

CASTLE ROCK WATER

# UPDATE: STORMWATER FOLLOW-UP



DECEMBER 16, 2025



# APPROACH

- Utilize experience with residential developments over past 10 - 15 years in addressing stormwater issues.
- Maintain guiding requirements: Town Storm Drainage Design and Technical Criteria Manual (SDDTCM) and Temporary Erosion and Sediment Control (TESC) manual.
- Review SDDTCM and TESC manuals regularly and updated as necessary.
- Update issues from residential land development and storm events.
- Update using underlying industry standards such as Mile High Flood District criteria.



CRW staff collecting data for third party analysis

# RECENT BACKGROUND

- Updated SDDTCM in 2012, 2019, and 2025.
- Updated TESC manual in 2019.
- Responded to June 9, 2024 storm with significant flooding and drainage issues in Crystal Valley Ranch.
- Retained Jacobs Engineering to analyze causes and problem areas.
- Hired Kiowa Engineering to do more detailed evaluation of 10 specific problem areas.
- Responded to customer drainage issues and complaints.

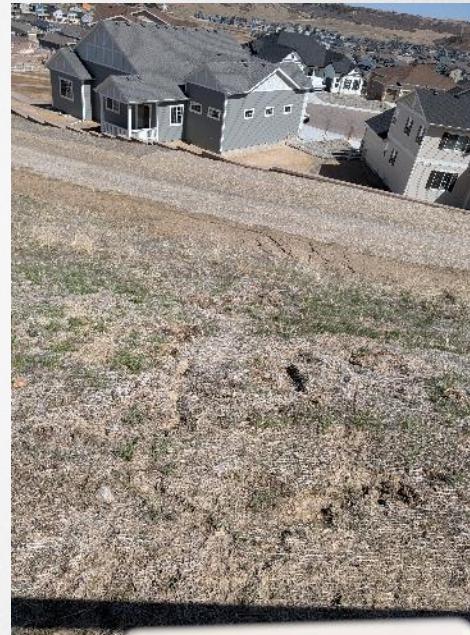


# COMMON ISSUES



Missing and or  
incorrectly designed  
swales.

# COMMON ISSUES



Steep slopes  
with excessive  
erosion

# COMMON ISSUES



Nuisance and surfacing groundwater

# COMMON ISSUES



Developer shortfalls  
and lack of follow -  
through

# COMMON ISSUES



Overtopping stormwater inlets and lack of emergency overflow path



Nuisance water and icing issues

# COMMON ISSUES



Level of effort required for quality control and assurance

# COMMON ISSUES

Fence post concrete  
breaking apart



Customer  
expectations



# STORMWATER FOLLOW-UP

## PROGRESS

- Included \$200,000 in 2025 budget to address issues in Crystal Valley Ranch (\$132,051 spent to date).
  - Completed new concrete diversion channels.
  - Extended storm sewer and added storm drain inlet.
  - Added concrete curbs near storm inlets.
- Reviewed design of 10 different low point inlets.
- Identified reasons didn't meet original design criteria:
  - Installed inadequate inlet capacity for design storms.
  - Failed to provide emergency overflow paths or proper swale grading and erosion protection.
  - Risked impacts to private property from flooding



# STORMWATER FOLLOW-UP

## PROGRESS

- Moved stringent enforcement model.
- Holding developers responsible for fixing 2 of 10 items under warranty.
- Retaining Kiowa Engineering to design fixes for 10 specific problem areas in Crystal Valley Ranch.
- Finalizing contract with Kiowa to start additional work in January.



# STORMWATER FOLLOW-UP

## PROGRESS

- **War Knot Ln/Plains End Ct:** New concrete channels to capture flow impacting resident properties. Total cost is \$231,400 and CRW is cost sharing with the HOA. Phase 1 completed in September and Phase 2 underway.
- **4367 Greystone Ln:** New inlet installed to capture runoff impacting residential property. Total project cost is \$21,200 and CRW is cost sharing with the developer. Project completed in May 2025.
- **2484 Villageview Ln:** CRW installed additional sump inlet curb height to contain street flow that impacted properties during June 9, 2024 storm. Project cost was \$16,200 and completed in June 2025.
- **4115 Hickory Oaks:** CRW required developer to reconstruct a swale and hardscape behind retaining wall to keep runoff and sediment off residential property. Project was completed under warranty in October 2025.
- **4256/4270 Hickory Oaks:** CRW required the developer to backfill in open space to protect private fence posts.
- **5180 Silver Hare Ct:** CRW is holding developer surety for revegetation and monitoring nuisance water issues.
- **4115 Eagle Tail Ln:** CRW required developer to install additional sump inlet curb height and overflow swale to contain street flow. Project was completed under warranty in June 2025.
- **Twelve Oaks Way:** CRW requiring developer to install additional sump inlet curb height and overflow swale to contain street flow. Work to be completed under the warranty.
- **421 Simmental Loop:** CRW required developer to install a riprap swale along property line to keep sump inlet overflow off residential property. Work completed during the warranty period in May 2025.
- **Brotherton Ct and Pt:** CRW required developer to repair/improve underdrain to keep sump water off sidewalk.
- **3865 Mighty Oaks St:** CRW required HOA to regrade open space to redirect runoff to area inlet to keep flow off residential property. Work completed in November 2024.

# STORMWATER FOLLOW-UP

## GOING FORWARD

- Improve development review and permitting processes.
  - Updated design standards
  - Updated certification requirements.
- Improve field inspections.
  - Increase training for inspectors.
  - Add construction inspector in 2026 focused on stormwater infrastructure.



# STORMWATER FOLLOW-UP

## GOING FORWARD

- Continue monitoring success of updated Design Standards in new development and adopt additional revisions as needed
  - Example 2019 vs. 2025 design criteria at new Dawson Trails Residential Development: 56% increase in number of inlets, 36% increase in pipe length, 27% increase in pond volume.
- Implement new practices to ensure conformance to new criteria
  - New Sump Inlet Elevation Certification Form at construction completion
  - New chase drain approval process
  - Update Standard Details as needed (e.g. underdrains)
- Funding considerations for evolving capital demands on system:
  - Stormwater Master Plan Update forthcoming to identify priorities and funding options



# QUESTIONS