.0%	$ -	$ -	$ -	$ -
Motor Vehicle Tax	$ 424,886	5.0%	Residential	100.0%	$ 0.31	$ -	$ -	$ -
Other Taxes	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Franchise Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Licenses & Permits	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Intergovernmental	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Charges for Service	$ 4,292,533	50.8%	N/A	100.0%	$ -	$ -	$ -	$ -
Management Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Fines & Forfeitures	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Investment Earnings	$ 11,903	0.1%	Fixed	100.0%	$ -	$ -	$ -	$ -
Impact Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
System Development Fees	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Contributions & Donations	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Transfers In	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Interfund Loan Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Debt & Financing Revenue	$ -	0.0%	N/A	100.0%	$ -	$ -	$ -	$ -
Other Revenue	$ 17,918	0.2%	N/A	100.0%	$ -	$ -	$ -	$ -
Fund Balance Transfer	$ 46,486	0.6%	Fixed	100.0%	$ -	$ -	$ -	$ -
Total	**$ 8,446,440**	**100.0%**			**$ 0.31**	**$ -**	**$ -**	
Community Center Fund Expenditures								
Personnel	$ 5,051,860	59.8%	Service Population	80.0%	$ -	$ -	$ 1.10	$ -
Services & Other	$ 2,367,220	28.0%	Service Population	100.0%	$ -	$ -	$ 0.65	$ -
Supplies	$ 569,822	6.7%	Service Population	100.0%	$ -	$ -	$ 0.16	$ -
Capital	$ 350,000	4.1%	Service Population	100.0%	$ -	$ -	$ 0.10	$ -
Debt & Financing	$ -	0.0%	Service Population	100.0%	$ -	$ -	$ -	$ -
Interfund Loan	$ -	0.0%	Service Population	100.0%	$ -	$ -	$ -	$ -
Transfers Out	$ 107,538	1.3%	Service Population	100.0%	$ -	$ -	$ 0.03	$ -
Total	**$ 8,446,440**	**100.0%**			**$ -**	**$ -**	**$ 2.03**	**$ -**

Source: Town of Castle Rock; Economic & Planning Systems

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4. Fiscal Impacts

The section of the reports summarizes the estimated Town revenues, expenditures, and net fiscal impacts of the proposed development program by fund, phase, and land use category.

Fiscal Impact by Fund

Revenues

Ongoing and one-time revenue generation estimates were provided for the General Fund, Transportation Fund, and Community Center Fund. Ongoing annual revenue associated with the Canyons South project is estimated to average $1.2 million at full stabilization. Additionally, one-time use tax revenues total an estimated $7.7 million over the course of buildout, from 2024 to 2027. Revenue generation estimates are shown in **Table 10** and summarized below.

Ongoing Revenue

Property Tax Revenues – Property tax revenues are allotted to the General Fund. The project has an overall development value of $357.8 million at full buildout. Applying the state's residential assessment rate of 7.15 percent and the commercial assessment rate of 29.00 percent, multiplied by the Town mill levy of 1.196, Canyons South is estimated to generate $35,113 in annual property tax revenue at full stabilization. Additionally, a regional improvement mill levy of 5 mills will be collected by the project's metro district and remitted to the city to fund capital improvements associated with regional improvements. The regional improvement mill levy is anticipated to generate $154,141 in annual property tax revenue at full stabilization.

Sales Tax Revenues – Sales tax revenues are estimated based on the Point of Origin and Point of Sale methodologies.

- **Point of Sale methodology** – The project is estimated to generate a weighted average of $265 per square foot in taxable retail sales, of which 38 percent are estimated to represent net new revenues to the Town. At full stabilization, the development is anticipated to generate $6.0 million annually in net new retail sales. After applying the 4.0 percent sales tax rate retained by the Town, Canyons South generates $255,904 annually in point of sale sales tax revenue.

- **Point of Origin methodology** – After full buildout, new households from the project are estimated to spend $18.1 million annually on retail goods within the Town of Castle Rock. After applying the 4.0 percent sales tax rate retained by the Town, Canyons South households generate $778,645 annually in additional sales tax revenue at full stabilization.

In total, at full stabilization Canyons South is estimated to generate $1.0 million in annual sales tax revenue. Approximately 25 percent of the total sales tax generated can be attributed to the retail development on the site, while 75 percent can be attributed to additional household spending from the residential uses. Of the total sales tax generated, 70.3 percent, 24.5 percent, and 5.2 percent are allotted to the General Fund, Transportation Fund, and Community Center Fund, respectively.

General Revenue – General revenue includes funding sources estimated using a residential or service population nexus to growth factor. At full stabilization, these sources total $123,699 annually in the General Fund, $41,171 in the Transportation Fund, and $7,447 in the Community Center Fund, totaling $172,317.

One-Time Revenue

Use Tax Revenues – Use tax revenues are allotted to the Transportation Fund, Community Center Fund, Transportation Capital Fund, General Long-Term Planning Fund, and Economic Development Fund.

The total material value associated with new construction from Canyons South averages $44.7 million and totals $178.9 million over the 4-year buildout period from 2024 to 2027. After applying the 4.0 percent use tax rate retained by the Town, Canyons South generates an average of $1.9 million annually and a total of $7.7 million, in use tax revenue.

Expenditures

Annual expenditures are estimated on a service population, residential, or per lane mile basis, depending on the fund, as shown in **Table 7**, **Table 8**, and **Table 9**. The Canyons South development is estimated to generate a total annual service cost of $1.1 million per year, which is comprised of $727,282 from General Fund services, $329,961 from Transportation Fund services, and $56,522 from Community Center Fund services, as shown in **Table 10**.

Ongoing Net Fiscal Impact

The average annual net fiscal impact of Canyons South on the Town's General Fund, Transportation Fund, and Community Center Fund is estimated at a positive $262,121, $18,783, and $1,450 at full stabilization, respectively, as shown in **Table 10**. The total net fiscal impact at full stabilization is estimated at $282,354. These project returns can be characterized as revenue neutral, given the margin of error applicable to a fiscal impact analysis. The analysis suggests that the project is estimated to largely cover the costs of providing Town services under current funding levels but should not be considered a revenue generator for the Town.

Table 10. Summary of Revenues, Expenditures, and Net Fiscal Impact by Fund

Description	General Fund	Transportation Fund	Community Center Fund	Other Funds [1]	Total
Ongoing Revenues					
Sales Tax - General	$676,451	$235,396	$50,524	--	$962,371
Sales Tax - County Transfer	--	$72,178	--	--	$72,178
Property Tax - City	$35,113	--	--	--	$35,113
Property Tax - Metro District	$154,141	--	--	--	$154,141
General Revenue	$123,699	$41,171	$7,447	--	$172,317
Total	**$989,404**	**$348,745**	**$57,972**	--	**$1,396,120**
Ongoing Expenditures					
Total	**-$727,282**	**-$329,961**	**-$56,522**	--	**-1,113,766**
Ongoing Net Fiscal Impact	**$262,121**	**$18,783**	**$1,450**	**$0**	**$282,354**
One-Time Revenues					
Use Tax - General	--	$2,422,866	$374,546	$4,358,988	7,156,400
Use Tax - County Transfer	--	$536,730	--	--	$536,730
Total	**--**	**$2,959,596**	**$374,546**	**$4,358,988**	**7,693,130**

[1] Other Funds include the Transportation Capital Fund, General Long-Term Planning Fund, and Economic Development Fund
Source: Economic & Planning Systems

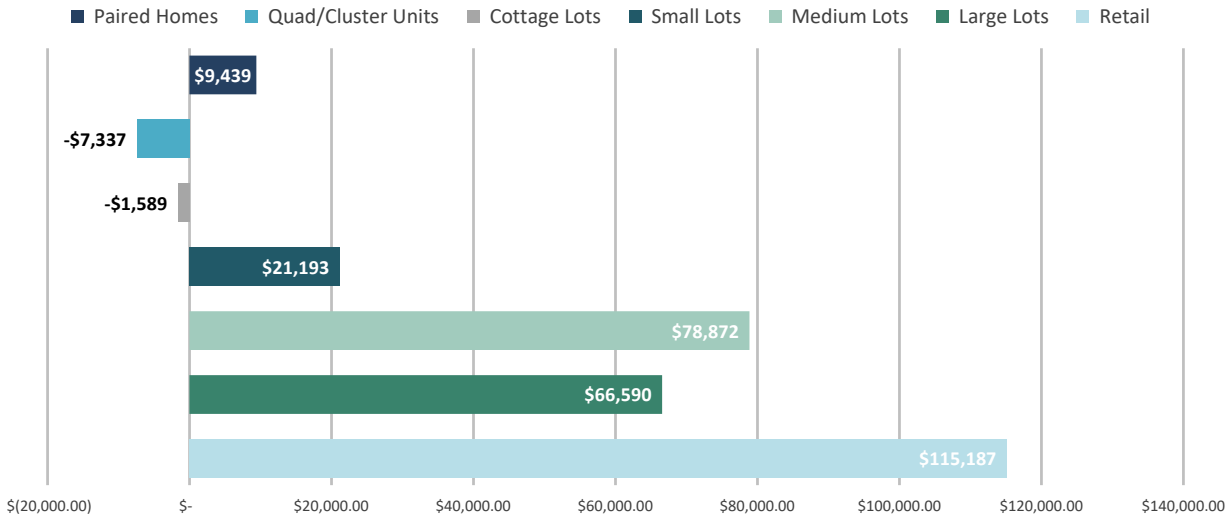
Fiscal Impact by Land Use

Ongoing Net Fiscal Impact

The proposed residential land uses result in a modest positive ongoing net fiscal impact to the Town in aggregate, as shown in **Figure 2**. At full buildout, the impacts range from negative $7,337 annually for the quad/cluster unit product to positive $78,872 annually for the medium lot product. The variations are largely due to the estimated household income for each unit type, which is related to sales tax revenues attributed to household spending under the Point of Origin methodology, in addition to the total number of proposed units of each product type.

The highest fiscal returns associated with the project are generated by retail development, which has an estimated ongoing net fiscal impact of approximately $115,187. In total, the combined net fiscal impact of residential and commercial uses equates to $282,354. Should the residential be developed and the retail not completed, the net fiscal impact would be reduced to $167,168.

Figure 2. Ongoing Net Fiscal Impact at Full Stabilization

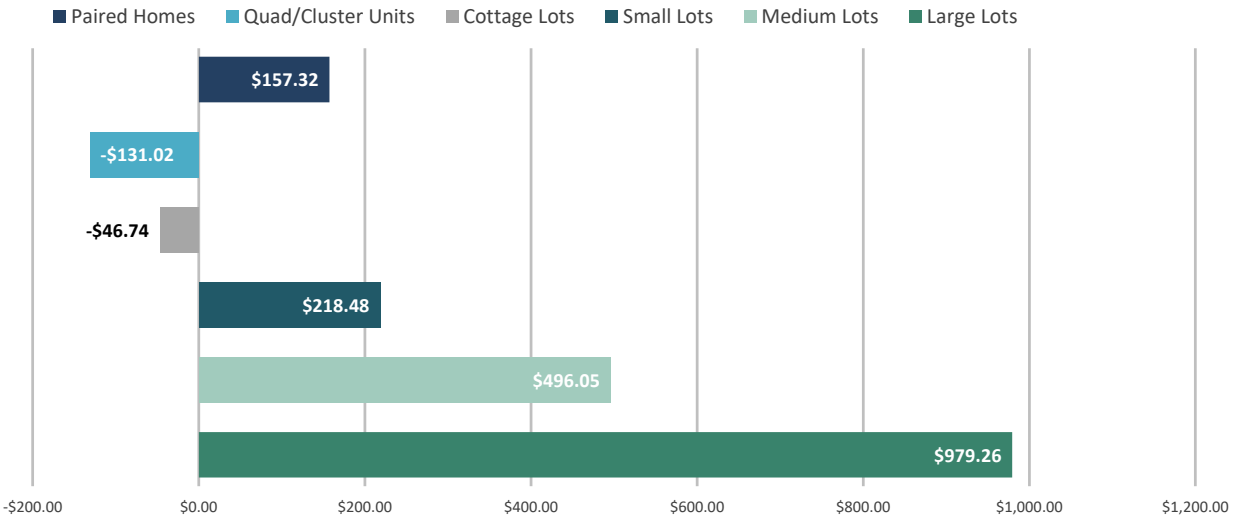


Source: Economic & Planning Systems

Ongoing Net Fiscal Impact Per Unit and Square Foot

At full stabilization, the large lot housing units have the highest ongoing net fiscal impact at $979.26 per unit, as seen in **Figure 3**. The quad/cluster housing units have the lowest ongoing net fiscal impact at negative $131.02 per unit. The retail development, which is not represented graphically, has a net fiscal impact of $1.92 per square foot.

Figure 3. Ongoing Net Fiscal Impact per Unit



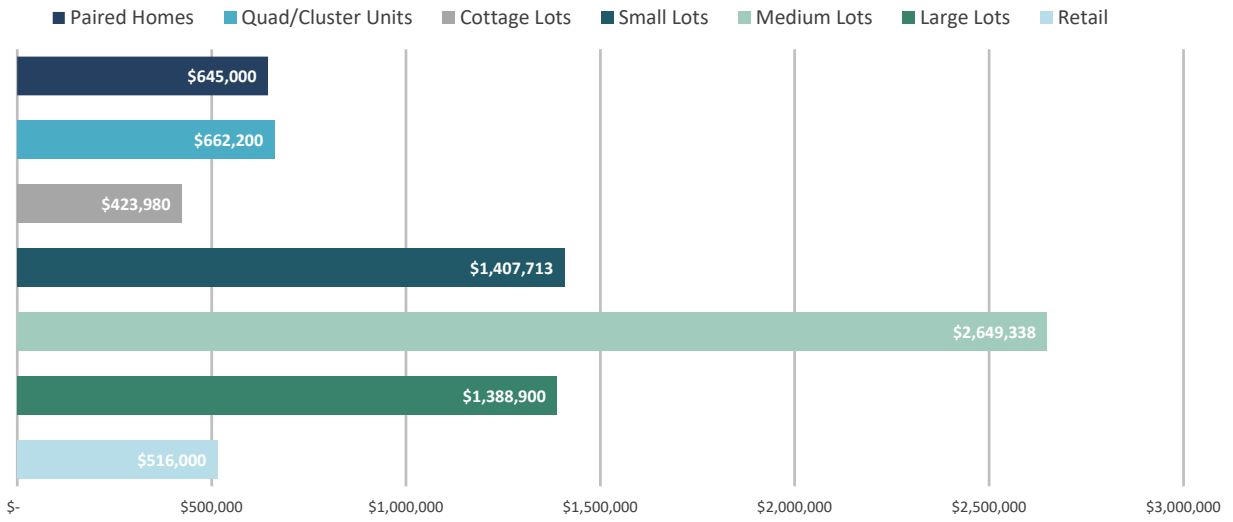
Source: Economic & Planning Systems

One-Time Revenues

In addition to ongoing revenues, the residential uses account for a total of $7.2 million in one-time use tax revenues generated between 2024 to 2027, as seen below in **Figure 4**. Residential use tax revenues account for approximately 93 percent of the total use tax revenues generated throughout the project's buildout.

The retail development accounts for approximately 7 percent of the total use tax revenues, for a total of $516,000.

Figure 4. Residential and Commercial One-Time Use Tax Revenue, 2024-2027



Source: Economic & Planning Systems

Town of Castle Rock

Agenda Memorandum

Agenda Date: 1/3/2023

Item #: 12. **File #:** ORD 2023-003

To: Honorable Mayor and Members of Town Council

Through: Dave Corliss, Town Manager

From: Tara Vargish, P.E., Director, Development Services

Ordinance Approving the Canyons Far South Development Agreement and Purchase Option Agreement; and Vesting a Site Specific Development Plan through December 31, 2037 (First Reading) - Public Hearing To Be Continued to February 21, 2023

Executive Summary

Canyons South, LLC (applicant) has requested a continuance of the Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting public hearings before Town Council from Tuesday, January 3, 2023 to Tuesday, February 21, 2023 at 6 pm. The purpose for the continuance is to allow additional time to address external referral comments from the Colorado Department of Transportation (CDOT).

Recommendation

Item #: 12. **File #:** ORD 2023-003

Staff recommends that Town Council continue the Canyons Far South Annexation, Initial Zoning, and Development Agreement with Vesting public hearings to Tuesday, February 21, 2023 at 6 pm.

Proposed Motion

"*I move to continue the public hearing on Ordinance Nos. 2023-001, 2023-002, and 2023-003 to the Town Council meeting scheduled for Tuesday, February 21, 2023, at 6:00 p.m.*"

Meeting Date: January 3, 2023

AGENDA MEMORANDUM

To: Honorable Mayor and Members of Town Council

Through: Dave Corliss, Town Manager

From: Tara Vargish, P.E., Director, Development Services

Title: **Ordinance No. 2023-__: An Ordinance Approving the Canyons Far South Development Agreement and Purchase Option Agreement; and Vesting a Site Specific Development Plan through December 31, 2037**

Executive Summary

Lowe Enterprises (the "Parties") is requesting to enter into a Development Agreement (DA) with the Town for property known as Canyons Far South Planned Development, that is located east of Founders Parkway, west of Castle Oaks Drive, north of Crimson Sky Drive and south of Crowfoot Valley Road (Figure 1) (Attachment A). In addition, the Parties are requesting vested property rights through December 31, 2037.

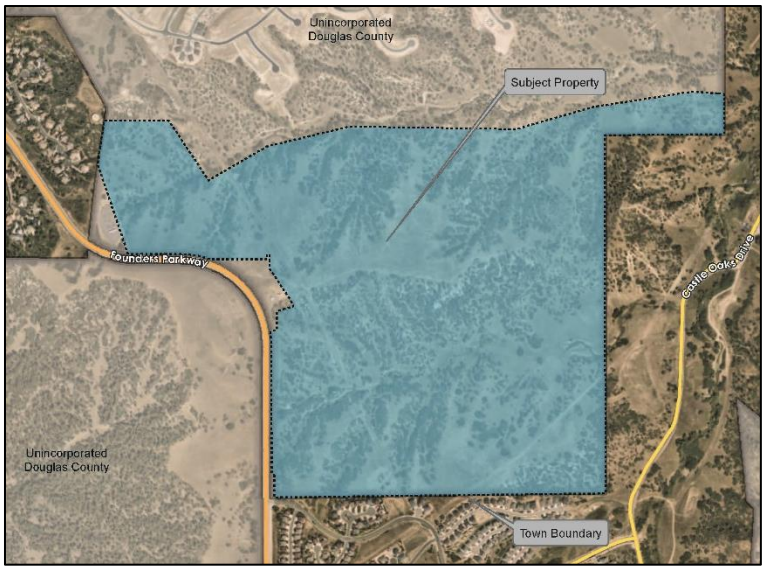


Figure 1: Site Vicinity Map

The property is currently under consideration for annexation and zoning as a Planned Development (PD) under separate land use applications. If the Canyons Far South Annexation and Planned Development Plan and Zoning Regulations are approved, the Parties must enter into a Development Agreement with the Town to define the obligations of the property owners and the Town relative to the development of the property.

A DA is a legally binding contract between the property owners and the Town that requires public hearings before Town Council, who shall review and make a decision upon the proposed DA.

Proposed Development Agreement

The Canyons Far South Development Agreement addresses infrastructure improvements, development phasing, open space conveyances, water rights conveyances, Town service obligations and other relevant items (Attachment B). These obligations are intended to be mutually beneficial, as well as enhance public health, safety and welfare. Some of the key components of the DA are briefly summarized below.

Vested Property Rights – Section 10.01

The Canyons Far South Planned Development Plan, inclusive of the embedded PD Zoning Regulations, constitutes a site specific development plan pursuant to Chapter 17.08 of the Castle Rock Municipal Code and §24-68-101, *et seq*., C.R.S., and establishes vested property rights that shall extend through December 31, 2037, to undertake and complete the development and use of the property in accordance with this Planned Development Plan.

Commencement of Development – Section 2.05

The owner must complete the construction of at least $500,000 in public improvements, excluding soft costs, and the issuance of the first building permit for a single-family residential structure by December 31,2032, otherwise the right of the owner under this Development Agreement and Town Regulations to undertake further development of the property, or to obtain permits for construction shall be suspended by the Town Council.

Water Rights Conveyance and Water Credit - Sections 5.02 and 5.03

Concurrent with the recordation of the Development Agreement, the owner shall convey the groundwater rights to the Town by special warranty deed. The groundwater rights are converted into development entitlements that are referred to as Water Credit. Water Credit is expressed as a single-family equivalent (SFE).

The total groundwater rights to be deeded to the Town is 465 acre feet; however, only 454.11 acre feet has been determined to have marketable title. Therefore, with the conveyance of the marketable 454.11 acre feet of ground water rights, a Water Credit of 412.83 SFE will be established for the property.

Renewable Water Resources – Section 5.07

The property is identified as an excluded property per the Town of Castle Rock Inclusion Map. As such, the owner must satisfy the requirements of Section 4.04.045A of the Municipal by doing one or a combination of the following to provide sufficient Renewable Water Resources to support the estimated wet water demand of 153 acre feet, as established in the Water Efficiency Plan:

- Acquire sufficient Renewable Water Resources; or

- Enter into a mutually-agreeable purchase option agreement with the Town to purchase at Town's cost, Renewable Water Resources and/or Irrigation Demand Reduction Measure identified and purchased by the Town and earmarked for the Property. A purchase option agreement is attached as an exhibit to the Development Agreement.

The requirement to provide Renewable Water Resources is distinctly separate from, and in addition to, the groundwater rights dedication requirement described above.

Water Efficiency Plan – Section 5.08

A Water Efficiency Plan (WEP) has been developed for Canyons Far South and shall be implemented by the owner for all residential and non-residential development within the PD (Attachment B, Exhibit 3). The Water Efficiency Plan will be incorporated into all conveyance documents for the property, private covenants and restrictions. All residential and non-residential development is subject to the requirements of shall be required to implement and follow the Water Efficiency Plan requirements.

The Canyons Far South WEP restricts residential use of irrigated turf to a maximum of 500 square feet in rear yards only, and allows only Coloradoscape landscaping in the front yards. Residential pools are prohibited.

Water, Wastewater and Stormwater – Section 7.01

The owner is required to construct the following Town water and wastewater improvements

- A 16" water line from Crowfoot Valley Road to Crimson Sky Drive, and

- A 12" water line from the Purple Zone Water Storage Tank 11 to a stub-out point located north of the Pioneer Ranch property.

Lift Stations – Section 7.03

The owner shall pay a wastewater lift station fee of $715 per SFE for the purpose of reimbursing the Town for a pro rata share of the costs the Town has incurred in association with the construction of the Castle Oaks Lift Station.

Drainageway Improvements – Section 7.04

The owner shall be responsible for preserving and fully stabilizing all major drainageways within the PD boundaries having a watershed area greater than 130 acres.

Transportation Improvements – Section 8.01 through 8.05

- Founders Parkway Right-of-Way Conveyance: The owner shall convey, at no cost to the Town, the necessary right-of-way for Founders Parkway, as determined

necessary by the Colorado Department of Transportation (CDOT) and depicted on the PDP.

- Founders Parkway Intersection Control: The owner shall design and construct a new intersection for future access to the property on Founders Parkway, to include a roundabout or traffic signal, turn lanes, acceleration and decelerations lanes and striping as identified in the Traffic Impact Analysis.

- Castle Oaks Drive Roadway Connection: In the first phase of the project, the owner shall design and construct a roadway connection between the property and Castle Oaks Drive, as depicted in the PD Plan.

- Founders Sidewalk Improvement: In the first phase of the project, the owner will design and construct a 10-foot concrete sidewalk adjacent to the east and north sides of Founders Parkway from Crowfoot Valley Road to Crimson Sky Drive, as depicted in the PD Plan.

- Macanta Boulevard Connection: The owner acknowledges that a connection from the property to Macanta Boulevard, located in the adjacent Macanta subdivision, is necessary for the development of the Canyons Far South project. In the event that Macanta Boulevard has not been extended to the property's collector road prior to the issuance of the first building permit for the project, the owner shall design and construct the extension of Macanta Boulevard as depicted in the PD Plan.

Public Lands and Improvements – Sections 9.01 and 9.02

- The public land tract identified as OSD-2 in the PD Plan shall be conveyed to the Town within 30 days following the effective date of this Development Agreement.

- All other public land tracts will be dedicated to the Town either with the first Plat that contains the public land, or with the first Plat adjacent to the public land, whichever occurs first.

- The owner shall be responsible for the design and construction of the following improvements on the public lands as described below:

    - Any required parking facilities, picnic tables and shade structures for the Town park, identified as PLD-1 on the PD Plan,

    - Berms and landscaping to serve as a buffer within OSD-3,

    - A natural surface trail system, as per the Town's Soft Surface Sustainable Trail Development Guide, located generally as shown on the PD Plan, and

    - A 10-foot wide concrete surface, all-weather trail connecting Founders Parkway and Castle Oaks Drive, in an alignment generally shown on the PD Plan.

Wildland Urban Interface Mitigation

All public lands and other parcels to be conveyed to the Town shall be assessed, at no cost to the Town, by a professional that is familiar with Wildland Urban Interface (WUI) mitigation. The owner shall contract with a contractor familiar with WUI mitigation to perform all identified treatments deemed necessary to meet the current Community Wildfire Protection Plan, as a condition of acceptance of the property by the Town.

Budget Impact

The Canyons Far South Development Agreement formalizes the developer/owner's financial obligations to adequately address impacts of the development on Town infrastructure and services.

Finding

Staff finds that the proposed obligations outlined in the Canyons Far South Development Agreement are adequate to support the proposed Canyons Far South Planned Development.

Recommendation

Staff recommends approval of the Canyons Far South Development Agreement and Vesting a Site Specific Development Plan through December 31, 2037, as proposed.

Proposed Motions

Option 1: Approval

"I move to approve Ordinance No. 2023 - ___, as presented."

Option 2: Approval with Conditions

"I move to approve Ordinance No. 2023 - __, with the following conditions:" (list conditions)

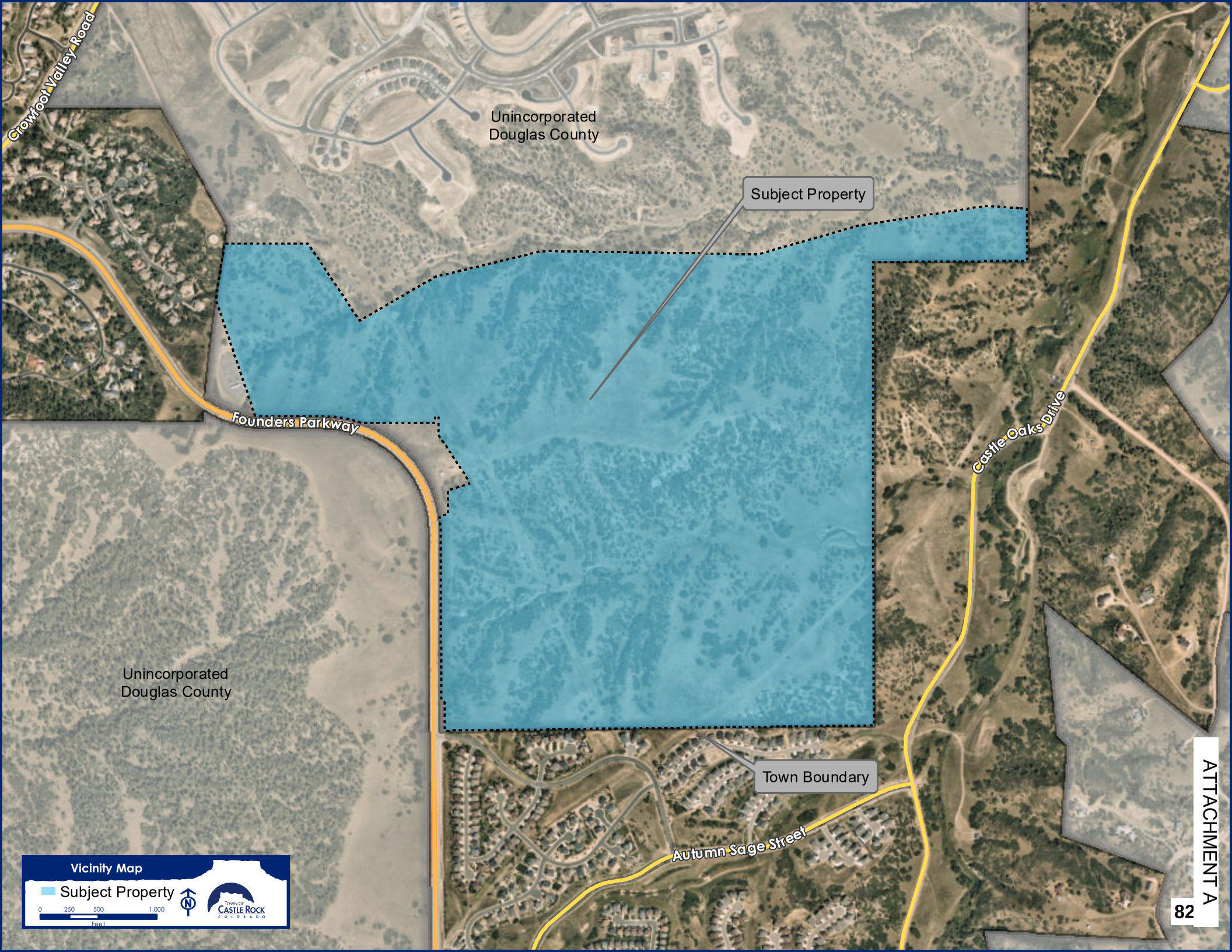
Option 3: Continue item to next hearing (need more information to make decision)

"I move to continue this item to the Town Council meeting on [date], 2023, at [time]."

Attachments

Attachment A: Vicinity Map
Attachment B: Ordinance

T:\Development Review\Canyons South (Far South)\Public Hearings\TC 1st Rdg 1-3-23\DA



ATTACHMENT A

ORDINANCE NO. 2023 - ____

AN ORDINANCE APPROVING THE CANYONS FAR SOUTH DEVELOPMENT AGREEMENT AND PURCHASE OPTION AGREEMENT; AND VESTING A SITE SPECIFIC DEVELOPMENT PLAN THROUGH DECEMBER 31, 2037

WHEREAS, pursuant to Article II, Section 30 of the Colorado Constitution, the Municipal Annexation Act of 1965, § 31-12-101 et seq., C.R.S., and Chapter 20.02 of the Castle Rock Municipal Code, the Town Council, by Ordinance No. 2023-___, has annexed into the Town of Castle Rock (the "Town") 409.008 acres of land located south of Crowfoot Road, east of Founders Parkway, north of Crimson Sky Drive and west of Castle Oaks Drive, as more particularly described on the attached ***Exhibit 1*** (the "Property"); and

WHEREAS, pursuant to Section 17.02.060 of the Town Municipal Code, the Town Council, by Ordinance No. 2023-___, has approved the initial zoning for the Property as set forth in the Canyons Far South Planned Development Plan and Zoning Regulations (the "PD Plan"); and

WHEREAS, in conjunction with the concurrent annexation and zoning of the Property, the Town and Canyons South, LLC (the "Owner"), have reached agreement on certain terms and conditions governing the development of the Property as set forth in the Canyons Far South Development Agreement (the "Development Agreement"); and

WHEREAS, the determination as to whether the Owner is able to meet the requirements of Section 4.04.045.A of the Town Municipal Code regarding the provision of renewable water resources shall be at the sole discretion of the Town Council; and

WHEREAS, the Town and the Owner have reached agreement on certain terms and conditions governing the provision of renewable water resources as set forth in the Canyons South Purchase Option Agreement (the "Purchase Option Agreement")

WHEREAS, the Owner has requested that the PD Plan be vested as a site-specific development plan, as provided in the Development Agreement, for a period of time through and including December 31, 2037; and

WHEREAS, a public hearing on the Development Agreement and vesting has been held before the Town Council in accordance with the applicable provisions of the Town Municipal Code; and

WHEREAS, the Town Council finds and determines that it is appropriate for the Town to enter into the Development Agreement and the Purchase Option Agreement with the Owner for the development of the Property; and

WHEREAS, pursuant to the authority granted by Chapter 17.08 of the Town Municipal Code and Section 24-68-101, et seq., C.R.S., the Town Council further finds and determines that

vesting of the PD Plan through the Development Agreement is justified due to the size and scale of the development, the length of the usual development and market cycle, the manner of the recovery of the Applicant's capital investment over the development cycle, and the Applicant's extraordinary contribution to public open space.

NOW, THEREFORE, IT IS ORDAINED BY THE TOWN COUNCIL OF THE TOWN OF CASTLE ROCK, COLORADO AS FOLLOWS:

Section 1. **Approval**. The Development Agreement in the form attached as ***Exhibit 2*** and the Purchase Option Agreement in the form attached as ***Exhibit 3*** are hereby approved. The Mayor and the other proper Town officials are hereby authorized to execute these agreements by and on behalf of the Town.

Section 2. **Vesting**. The vesting of the PD Plan authorized under Article X of the Development Agreement is approved, which vests the PD Plan as a site-specific development plan for a term ending on December 31, 2037. The notice of vesting of the PD Plan required under 17.08.090 of the Town Municipal Code shall be given within fourteen (14) days of approval of this Ordinance

Section 3. **Severability**. If any clause, sentence, paragraph, or part of this Ordinance or the application thereof to any person or circumstances shall for any reason be adjudged by a court of competent jurisdiction invalid, such judgment shall not affect the remaining provisions of this Ordinance.

Section 4. **Safety Clause**. The Town Council finds and declares that this Ordinance is promulgated and adopted for the public health, safety and welfare and this ordinance bears a rational relationship to the legislative object sought to be obtained.

APPROVED ON FIRST READING this ___ day of _____, 2023, by the Town Council of the Town of Castle Rock, Colorado by a vote of ___ for and ___ against, after publication; and

PASSED, APPROVED AND ADOPTED ON SECOND AND FINAL READING this ___ day of _____, 2023, by the Town Council of the Town of Castle Rock, Colorado by a vote of ___ for and ___ against.

ATTEST:

_____
Lisa Anderson, Town Clerk

TOWN OF CASTLE ROCK

_____
Jason Gray, Mayor

Approved as to form:

_____
Michael J. Hyman, Town Attorney

Approved as to content:

_____
Tara Vargish, Development Services Director

CANYONS SOUTH ANNEXATION BOUNDARY

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:

1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:

1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;

2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:

1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:

1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;

2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:

1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:

1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:

1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

FINAL DRAFT
11/30/2022
Legal needs to insert the revised DA that includes CR Water changes to Section 5.03

CANYONS FAR SOUTH DEVELOPMENT AGREEMENT

APPROVAL OF THIS AGREEMENT CREATES A VESTED PROPERTY RIGHT PURSUANT TO § 24-68-103, C.R.S.

DATE: _____, 2022.

PARTIES: **TOWN OF CASTLE ROCK**, a home rule municipal corporation, 100 N. Wilcox Street, Castle Rock, Colorado 80104.

CANYONS SOUTH, LLC, a Delaware limited liability company, 7979 E. Tufts Avenue, Suite 105, Denver, Colorado 80237.

MORTGAGEE: _____

RECITALS:

A. Initially capitalized words and phrases used in this Agreement have the meanings stated in Article I, or as indicated elsewhere in the Agreement.

B. The Parties have determined that it is in their mutual interest to enter into this Agreement governing the development of the Property in conjunction with the concurrent approval of the annexation and zoning of the Property.

C. The Parties acknowledge that this Agreement contains reasonable conditions and requirements to be imposed upon the development of the Property and the Project, and that these restrictions are imposed to protect and enhance the public health, safety and welfare of the Town and its residents.

D. Pursuant to Article II, Section 30 of the Colorado Constitution, the Municipal Annexation Act, Title 20 of the Code, and this Agreement, the Town Council has annexed the Property into its municipal boundaries, and has jurisdiction and authority over the Property as necessary to bind the Property to the Town Regulations and to provide Municipal Services to the Property.

E. Each Party has taken the requisite corporate action as may be required under its respective governance instruments to authorize such Party's execution of this Agreement and to legally bind such Party to perform its obligations under this Agreement.

F. Mortgagee is a party to this Agreement solely for the purpose of subordinating its lien and interest in the Property to the terms and conditions of this Agreement.

COVENANTS:

NOW, THEREFORE, in consideration of these mutual promises, the Parties agree and covenant as follows:

ARTICLE I
DEFINITIONS

1.01 Defined Terms. The following words when capitalized in the text shall have the meanings indicated:

Agreement: this Canyons Far South Development Agreement inclusive of any future amendments to this Agreement.

Charter: the Home Rule Charter of the Town, as amended.

Code: the Castle Rock Municipal Code, as amended.

County: Douglas County, Colorado.

C.R.S.: the Colorado Revised Statutes, as amended.

Development Exactions: the capital recovery fees and charges imposed by the Town under the Town Regulations on development and building, including System Development Fees, as the same may be amended from time to time, and applied uniformly throughout the Town.

District(s): The metropolitan district(s) which may be formed pursuant to the Special District Act to serve the Property in accordance with the terms and conditions of this Agreement.

Effective Date: the date when the following have occurred: (i) the ordinance approving this Agreement and the PDP is no longer subject to referendum, and (ii) the required Annexation Documents under Section 31-12-113(2)(a)(II)(A), C.R.S. have been filed.

Full Buildout: The completion of Project as evidenced by the issuance of the certificate of occupancy for the last dwelling unit and commercial use to be constructed within the Property.

Groundwater Rights: the right to and interest of Owner in the Denver Basin groundwater underlying the Property, including, but not limited to, the Denver Basin groundwater adjudicated in Case Nos. 81 CW417 and 84CW386A, Water Division No. 1.

Irrigation Demand Reduction Measures: any renovation of existing landscaping on publicly- or privately-owned irrigated lands served by the Town water system and undertaken in accordance with the Town Landscape and Irrigation Criteria Manual that results in a verifiable reduction of

the then-current water demand for such lands, as determined by the Town in its sole and reasonable discretion.

Municipal Annexation Act: Section 31-12-101, et. seq., C.R.S., as amended, also known as the "Municipal Annexation Act of 1965."

Municipal Services: public safety, water, wastewater, stormwater drainage and detention, parks and recreation, transportation and street maintenance, general administrative services including code enforcement and any other service provided by Town within the municipality under its police powers.

Owner: the person(s) or entity(ies), individually or collectively, that hold fee simple title to any portion of the Property, according to the records of the County Clerk and Recorder. The use of the singular "Owner" shall refer to all owners of the Property, unless the context of the Agreement otherwise limits the reference and subject to Section 2.01 of this Agreement. As of the date of execution of this Agreement, Canyons South, LLC is the Owner of the Property.

Party(ies): individually or collectively, the Town and Owner, together with (except as otherwise limited by the terms of this Agreement) their designated successors and assigns.

PDP: the Canyons Far South Planned Development Plan approved by Ordinance No. 2022-_____ and recorded in the Records at Reception No. _____.

Phasing Plan: the matrix and notes on the PDP designating development thresholds of which Public Improvements must be developed and Public Lands conveyed to the Town.

Plans: the plans, documents, drawings and specifications prepared by or for Owner for the construction, installation or acquisition of the Public Improvements as approved by the Town under the Town Regulations.

Plat: a subdivision plat of any portion of the Property approved under the Town Regulations.

Project: the residential/limited commercial mixed use community anticipated to be developed within the Property, including parks, open space, and other such public amenities as set forth in the PDP and this Agreement.

Property: the real property described in ***Exhibit 1***.

Public Improvements: the infrastructure prescribed by Town Regulations or expressly prescribed under this Agreement necessary to furnish Municipal Services and Public Utilities to the Property or designated development thresholds thereof pursuant to the Phasing Plan, including the infrastructure required to extend or connect the Public Improvements to complementary infrastructure off-site of the Property and necessary to serve Public Lands. Public Improvements include, without limitation, the infrastructure necessary to serve the Property with water, wastewater, storm water and/or drainage, and transportation improvements including, but not limited to streets, roads, sidewalks and trails.

Public Lands: those portions of the Property designated as Open Space Dedicated (OSD) and Public Land Dedicated (PLD) on the PDP for dedication to the Town pursuant to this Agreement for parks, recreational areas, public open space, Public Improvements and related public purposes.

Public Utilities: the infrastructure necessary to extend services (other than Municipal Services) to the Property, which are provided by public or quasi-public utility entities, including natural gas, electricity and cable television.

Records: the real property records of the County Clerk and Recorder.

Regional Mill Levy: a property tax of five (5) mills, subject to future changes made in the method of calculating assessed valuation, to be imposed by the Districts and remitted to the Town on an annual basis for the purpose of defraying costs incurred by the Town in providing such services and improvements as the Town, in its sole and reasonable discretion, believes are: (i) public in nature; (ii) for the benefit of the residents and taxpayers of the Districts; and (iii) permitted by State law to be paid from taxes imposed by the Districts.

Renewable Water: any tributary water resources or any groundwater resources that are rechargeable on a yearly basis due to the hydrologic cycle without consideration of the capacity to harvest and use such resources.

Renewable Water Resources: any (i) Renewable Water Right(s) acceptable to the Town, in the Town's sole discretion, that may be lawfully used, or reasonably changed by the appropriate water court for lawful use, within the Town's service area; (ii) facilities used to withdraw, treat, store, and deliver, or to capture, reclaim and reuse Renewable Water; and (iii) property interests, legal rights and entitlements that support the use and delivery of Renewable Water Resources.

Renewable Water Rights. Any right established under Colorado law to physically divert a specific amount of Renewable Water from a specific point of diversion or control and put it to a certain beneficial use.

SDP: the site development plan for the Property, or a portion of the Property, prescribed under Title 17 of the Code.

SIA: a subdivision improvements agreement entered into between the Town and a subdivider pursuant to an approved Plat, as required under the Code.

Special District Act: Section 32-1-101, et seq., C.R.S., as amended.

System Development Fees: the capital recovery charges for the Town water, wastewater and stormwater systems and renewable water fees imposed under the Code, as the same may be amended from time to time, and applied uniformly throughout the Town.

TIA: the traffic impact analysis dated December 6, 2021, prepared with the PDP, and submitted to and accepted by the Town.

Town Council: the governing body of the Town of Castle Rock, Colorado, constituted under Article II of the Charter.

Town Regulations: the Charter, Code, ordinances, resolutions, rules and regulations of the Town, technical criteria, and the provisions of all zoning, subdivision and building codes, as the same may be amended from time to time and applied uniformly throughout the Town.

Urban Services: Municipal Services and services provided through Public Utilities.

Vested Property Rights Act: Section 24-68-101, et seq., C.R.S., as amended.

Certain other terms are defined in the text of the Agreement and shall have the meaning indicated.

1.02 Cross-reference. Any reference to an article or section number, without further description, shall mean such article or section in this Agreement.

ARTICLE II
APPLICATION AND EFFECT

2.01 Binding Effect. The Owner, the Town and the Property are all benefited and burdened by the mutual covenants of this Agreement, and such covenants shall constitute real covenants binding upon successors in interest to the Property, including any mortgagees or lienholders subsequently acquiring title to the Property, irrespective of whether specific reference to this Agreement is made in any instrument affecting title to the Property. Except as expressly provided in this Agreement to the contrary, upon conveyance of all, or a portion of the Property, the grantor shall be relieved of all obligations imposed by this Agreement applicable to the portion of the Property conveyed, provided that: (i) the grantee expressly assumes such obligation; and, (ii) the grantor shall not be relieved of any default under this Agreement attributable to the action or inaction of the grantor while the grantor was in title to such portion of the Property.

2.02 Mortgagee Obligation. No mortgagee or lienholder shall have an affirmative obligation hereunder, nor shall Town have the right to seek performance of this Agreement from mortgagees or lienholders except in the event a mortgagee or lienholder acquires legal title to all, or a portion of the Property, in which event the mortgagee or lienholder shall be bound by the terms, conditions and restrictions of this Agreement.

2.03 Owner/Districts Responsibility. Town shall accept the District(s)' performance of Owner's obligations under this Agreement after the Districts are in compliance with Article III. However, the owner of the Property upon which development approval is granted retains the ultimate responsibility for performance of the covenants and obligations of this Agreement should the Districts fail to discharge such obligations. To the extent the Districts discharge the obligation of Owner under this Agreement, as further provided in Article III, Districts shall have the same contractual rights and responsibilities as Owner under this Agreement with respect to such obligation.

2.04 Town Regulations. Subject and subordinate to any provisions to the contrary contained in this Agreement, (i) the Town Regulations shall apply to the Property in the same manner and effect as within other areas of the Town, and, (ii) this Agreement shall not in any manner restrict or impair the lawful exercise by the Town Council of its legislative or police powers as applied to the Property, including specifically the amendment, modification or addition to the Town Regulations, subsequent to the execution of this Agreement; however, Owner does not waive its right to challenge the legality or validity of any amendment to the Town Regulations that it could maintain absent this Agreement.

When this Agreement calls for compliance with the Town Regulations, the operative Town Regulations in effect at the time such compliance is required shall govern unless the provisions of this Agreement expressly provide to the contrary.

2.05 Commencement of Development. Except as provided otherwise herein, execution of this Agreement by Owner does not create any obligation upon Owner to commence or complete development of the Property within any particular timeframe. The Parties, however, understand and agree that this Agreement imposes certain financial obligations on Owner which are time sensitive after the commencement of development on the Property. Accordingly, in the event that Owner has not completed the construction of at least $500,000.00 in Public Improvements, excluding soft costs, and the issuance of the first building permit for a single-family residential structure by December 31, 2032, then the right of Owner under this Agreement and the Town Regulations to undertake further development of the Property, or to obtain permits for construction shall be suspended by the Town (the "Development Suspension"). The Development Suspension may be released by the Town Council, in its discretion, upon a showing of good cause for the delay, and the demonstration by Owner of the ability to commence and complete development of the Property in accordance with the PDP. If the Town Council determines that the Development Suspension should not be released, thereafter, the Town may initiate modifications to the PDP through the Town Regulations.

ARTICLE III
METROPOLITAN DISTRICTS

3.01 Authorization. The Parties anticipate that the Districts will finance and construct a significant portion of the Public Improvements on behalf of Owner, or in the alternative, fund the Owner construction costs either directly or as a reimbursement of costs incurred. It is the Parties intention that the Districts comply with the Special District Oversight Ordinance of the Town Regulations ("SDO") and the Model Service Plan adopted by the Town Manager and on file with the Town Clerk ("MSP") prior to and as a condition undertaking any of Owner's obligation under this Agreement.

Accordingly, Owner intends to submit a request to the Town to form the Districts, including approval of the Districts' Service Plan(s) in compliance with the Special District Act, the SDO, and the MSP. In addition, concurrently with action on the Service Plan(s), and subject to the approval of the Town Council, the Town and Districts shall enter into a Master Intergovernmental Agreement addressing all operational aspects of the Districts' assumption of Owner's obligations under this Agreement. The Service Plans and Master Intergovernmental

Agreement shall require the Districts to impose and remit to the Town a Regional Mill Levy, beginning at such time when any one District first imposes a debt service mill levy and continuing until such time as all of the Districts no longer impose a debt mill levy or are otherwise dissolved, whichever shall last occur.

District formation matters, including all approvals described herein, shall be processed by the Town concurrently with this Agreement and the PDP, and the final approval date for District formation shall be the same as the Effective Date.

Subject to Town Council approval of the Districts' Service Plans and Master Intergovernmental Agreement ("District Approvals") and the assignment of the Owner's obligations to fund and construct Public Improvements under this Agreement to the Districts, the Districts shall have the same contractual rights and responsibilities as the Owner with respect to such obligations. Town shall accept the performance by the Districts to the extent that the Districts discharge the obligations imposed on Owner under this Agreement. When undertaking development of Public Improvements, references in this Agreement to "Owner" shall mean "District(s)" unless the context clearly indicates otherwise. Nothing in this Agreement shall relieve the Districts from obtaining Town approval of service plan amendments required under the Special District Act, the SDO, and the MSP.

3.02 **Surety**. In recognition of the quasi-governmental nature of the Districts and their financial and taxing powers, and subject to the grant of the District Approvals and the assignment of the Owner's obligations to fund and construct Public Improvements under this Agreement to the Districts, the Districts may satisfy the requirements under this Agreement or the Town Regulations for posting of financial guarantees to assure the construction and warranty obligations for Public Improvements which the Districts have constructed by establishing a construction escrow (the "Escrow") in accordance with the following:

(a) the Escrow shall be established with a title insurance company or financial institution;

(b) the Escrow deposit shall be in the amount of prescribed by the Town Regulations;

(c) Districts may make progress payments to their contractors from the Escrow deposit, provided the Town approves the payment request, which approval shall not be unreasonably withheld;

(d) the Escrow deposit may not be drawn down below the amount required for the warranty surety under the Town Regulations;

(e) the Escrow agreement shall authorize the Town to access the Escrow deposit in the event of a default by Districts for the purpose of undertaking completion or remediation work on the Public Improvements as more specifically provided under the applicable SIA; and

(f) the Escrow deposit remaining after completion of the Public Improvements and the posting of the required warranty surety shall be returned to the Districts.

The Districts may, at their discretion, post any form of financial surety authorized under the Town Regulations. In the event of a default by Districts in their obligation to construct the Public Improvements, Town shall have the right to withhold approvals and permits for the Project until the default is cured. The Town shall provide the Districts with reasonable notice and the right to cure any defaults hereunder.

3.03 Disconnection from Fire District. Pursuant to the provisions of that certain agreement entered into between the Town and the Castle Rock Fire Protection District ("Fire District") dated March 20, 1986, and recorded on November 7, 1986, in the Records at Book 677 at Page 918, (the "1986 Agreement"), (recorded as part of the Findings and Order of Dissolution of the Fire District), ordinances annexing territory within the boundaries of the Fire District to the Town are required to recite that all such annexed territory be excluded from the Fire District.

In compliance with the terms of the 1986 Agreement, Town hereby agrees to file a certified copy of the Annexation Ordinance with the District Court in Action No. 80CV209, not later than _____, 20__, and, upon receipt, record a certified copy of the Order of Exclusion entered by the court with the County Clerk and Recorder, pursuant to the above-referenced Findings and Order.

ARTICLE IV
TOWN OBLIGATIONS GENERALLY

4.01 Municipal Services. Except as specifically set forth to the contrary in this Agreement, and so long as Owner has satisfied its obligation to develop the necessary Public Improvements under this Agreement and the Town Regulations, Town shall provide the Property with Municipal Services at an equivalent service level and on the same terms and conditions, including non-discriminatory fees and charges, as provided elsewhere within its municipal boundaries. Town reserves the right to contract with other governmental or private entities for delivery of Municipal Services to the Property, provided such service level is comparable to that provided by the Town in its proprietary capacity and services are provided on similar terms and conditions as provided to similar developments in other portions of the Town.

4.02 Permitted Development. Owner shall be permitted to develop the Property and/or the Project in accordance with this Agreement and Town Regulations and applicable state and federal law and regulations. Subject to compliance with the PDP and this Agreement, and further subject to the limited application of the Town Regulations to the Property as provided in Article X, Town shall allow and permit the development of the Property in accordance with the Town Regulations and the PDP, upon submission of proper application(s), payment of fees, exactions and charges imposed by the Town Regulations, including Development Exactions, and compliance with conditions precedent to permitting imposed by this Agreement or Town Regulations. The Town agrees that it shall review and process all submittals for land use approvals, plans, specifications, drawings, details, permit applications, subdivision plats or other pertinent data required in connection with the Property in a prompt and efficient manner, in accordance with

applicable Town Regulations, the PDP, and this Agreement. Town shall not unreasonably delay, condition, withhold or deny consent to or approval of any development request or permit relating to the Property and/or the Project.

4.03 Coordination. Subject to prior review, Town shall coordinate with and affirmatively support the Owner in any filings or applications before other governmental jurisdictions necessary for the Owner to fulfill its obligations under this Agreement or to allow development of the Property, in accordance with the PDP and this Agreement.

ARTICLE V
GROUNDWATER RIGHTS AND RENEWABLE WATER RESOURCES

5.01 Groundwater Rights. Under the Town Regulations, it is the obligation of Owner to convey the Groundwater Rights, together with additional water resources, if needed, at the time of, and as a condition to the annexation of the Property. This requirement supports the Town's obligation to provide a municipal water supply to the Property in accordance with this Agreement. Upon conveyance by the Owner to Town of the Groundwater Rights pursuant to Section 5.02, below, the Town will have ownership of such Groundwater Rights. Town shall have no obligation to issue land use approvals for development on the Property unless the Owner is in compliance with the provisions of this Article V.

5.02 Conveyance. Concurrently with and as a condition to recordation of this Agreement, Owner shall convey the Groundwater Rights to Town by special warranty deed generally consistent with the form attached as ***Exhibit 2***. The conveyance of the Groundwater Rights shall transfer to Town the right to use, reuse, lease or sell the water withdrawn under the Groundwater Rights. As a condition to Town's acceptance of such special warranty deed, Owner, at its sole expense, shall provide Town with an opinion from a qualified Colorado attorney, upon which Town may rely, that: (i) Owner owns the Groundwater Rights and (ii) upon recordation of the special warranty deed conveying the Groundwater Rights to the Town, Town will have good and marketable title to the Groundwater Rights, free of liens, encumbrances or other title defects (the "Title Opinion"). Owner shall further reimburse Town for all reasonable costs incurred by Town in retaining legal counsel to review the Title Opinion. Town has relied upon such opinion in accepting conveyance of the Groundwater Rights.

After conveyance of the Groundwater Rights, Owner shall execute such further reasonable and additional instruments of conveyance and other documents which Town reasonably determines necessary to grant to the Town the exclusive ownership, management and control of the Groundwater Rights. Should it be subsequently determined that marketable title to any portion of the Groundwater Rights did not vest in the Town with the conveyance of same and such defect cannot be cured by Owner, the Water Credit established in Section 5.03, below, shall be reduced accordingly and the Water Bank debited in an amount equal to the SFE equivalent of that portion of the Groundwater Rights for which marketable title did not vest.

5.03 Water Credit. Under the Town Regulations, the Groundwater Rights are converted into development entitlements, referred to as a "Water Credit." The Water Credit is expressed as a single-family equivalent ("SFE"). SFE's are assigned to residential, commercial and irrigation uses

under the Town Regulations, subject, however, to the provision that these demand calculations shall be adjusted to reflect demand levels established pursuant to the approved Water Efficiency Plan.

With conveyance of the 465 acre feet of Groundwater Rights, a Water Credit for the Property is currently established at 418 SFE. The water credit of 418 SFE may be subject to adjustment over time pursuant to the Water Efficiency Plan under Section 5.08, below; however, such SFE calculation shall not be affected by changes in the conversion rate of Groundwater Rights into SFE that the Town may implement through modifications to the Town Regulations after the date of this Agreement, including any future changes in the non-renewable dedication requirement under the Town Regulations.

5.04 Application of Water Credit. Unless otherwise directed by the Owner in accordance with Section 5.06, below, the Water Credit shall be reduced (i.e. applied):

(a) initially at the time of Plat approval by the total SFE assigned to all approved development (private and public) to the extent the water demand for such use can be determined at such Plat approval;

(b) subsequently adjusted at the time of SDP approval within the Property, or at building/irrigation permit issuance within the Property for those uses not accounted for at the time of Plat approval, or as necessary to reflect specific SFE assignment determined at building permit; and

(c) at the time all potable and irrigation tap sizes are known, the Water Credit in the Water Bank, as defined in Section 5.05, below, shall be adjusted to reflect the SFE assignment in accordance with the Town Regulations or the Water Efficiency Plan for the Property.

5.05 Water Bank. In order to properly account for the Water Credit, Town shall administratively maintain an account designated as the Canyons Far South Water Bank ("Water Bank"). The Water Bank shall be debited or credited from time to time upon the Owner's application of any portion of the Water Credit in accordance with this Article V.

The Owner may request in writing an accounting of all entries made to the water bank and the current balance. Any objections raised by Owner regarding any entry shall be reviewed by the Town, however, the Town's determination after such review shall be final and binding, if made in accordance with this Agreement.

5.06 Ownership and Transfer of Water Credit. The Water Credit may be allocated by Owner at the time of approval of any Plat within the Property for the use and benefit of the portion of the Property subject to such Plat ("Allocated Water Credit") upon the issuance of notice of such allocation by the Owner to the Town. Upon notification, the Allocated Water Credit may be used exclusively for the portion of the Property subject to such Plat.

Any Allocated Water Credit may be transferred for use on other portions of the Property with the prior written consent of the Owner and upon the Town's determination that the Allocated Water Credit exceeds the demand for the designated portion of the Property.

Owner may grant a security interest in the Water Credit to a creditor, provided that such creditor's use of the Water Credit upon foreclosure of the security interest shall be subject to all rights, conditions and restrictions contained in this Article V, and further provided, however, any Water Credit "debited" from the Water Bank pursuant to Section 5.05 shall no longer be subject to such collateral assignment, irrespective of whether or not the secured party has expressly consented to such application of SFE's.

The Water Credit may not be assigned or transferred for use on properties other than the Property. Any unused portion of the Water Credit remaining after Full Buildout shall revert to the Town, at no cost or obligation to Town.

5.07 Renewable Water Resources. In order to satisfy the requirements of Section 4.04.045A of Code, the Owner shall do one or a combination of the following to provide sufficient Renewable Water Resources to support the estimated wet water demand of 153 acre feet as set forth in the Water Efficiency Plan (see Section 5.08, below): (i) acquire sufficient Renewable Water Resources; or (ii) enter into a mutually-agreeable purchase option agreement with Town, to purchase at Town's cost, Renewable Water Resources and/or Irrigation Demand Reduction Measures identified and purchased by Town and earmarked for the Property. All Renewable Water Resources so acquired pursuant to (i), above, shall thereafter be conveyed to the Town by special warranty deed generally consistent with the form attached as ***Exhibit 2***, upon which conveyance said Renewable Water Resources shall be deemed to have been provided to Town within the meaning of this Section 5.07. The requirement to provide Renewable Water Resources shall be distinctly separate from, and in addition to, the Groundwater Rights dedication requirement in Section 5.01. On or before, and as a condition to, the issuance of any Plat, Owner shall provide Renewable Water Resources to Town in an amount sufficient to serve the equivalent number of residential, commercial, or irrigation uses authorized by said Plat. Town shall not be obligated to approve any additional Plat(s) or issue building permits for that portion of the Property for which sufficient Renewable Water Resources have not been provided.

5.08 Water Efficiency Plan. Owner shall implement the Water Efficiency Plan attached as ***Exhibit 3*** ("Water Efficiency Plan") for all residential and non-residential development within the Property. The Water Efficiency Plan shall be incorporated into all conveyance documents for the Property and private covenants and restrictions. Homebuilders constructing homes on the Property shall be required to implement and follow all requirements of the Water Efficiency Plan.

Minor modifications and clarifications to the Water Efficiency Plan may be made administratively as determined by the Town. In the event that more restrictive water use conservation measures than are contained in the Water Efficiency Plan are subsequently adopted through the Town Regulations and applied uniformly throughout the Town, the more restrictive provisions shall govern all future Plat approvals.

ARTICLE VI
PUBLIC IMPROVEMENTS DEVELOPMENT

6.01 Generally. Owner shall develop the Property in accordance with this Agreement and Town Regulations, and applicable state and federal laws and regulations. Except for the Town Water and Wastewater Improvements defined in Section 6.04, below, and except as set forth in Section 3.01, development of the Public Improvements shall be the exclusive obligation of Owner, and Owner shall bear the cost of planning, design, construction and financing of the Public Improvements and all other related and incidental activities, including off-site property or easement acquisition if such off-site property interests are necessary to construct the Public Improvements or to connect the Public Improvements to existing infrastructure and are located in the general vicinity of the Property. Town may, at the Town's discretion, exercise its eminent domain powers to acquire such off-site property interests if Owner or District reasonably determine that they are unable to secure them, provided that Owner bears all costs of condemnation including appraisal, expert witness and attorney's fees and just compensation for the property acquired, if compensation is required. Town shall not unreasonably delay, condition or deny the use of its eminent domain powers upon receipt of a sound request from Owner or District in this regard.

The Public Improvements shall be developed in strict accordance with Town Regulations, the PDP, this Agreement, the Phasing Plan and the applicable SDP, Plat and SIA. Except as otherwise expressly provided in this Agreement, Town shall have no obligation to develop Public Improvements.

6.02 Oversizing. In the event Owner independently develops Public Improvements which are sized to serve, or otherwise directly benefit adjacent developments, Town and Owner shall prescribe in the applicable SIA the method by which Owner may recover a fair and equitable portion of the cost of development of such Public Improvements from such third-party developments. Town shall make diligent and best efforts to obtain such recoupment, subject to applicable legal limitations on its authority to effect such recoupment and pre-existing contractual provisions with such other development interests.

6.03 Cooperation in Public Improvements Development. Town and Owner shall cooperate in obtaining necessary permits and approvals required by other governmental agencies in order to develop the Public Improvements. Town shall promptly apply for, and diligently process to completion, any such permits or approvals in its name or in the joint names of the Town and Owner, if so required by the governmental agencies. Town shall incur no liability to Owner if such governmental agencies do not issue necessary permits and approvals.

6.04 Town Water and Wastewater Improvements. The Town has the obligation to construct, acquire or otherwise develop raw water production, treatment and storage, and wastewater treatment with sufficient capacity to serve the Property through Full Buildout ("Town Water and Wastewater Improvements"). Unless a portion of the cost of the Town Water and Wastewater Improvements is allocated to Owner by mutual agreement, Town shall have the exclusive obligation to design, engineer and construct the particular component of the Town Water and Wastewater Improvements such that adequate capacity in the Town Water and Wastewater Improvements is available for service to development within the Property. If Owner has the

obligation to jointly fund a Town Water and Wastewater Improvement, the Town's obligation to develop such improvement is dependent on Owner providing financial guarantees and tendering funds when reasonably required by the Town.

6.05 Public Improvements Control. Upon dedication of Public Improvements by Owner and acceptance of the same by Town, Town shall have the exclusive ownership, management and maintenance rights and obligations with respect to the Public Improvements and Owner shall have no further responsibility for ownership or maintenance of the same. Town may use or allow others to use the capacities in the Public Improvements, provided that the capacities developed by Owner at Owner's cost shall be reserved for the benefit of the Property, or if used by Town to serve other properties, Town shall provide replacement or alternative capacities in such a manner as to not impede development on the Property and so as to maintain adequate service to existing development on the Property.

6.06 Subdivision Improvements Agreement. The Town Regulations require that a subdivider enter into an SIA at the time of approval of a Plat. The SIA addresses the engineering requirements for the Public Improvements to be constructed to serve the Plat and the financial guarantees to assure construction of the Public Improvements. Unless modified in the SIA, the provisions of this Article VI will apply to the development of such Public Improvements, irrespective of whether or not reference to this Article VI is made in the SIA.

ARTICLE VII
WATER, WASTEWATER AND STORMWATER

7.01 Water and Wastewater System Improvements. Owner, at its sole cost and expense, shall design and construct the necessary internal water and wastewater system improvements ("System Improvements") required to serve the Project, including construction costs incurred in connecting the System Improvements to the Town Water and Wastewater Improvements, in accordance with the Town Regulations and this Agreement.

Town shall permit Owner to connect to existing Town Water and Wastewater Improvements located on the east and west sides of the Property at locations approved by the Town.

Owner shall be required to construct the following Town Water Improvements as shown on the map attached as ***Exhibit 4***:

(a) A 16" water line from Crowfoot Valley Road to Crimson Sky Drive; and

(b) A 12" water line from Purple Zone Water Storage Tank 11 to a stub-out point located north of the Pioneer Ranch.

Prior to the construction of the Improvement referenced in subsection (a) of this section, Owner shall undertake and complete an analysis of whether it is necessary to increase its capacity in order to provide adequate water service to the Project. If, as a result of the analysis, the Town

determines in the exercise of reasonable discretion that an increase in capacity is necessary, Owner shall be required to upsize such Improvement.

In addition, Owner shall be required to fund a pro rata share of the actual costs incurred by the Town in oversizing the Woodlands Sewer Interceptor, which share shall not exceed $289.29 per SFE. Funding of such pro rata share shall be included with each residential building permit.

In the event that any of the above-listed Town Water and Wastewater Improvements should serve or, otherwise, directly benefit adjacent developments, then the provisions of Section 6.02 shall apply.

7.02 Water and Wastewater Service. Upon final acceptance of the System Improvements constructed by Owner to Town specifications, the Town will own, manage, and maintain the System Improvements at Town expense; provided, however, that to maintain that portion of: (i) each water service line from the curb stop to the building, and (ii) each sanitary sewer service line from the sanitary sewer main to the building, water and wastewater service will be billed and collected by the Town pursuant to the terms and conditions of the Town Regulations.

7.03 Lift Stations. Owner shall pay a wastewater lift station fee of $715.00 per SFE for the purpose of reimbursing the Town for a pro rata share of the costs the Town has incurred in association with the construction of the Castle Oaks Lift Station. Payment of such fee shall be due with each residential building permit for those residential units served by the Lift Station. Prior to the approval of the first Plat and the execution of the initial SIA, Owner shall undertake and complete an analysis of whether it is necessary to increase the capacity of the Castle Oaks Lift Station in order to provide adequate wastewater service to the Project. If, as a result of the analysis, the Town determines in the exercise of reasonable discretion that an increase in capacity is necessary, Owner shall be required to fund all costs the Town may incur in upsizing the Castle Oaks Lift Station up to and including a maximum amount of $100,000.00. Funding for such costs shall be payable by Owner at the later of (i) at the time a building permit is issued to the Town for such upsizing, or (ii) the issuance of the 50th residential building permit on the Property.

7.04 Drainageway Improvements. Owner shall be responsible for preserving and fully stabilizing all major drainageways within the Project boundaries having a watershed area greater than 130 acres. In particular, Owner, at its sole expense, shall be responsible for the design and construction of major drainageway improvements on Tributary 3 to McMurdo Gulch within the Project boundaries. Drainageway improvements shall be constructed and completed concurrently with the adjacent subdivision improvements and shall be consistent with Town regulations, including but not limited to the Town Storm Drainage Design and Technical Criteria Manual, as amended, watershed master planning for McMurdo Gulch, and natural stream channel design principals. At the Town's sole discretion, if Owner is unable, for any reason, to obtain the necessary permit(s) for all required drainageway improvements, the Town, at Town's sole discretion may seek to obtain the necessary permits and undertake the required improvements. If Town agrees to obtain the necessary permits and undertake the improvements, Owner shall deposit with Town an amount equivalent to the estimated cost, as agreed to by the Town and Owner, of completing such improvements.

ARTICLE VIII
TRANSPORTATION IMPROVEMENTS

8.01 Founders Parkway Right-of-Way Conveyance. Owner shall convey, at no cost to the Town, the necessary right-of-way for Founders Parkway as determined necessary by the Colorado Department of Transportation ("CDOT") and depicted on the PDP. Conveyance shall be at the time of plat approval of the adjacent property as required by CDOT.

8.02 Founders Parkway Intersection Control. Owner, at its sole cost and expense, shall design and construct a new intersection for future access to the Property on Founders Parkway, including those improvements identified in the TIA and in compliance with the CDOT access plan and CDOT specifications ("Founders Intersection"). The Founders Intersection shall be located adjacent to the designated commercial area (identified as PA-5) on the PDP at a location approved by CDOT and the Town. The Founders Intersection improvements will include, but not be limited to, a roundabout or traffic signal, turn lanes, acceleration and deceleration lanes, and striping; provided, however, that the design and construction of a roundabout or traffic signal shall not occur until such time as CDOT and the Town jointly determine, by means of a Town-approved traffic analysis, that such improvement is necessary. If, at such time as building permits have been issued by the Town for 75% of the residential lots in the Project, CDOT and the Town find that neither a roundabout nor a traffic signal is necessary, Owner shall, in lieu of design and construction, make a cash payment to the Town in an amount equal to the then-current estimated cost of the roundabout or traffic signal. The Project road connection at the Founders Intersection shall be constructed to the Town's standard of "major collector." Town agrees to use reasonable best efforts to recoup 50% of the costs associated with the design and construction of the roundabout or traffic signal, required turn lanes and other qualified elements of the Founders Intersection improvements from the owner or owners of the property located directly south of the Founders Intersection (the "Pioneer Ranch Property") if and when said owner or owners pursue (i) the annexation and development of the Pioneer Ranch Property within the Town or (ii) if the Pioneer Ranch Property is developed within the unincorporated County, the issuance of a permit by the Town to engage in development in an area of state interest or to conduct an activity of state interest pursuant to Title 21 of the Code. Town shall cause the adjacent property owners to remit to Owner any and all funds that may be recouped from such adjacent property owners for Founders Intersection improvements pursuant to the provisions of this Section 8.02.

8.03 Castle Oaks Drive Roadway Connection. Owner, at its sole cost and expense, shall design and construct a roadway connection between the Property and Castle Oaks Drive (the "Castle Oaks Connection") as depicted in the PDP. The Castle Oaks Connection shall be constructed with the first phase of the Project. In the event Castle Oaks Drive has not been realigned by the developer of the adjacent Terrain subdivision (the "Terrain Developer"), Owner shall be responsible for designing and constructing an interim connection from the new roundabout to Castle Oaks Drive. The connection may be on an interim alignment until Castle Oaks Drive is realigned permanently. Owner is further responsible for 100% of the costs of designing and constructing a roundabout at the intersection of the Castle Oaks Connection and Castle Oaks Drive along the ultimate alignment of Castle Oaks Drive. The roundabout shall be constructed with the first phase of the Project.

8.04 Founders Sidewalk Improvement. Owner, at its sole cost and expense, shall design and construct a ten-foot concrete sidewalk, located adjacent to Founders Parkway in an alignment that minimizes grading and disturbance of natural areas, from Crowfoot Valley Road to Crimson Sky Drive as depicted in the PDP, (the "Founders Sidewalk"). The construction of the Founders Sidewalk shall be undertaken as part of the first phase of the Project, pursuant to the approved SIA for the first Plat, concurrently with construction of the Founders Intersection improvements, including all missing sidewalk segments in the sidewalk alignment.

The Town and Owner acknowledges that the construction of that portion of the Founders Sidewalk between the western Property boundary, adjacent to the Founders Intersection, to Crowfoot Valley Road (the "Timber Canyon Segment") will require the cooperation of multiple property owners. Accordingly, the Town shall use reasonable best efforts to assist Owner in obtaining permission from the adjacent property owners to construct the Timber Canyon Segment on the adjacent property. In the event that the Town's efforts should prove unsuccessful, the Town agrees to accept a cash in lieu payment from Owner equal to the actual cost of designing and constructing the Timber Canyon Segment, as such cost is approved to by the Town. Delays in completing construction of Founders Sidewalk shall not limit or delay the issuance of residential building permits, or Owner's right to obtain approval of subsequent Plats and SIAs.

8.05 Macanta Boulevard Connection. Owner acknowledges that a connection from the Property to Macanta Boulevard located in the adjacent Macanta subdivision in the unincorporated County is necessary for the development of the Project. In the event that Macanta Boulevard has not been extended to the Project collector road prior to the issuance of the first building permit for the Project, Owner shall, at no cost to the Town, design and construct the extension of Macanta Boulevard, as depicted in the PDP**.** If this roadway connection to Macanta is not open to the public by the 50th building permit in the Project, the Town shall withhold all future building permits until the roadway is completed.

ARTICLE IX
PUBLIC LANDS

9.01 Required Dedication. All Public Lands shall be offered for dedication and upon acceptance by Town, conveyed to Town, at no cost to Town: (i) with the first Plat the Public Land tract lies within; or, (ii) with the first Plat adjacent to the Public Land tract, whichever occurs first; provided, however, that with respect to the Public Land tract described in the PDP as OSD-2, said tract shall be conveyed to the Town within 30 days following the Effective Date. The Owner shall plat the remaining Public Land tract(s) described in PDP at the time of platting for the phase within which said tract(s) are located. In addition, if the Town requires any other Public Land tract prior to the first Plat that such tract lies within or the first Plat adjacent to such tract, the Owner shall use its best efforts to convey the tract to the Town. All conveyances shall be in accordance with 9.05, below. Notwithstanding any provision of the Town Regulations to the contrary, those Public Lands dedications set forth in the PDP and this Agreement as listed below shall satisfy all required dedications necessary in connection with the development of the Property. The required Public Lands dedications are the following:

(a) The public open space areas identified as OSD-1, OSD-2, OSD-3, OSD-4, and OSD-5 on the PDP; and

(b) The Town park area identified as PLD-1 on the PDP.

9.02. Required Improvements. Owner, at its sole cost and expense, shall be responsible for the design and construction of the following improvements on Public Lands dedicated pursuant to Section 9.01:

(a) Town park area PLD-1, including, but limited to, any required parking facilities, picnic tables, and shade structures;

(b) Berms and landscaping to serve as a public open space buffer in OSD-3, as shown on the PDP;

(c) A natural surface trail system as per the Town's Soft Surface Sustainable Trail Development Guide, located generally as shown on the PDP; and

(d) A ten-foot wide concrete surface, all-weather trail connecting Founders Parkway and Castle Oaks Drive in an alignment that minimizes grading and disturbance of natural areas, as generally shown on the PDP.

In addition, the construction of the Town park area shall be completed and open to the public on or before the issuance of the 30th certificate of occupancy in PA-2, as identified on the PDP, or the 85th certificate of occupancy for the entire Project, whichever comes first. The Town shall retain the authority to approve the final design of each such improvement at the time of SDP approval. Upon completion by Owner of all improvements pursuant to this Article IX, and acceptance by Town of the dedication of any and all Public Lands set forth herein, the Town shall assume all ownership of and maintenance responsibilities for such improvements and dedicated lands.

9.03 Acquisition of Off-Site Real Property Interests. Wherever this Agreement requires the Owner to acquire any off-site real property interest for the purpose of constructing Public Improvements or providing other public improvements in connection with the Project, the acquisition of such off-site real property interests shall be the sole and exclusive responsibility of the Owner, and the Owner shall bear all costs associated with the same. Without limiting the generality of Section 3.01, the acquisition of off-site real property interests may be accomplished by one or more Districts through the use of eminent domain, provided that the use of eminent domain is authorized by such District's Service Plan in accordance with Article III.

9.04 Development Costs. Owner, at its expense, shall extend water, wastewater and stormwater utilities and streets to Public Lands as part of the Plat approval process. Owner shall pay to Town the applicable water, renewable water resource, stormwater and wastewater System Development Fees and tap connection charges utilized by the Town pursuant to Town Code to provide potable and irrigation water for parks development on Public Lands ("Tap Fees"). The Tap Fees shall be paid to Town with the Plat which includes the applicable Public Lands, or if the

number and size of the Tap Fees for the platted Public Lands is not known at the time of Plat recordation, then 60 days after notice from Town that the Tap Fees have been determined based on the Town's development plan for the Public Lands.

9.05 Conveyance. All Public Lands and other parcels to be conveyed to the Town shall be conveyed to Town by special warranty deed, subject to matters of record but free and clear of liens, or other title impediments that would preclude Town from utilizing the property for its intended purposes, as reasonably determined by Town. Unless otherwise provided in the Town Regulations to the contrary, the Owner shall furnish the Town with a policy of title insurance, issued by a title company licensed to do business in the State of Colorado, in the amount of $10,000 per acre. If so requested by Town or required by the Town Regulations, Owner shall complete a Phase 1 environmental audit of all Public Lands prior to conveyance and acceptance by Town, and shall be solely responsible for any remedial environmental measures of hazards identified in the audit reasonably imposed by Town as a condition to Town's acceptance of such Public Lands. Should the Phase 1 environmental audit identify the need for a Phase II audit, then Owner shall deliver such Phase II to Town and shall be solely responsible for any remedial environmental measures of hazards identified in the Phase II audit reasonably imposed by Town as a condition to Town's acceptance of such Public Lands.

9.06 Wildland Urban Interface Mitigation. All Public Lands and other parcels to be conveyed to the Town shall be assessed, at no cost to the Town, by a professional that is familiar with Wildland Urban Interface (WUI) mitigation. This assessment shall be provided to the Life Safety Division of the Fire Department for review and determination if any treatments are necessary to meet the current Community Wildfire Protection Plan that has been approved by the State of Colorado and Town of Castle Rock. Unless otherwise provided in the Town Regulations to the contrary, the Owner, shall furnish the Town with the review letter from the Fire Department stating that no treatments are required at the time of conveyance. If so requested by the Town or required by Town Regulations, the Owner shall contract with a competent contractor that is familiar with WUI mitigation to perform all identified treatments for all Public Lands prior to conveyance and acceptance by the Town. All mitigation treatments shall be completed by the Owner as a condition to Town's acceptance of such Public Lands, except for those Public Lands described in the PDP as OSD-2, which shall be conveyed to the Town at the time of the Effective Date of this Agreement, per Section 9.01. All mitigation treatments required pursuant to this Section 9.06 for OSD-2 shall be completed by the Owner prior to the first residential building permit for the Project, or within two (2) years following the date upon which OSD-2 is conveyed to the Town, whichever comes first. Once the initial mitigation is completed by the Owner and the Public Lands are conveyed to the Town, it shall be the responsibility of the Town to maintain the level of treatment that is appropriate as identified in the reviewed assessment and any subsequent updates.

Any Public Lands being conveyed to another public entity besides the Town, shall be also be assessed and the results of said assessment provided to the Life Safety Division of the Fire Department for review and determination if any treatments are necessary to meet the current Community Wildfire Protection Plan that has been approved by the State of Colorado and the Town of Castle Rock. If any treatments are required, they shall be the responsibility of the Owner. Once the Public Land is conveyed to another public entity it shall be the responsibility of said other

public entity to maintain the level of treatment that is appropriate as identified in the reviewed assessment and any subsequent updates.

9.07 Exclusion of Covenants. Owner shall exclude all Public Lands from application and effect of restrictive covenants, which may otherwise be imposed on the Property. If any Public Lands are inadvertently made subject to such covenants, this Agreement shall constitute the irrevocable consent of the Owner and the board of directors of any homeowner's association to the exclusion of the Public Lands from the application of such covenants. However, prior to constructing or placing any buildings or structures on Public Land, Town shall give the Owner and the applicable homeowner's association a reasonable opportunity to review and comment on the design and plans for any such improvements, but Town shall retain the ultimate authority to determine what improvements are placed on Public Lands.

9.08 Landscape Maintenance. Owner shall have the responsibility for the maintenance of landscaping within any public street right-of-way dedicated by Owner to the Town, including water, irrigation system, features, plantings, etc., for the landscaping between the right-of-way and street curbing within street medians and roundabout islands, as well as for any landscaping installed as part of the public open space buffer in OSD-3. Such maintenance shall be at the sole expense of Owner and to the standard for maintenance established by the Town's Landscape and Irrigation Criteria Manual Sections 4.3 and 9.3.2, or subsequently adopted equivalent provisions. Owners' maintenance obligation includes procurement of water services from the Town and payment of applicable water service charges under the Town Regulations. Owner(s) may delegate its maintenance obligation to one or more homeowner's association ("HOA") or to the District by separate agreement, and Town shall accept performance by the HOA or the District of such maintenance obligations, provided that if so delegated, the Town shall be designated as an intended third-party beneficiary to said agreement with all rights to enforce said agreement against the HOA or the District. Upon acceptance of such maintenance obligations by the HOA and/or the District, the Town agrees to release Owner from further maintenance obligations under this Agreement with respect to those improvements accepted.

ARTICLE X
VESTING

10.01 Vested Property Rights. Owner has demonstrated that the PDP inclusive of the PD Zoning Regulations meets the criteria under Chapter 17.08 of the Code and the Vested Property Rights Statute for vesting of property rights by agreement for a term in excess of three years. The PDP and this Agreement each constitute a "site-specific development plan" as defined in Section 104 of the Vested Property Rights Statute and Chapter 17.08 of the Code and, accordingly, vested property rights are established with respect to the PDP, inclusive of the PD Zoning Regulations, and this Agreement in accordance with the Vested Property Rights Statute and Chapter 17.08 of the Code. Pursuant to Section 17.08.080 of the Code, the following provision shall be placed on the PDP:

> This Canyons Far South Planned Development Plan, inclusive of the embedded PD Zoning Regulations, constitutes a site-specific development plan pursuant to Chapter 17.08 of the Castle Rock Municipal Code and §24-68-101, *et seq*., C.R.S.,

and establishes vested property rights that shall extend through December 31, 2037, to undertake and complete the development and use of the property in accordance with this Planned Development Plan.

10.02 Duration. Development of the Property requires Owner to make substantial upfront capital investment in Public Improvements as well as off-site infrastructure mandated by this Agreement. Given the scale of the Project, much of such infrastructure will serve multiple phases of the Project and the recoupment of such investment by Owner will occur incrementally as development of the Property progresses. The ability of the Owner or District to finance development of the Property is dependent on demonstration to the capital markets that there is an extended period of time in which the Project may be developed and marketed as currently envisioned, and that material modifications to the PDP will not be unilaterally imposed by the Town. Accordingly, the Parties find that the Vesting Term, as provided in this Section 10.02, is necessary and appropriate.

Property rights in the PDP and this Agreement are vested pursuant to Chapter 17.08 of the Code and the Vested Property Rights Statute until December 31, 2037 (the "Vesting Term").

10.03 Vesting Term Restrictions. During the Vesting Term, the Town shall not take any zoning or land use action (whether by action of the Town Council or pursuant to an initiated ordinance), which would alter, impair, prevent, diminish, impose a moratorium, or the like, on development, or otherwise delay development or the use of the Property in accordance with the PDP, nor shall Town unilaterally amend the PDP, except the following actions shall not be precluded during the Vesting Term ("Permitted Actions"):

(a) the enforcement and application of the Town Regulations in effect as of the Effective Date, except as expressly provided in the PDP or this Agreement;

(b) the enforcement and application of Town Regulations in effect at any point in time during the Vesting Term which are generally applicable to all similarly situated property, development, or construction within the Town;

(c) the enforcement and application of Town Regulations to which Owner consents;

(d) any action with respect to the PDP or this Agreement for which the Town pays just compensation as prescribed under Section 105(c) of the Vested Property Rights Statute; or

(e) the imposition of regional, state or federal regulations which are beyond the control of the Town as reasonably determined by Town.

10.04 Reservation of Rights. Although Owner will not have a claim against the Town for the occurrence of a Permitted Action, Owner reserves the right to challenge the legality of such action on any basis other than contractual breach of this Agreement, subject to the limitation and remedies under Section 10.05.

10.05 Limitation of Remedies. During the Vesting Term, and provided that Town is not in breach of its obligations under Article X of this Agreement, Owner shall not assert estoppel or "common law vesting," or any other legal or equitable cause of action or claim against the Town as a result of Owner's investment in Public Improvements or other expenditures in furtherance of development of the Property under the PDP. Upon expiration of the Vesting Term, or in the event Town is in breach of Article X of this Agreement, (i.e. Town has failed to timely cure a noticed default) this Section 10.05 shall no longer restrict Owner's legal remedies. Owner acknowledges that the limitation of its remedies during the Vesting Term is a material factor and inducement to the Town in granting vested property rights pursuant to this Article X.

10.06 Rights in PDP. Prior to expiration of the Vesting Term, Owner shall have the right to undertake and complete the development and use of the Property in accordance with the PDP and this Agreement, subject to the Permitted Actions. After expiration of the Vesting Term, the PDP and this Agreement shall remain valid and effective; however, the statutory vested property rights in the PDP and this Agreement shall then terminate. The termination of such vested property rights shall not affect any equitable right or entitlement, if any, Owner may have to complete the development of the Property in accordance with the PDP and this Agreement under law.

10.07 Effective Date. The effective date of this vesting of property rights in the PD is the Effective Date. The public notice of vesting required under Section 103 of the Vested Property Rights Statute shall be included in the publication of the ordinance approving the PDP. Town shall publish such ordinance within 14 days of its approval on second reading.

10.08 Effect of Referendum. Any referendum filed pursuant to Section 104(2) of the Vested Property Rights Statute and approved by the voters of the Town, which purports to invalidate the vested property rights established pursuant to this Article XI of this Agreement, shall not, except as may be expressly set forth therein, have the effect of invalidating the PDP or any other Town approvals pertaining to the Property.

10.09 Remedy for Breach or Impairment of Vested Property Rights.

(a) In consideration of the establishment of the vested property rights, together with the benefits to the Parties that this Agreement otherwise assures, the Parties, on behalf of themselves and their respective successors and assigns as applicable, have determined that it is in their respective interests to address and to waive certain potential claims, rights and remedies that might otherwise be construed to apply in a manner contrary to the Parties' intent in entering into, and performing their respective obligations pursuant to, this Agreement.

(b) The Town Council has established in its legislative capacity as the legislative governing body of the Town that, although the Vested Property Rights Statute provides for the payment of certain monetary damages upon a deprivation, impairment, violation or other divestment of the vested property rights, the Town desires not to be subject to liability for monetary damages pursuant to the Vested Property Rights Statute as a remedy for breach or default with respect to the vested property rights. Accordingly:

(i) In implementation of the foregoing policy to protect the Town from potential monetary liability under the Vested Property Rights Statute, while securing to Owner, as applicable, the benefits of the vested property rights under and pursuant to the Vested Property Rights Statute:

(A) Owner hereby knowingly, intentionally, voluntarily and irrevocably waives, for itself and for its successors and assigns (including, but not limited to, any successor Owner), any remedial right it or they, as applicable, may have pursuant to Section 105(1)(c) of the Vested Property Rights Statute to be paid money damages as just compensation upon a deprivation, impairment, violation or other divestment of the vested property rights.

(B) The Town hereby knowingly, intentionally, voluntarily and irrevocably waives, for itself and for its successors and assigns, any right the Town may have pursuant to Section 105(1)(c) of the Vested Property Rights Statute to pay money damages to Owner (including, but not limited to, any successor Owner) as just compensation upon a deprivation, impairment, violation or other divestment of the vested property rights.

(C) The Parties have executed and entered into the foregoing mutual waivers, with the express intent that such waivers will be mutually binding and enforceable as to each them and their respective successors and assigns, having been given in consideration of the mutual benefits accruing to each of them as a result of such mutual waivers, and otherwise accruing to each of them pursuant to this Agreement, and with the intent and mutual understanding that the effect of such mutual waivers will be that the Town is precluded from taking such actions as are set forth in Section 105(1)(c) of the Vested Property Rights Statute.

(ii) The Town Council, acting in its legislative capacity as the legislative governing body of the Town, expressly authorizes, determines and directs that Owner will be entitled to seek and to be awarded, and the Town will be subject to, such mandatory or prohibitory equitable remedies as may be required to secure to the Parties the remedies, limitations on remedies, and enforcement of the other terms and conditions set forth in this Section 10.09(b).

(c) Contingent Remedy. Only if, notwithstanding the foregoing mutual waivers and the Parties' express intent as to the enforceability and remedial effect of such waivers, it is judicially determined that the terms and conditions (either in whole or in part) set forth in Section 10.09(b) will not be enforced against the Town as written, Owner will be entitled to pursue and be awarded just compensation pursuant to Section 105(1)(c) of the Vested Property Rights Statute to the extent the Town takes any action which has the effect of divesting, depriving, impairing or violating the vested property rights under any circumstances other than those stated in Section 10.09(b) and such action constitutes a compensable action under the Vested Property Rights Statute.

ARTICLE XI
DEFAULT AND REMEDIES

11.01 Event of Default. Failure of Town or Owner to perform any covenant, agreement, obligation or provision of this Agreement, constitutes an event of default under this Agreement.

11.02 Default Notice. In the event either Party alleges that the other is in default, the non-defaulting Party shall first notify the defaulting Party in writing of such default, and specify the exact nature of the default in such notice. Except as otherwise provided herein, the defaulting Party shall have 20 business days from receipt of such notice within which to cure such default before the non-defaulting Party may exercise any of its remedies hereunder. If such default is not of a type which can be cured within such twenty (20) day period and the defaulting Party commenced the cure within the twenty (20) day period and is actively and diligently pursuing such cure, the defaulting Party shall have a reasonable period of time given the nature of the default following the end of the twenty (20) day period to cure such default, provided that such defaulting Party is at all times within such additional time period actively and diligently pursuing such cure in good faith.

11.03 Remedies. In addition to specific remedies provided elsewhere in this Agreement (including Town's right to withhold development approvals on portions of the Property burdened with the unperformed obligation), upon notice of default and failure to cure in accordance with Section 11.02, the non-defaulting Party shall have the right to take whatever action, at law or in equity, which appears necessary or desirable to enforce performance and observation of any obligation, agreement or covenant of the defaulting Party under this Agreement, or to collect the monies then due and thereafter to become due. In any such legal action, the prevailing Party shall be entitled to recover its reasonable attorney's fees and litigation costs from the other Party. Notwithstanding anything herein to the contrary, Owner's remedies in the event of a default by Town in the grant of vested development rights are governed by Section 10.09.

The Parties acknowledge and agree that Mortgagee has a right, but not the obligation, to remedy or cure any event of default or breach by Owner under this Agreement, and that the Town will accept such remedy or cure if properly and timely carried out by Mortgagee; provided that any remedy or cure by Mortgagee shall not be construed as an assumption by Mortgagee of, or create any liability to Mortgagee with respect to the obligations of owner under this Agreement unless Mortgagee acquires ownership of the Property.

ARTICLE XII
GENERAL PROVISIONS

12.01 Amendment. Any and all changes to this Agreement, in order to be mutually effective and binding upon the Parties and their successors, must be in writing and duly executed by the signatories or their respective representatives, heirs, successors or assigns. This Agreement may be amended without the approval of all of the then Owners of the Property, provided that such amendment shall not be binding on an Owner or the Property owned by such Owner who is not a Party to such amendment. The Town Manager and Town Attorney and officers on behalf of Owner executing this Agreement are authorized to make corrections and clarifications to this

Agreement, so long as the changes are consistent with the intent and understanding of the Parties at the time of approval by the governing bodies, and execution of such amendment will constitute approval of such changes by the Parties.

12.02 Interpretation. In this Agreement, unless the context otherwise requires:

(a) all definitions, terms and words shall include both the singular and the plural;

(b) words of the masculine gender include correlative words of the feminine and neuter genders, and words importing singular number include the plural number and vice versa; and

(c) the captions or headings of this Agreement are for convenience only and in no way define, limit or describe the scope or intent of any provision, article or section of this Agreement.

12.03 Notice. The addresses of the Parties to this Agreement are listed below. Any and all notices allowed or required to be given in accordance with this Agreement may be given personally, sent via nationally recognized overnight carrier service, or by registered or certified mail, return receipt requested. If given by registered or certified mail, the same will be deemed to have been given and received three days after a registered or certified letter containing such notice, properly addressed, with postage prepaid, is deposited in the United State mail. If personally delivered or sent via nationally recognized overnight courier service, a notice will be deemed to have been given and received the first to occur of one business day after being deposited with a nationally recognized overnight air courier service or upon delivery to the Party to whom it is addressed. In the event of transfer of the Property to the address of such grantee as indicated in the recorded instrument whereby such grantee acquired an interest in the Property.

If to Town: Town of Castle Rock
100 Wilcox Street
Castle Rock, CO 80104
Attn: Town Manager
With a copy to: Town Attorney

If to Owner: Canyons South, LLC
7979 E. Tufts Avenue, Suite 105,
Denver, Colorado 80237

12.04 Severability. It is understood and agreed by the Parties hereto that if any part, term, or provision of this Agreement is found by final judicial decree to be illegal or in conflict with any law of the State of Colorado, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the Parties shall be construed and enforced as if the Agreement did not contain the particular part, term or provision held to be invalid.

12.05 Conflicts. If the terms and provisions of this Agreement are in conflict with any prior agreement between the Town and the Owner or the Town Regulations, the terms and provisions of this Agreement, as it may be amended from time to time, shall control.

12.06 Verification. The Town and the Owner shall provide the other written verification regarding the status, performance or completion of any action required of the Town or the Owner under the Agreement or by the terms of any other agreement.

12.07 Additional Documents or Action. The Parties agree to execute any additional documents or take any additional action, including but not limited to estoppel documents requested or required by lenders or the Parties hereto, that is necessary to carry out this Agreement or is reasonably requested by any Party to confirm or clarify the intent of the provisions of this Agreement and to effectuate the agreements and the intent. If all or any portion of this Agreement, or other agreements approved in connection with this Agreement are asserted or determined to be invalid, illegal or are otherwise precluded, the Parties, within the scope of their powers and duties, will cooperate in the joint defense of such documents and, if such defense is unsuccessful, the Parties will use reasonable, diligent good faith efforts to amend, reform or replace such precluded items to assure, the extent legally permissible, that each Party substantially receives the benefit that it would have received under this Agreement.

12.08 Entire Agreement. This instrument embodies the whole agreement of the Parties. There are no promises, terms, conditions or obligations other than those contained herein; and this Agreement shall supersede all previous communications, representations or agreements, either verbal or written.

12.09 Days. If the day for any performance or event provided for herein is a Saturday, Sunday or a day on which national banks are not open for regular transactions of business, or a legal holiday pursuant to Section 24-11-101(1), C.R.S, such day will be extended until the next day on which such banks and state offices are open for the transaction of business.

12.10 Natural and Manmade Hazards. Nothing in this Agreement or otherwise shall require the Town to approve development or use of any portion of the Property where there exist natural or man-made hazards on or in the immediate vicinity of the proposed area of use, provided that such natural or man-made hazards could not reasonably have been discovered at the time of approval of the PDP but such hazards, if uncorrected, would pose a serious threat to the public health, safety and welfare.

12.11 Recording. This Agreement will be recorded in the Records after mutual execution by the Parties following the Effective Date.

(Signature Pages to Follow)

ATTEST: **TOWN OF CASTLE ROCK**

_____ _____
Lisa Anderson, Town Clerk Jason Gray, Mayor

Approved as to form:

_____
Michael J. Hyman, Town Attorney

COUNTY OF)
) ss.
STATE OF)

The foregoing instrument was acknowledged before me this _____ day of _____, 2022, by _____as Town Clerk and _____ as Mayor for the Town of Castle Rock, Colorado.

Witness my official hand and seal.
My commission expires: _____.

(S E A L)

_____
Notary Public

OWNER:

CANYONS SOUTH, LLC
a Colorado limited liability company

By: _____

Its: _____

STATE OF)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this _____ day of _____, 2022 by_____ as _____ for Canyons South, LLC, a Colorado limited liability company.

Witness my official hand and seal.
My commission expires: _____

(S E A L)

_____
Notary Public

MORTGAGEE JOINDER

By execution of this Agreement, Mortgagee subordinates its lien and interest in the Property created by Deed of Trust recorded in the Records _____ at Reception No. _____ to the real covenants and restrictions of this Agreement. Mortgagee shall have no affirmative obligation hereunder, nor shall Town have the right to seek performance of this Agreement from Mortgagee except in the event Mortgagee acquires legal title to the Property, in which event Mortgagee shall be bound by the terms, conditions and restrictions of this Agreement.

MORTGAGEE:

By: _____

Its: _____

STATE OF)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this ___ day of _____, 20__ by _____ as _____ for _____.

Witness my official hand and seal.
My commission expires: _____.

(S E A L)

_____
Notary Public

CANYONS SOUTH ANNEXATION BOUNDARY

A PARCEL OF LAND BEING TRACTS V & X, CANYONS SOUTH FILING NO. 1A, 3RD AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2021023312, IN THE RECORDS OF THE DOUGLAS COUNTY CLERK AND RECORDER'S OFFICE AND PORTIONS OF THE SOUTH HALF OF SECTION 30 AND THE NORTH HALF OF SECTION 31, TOWNSHIP 7 SOUTH, RANGE 66 WEST & THE SOUTHEAST QUARTER OF SECTION 25, TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF DOUGLAS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE BEARINGS FOR THIS DESCRIPTION ARE BASED ON THE EAST LINE OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 7 SOUTH, RANGE 66 WEST OF THE SIXTH P.M., AS SHOWN ON SAID PLAT OF CANYONS SOUTH FILING NO.1A, 3RD AMENDMENT TO BEAR S 00°03'56" E, FROM THE EAST QUARTER CORNER OF SAID SECTION 30, BEING MONUMENTED BY A REBAR WITH A 2 INCH ALUMINUM CAP STAMPED "PLS 23515" TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, BEING MONUMENTED BY A REBAR WITH A 1-1/2 INCH ALUMINUM CAP, STAMPED "PLS 23515", WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO.

COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 30, THENCE S 00°03'56" E, ALONG THE EAST LINE OF SAID CANYONS SOUTH FILING NO, 1A, 3RD AMENDMENT AND ALONG THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 798.31 FEET TO THE NORTHEAST CORNER OF SAID TRACT X AND THE POINT OF BEGINNING;

THENCE S 00°03'56" E, CONTINUING ALONG SAID EAST LINES, A DISTANCE OF 525.32 FEET TO THE SOUTH SIXTEENTH CORNER OF SECTIONS 29/30, ALSO BEING A POINT ON THE NORTH LINE OF CASTLE OAKS, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 150556, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE NORTH AND EAST LINES OF SAID CASTLE OAKS PLAT, THE FOLLOWING THREE (3) COURSES:

1. S 89°49'31" W, A DISTANCE OF 1319.43 FEET TO THE SOUTHEAST SIXTEENTH CORNER OF SAID SECTION 30;
2. S 00°04'19" E, ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, A DISTANCE OF 1331.29 FEET TO THE EAST SIXTEENTH CORNER OF SAID SECTIONS 30/31;
3. S 00°07'26" E, ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 31, A DISTANCE OF 2643.38 FEET TO A POINT ON THE NORTH LINE OF CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 2013082860 AND A POINT ON THE NORTH LINE OF THAT BOUNDARY LINE AGREEMENT RECORDED AT RECEPTION NO. 2007016736, BOTH OF SAID DOUGLAS COUNTY RECORDS;

THENCE S 89°18'28" W, ALONG THE NORTH LINE OF SAID BOUNDARY LINE AGREEMENT AND ALONG THE NORTH LINES OF SAID CASTLE OAKS ESTATES FILING NO. 1, 9TH AMENDMENT, CASTLE OAKS ESTATES FILING NO. 1, AMENDMENT NO. 2, RECORDED AT RECEPTION NO. 2006078876 AND CASTLE OAKS ESTATES FILING NO. 1, RECORDED AT RECEPTION NO. 2003181990, A DISTANCE OF 3675.98 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009029995, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE EAST AND NORTH LINES OF SAID PARCEL OF LAND THE FOLLOWING TWO (2) COURSES:

1. N 00°13'51" W, A DISTANCE OF 245.55 FEET;

2. N 47°08'24" W, A DISTANCE OF 34.12 FEET TO A POINT ON THE EAST LINE OF THE FOUNDER'S PARKWAY RIGHT-OF-WAY, ORIGINALLY DEDICATED AS MILLER BOULEVARD, BY THE MILLER BOULEVARD FILING NO. 2 FINAL PLAT, A SUBDIVISION PLAT RECORDED AT RECEPTION NO. 8603133, SAID DOUGLAS COUNTY RECORDS;

THENCE ALONG SAID EAST LINE, THE FOLLOWING TWO COURSES:

1. N 00°12'47" W, A DISTANCE OF 1420.37 FEET TO A POINT OF CURVATURE;
2. ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 10°42'21" AND AN ARC LENGTH OF 187.79 FEET TO THE SOUTHWEST CORNER OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2009099312;

THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND THE FOLLOWING FIVE (5) COURSES:

1. N 72°31'31" E, A DISTANCE OF 73.36 FEET;
2. N 00°01'17" E, A DISTANCE OF 200.00 FEET;
3. N 72°31'31" E, A DISTANCE OF 192.84 FEET;
4. N 24°42'07" W, A DISTANCE OF 72.63 FEET;
5. N 33°43'04" W, A DISTANCE OF 424.14 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY;

THENCE N 00°01'17" EAST, A DISTANCE OF 88.15 FEET TO A POINT ON THE NORTH LINE OF SAID RIDGE ROAD RIGHT-OF-WAY;
THENCE S 89°47'43" W, ALONG SAID NORTH LINE, A DISTANCE OF 729.78 FEET TO A POINT ON THE NORTH LINE OF SAID FOUNDER'S PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE;

THENCE ALONG SAID NORTH LINE, THE FOLLOWING THREE COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 1005.00 FEET, A CENTRAL ANGLE OF 13°57'59" AND ARC LENGTH OF 244.98 FEET, THE CHORD OF WHICH BEARS N 82°51'30" W, A DISTANCE OF 244.37 FEET;
2. N 89°50'29" W, A DISTANCE OF 488.91 FEET TO A POINT OF CURVATURE;
3. ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 895.00 FEET, A CENTRAL ANGLE OF 25°36'15" AND AN ARC LENGTH OF 399.95 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY, AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°41'01" W, ALONG THE EAST LINE OF SAID RIDGE ROAD RIGHT-OF-WAY, A DISTANCE OF 29.20 FEET TO A POINT BEING 23.00 FEET NORTH OF THE NORTH LINE OF SAID FOUNDER' PARKWAY RIGHT-OF-WAY AND A POINT OF NON-TANGENT CURVATURE, AND BEING THE SOUTHWEST CORNER OF A PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2006097242, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH AND EAST LINES OF SAID PARCEL OF LAND, THE FOLLOWING TWO (2) COURSES:

1. ALONG THE ARC OF A NON-TANGENT CURVE TO THE LEFT, HAVING A RADIUS OF 872.00 FEET, A CENTRAL ANGLE OF 22°57'23" AND AN ARC LENGTH OF 349.38 FEET, THE CHORD OF WHICH BEARS S 74°32'56" E, A DISTANCE OF 347.05 FEET;

2. N 19°21'06" W, A DISTANCE OF 1023.82 FEET TO A POINT ON THE EAST LINE OF THE RIDGE ROAD RIGHT-OF-WAY AS DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2008079259, SAID DOUGLAS COUNTY RECORDS;

THENCE N 11°52'30" E, ALONG SAID EAST LINE, A DISTANCE OF 499.36 FEET TO A POINT ON THE SOUTH LINE OF THAT PARCEL OF LAND DESCRIBED IN THAT DEED RECORDED AT RECEPTION NO. 2018029164, SAID DOUGLAS COUNTY RECORDS;
THENCE ALONG THE SOUTH LINE OF SAID PARCEL OF LAND THE FOLLOWING FOUR (4) COURSES:

1. N 90°00'00" E, A DISTANCE OF 653.69 FEET;
2. S 33°43'04" E, A DISTANCE OF 792.75 FEET;
3. N 59°57'41" E, A DISTANCE OF 749.00 FEET;
4. N 76°24'57" E, A DISTANCE OF 927.15 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING, ALSO BEING THE WEST CORNER OF SAID TRACT V;

THENCE ALONG THE NORTH LINE OF SAID TRACT V, THE FOLLOWING FOUR (4) COURSES:

1. N 76°24'57" E, A DISTANCE OF 14.66 FEET;
2. S 89°06'00" E, A DISTANCE OF 1845.91 FEET;
3. N 74°02'37" E, A DISTANCE OF 891.67 FEET;
4. N 81°10'33" E, A DISTANCE OF 389.25 FEET TO A POINT ON THE SOUTH LINE OF SAID CANYONS SOUTH FILING NO. 1A, 3RD FILING;

THENCE ALONG SAID SOUTH LINE, THE FOLLOWING THREE COURSES:

1. N 63°07'04" E, A DISTANCE OF 395.46 FEET;
2. S 73°17'30" E, A DISTANCE OF 198.44 FEET;
3. S 85°55'00" E, A DISTANCE OF 165.88 FEET TO THE WEST CORNER OF SAID TRACT X;

THENCE N 81°10'33" E, ALONG THE NORTH LINE OF SAID TRACT X, A DISTANCE OF 354.66 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 17,816,380 SQUARE FEET OR 409.008 ACRES, MORE OR LESS.

PLACEHOLDER

Attachment B, Exhibit 2, Exhibit 2

Special Warranty Deed Template

(To be attached by Legal)

WATER EFFICIENCY PLAN FOR CANYONS FAR SOUTH

Castle Rock, Colorado
WEP21-0004

Prepared For:
Canyons South LLC
5299 DTC Blvd., Suite 1260
Greenwood Village, CO

Prepared by:
Dig Studio
1521 15th Street
Denver, CO 80202

November 2022

LANDSCAPE ARCHITECT'S STATEMENT:

The enclosed Water Efficiency Plan, and Exhibits were prepared by me, or under my direct supervision, and are correct to the best of my knowledge and belief. Said Water Efficiency Plan has been prepared in accordance with applicable Town of Castle Rock criteria and latest Minimum Standards for Water Efficiency document.

_____

William P Vitek, Registered Landscape Architect, CO License #737

OWNER/DEVELOPER'S STATEMENT

As Owner/Developer of land(s) identified within this report; I agree to proceed, implement and comply with all recommendations and requirements outlined herein.

_____

Canyons South LLC

TOWN OF CASTLE ROCK APPROVALS:

_____

Accepted By:

TABLE OF CONTENTS

Standard
Terminology and Values

One cubic foot = 7.48 gallons of water
One acre-foot = 325,851 gallons of water
One cubic foot per second (cfs) = 448 gallons per minute (gpm)
One acre of low water use turf grass, as approved by Town of Castle Rock Water, requires approximately 19.0" (407,314 gallons) of water per year.

I. INTRODUCTION

This Water Efficiency Plan (WEP) has been prepared as a supplement to the Canyons Far South Planned Development Plan. The WEP will also be supported by project specific Design Guidelines for the Canyons Far South project. This WEP and associated Design Guidelines conforms with the Town of Castle Rock latest standards and requirements as of the date of the adoption of this WEP.

A. Location

Canyons Far South (the "Property") is a master planned residential community located on a total of approximately 409 acres. The site is located in the northeast corner of the Town of Castle Rock as depicted on the Site Location Map in the Appendix. The site is located just north of the Terrain community, east of Founders Parkway, west of Castle Oaks Drive and just south of the Macanta residential community

B. Description of Property

The site is entitled for 474 residential units and 60,000 SF of commercial, and is anticipated to include a mix of lot and housing options in a site planning configuration that respects the natural vegetation, existing topography and drainage corridors. Existing vegetation, which is not currently irrigated, consists mainly of native grasses, scrub oak and some sporadic groupings of ponderosa pine along the drainage corridors. Infrastructure improvements for this project are expected to occur in phases as shown on the PD Plan.

II. WATER SYSTEM CHARACTERISTICS

A. Existing Supply

The Property is served by the Town of Castle Rock for potable water service delivered through the Town's water infrastructure. It is anticipated the project will utilize the Town's existing Red Zone water lines for the Commercial Planning Area and the Purple Zone system for the Residential Planning Areas. Connection points for the water infrastructure are located along Founders Parkway, Castle Oaks Drive and within the Macanta community to the north. Canyons South LLC will dedicate all owned ground water rights to the Town.

B. Proposed Facilities

All water and wastewater infrastructure design will be in accordance with the current Town of Castle Rock Water and Wastewater Design Criteria Manuals that can be located at: www.crgov.com/codecentral

C. Irrigation Demand

Canyons Far South is envisioned to be a model of water efficiency for the Town of Castle Rock utilizing both exterior and interior efficiency programs while still providing an attractive landscaped environment.

Residential lots will include water-wise landscaping with a mix of vegetation and landscaping materials. It is anticipated the Property will contain a variety of lot sizes each of which will provide specific limits to the amount of irrigated turf, planting materials and general landscape design. Landscape requirements will, at a minimum, meet the Town of Castle Rock standards, while the community design guideline will further define the landscape requirements for homebuilders and homeowners. Specific detail for landscape requirements and limitations shall be included with each respective site development plan (SDP) but shall not be subject to additional restriction so long as they are consistent with the Town's then landscape requirements and this WEP.

Common areas, open space, and streetscapes will utilize a drought tolerant plant palette that is consistent with Town of Castle Rock standards and plant list. The overall streetscape will be designed to have a multi-seasonal aesthetic appearance while accommodating plants that tolerate increased pollution and salts. No turf grass will be used within the streetscape and trees will meet the minimum diversity standard. The streetscape will be designed to blend in with the naturalized landscape concept for the Property with trees grouped rather than formal tree lawn plantings. All trees will be planted with regard to adequate growth potential and pedestrian safety zones.

Native seed planting will be utilized in the common space, and open space areas in and around the Planning Areas and for revegetation of disturbed areas. Native drought tolerant grasses will be included in most common space areas. Trees, shrubs and ornamental plants will be selected from the Town's low to very low hydrozone plant list and utilize a drip irrigation system. Grow-in of the disturbed areas may utilize additional water demand to reestablish vegetation to a sustainable coverage. Common area parks may utilize Town of Castle Roack approved irrigated turf, Kentucky bluegrass not allowed, but only in those areas identified as high-demand high-traffic areas planned for recreational purposes and group activities. Enhanced Native drought tolerant grasses, species approved by the Town of Castle Rock are required for these areas.

The Appendix includes an example landscaping plan for a typical sized lot along with a suggested planting list for the community. Additional plant materials may be proposed by the homebuilder and/ or installed by the homeowner so long as they are consistent with the intent of this WEP and the community design guidelines. Plant material to be utilized will be on the Town of Castle Rock approved Plant List and will be in Hydrozone 1 and 2.

III. WATER USAGE PERFORMANCE STANDARDS

A. Water Efficiency Plan (WEP) Minimum Criteria

All single-family homes in Canyons Far South will be constructed according to the following minimum criteria. Homes constructed under this WEP will demonstrate a higher efficiency and additional water savings above and beyond similar homes built without a WEP. Water efficiency criteria must meet or exceed current Town of Castle Rock standards. These standards may be

adjusted as phases develop to reflect new technologies and updates to the Town's Criteria and the Colorado's WaterSense programs.

1. The homes at Canyons Far South will meet the following required fixture criteria:

1.1. Service Pressure

i. Limited to 60 pounds per square inch (psi) at the point of service.

1.2. Toilets

i. Dual Flush: Watersense labeled, not to exceed a solid flush of 0.8 gallons per flush gpf or less and a liquid flush of 0.5gpf or less.

ii. Single Flush: Watersense labeled, not to exceed 0.8 gallons per flush gpf or less.

1.3. Kitchen Faucets

i. Not to exceed 1.5 gallons per minute (gpm).

1 .4. Bathroom Faucets

i. WaterSense labeled, not to exceed 1.2 gpm.

1.5. Showerheads (one allotted per bath/shower)

i. WaterSense labeled, not to exceed 1.5 gpm per showerhead.

1.6 Irrigation Controller

i. WI-FI enabled smart irrigation controller with multiple sensor inputs for rain and flow sensors.

1.7 Irrigation Components

i. Rotors, rotary nozzles, and point source or sub-surface drip irrigation, high efficiency spray irrigation is only allowed in turf areas and must have an application rate not to exceed one and one quarter (1.25) inches / hour.

ii. Irrigation flow sensor

ii. Irrigation master valve

1.8. Water Features

i. Outdoor decorative water features are not allowed.

Optional fixture selection and design criteria to achieve a minimum of seven (7) Points will also be required from the list of options as follows. Calculation of such points shall be determined with each respective Site Development Plan (SDP) application, allowing for flexibility in achieving the points to vary between product and homebuilder preference.

1.9 Pools

i. In-ground pools are not allowed.

1.10 Colorado Scape Design

i. A natural landscape which uses low to very low water, less than ten (10") inches of water per year incorporating plant material that blends with the native Castle Rock area landscapes. Plant material must be maintained in its natural form, utilizing a combination of hardscape and landscape materials which provide a variety of colors, textures, sizes, shapes and seasonal interest. No turf is allowed in front yards.

* Back Yard, 5 Points

1.11 Internal House Greywater System

i. A system contained within each home that allows for the collection and re-use of greywater generated within the home for the purpose of toilet flushing. 5 Points.

1.12 Hot Water Demand

i. A continuous whole-home hot water recirculation, with a traditional water heater system. 3 Points.

1.13 Tankless Water Heater

i. Point of use tankless electric water heater. 1 Point per location, maximum of 4 Points.

1.14 Leak Detection

i. Wi-Fi enabled flow detection and monitoring device with automatic shut off such as a Flo by Moen or similar system, 2 Points.

1.15 Kitchen Faucets

i. Kitchen faucets with less than 1.5 gpm, 1 Point per location, maximum of 2 Points.

1.16 Bathroom Faucets

i. Bathroom faucets with 1 gpm or less, 1 Point per location. Maximum of 3 Points.

2. Outdoor Water Efficiency

Landscape and Irrigation plans submitted as part of a WEP must meet or exceed the most current landscape and irrigation regulations at the time of each respective Site Development Plan (SDP) submittal. All single-family homes in Canyons Far South will be constructed according to the following outdoor criteria.

The outdoor water efficiency at Canyons Far South will be required to meet at least 3 points from the Town of Castle Rock's WEP criteria, an additional 4 points will come from indoor water efficiency.

2.1 Landscape and Irrigation Typical Treatment

All landscape and irrigation plans, as part of this Water Efficiency Plan, must be approved by Castle Rock Water, Conservation Plan Review at time of SDP.

i. Collector Spine Road Landscape:
   a. A regularly spaced, 40' o.c. tree lined road is not the intent of this landscape character area. Rather groupings of trees will be used to focus and buffer views along the entire length of the spine road. The total quantity of trees in the Spine Road groupings will equal the quantity of trees that would be anticipated for a 40' o.c. spacing. The Landscape Character along the main collector spine road will consist of groupings of trees and shrubs to match the existing native landscape character. The ground plane will be treated with a native grass seed mix to blend back with the existing undisturbed areas of the site. Drip irrigation to trees and shrubs shall be permanently installed to provide long term supplemental watering. Irrigation for native seeding is to be temporarily installed for establishment purposes only then removed.

ii. Planning Area Internal Local Neighborhood Streets (Not adjacent to Lots)
   a. Entry roads into the Planning Areas will consist of a mixture of 50% native reseeded grass areas and 50% enhanced native shrub areas within the Right of Way (ROW). Areas disturbed by grading operations will be reseeded with native grass. Similar to the Spine Road aesthetic, trees will be planted in groupings to mimic the native surroundings and open up views across the landscape. Temporary irrigation will be utilized for the native seed grass areas and will be removed, see Temporary Irrigation Criteria on CRgov.com, once these native areas are established. A point source drip irrigation system utilizing no more than 10" of water per year for the trees and shrubs shall be permanently installed to provide long term supplemental watering. This system will be maintained by the HOA. Irrigation for native seeding is to be temporarily installed for establishment purposes only then removed.

iii. Local Streets Adjacent to Lots
   a. The landscape areas located between the street facing lot lines and the back of the adjacent attached sidewalk will be planted with enhanced native plants and trees, as shown as a conceptual example in the Appendix of this WEP. These areas will utilize a point source drip irrigation system that will be installed by builder and maintained by homeowner. Plantings will not utilize more than 10" inches of irrigation per year and turf grass will not be allowed in this area. The plantings and irrigation system in this area will be the responsibility of the individual lot owner, as per section 9.3.2 of the Town of Castle Rock Landscape and Irrigation Criteria Manual, for upkeep and maintenance.

iv. Open Space Private (OSP)/developed parks
   a. Planning Areas may contain developed park areas for open recreational activities such as informal field games, catch, frisbee, and dog walking.

b. It is anticipated that turf areas or high water areas may be incorporated into park designs as consistent with Town of Castle Rock Municipal code Chapter 13.20. Low water turf grass will utilize no more than 19" inches of water per year. The remaining area will include enhanced native shrubs and trees on a drip irrigation system utilizing no more than 10" inches of water per year. These areas will contain shrubs and low water plantings with limited turf.

v. Commercial

a. Open space within the commercial area will mainly consist of paved plaza spaces and gathering areas that are accented with shrub beds for color and trees for shade. Water usage in planted areas will not exceed more than 10" of water per year.
b. Design will adhere to Town of Castle Rock Landscape and Irrigation Criteria Manual.
c. Parking lots will be landscaped with trees and hearty shrubs.
d. Any screening necessary for the Commercial Area will be shrubs and trees with the surrounding area will be a revegetated native seed to be established with temporary irrigation and blend with the existing character of Canyons Far South.
e. All landscape areas will be irrigated with drip irrigation.
f. No outdoor water features are allowed.
g. No areas of irrigated turf are allowed.

2.2. Landscape Design

i. ALL landscape design and implementation shall adhere to the Town of Castle Rock Landscape and Irrigation Criteria Manual.
ii. All front and rear yards will be designed and installed by the homebuilder consistent with this WEP and community design guidelines.
iii. All front yards will be designed to utilize a low to very low less than ten (10") inches of water per year) plant palette and will provide a variety of colors, textures, sizes, and shapes through hardscape and landscape materials.
iv. Backyard turf area size in no case shall exceed 500 square feet.
v. Turf types shall not include Kentucky Bluegrass varieties but may include other drought tolerant varieties. Allowable turf shall include turf species as listed on CRgov.com. All turf species shall be approved by the Castle Rock Water prior to installation.
vi. All other landscaping must be Low to Very-Low Hydrozone (10" or less per year). All turf species shall be approved by Castle Rock Water prior to installation. Approved plant and turf species are available on-line at www.CRgov.com
vii. Landscape must provide a minimum coverage of plant materials of 75% at *5* year maturity in front yards, excluding driveways and walks, and side yards when adjacent to streets.
viii. Rear yards shall have a minimum of 50% plant coverage at *5-year* maturity. The remainder of yard coverage, excluding patios, may be composed of rock mulches, aggregate surfacing, artificial turf or hardscape. Rear yard design and

implementation shall adhere to the Town of Castle Rock Landscape and Irrigation Criteria Manual.

ix. An irrigation exemption may be issued for establishment of irrigated planted native seed in any month of the Mandatory Watering Schedules except July.

2.3. Irrigation Design

Residential Irrigation designs shall follow the Town of Castle Rock Landscape and Irrigation Criteria Manual at a minimum. Refer to Sections 4 and 6 for specific requirements. Additional requirements shall include:

i. Irrigation Flow Sensor
ii. Irrigation Master Valve
iii. Controllers:
   a. A wi-fi enabled weather sensing automatic irrigation system controller shall be installed. Controllers must be Town- approved and sensing shall be either weather-based (ET) or soil-moisture based. Controller shall automatically adjust irrigation in response to changes in plants' needs as weather conditions change. Controller must be capable of reading flow.
   b. Automatic irrigation system controllers shall be WaterSense labeled or approved by the Town.
   c. Weather-based (ET) controllers shall have a separate wired or wireless rain sensor. Rain sensor must not be bypassed, and must remain fully operational.
   d. Controllers shall have a minimum of 3 programs or schedules and a minimum of 3 start times per each schedule or program.
   e. Controllers must be capable of watering every third day.
iv. Sprinkler Heads:
   a. Pop-up or rotor heads that utilize high efficiency nozzles designed with head-to-head coverage. This may include conventional rotors, stream rotators or high efficiency pop-up spray nozzles. The DU must be verified by third-party audit, see the TOCR Landscape and Irrigation Criteria Manual.
   b. Pop-up height must be 6" for turf areas and 12" for native areas.
   c. Pop-up spray sprinkler bodies must be equipped with internal pressure regulation matching the required pressure of the nozzle. All sprinkler heads (spray and rotor) must be equipped with internal check valve.
   d. Sprinkler heads must be installed at head-to-head spacing at a minimum.
   e. The turf may use spray nozzles at a radius of 15 feet or less, a combination of rotary nozzles and stream rotators from 15 to 35 feet, and short to medium range rotors at 25 feet or greater. Sprinkler heads within the same zone must have matched precipitation rates.
   f. Traditional fixed and traditional variable arc spray nozzles are not allowed.

g. Pop-up spray nozzles cannot be zoned together with multi-trajectory rotating stream nozzles or traditional rotor heads.
h. Nozzles must be adjustable for arc and distance and must be calibrated at the time of installation to cover only the irrigated area.
i. Nozzle application rate shall not exceed 1.25" per hour.

v. Drip Irrigation: the use of a drip system will be used in all shrub bed areas; no spray type irrigation will be allowed. Minimum requirements are:
a. Pressure compensating emitters
b. Pressure regulation at the control valve assembly (min. 20 PSI, max. 40 PSI)
c. Filtration at the control valve assembly (min. 200 mesh)
d. All drip zones must contain a flush valve and operational indicator at all drip lateral line dead ends.

B. Education

1. Resident Education

1.1. The developer/builder shall create educational materials to be provided to residents. Educational programs will be approved by the Town and will contain information pertinent to the WEP, water budget rate structure, and specific water conservation measures including, but not limited to, soil preparation appropriate for existing conditions and selected plant materials, smart irrigation controllers, and high efficiency sprinkler heads and nozzles. Materials may include brochures, how-to guides, a Homeowners Education Packet, instruction manuals, web content for the Town website, educational videos, or in-person training. The educational program will be submitted to Castle Rock Water Conservation staff for their review and approval. Sample educational materials may be found on the Colorado Water Conservation Board (CWCB) website at:

https://cwcb.colorado.gov/public-information

1.2. Residents shall be educated regarding installed indoor and outdoor water efficiency measures, including relationships with water budgets and billing rates. Education will be accomplished through 'how-to' education packets to residents and on-site training by an outside qualified person, coordinated by the Metropolitan District or HOA for Canyons Far South.

1.3. Training for each Homeowner will be coordinated after landscape installation is complete, by an outside qualified person, hired by the Metropolitan District or HOA for Canyons Far South. Training shall include one session on the care and operation of the irrigation system and plant material to each resident at the time of installation. This training shall include controller operations and programming, locations of shut off valves, winterization need, watering days as determined by address, and expected plant material watering needs.

1.4. Residents shall be provided an online link to training material from the outside qualified person for spring, summer, fall, and winter maintenance, care and WaterWise conservation.

1.5. All financial costs and responsibility for implementation of the educational components shall be borne by the Metropolitan District or HOA for Canyons Far South.

1.6. Metropolitan Districts and HOA will be required to send 'how-to' education packets to residents and schedule on-site training by an outside qualified person.

1.7. The Builder shall install a permanent placard at the meter. Placard will follow Castle Rock Water guidelines and will be similar to other WEP development placard examples, as found on the Castle Rock Water Website.

C. Verification

Each completed home will have an Indoor 3rd party inspection at the expense of the builder. Outdoor 3rd party inspection by Castle Rock Water - Water Conservation staff. The third-party inspector shall certify that all homes, landscapes and irrigation systems are being constructed in compliance with the standards outlined in this WEP prior to certificate of occupancy (CO).

D. Indoor Water Efficiency Standards

As part of the building permit application, builders will be required to submit a WEP Homeowners Education Packet, with detailed information regarding the specific high-efficiency fixtures and appliances being installed in each unit and to verify they meet or exceed the indoor Design Guidelines. A sample verification checklist is provided in the Appendix of this plan. Any deficiencies must be corrected within 30 days following inspection. A 3rd party inspection for indoor fixtures is required. A Certificate of Occupancy (CO) will be issued once indoor and outdoor requirements are met.

E. Outdoor Water Efficiency Standards

In accordance with ·the Town's existing Landscape and Irrigation Criteria Manual, a landscape and irrigation plan for front and back yard, must be completed for each residential unit. Each submittal will be reviewed to ensure compliance with water efficiency standards per current Town landscape regulations and as outlined in this WEP. Soil and landscape outdoor inspections are required prior to Certificate of Occupancy (CO). Each submittal will be compared to the irrigated turf and outdoor water budget restrictions to ensure compliance with the minimum stated standards. The submittal shall include the name of the Town-registered landscape and irrigation contractors. A sample verification checklist is provided in the Appendix of this plan. Outdoor inspections are weather dependent and will be completed April through October. For

homes requesting a certificate of occupancy between November 1 - April 1, the outdoor inspection is required within 180 days from the CO date. Any deficiencies must be corrected within 30 days following inspection.

F. Water Usage Calculations.

A Water Budgeting Analysis is presented in the Appendix. This table presents the anticipated average water use, based on a conceptual Site Plan, in ac-ft/yr for a variety of usage approaches, styles, and modeling assumptions. This table demonstrates the variety of statistical assumptions that have been made regarding average residential, open space, right-of-way, park and commercial water use. Average residential use shall be recalculated each March by the Town. All new customers will be set to the customer class average for Tier 1 until individual indoor use is established. Consumers who use an amount greater than that which has been budgeted for that specific user shall be subject to higher rate tiers. However, the Owner/ Developer shall not be penalized via their water bank or otherwise for such users increased usage/demand beyond the budgeted amount per user.

Target water usage for this project has been estimated assuming self-imposed water budgeting restrictions for both indoor and outdoor use, based on a conceptual Site Plan.

IV. CONCLUSION

This WEP proposed for Canyons Far South is in accordance and compliance with the Town's Minimum Standards for WEPs and meets or exceeds the Town's existing standards in the Landscape and Irrigation Criteria Manual. The WEP sets the parameters for low water use landscapes, including native grasses and low water plantings.

The water conservation practices make the Canyons Far South WEP exceptional. The homebuilders are required to install both front and back yard landscaping and turf grass limitations of this WEP exceed or meet those listed in the Town's Water Efficiency Master Plan and the Landscape and Irrigation Criteria Manual.

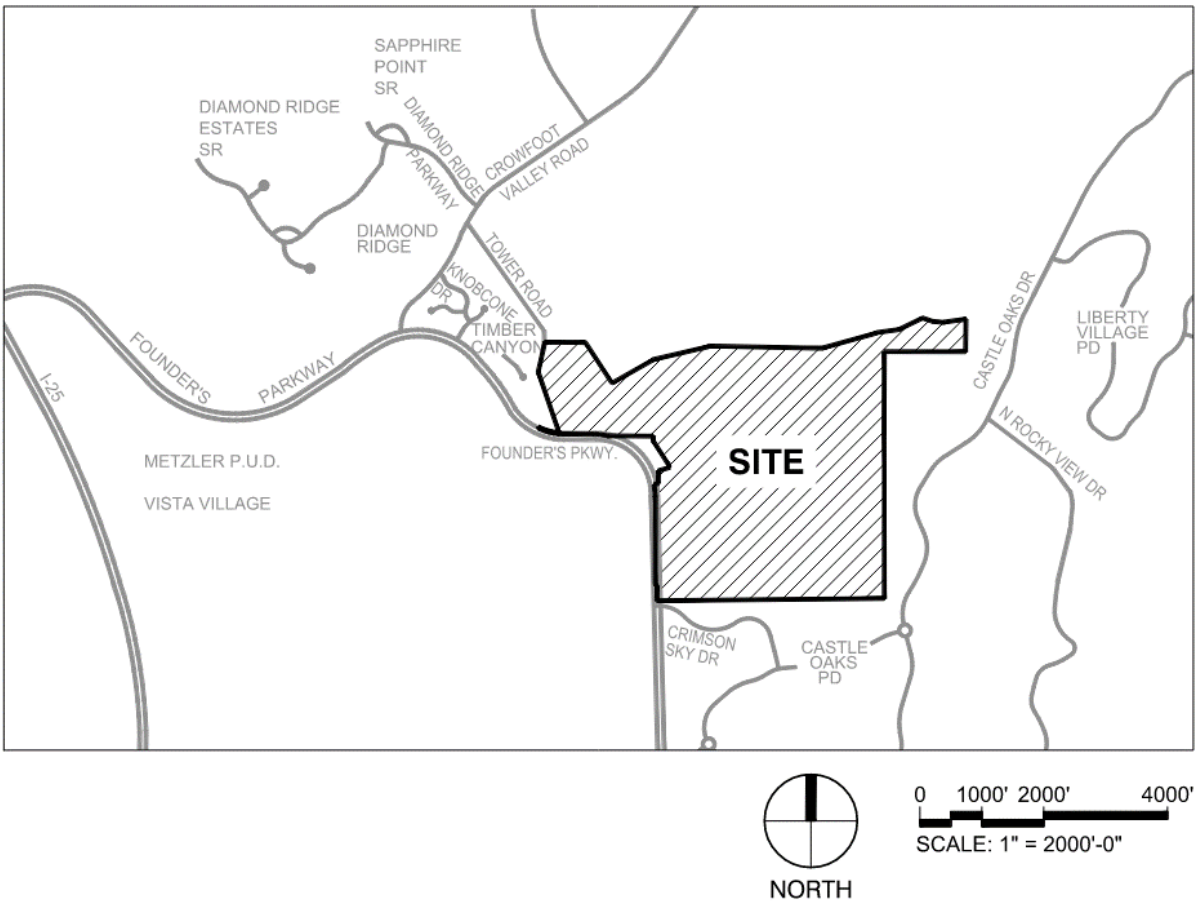
Performance standards within this WEP should result in significantly less water usage than typical, and as compared with standards within Town code. These standards and guidelines support the intended goal of this WEP and Canyons Far South to be a model for future community development within the Town Castle Rock and the State of Colorado.

V. REFERENCES

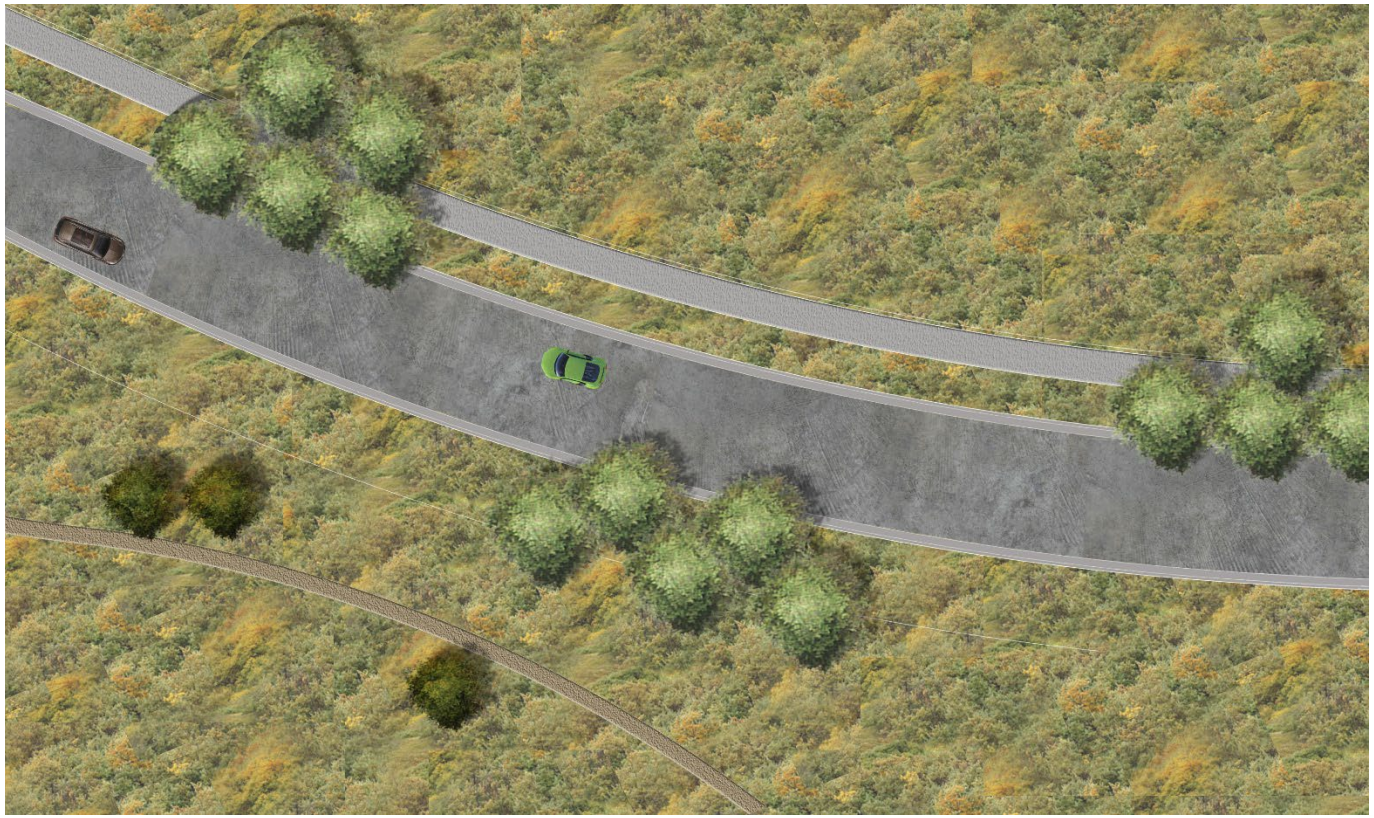
1. Town of Castle Rock Water Efficiency Master Plan. Castle Rock, Colorado, 2015.
2. Town of Castle Rock Landscape and Irrigation Criteria Manual. Castle Rock, Colorado, April 1, 2021.
3. AWWA Residential End Uses of Water, Version 2: Executive Report, Published April 2016 https://www.waterrf.org/research/projects/residential-end-uses-water-version-2

APPENDIX

Site Location Map



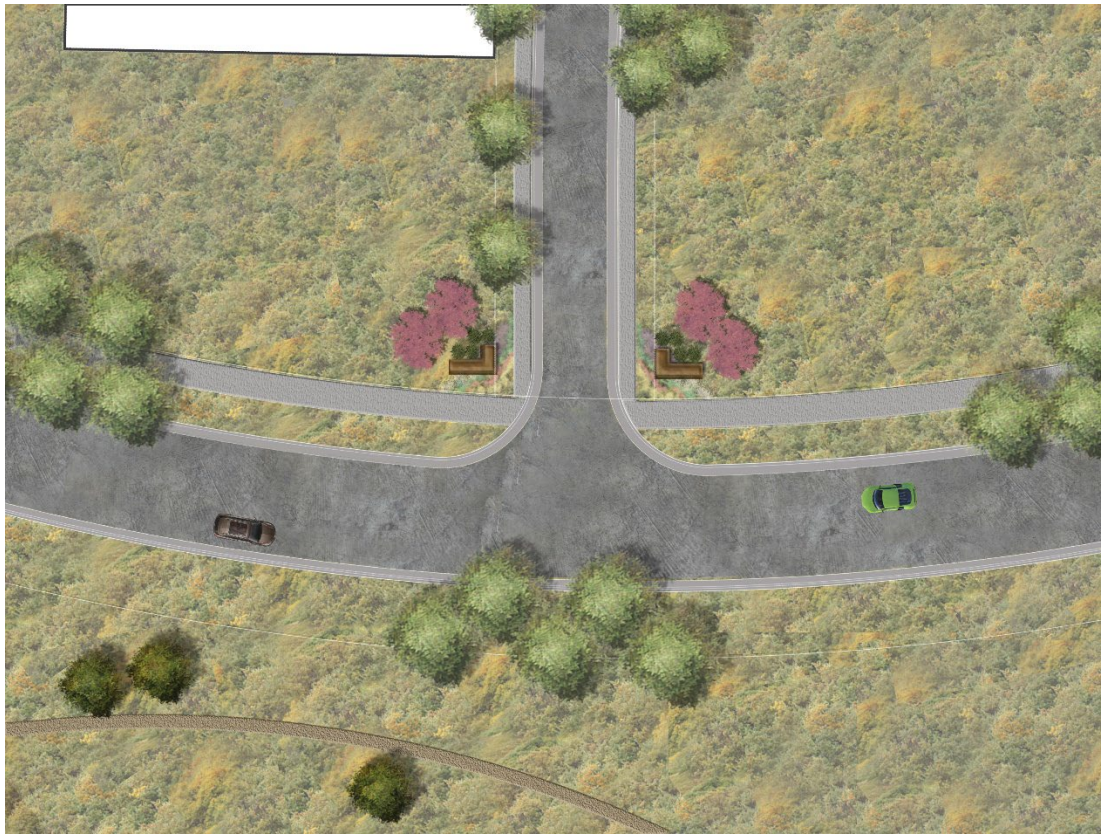
CANYONS FAR SOUTH- TYPICAL SPINE ROAD LANDSCAPING



SPINE ROAD TYPICAL NOTES:

1. TURF AREAS SHALL NOT BE ALLOWED WITHIN THE RIGHT-OF-WAY. VERY LOW AND LOW WATER USE HYDROZONE PLANTS WITH SEASONAL INTEREST ARE REQUIRED.
2. LANDSCAPE TO BLEND WITH SURROUNDING NATIVE LANDSCAPE.
3. TREES TO BE GROUPED TO ALLOW FOR VIEWS AND TO COMPLIMENT THE EXISTING NATIVE LANDSCAPE.

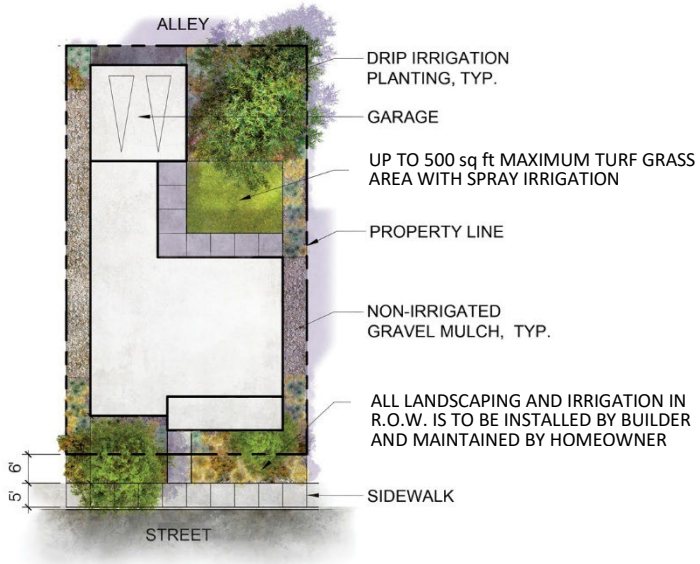
CANYONS FAR SOUTH- TYPICAL PA ENTRY LANDSCAPING



ENTRY TYPICAL NOTES:

1. ENTRY LANDSCAPING SHALL NOT ALLOW TURF. VERY LOW AND LOW WATER USE HYDROZONE PLANTS WITH SEASONAL INTEREST ARE REQUIRED.
2. LANDSCAPE TO BLEND WITH SURROUNDING NATIVE LANDSCAPE.

CANYONS FAR SOUTH- TYPICAL LOT LANDSCAPING PLANS

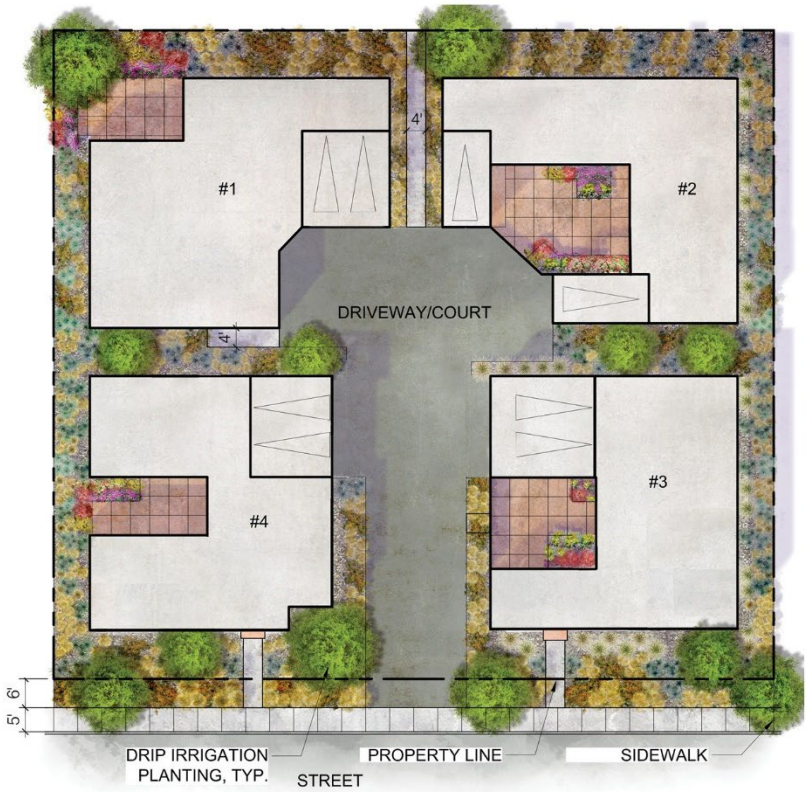


DRIP IRRIGATION PLANTING: 1,575sf, PER UNIT

SPRAY IRRIGATION: UP TO 500 sq ft

TOTAL IRRIGATION AREA: 2,000sf

TYPICAL COTTAGE HOME

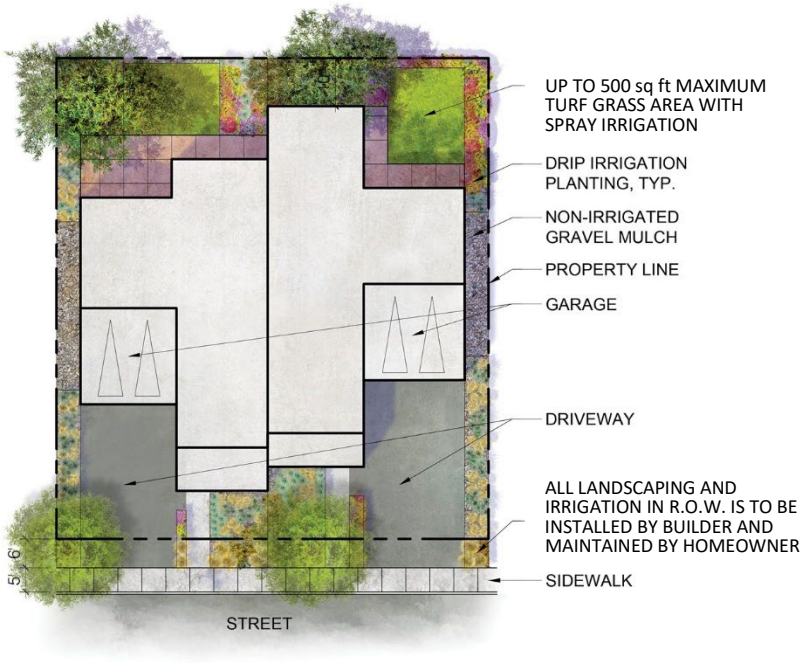


DRIP IRRIGATION PLANTING: 1,500sf, PER UNIT

SPRAY IRRIGATION: UP TO 500 sq ft

TOTAL IRRIGATION AREA: 2,025sf, PER UNIT

TYPICAL CLUSTER HOME

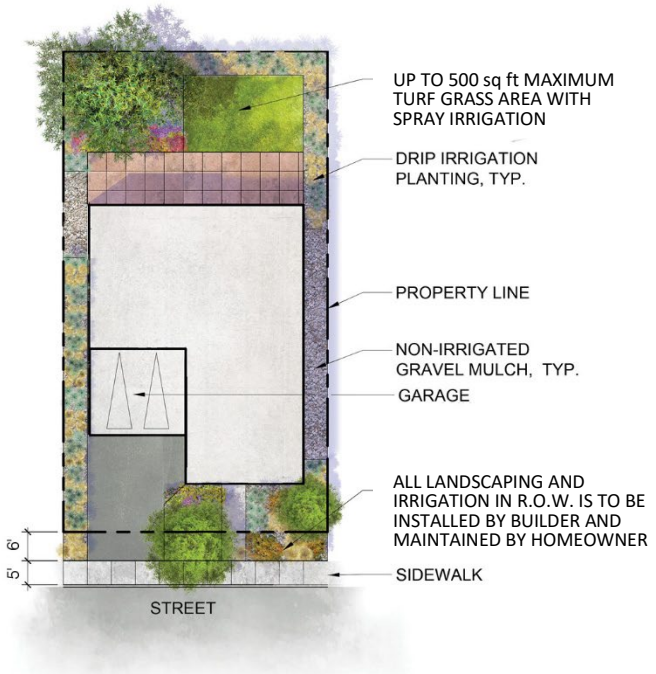


DRIP IRRIGATION PLANTING: 1,260sf, PER UNIT

SPRAY IRRIGATION: UP TO 500 sq ft

TOTAL IRRIGATION AREA: 1,710sf, PER UNIT

TYPICAL PAIRED HOME



DRIP IRRIGATION PLANTING: 1,860sf, PER UNIT

SPRAY IRRIGATION: UP TO 500 sq ft

TOTAL IRRIGATION AREA: 2,460sf

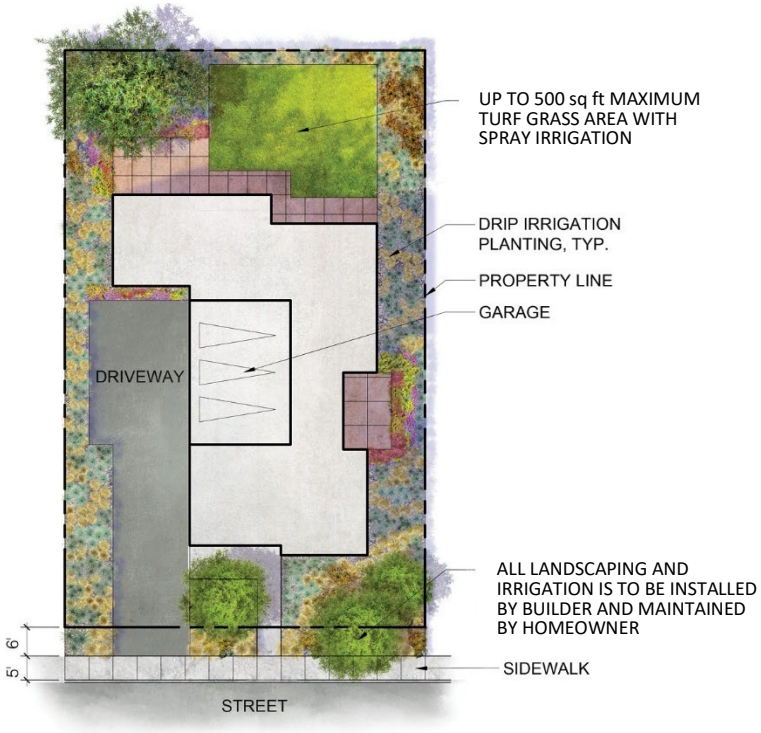
TYPICAL SMALL LOT

DRIP IRRIGATION PLANTING: 3,640sf, PER UNIT

SPRAY IRRIGATION: UP TO 500 sq ft

TOTAL IRRIGATION AREA: 4,140sf

TYPICAL MEDIUM LOT



DRIP IRRIGATION PLANTING: 4,100sf, PER UNIT

SPRAY IRRIGATION: UP TO 500 sq ft

TOTAL IRRIGATION AREA: 4,600sf

TYPICAL LARGE LOT

LOT TYPICAL NOTES:

1. FRONT YARD LANDSCAPING SHALL NOT ALLOW TURF. VERY-LOW AND LOW WATER USE HYDROZONE PLANTS ARE REQUIRED.
2. BACK YARD IRRIGATED TURF AREAS SHALL FOLLOW THE CRITERIA AS OUTLINED IN THE WEP. TURF IS NOT TO EXCEED 500sf PER LOT. TURF/SOD MIXES APPROVED BY THE Town of Castle Rock Water ARE REQUIRED. ALLOWABLE TURF AND PLANT SPECIES LISTS ARE AVAILABLE ON-LINE AT CRgov.com.
3. ALL LANDSCAPING AND IRRIGATION IS TO BE INSTALLED BY BUILDER AND MAINTAINED BY HOMEOWNER.
4. A MINIMUM OF ONE (1) 2 1/2" CALIPER LARGE CANOPY SHADE TREE SHALL BE PROVIDED IN THE FRONT YARD SETBACK.
5. ROCK MULCH SHALL BE USED IN PLANTING BEDS AND IN THE SIDE YARDS. ALL AREAS IN THE FRONT YARD CONTAINING ROCK MULCH ARE TO HAVE PLANT COVERAGE WITH LOW TO VERY LOW WATER REQUIRING PLANT MATERIAL.
6. IT IS REQUIRED TO PLANT TREES 1O' MIN. FROM WATER AND SEWER LINES

CANYONS FAR SOUTH WATER EFFICENCY PLAN PROJECTED WATER USE

Forcasted bedroom counts are estimated from concept plan to get to forcasted demand. Water audit will calculate actual fixture count and forcasted water use.

Indoor and Outdoor Residential Water Use

	Indoor Water Use							Irrigation - Lots								Indoor and Outdoor Water Use Per Lot Totals		Canyons South Total Estimated Water Usage Compared with Water Dedication			
								High Water Use Area				Low Water Use Area									
	No. of Units***	persons per unit	indoor Gal/pp/Day	gal/d-unit	gal/d-unit with 23% WEP credit	gal/year	Ac-ft/yr, indoor use	irrigable area, SF	irrigable area, Ac	in/year irrigation	ft/yr, irr	irrigable area, SF	irrigable area, Ac	in/year irrigation	ft/yr, irr	High and Low Irrigation Totals ac-ft/yr	total water use, ac-ft/yr	Required 2:1 dedication, ac-ft	Total Water Use including permanent irrigation all lots, ac-ft	Water Dedication ac-ft avail	shortage, ac-ft	shortage, SFE (1.1 acft/sfe)
2 bedroom	38	2.34	70	164	127	46,355	***0.143***	500	0.011	19	1.583	750	0.017	10	0.833	***0.033***	**0.176**	0.352	13.38			
3 bedroom	56	3.5	70	245	189	68,985	***0.212***	500	0.011	19	1.583	763	0.018	10	0.833	***0.033***	**0.245**	0.490	27.44			
3 bedroom	56	3.5	70	245	189	68,985	***0.212***	500	0.011	19	1.583	620	0.014	10	0.833	***0.031***	**0.243**	0.486	27.22			
3 bedroom	77	3.5	70	245	189	68,985	***0.212***	500	0.011	19	1.583	980	0.022	10	0.833	***0.037***	**0.249**	0.498	38.35			
4 bedroom	121	3.75	70	263	203	74,095	***0.227***	500	0.011	19	1.583	1,945	0.045	10	0.833	***0.056***	**0.284**	0.568	68.73			
4 bedroom	76	3.75	70	263	203	74,095	***0.227***	500	0.011	19	1.583	2,175	0.050	10	0.833	***0.060***	**0.288**	0.576	43.78			
5 bedroom	50	4.25	70	298	230	83,950	***0.258***	500	0.011	19	1.583	2,175	0.050	10	0.833	***0.060***	**0.318**	0.636	31.80			

Indoor Water Reduction Calculation

	Standard Use* gal/min or gal/flush	Canyons Far South WEP Use gal/min or gal/flush	% of household Use **	% of Savings with WEP
Bathroom Faucet	2.2	1.2 (two per bathroom)	9.5%	5.2%
Toilets	1.6	0.8	24%	12.0%
Kitchen Faucet	2.2	1.5	9.5%	6.5%
Showerheads	2.1	1.5	19%	13.6%
			62.0%	37.2%
		Total Percentage Savings for WEP Standards		23.1%

Irrigation - Common Areas

	irrigable area, SF	irrigable area, Ac	in/year irrigation	ft/yr irrigation	Total Water Use ac-ft/yr	Required 2:1 dedication, ac-ft
Spine Road	141,900	3.258	10	0.833	***2.715***	5.429
Commercial Area	72,005	1.653	10	0.833	***1.378***	2.755
Parks	242,797	5.574	17	1.417	***7.896***	15.793
	73,827	1.695	10	0.833	***1.412***	2.825
Entries	49,000	1.125	10	0.833	***0.937***	1.875
					14.338	28.68

Residential Water Use and Common Area Irrigation	**279.38**	**465**	**-185.6**	**-168.75**
	28.68			

* Standard Use calculated from EPA Water Sense

** Washing machine, leaks and other make up 38%, and assume no savings

***Exhibit is based on conceptual plan for Canyons Far South. If development is short on water, CFS has ability to aquire additional renewable sources.

Water Efficiency Verification Checklist
Indoor Standards

Lot Number/Address: _____ Permit Number:_____

All indoor fixtures and appliances must comply with standards listed in the current approved version of the WEP.

Summary of Proposed Fixtures and Appliances.

Complete the information on water demand and the make/model for each fixture and appliance that will be installed.

Room	Fixture/Appliance	Water Demand	Make/Model
Kitchen	Sink Faucet Dishwasher	gal/minute gal/cycle	
Bathroom 1	Toilet Sink Faucet(s) (up to 2 per) Showerhead (1 per)	gal/flush gal/minute gal/minute	
Bathroom 2	Toilet Sink Faucet(s) (up to 2 per) Showerhead (1 per)	gal/flush gal/minute gal/minute	
Bathroom 3	Toilet Sink Faucet(s) (up to 2 per) Showerhead (1 per)	gal/flush gal/minute gal/minute	
Bathroom 4	Toilet Sink Faucet(s) (up to 2 per) Showerhead (1 per)	gal/flush gal/minute gal/minute	
Laundry	Sink Faucet Clothes Washer	gal/minute gal/cycle/cubic foot	
Other			

- Is a 5/8-inch tap being requested? (Yes/No):
- Confirm fixtures and appliances are consistent with approved verification submittal. (Yes/No)
- Confirm results of leak detection pressure loss test (Yes/No)
- WEP Placard (yes/no)

CERTIFICATION

I hereby certify that the above information is true and accurate. I understand that the falsification of any information on this submittal may disqualify me from completing or performing future work related to The Lanterns development in Castle Rock, CO.

Builder Signature: _____ Date: _____
Printed Name/Company: _____

Water Efficiency Verification Checklist
Outdoor Standards

Lot Number/Address: _____ **Permit Number:_____**
Lot Size: _____

Landscape Design

The design guidelines for outdoor uses were developed to limit the use of irrigated turf and reduce overall outdoor water demands. The maximum turf area for lot sizes is outlined in Section 2.1 of this WEP. In no case shall maximum turf areas exceed the limits of this WEP. Kentucky bluegrass turf is not permitted. Turf grass shall use no more than 19" of irrigation per season and shall be listed in the Town of Castle Rock Landscape and Irrigation Criteria Manual Appendix B.

Proposed landscape plans must be summarized as specified in Table 1 below. The Town of Castle Rock approved plant list shall be used to classify selected plants into the appropriate Irrigated Water Use Zone.

Table 1. Landscape Irrigation Demands.

Irrigated Water Use Zone		Size of Zone
High	(more than 15”)	___sf
Moderate	(10.1” - 15”)	___ sf
Low	(5.1” - 10”)	___ sf
Very Low	(0”-5”)	___sf
Total		___ sf

- Does landscape plan comply with turf limitation? (Yes/No): _____
- Does plant material comply with approved landscape plan? (Yes/No): _____
- Turf type: _____
- Number of plants: _____
- Does installed landscaping match typical landscape design in the approved WEP? (Yes/No)
- Verify that pressure within the home and irrigation system does not exceed 60 psi
- Confirm correct heads and nozzles
- Correct clock with appropriate weather or soil moisture sensor. Ensure all sensors are connected and operational.
- Rain sensor installed and operational.
- Check sprinkler head spacing to ensure head to head coverage by running the system
- Check sprinkler adjustments to ensure no overspray onto impervious surfaces

Irrigation System Design

Automatic irrigation system controllers shall be approved by the Town, and be weather based (ET) or soil-moisture based, that automatically adjust irrigation in response to changes in the plants' needs as weather conditions change and are capable of reading flow. All equipment must comply with the standards listed in the current version of approved WEP. Design requirements are subject to change as reflected in updated EPA WaterSense Program details and Town of Castle Rock Landscape and Irrigation Performance Standards and Criteria.

Table 3. Proposed Irrigation System Equipment.

Device	Make/Model
Smart Controller	
Fixed Spray Heads	
Rotor Heads	
Drip Emitters	
Rain Sensors	

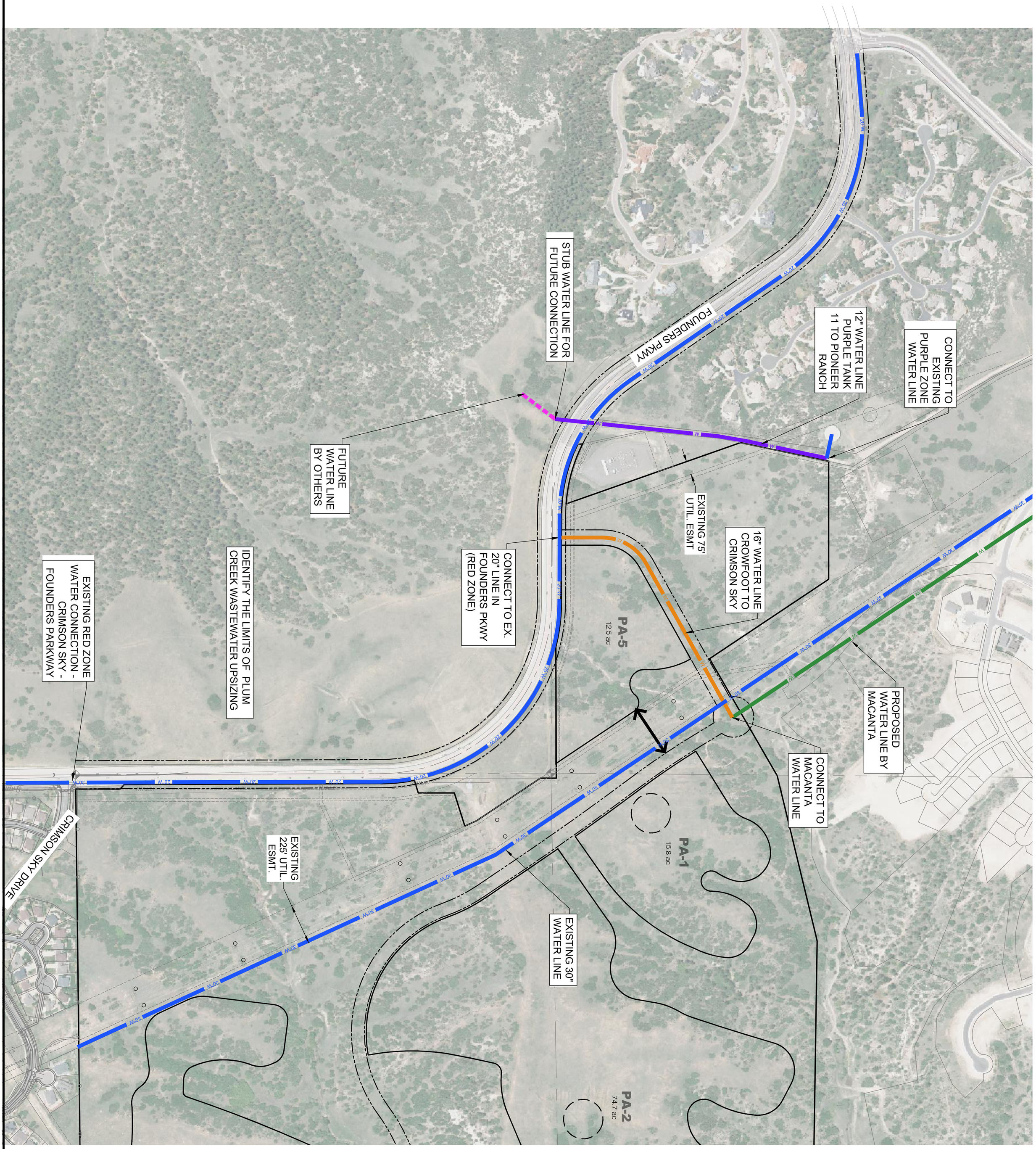
CERTIFICATION

I hereby certify that the above information is true and accurate. I understand that the falsification of any information on this submittal may disqualify me from completing or performing future work in Castle Rock, CO.

Builder Signature: _____ Date: _____
Printed Name/Company: _____

Landscape Designer Signature: _____ Date: _____
Printed Name/Company: _____

Irrigation Designer Signature: _____ Date: _____
Printed Name/Company: _____



LEGEND

- EXISTING EASEMENT
- PROJECT BOUNDARY
- EX WATER LINE
- PR WATER LINE (PURPLE TANK 11 TO PIONEER RANCH)
- PR WATER LINE (MACANTA)
- PR WATER LINE (CROWFOOT TO CRIMSON SKY)
- FUTURE WATER LINE BY OTHERS

ATTACHMENT B, EXHIBIT 2, EXHIBIT 4

CANYONS SOUTH

DEVELOPMENT AGREEMENT - EXHIBIT 4

CORE CONSULTANTS. INC.
3473 S. BROADWAY
ENGLEWOOD, CO 80113
303.703.4444
LIVEYOURCORE.COM

LAND DEVELOPMENT
ENERGY
PUBLIC INFRASTUCTURE

1 inch = 250 ft. (0 – 250')

DATE: 11/18/22
CREATED BY: CGV
JOB NO. 20-245
SHEET 2 OF 2

CANYONS FAR SOUTH PURCHASE OPTION AGREEMENT

DATE: _____, 2022.

PARTIES: **TOWN OF CASTLE ROCK**, a home rule municipal corporation, 100 N. Wilcox Street, Castle Rock, Colorado 80104.

CANYONS SOUTH, LLC, a Delaware limited liability company, 7979 E. Tufts Avenue, Suite 105, Denver, Colorado 80237.

RECITALS:

WHEREAS, the Town's Water Resources Strategic Master Plan (the "Plan") establishes a framework for imposition of user service charges and capital fees sufficient to enable the Town in the future to meet the bulk of water system demand from sustainable, renewable water supplies, thereby assuring the long-term viability of the Town's water supply and the attendant preservation of public and private property values and investment; and

WHEREAS, according to Section 4.04.045 of the Town Code, except for those properties designated as "infill properties" under the Plan, no property shall be annexed to the Town unless the Town is concurrently provided, at the expense of the property owner, (i) renewable water resources or (ii) a verifiable reduction in current irrigation demand through the drying up of existing irrigated lands by means of landscape renovation; and/or

WHEREAS, Town and Owner have determined that it is in their mutual interest to enter into the Development Agreement governing the development of Owner's property in conjunction with the concurrent approval of the annexation and zoning of such property; and

WHEREAS, among other things, Section 5.07 of the Development Agreement, which addresses the obligation of Owner to provide Renewable Water Resources to the Town, requires the execution of this Agreement as one means by which Owner may fulfill this obligation.

NOW, THEREFORE, in consideration of the mutual promises contained herein, Town and Owner covenant and agree as follows:

1. **Defined Terms**. The following words when capitalized in the text shall have the meanings indicated:

Agreement: this Purchase Option Agreement by and between the Town and the Owner, dated _____, 2022, and referred to in Section 5.07 of the Development Agreement.

Development Agreement: that certain Canyons Far South Development Agreement by and between the Town and Owner and dated _____, 2022, inclusive of any future amendments thereto.

Irrigation Demand Reduction Measures: any renovation of existing landscaping on publicly- or privately-owned irrigated lands served by the Town water system and undertaken in accordance with the Town Landscape and Irrigation Criteria Manual that results in a verifiable reduction of the then-current water demand for such lands, as determined by the Town in its sole and reasonable discretion.

Owner: the person(s) or entity(ies), individually or collectively, that hold fee simple title to any portion of the property described in the Development Agreement, according to the records of the County Clerk and Recorder. As of the date of execution of this Agreement, Canyons South, LLC is the Owner of the Property.

Party(ies): individually or collectively, the Town and Owner, together with (except as otherwise limited by the terms of this Agreement) their designated successors and assigns.

Project: the Town's (i) acquisition of Renewable Water Resources or (ii) implementation of Irrigation Demand Reduction Measures; provided, however, that the term "Project" shall not include (a) any acquisitions of Renewable Water Rights by the Town in accordance with the Plan made available through the Water Infrastructure and Supply Efficiency (WISE) Partnership or to complete the Town's previous commitment to acquire 2,500 acre feet as part of the Town's Box Elder Project, of which 2,260 acre feet of Renewable Water Rights have previously been acquired by the Town; (b) any Renewable Water Resources offered and/or provided to the Town by an owner, developer, or other party seeking to annex property to, and develop property within the Town as a condition of said annexation and development; or (c) any acquisition of Renewable Water Rights by the Town made necessary by the catastrophic failure of one or more of the Town's existing water rights, of which there are currently no known issues, used to provide water service to existing Town customers, and undertaken for the purpose of replacing said water right(s).

Project Funding Price: the total payment that the Town will require from the Owner to fund a Project, as determined by the Town in its sole and reasonable discretion.

Renewable Water: any tributary water resources or any groundwater resources that are rechargeable on a yearly basis due to the hydrologic cycle without consideration of the capacity to harvest and use such resources.

Renewable Water Credit: the total amount of acre feet that may be credited to the actual wet water demand under the Owner's Water Efficiency Plan as determined by the Town in its sole and reasonable discretion.

Renewable Water Rights: any right established under Colorado law to physically divert a specific amount of Renewable Water from a specific point of diversion or control and put it to a certain beneficial use.

Renewable Water Resources: any (i) Renewable Water Right(s) acceptable to the Town, in the Town's sole discretion, that may be lawfully used, or reasonably changed by the appropriate water court for lawful use, within the Town's service area; (ii) facilities used to withdraw, treat,

store, and deliver, or to capture, reclaim and reuse, Renewable Water; and (iii) property interests, legal rights and entitlements that support the use and delivery of Renewable Water Resources.

Town: the Town of Castle Rock, Colorado.

Certain other terms are defined in the text of the Agreement and shall have the meaning indicated.

2. **Grant of Option**. For purposes of satisfying the requirements set forth in Section 5.07 of the Development Agreement relating to the provision of Renewable Water Resources, Town hereby grants Owner an option (the "Option") to fund future Projects on the terms and conditions set forth in this Agreement. Such Option shall be made available to Owner for all future Projects until Owner completes its Renewable Water Resources requirement pursuant to the Development Agreement.

3. **Term of Option**. The Option shall commence on the date upon which Town presents a Project to Owner for consideration and shall terminate on the last day of the Consideration Period described below in paragraph 4, unless sooner terminated as provided herein.

4. **Consideration Period**. As opportunities become available to Town to undertake a Project, Town shall notify the Owner of such opportunity in writing (the "Option Notice"). At a minimum, such notice shall include: (i) a description of the Project and its anticipated closing or completion date, (ii) the Renewable Water Credit, (iii) the Project Funding Price and (iv) the period of time within which Owner shall have from the delivery of the Option Notice to determine whether to fund the Project and to make payment of the Project Funding Price in full to the Town (the "Consideration Period"). The form of such Option Notice is set forth in the attached ***Exhibit 1***. An Option Notice for a Project that the Town is currently pursuing and wishes to offer Owner is set forth in the attached ***Exhibit 2***.

Owner, at its sole and reasonable discretion, may elect, in writing, to decline the Option at any time prior to the expiration of the Consideration Period (the "Declination Notice"). In such event, the Consideration Period shall terminate as of the delivery of the Declination Notice to the Town. At such time, the Town may elect to offer the Option to fund the Project to any other landowner with whom it has executed a similar Purchase Option Contract. In no event shall Owner's decision to decline an option to fund a particular Project cause the termination of this Agreement, or otherwise modify Owner's rights pursuant to the terms of this Agreement for first opportunity to fund future Projects.

5. **Renewable Water Credit**. Upon exercise of the Option, payment in full of the Project Funding Price by Owner, and closing of the Project by Town, Town shall deem that Renewable Water Resources have been provided by Owner within the meaning of Section 5.07 of the Development Agreement and grant Owner a Renewable Water Credit in the amount set forth in the Option Notice. At such time, the Option Notice shall be amended to reflect such payment and concurrent grant and, thereafter, attached as an exhibit to this Agreement. If a Project is not closed by Town for any reason, Town shall notify Owner and the Project Funding Price shall be returned to Owner within thirty (30) days following the delivery of such notice. In such event,

Town shall not grant Owner a Renewable Water Credit. Further, Owner shall have no recourse whatsoever against Town for Town's decision not to close on a Project.

6. **Termination**. This Agreement shall terminate on the date upon which the Owner's obligation under Section 5.07 of the Development Agreement to provide Renewable Water Resources to the Town has been fully satisfied.

7. **Event of Default**. Failure of the Town or the Owner to perform any covenant, agreement, obligation or provision of this Agreement, shall constitute an event of default under this Agreement.

8. **Default Notice**. In the event either Party alleges that the other is in default, the non-defaulting Party shall first notify the defaulting Party in writing of such default and specify the exact nature of the default in such notice. The defaulting Party shall have twenty (20) business days from receipt of such notice within which to cure such default before the non-defaulting Party may exercise any of its remedies.

9. **Remedies**. Upon default of this Agreement and failure to timely cure, the non-defaulting Party shall have the right to take whatever action at law or in equity necessary or desirable to enforce performance and compliance with this Agreement. In any such legal action, the prevailing Party shall be entitled to recover its reasonable attorney's fees and litigation costs from the other Party.

10. **Governing Law**. This Agreement shall be construed and enforced in accordance with the laws of the State of Colorado.

11. **Venue**. Venue for any action to enforce or interpret the terms of this Agreement shall be in the District Court, Douglas County, Colorado.

12. **Amendment**. Any and all changes to this Agreement, in order to be mutually effective and binding upon the Parties and their successors or assigns, must be in writing.

13. **Non-Assignability**. This Agreement and all interests and benefits of the Owner hereunder may not be assigned by Owner without the prior written consent of the Town, which consent shall not be unreasonably withheld, conditioned, delayed or denied.

14. **Severability**. It is understood and agreed by the Parties hereto that if any part, term, or provision of this Agreement is found by final judicial decree to be illegal or in conflict with any law of the State of Colorado, the validity of the remaining portions or provisions shall not be affected, and the rights and obligations of the Parties shall be construed and enforced as if the Agreement did not contain the particular part, term or provision held to be invalid.

15. **Notice**. Any and all notices allowed or required to be given in accordance with this Agreement are deemed to have been given when delivered to the other Party, or three (3) days following the date the same is deposited in the United States mail, registered or certified, postage

prepaid, return receipt requested, addressed to the other Party at the address noted; or such address as is subsequently endorsed in writing.

If to Town:	Town of Castle Rock 100 N. Wilcox Street Castle Rock, Colorado 80104 Attn: Director of Castle Rock Water With a copy to: Town Attorney
If to Developer	Canyons South, LLC 7979 E. Tufts Avenue, Suite 105 Denver, Colorado 80237

16. **Entire Agreement**. This instrument embodies the whole agreement of the Parties. There are no promises, terms, conditions or obligations other than those contained herein, and this Agreement shall supersede all previous communications, representations or agreements, either verbal or written.

IN WITNESS WHEREOF, this Agreement is executed as of the day and year first above written.

TOWN:

ATTEST:

_____
Lisa Anderson, Town Clerk

Approved as to form:

_____
Michael J. Hyman, Town Attorney

TOWN OF CASTLE ROCK

_____
Jason Gray, Mayor

Approved as to content:

_____
Mark Marlowe, Director Castle Rock Water

OWNER:

CANYONS SOUTH, LLC
a Colorado limited liability company

By: _____

Its: _____

EXHIBIT 1
FORM OF OPTION NOTICE

Pursuant to the terms and conditions of that certain Purchase Option Agreement between the Town of Castle Rock ("Town") and Canyons South, LLC ("Owner"), dated _____, 2022 ("Agreement"), hereby offers Owner the opportunity to fund the Project described herein:

1. Project Description:

_____
_____
_____

2. Anticipated Project Closing and/or Completion Date: _____

3. Renewable Water Credit: _____

4. Project Funding Price: _____

5. Consideration Period: _____

Capitalized Terms shall have the same meaning as set forth in the Agreement. Upon acceptance of the offer and payment in full of the Project Funding Price by Owner, the Town shall grant the Renewable Water Credit set forth herein, amend the Option Notice to reflect such payment and concurrent grant, and append the amended Option Notice to the Agreement.

EXHIBIT 2
OPTION NOTICE – ROXBOROUGH WATER RIGHTS

Pursuant to the terms and conditions of that certain Purchase Option Agreement between the Town of Castle Rock ("Town") and Canyons South, LLC ("Owner"), dated _____, 2022 ("Agreement"), hereby offers Owner the opportunity to fund the Project described herein:

1. Project Description:

The following renewable water rights to be acquired by the Town pursuant to that certain Purchase and Sale Agreement, dated as of _____, 2022, between Roxborough Water and Sanitation District, as seller, and Town, as buyer:

The right to divert and use 3.75 cfs out of the 5.0 cfs of water decreed to the Meadow Ditch from Indian Creek, tributary to Plum Creek, tributary to the South Platte River, for irrigation use, by decree of the District Court of Douglas County dated December 10, 1883, with an appropriation date of May 31, 1866; as the same has been changed by decree of the District Court for Water Division No. 1, in Case No. 2005CW030, dated March 23, 2007.

2. Anticipated Project Closing and/or Completion Date:

January 15, 2023.

3. Renewable Water Credit:

Estimated at fifty (50) acre feet, with the final amount subject to change depending upon the outcome of the Town's change of place of use application through water court.

4. Project Funding Price:

$1,425,000

5. Consideration Period:

The later of (i) sixty (60) days from the Effective Date of the Development Agreement, or (ii) sixty (60) days from the date of Town closing on the Project.

Owner shall have the option to extend the Consideration Period up to sixty (60) days by paying one hundred thousand dollars ($100,000.00) in cash or certified funds to Town, which payment shall be non-refundable, but which shall be applied to the Project Funding Price upon closing.

Capitalized Terms shall have the same meaning as set forth in the Agreement. Upon acceptance of the offer and payment in full of the Project Funding Price by Owner, the Town shall grant the Renewable Water Credit set forth herein, amend the Option Notice to reflect such payment and concurrent grant, and append the amended Option Notice to the Agreement.