

MEMORANDUM

To: Alisha Kwon Hammett, Shopworks Architecture

From: Cassie Slade, PE, PTOE

Date: June 7, 2022

Project: Castle View Senior Housing – Meadows 19, Lot 2 in Castle Rock, Colorado

Subject: Traffic Conformance Memo

The Fox Tuttle Transportation Group has completed a traffic analysis for the proposed development of an affordable senior housing project in Castle Rock, Colorado. The Castle View Senior Housing project is proposing to construct 200 dwelling units within a single building. It is understood that there will be 130 one-bedroom units and 70 two-bedroom units that will be restricted by age and income.

This site is located west of N. Meadows Drive and north of the future Timber Mill Parkway as shown in **Figure 1**. A previous traffic analysis¹ for Meadows Filing No. 19 was prepared for adjustments in the anticipated land uses and the addition of a property owned by Douglas County that would increase traffic on the future Timber Mill Parkway.

The existing and future roadways and intersections have been planned or built to support The Meadows' traffic including the parcels in Filing No. 19 located along Timber Mill Parkway. The

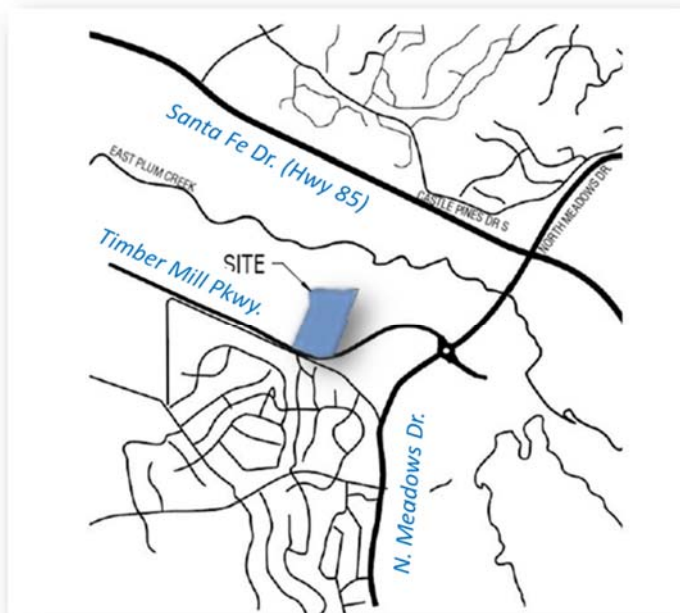


Figure 1. Vicinity Map

¹ The Meadows Filing 19 North – Timber Mill Parkway Analyses. Felsburg Holt & Ullevig. September 27, 2021.

purpose of this "traffic conformance memo" is to determine if the proposed change in senior housing type exceeds the trip generation assumptions for Lot 2 as analyzed in the previous traffic analyses and to determine if additional traffic analyses are necessary.

Comparison to the Master Traffic Study

A review of the previous analyses for The Meadows Filing No. 19 indicated the focus of the most current study was to determine if there would be impacts to the design of Timber Mill Parkway and the future intersections within The Meadows Filing No. 19 with adjustments to the land use assumptions and inclusion of a parcel owned by Douglas County. Lot 2 for the proposed Castle View Senior Housing project appears to be part of parcel's D2 and D1 as shown in the previous traffic study map and illustrated on **Figure 2** to the right.

The previous parcel D1 assumed there would be 130 senior apartments and the trips were estimated by applying the trip rates for "Continuing Care Retirement Community" (ITE #255). The previous parcel D2 assumed there would be 53,000 square foot church (ITE #560).

The proposed Castle View Senior Housing project will change the previous D1 land use from senior retirement community to affordable senior housing and the parcel lines will be adjusted slightly (now listed as Lot 2). Access will remain the same as shown in **Figure 2** and as previously evaluated. The residents of the affordable senior housing project will have two accesses on either side of the property to connect to Timber Mill Parkway.

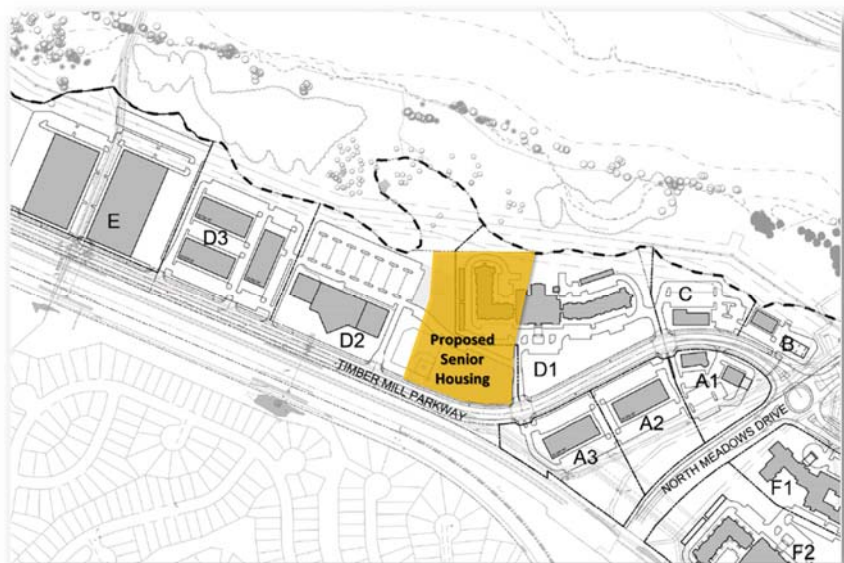


Figure 2. Proposed Project on Previous Traffic Study Parcel Map

Trip Generation

To establish the volume of trips associated with the proposed change in type of senior housing, the data contained in the Institute of Transportation Engineers' (ITE) Trip Generation Handbook and Manual and other research resources for affordable housing was applied to the most applicable land use category. It is unclear which version of the Trip Generation Handbook was utilized in previous traffic studies, however, the most current version (11th Edition, Year 2021) was utilized for this traffic conformance letter.

Previous parcel D1 assumed 130 senior "continuing care retirement" apartments would be constructed, which was estimated to generate up to 977 daily trips with 28 trips in the AM peak hour and 29 trips in the PM peak hour.

Parcel No.	Land Use	Unit	Size	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
A1	Retail ¹	SF	5.8 ^k	17	25	25	50	23	22	45
	Bank	SF	4.8 ^k	398	27	19	46	49	49	98
A2	Office	SF	20 ^k	223	39	7	46	4	21	25
A3	Office	SF	20 ^k	223	39	7	46	4	21	25
B	Retail ²	SF	5 ^k	3,121	102	101	203	123	123	246
C	Retail ³	SF	8.5 ^k	321	5	3	8	16	17	33
D1	Senior Apartments ⁴	DU	130	977	18	10	28	12	17	29
D2	Church	SF	53 ^k	343	11	8	19	11	13	24
D3	Light Industrial	SF	60 ^k	286	27	4	31	4	29	33
E	Light Industrial	SF	160 ^k	664	40	20	60	20	40	60
Filing 19 Subtotals				6,573	333	204	537	266	352	618
Off-Site DC Parcel	Light Industrial	SF	439.1 ^k	1,722	118	16	134	14	89	103
TOTALS				8,295	451	220	671	280	441	721
¹ Pharmacy/Drugstore with Drive-Through Window ² Convenience Market with Gasoline Pumps ³ Shopping Center (Calculated using Average Rates) ⁴ Continuing Care Retirement Community										

Figure 3. Trip Generation Table from The Meadows Filing 19 North – Timber Mill Parkway Analyses

Recently ITE added the land use category "Affordable Housing". The definition of this land use type is:

"Affordable housing includes all multifamily housing that is rented at below market rate to households that include at least one employed member. Eligibility to live in affordable housing can be a function of limited household income and resident age. Data are presented for three subcategories for this land use: (1) sites with income limitations for its tenants (denoted as income limits in the data plots), (2) sites with both minimum age thresholds and income limitations for its tenants (denoted as senior in the data plots), and (3) sites designed for and occupied by residents with special needs, such as persons with physical and mental impairments, single mothers, recovering addicts and others living in a group setting."

Since the new set of data for affordable senior housing in ITE only included three (3) sites for the AM peak hour and two (2) sites for the PM peak hour, additional data from research conducted

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by the Los Angeles Department of Transportation (LADOT) was included in this analysis. The LADOT partnered with other professional engineers and students to evaluate 13 senior affordable housing to develop their local trip rate to be utilized in traffic studies. **Table 1** provides the previous trip generation estimates for parcel D1, the updated trip generation estimate for the Castle View Senior Housing (Lot 2), and the comparison of the trip volumes for weekday daily, weekday AM, and weekday PM periods. The ITE trip rates and LADOT trip rates are shown in **Table 1** and averaged to estimate the trips associated with the proposed Castle View Senior Housing.

Table 1. Trip Generation Estimate and Comparison

Land Use	Size	Unit	Average Daily New Trips				AM Peak Hour New Trips				PM Peak Hour New Trips			
			Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Previous Traffic Study														
D1 - Senior Apartments	130	DU		977	489	488		28	18	10		29	12	17
Proposed Senior Affordable Housing - ITE Trip Rates														
ITE #223: Affordable Housing - Seniors *	200	DU		270	135	135	0.18	36	21	15	0.09	18	11	7
LADOT: Affordable Housing - Seniors **	200	DU	1.72	344	172	172	0.12	24	9	15	0.15	30	16	14
Average of Data				307	154	153	0.12	30	15	15	0.15	24	14	11
Change from Previous Land Use Assumptions				-670	-335	-335	AM >	2	-3	5	PM >	-5	2	-7
Percent Difference				-69%			7%				-17%			

* Source: ITE Trip Generation 11th Edition, 2021. Note: 3 studies used for AM trip rates and 2 studies for PM trip rates.

** Source: City of Los Angeles Transportation Impact Study Guidelines, 2016. Note: 13 studies used trip rates.

Based on the comparison of the previous and current land plans, **it was estimated that the trips associated with the proposed 200 affordable senior units will have significantly less daily traffic and nearly the same traffic level during the AM and PM peak hours.** The AM peak hour is anticipated to have two additional trips and the PM peak hour is anticipated to have five fewer trips. Based on the available data for trip rates, the income level of senior housing impacts the amount of traffic generated by residents, which is evident in the proposed increase of dwelling units with lower income generating less trips than the previously assumed fewer market-rate senior apartments.

Conclusions

It is anticipated that the approved roadway network, intersections, and access can accommodate the proposed change to affordable senior housing. **The analysis for the proposed Castle View Senior Housing found that the previous traffic study and recommendations are still valid. Therefore, no new traffic analyses are required beyond what was already analyzed in the previous studies for The Meadows Filing No. 19 for off-site improvements.**

I hope that the contents of this memorandum are helpful to you. If you have any questions, please feel free to give me a call.

Sincerely,

FOX TUTTLE TRANSPORTATION GROUP, LLC



Cassie Slade, P.E., PTOE
Principal

