



# N. Dayton Valley Storm Drain & Basin Scoping Project

CWSD Board Meeting | May 20<sup>th</sup>, 2026

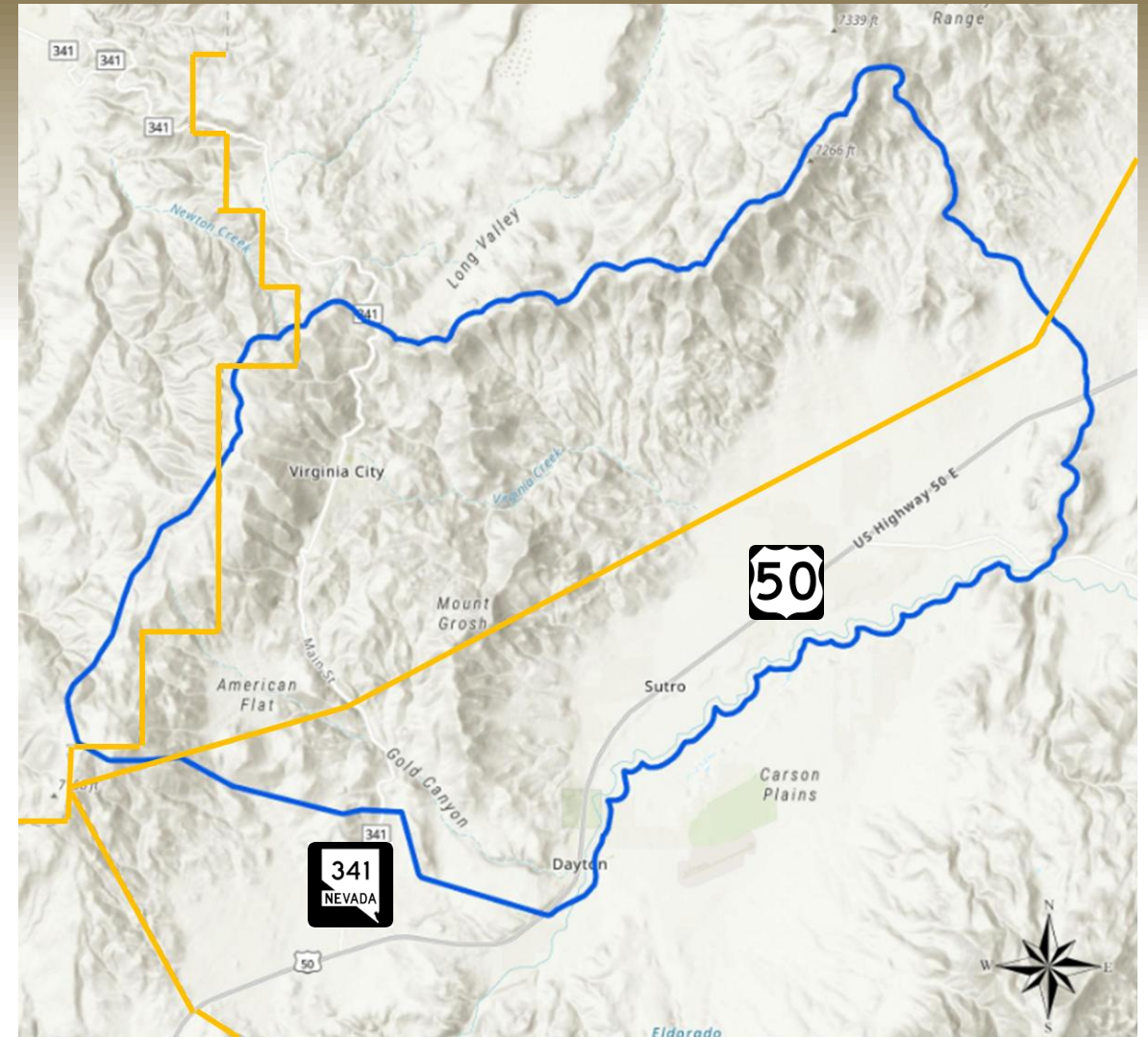


FEMA



# Project Background

- ▶ Builds upon the 2019 Dayton Valley Area Drainage Master Plan (ADMP)
- ▶ Multi-jurisdictional study area and effort: Storey + Lyon Counties
- ▶ Flooding impacts include:
  - Risk to homes and infrastructure
  - Frequent closures of local roads and U.S. Highway 50 (critical regional corridor)
  - Sediment and debris accumulation impacting maintenance operations



**Project Study Area**

# Purpose & Objectives

- ▶ Advance best concepts from 2019 ADMP to fundable, implementable projects
- ▶ Identify projects that consider:
  - Cultural and environmental impacts
  - FEMA Benefit-Cost Analysis (BCA) requirements
  - Multitude of other screening factors
- ▶ Develop selected projects to a 60% design level to support future grant funding



# N. Dayton Valley Storm Drain & Basin Scoping Project Project Funding



**FEMA**

**Nevada Department of  
Emergency Management ->FEMA  
BRIC Program**

**Lyon County – Storey County**



**Scoping  
Project**

# Two-Phase Project Approach

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- ▶ Phase 1 – Feasibility & Project Screening
- ▶ Phase 2 – Project Advancement
- ▶ Deliverables:
  - Phase 1 Memorandum
  - Scoping Design Report (SDR)
  - Cultural and environmental assessments
  - Opinion of probable cost (OPCC)
  - 60% design plans
  - Public and stakeholder presentations



# Initial Selection Criteria

- Project Cost < \$2,000,000
- Account for Projects Recommended for Exclusion in ADMP
- Project Independence.
- Projects that Benefit Developed vs. Undeveloped

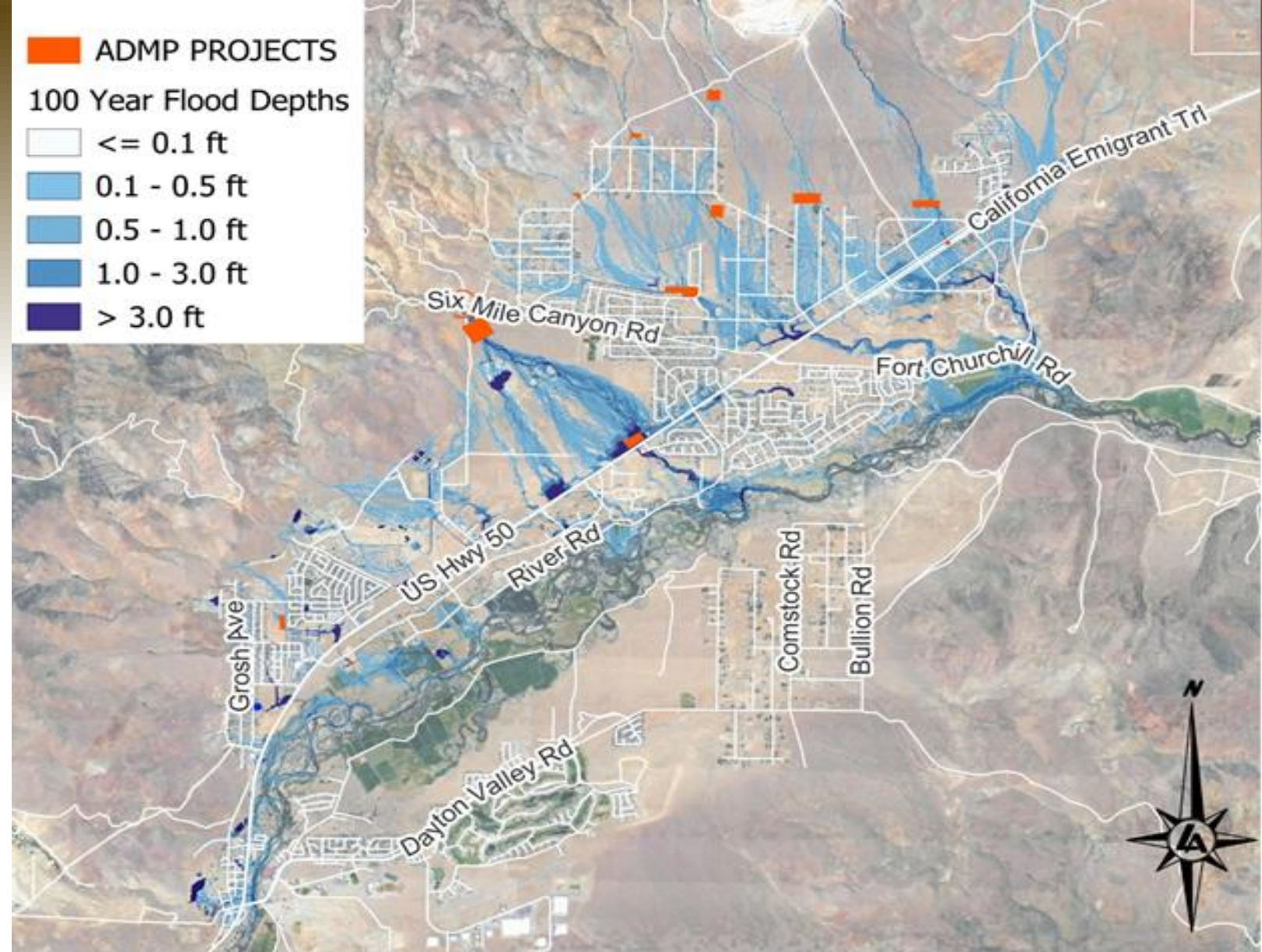


Figure 1: North Dayton Valley Study Area, ADMP Flood Map, and ADMP Projects.

# Project Rating Criteria

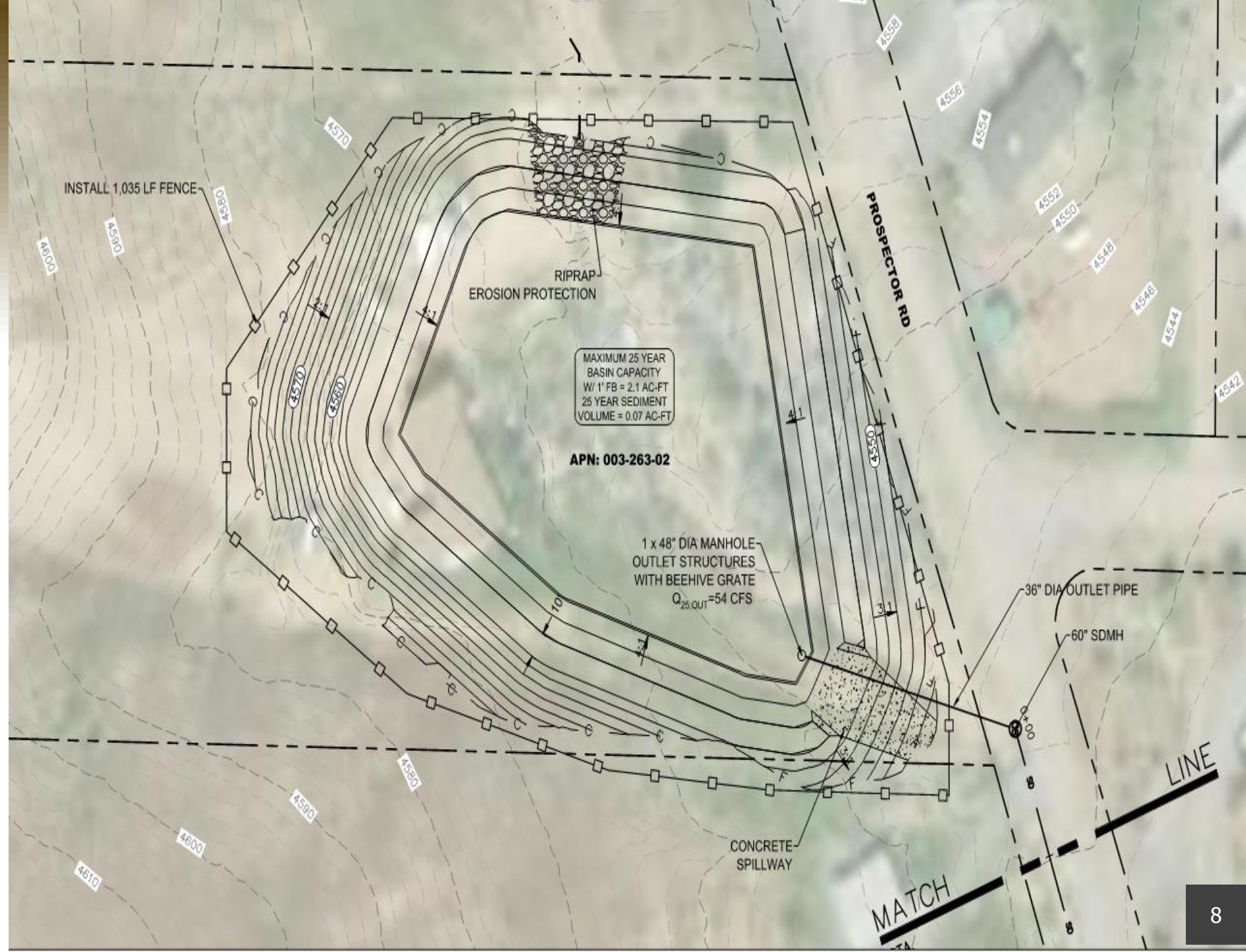
- Total Project Cost
- Risk of Adverse Flooding Impacts
- Buildings Benefitted
- Weighted Flooding Reduction
- Existing Developments vs Undeveloped Areas
- Environmental Documentation Triggers
- Land Acquisition Requirements
- Road Flooding Hazards
- County-Specific Impacts
- Potential Grant Matches Available
- Operation and Maintenance (O&M) Costs

Table 2: Phase 1 Projects Evaluation Matrix Results (see Appendix A for scoring rationale).

EVALUATION CRITERIA	Total Project Costs (Construction and Non-Construction)	Buildings Benefitted	Weighted Reduction of Flooding	Existing Developments vs Undeveloped Areas	Road Flooding Hazards	Land Acquisition Requirements	Risk of Adverse Flooding Impacts	County-Specific Impacts	Environmental Documentation Triggers	TOTAL WEIGHTED SCORE	PROJECT OVERALL RANKING
CRITERIA WEIGHTING	100%	70%	60%	60%	20%	40%	90%	25%	50%	/100	
PROJECTS	Project Score / 10										
Sutro Springs System (Alt 1 - 25 Year)	1.2	0.3	10.0	5.0	0.9	0.0	10.0	3.0	6.0	44	5
Wagon Wheel Culvert (Alt 2 - 100 Year)	9.8	0.0	1.3	10.0	0.1	9.9	3.4	1.0	10.0	54	4
Lonnie Basin (Alt 1 - 25 Year)	0.0	1.3	6.1	6.0	2.2	4.7	6.2	10.0	8.0	42	6
Grosh & Rosepeak Culverts (Alt 2 - 100 Year)	8.5	1.0	8.5	9.0	0.8	9.8	8.0	10.0	10.0	72	1
Gold Canyon Spillway (100 Year)	5.2	10.0	7.0	9.5	10.0	7.6	2.0	10.0	0.5	59	3
Prospector Basin (Alt 2 - 100 Year)	5.0	3.5	7.6	7.5	0.1	7.8	8.6	5.0	8.0	61	2

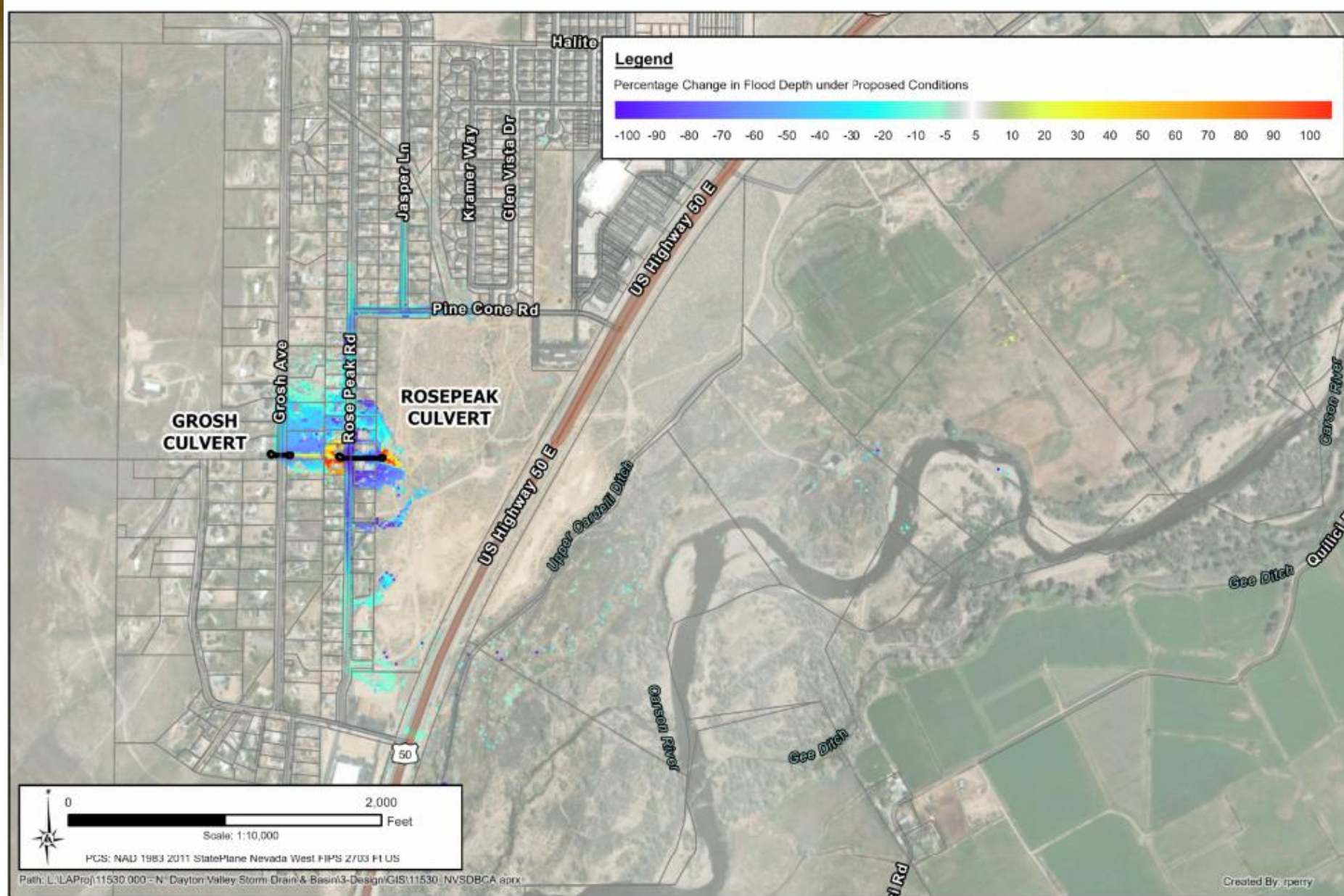
# Prospector Basin

- Benefits
- Challenges



# Grosh & Rosepeak Culverts

- Benefits
- Challenges
- Progressed to 60% Design



PLEASE NOTE: Data is not survey grade. Data used in map was sourced from open data sources or from GPS grade devices. Please use at your own discretion.

**PHASE 1 PROJECT EVALUATION**  
**GROSH AND ROSEPEAK CULVERTS**  
**(ALT 2 - 100 YEAR)**

CARSON WATER  
SUBCONSERVANCY DISTRICT  
NORTH DAYTON VALLEY  
STORM DRAIN BENEFIT COST ANALYSIS

Date: 3/7/2025  
Project #: 11530.000  
Revision:

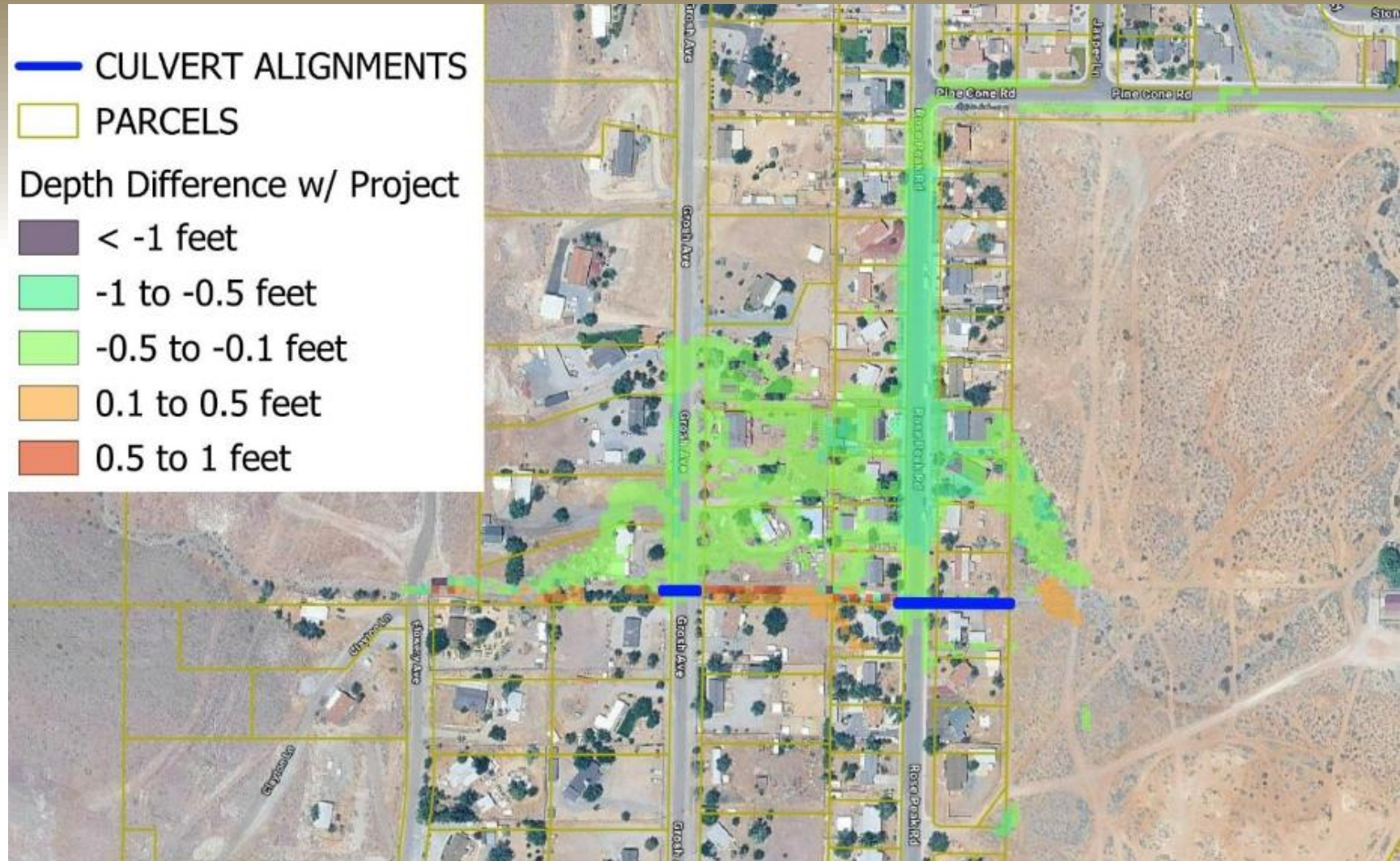


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# Updated Hydraulic Modeling

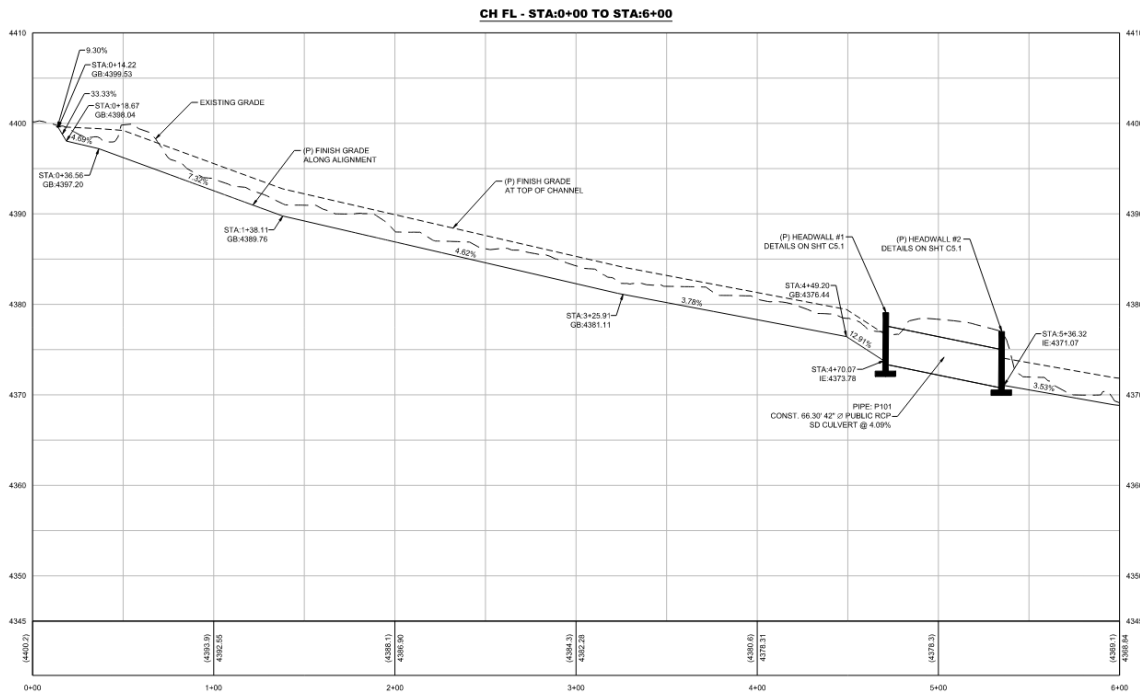
- Newer Model Build (FLO-2D Pro Version 19.07.21)
- Block Obstructions or Area Reduction Factors updated to reduce instabilities
- Rainbow Road Channel Improvements Incorporated
- V&T Way At-Grade Crossing near center of study area Updated
- Proposed Grosh & Rosepeak design incorporated.



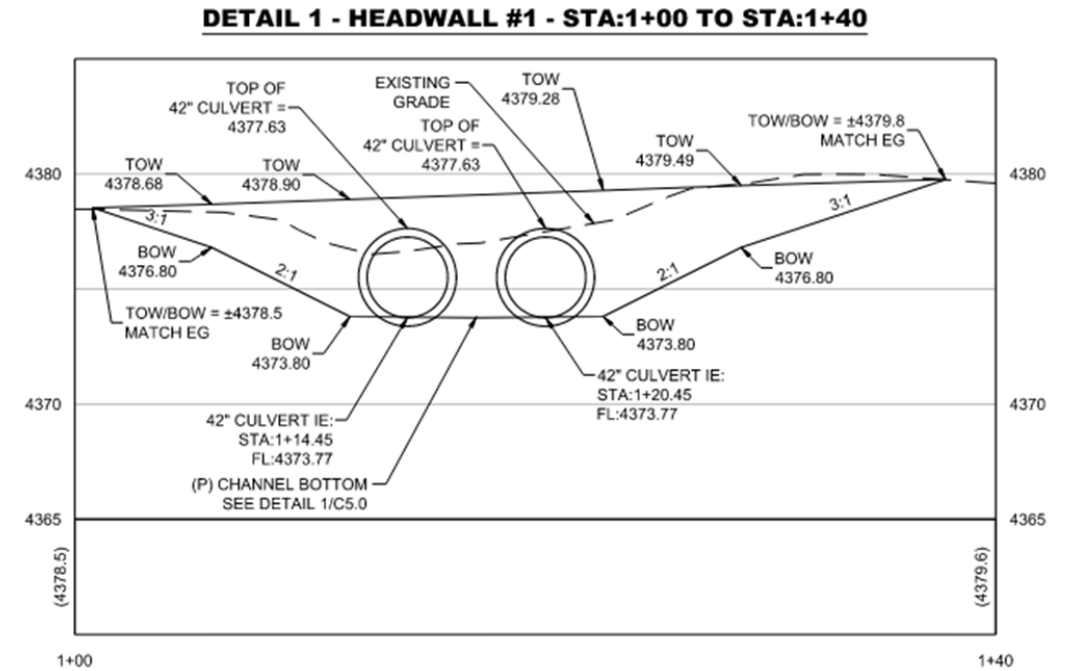
# Civil Design

60% Design – Grosh & Rosepeak

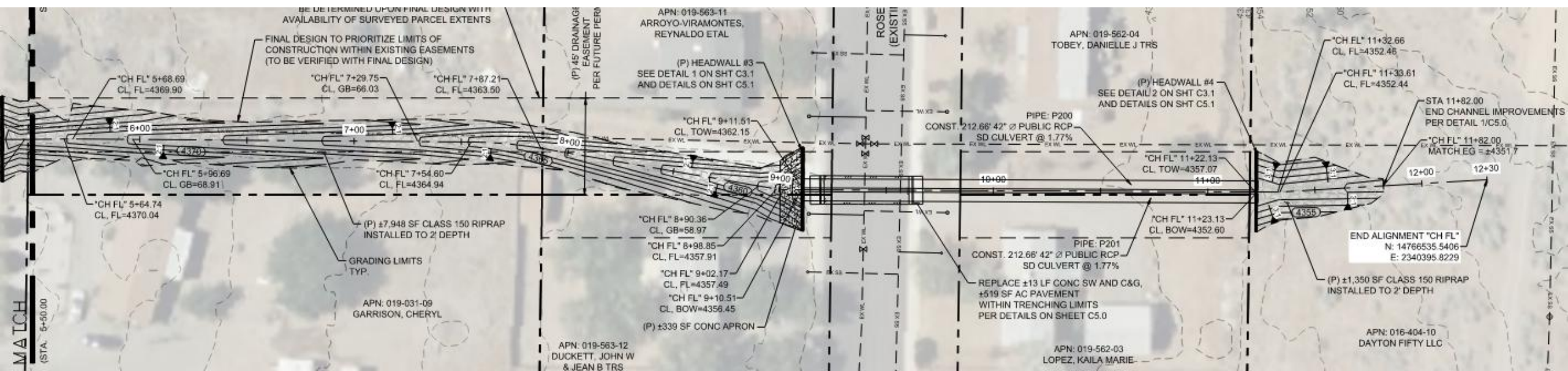
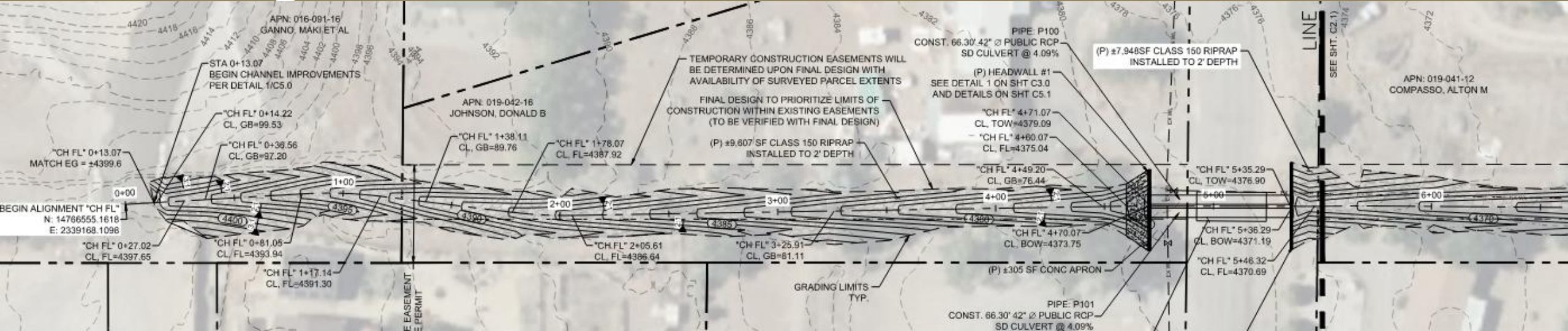
## Channel Improvements



## Culvert Improvements



# Civil Design



# Environmental Assessment

2025 Flow Status Assessment Report  
(CWSD, 2025)

- Findings: Area Determined to be Ephemeral and therefore not WOTUS
- Sources Utilized:
  - U.S. Fish & Wildlife Service National Wetland Inventory
  - NRCS Soil Survey
  - SEINet Data Portal (2025)



**Carson Water Subconservancy District**

North Dayton Valley Scoping Project

Lyon County, Nevada

**Flow Status Assessment Report**



# Cultural Assessment

2025 Biological Screening Memo (CWSD, 2025)

- Findings: No threatened or endangered plants, wildlife, or their habitats are negatively affected by this project



**Carson Water Subconservancy District**

North Dayton Valley Scoping Project

Lyon County, Nevada

**2025 Biological Screening Memo**



# Benefit – Cost Analysis (BCA)

- Required BCA for Federal Funding: 1.0

Construction Cost	\$731,124
50 Year O&M	\$44,162
Annual Benefit	\$421,447
BCA	0.544



## North Dayton Benefit Cost Analysis (BCA) Scoping Project

Grosh and Rose Peak Culvert Improvement Project Benefit Cost Analysis

Technical Report

October 2025



# Interim Actionable Flooding Mitigation

- Channel Stabilization
- Culvert Upsizing
- Low Water Crossings at High-Frequency Flood Locations
- Standalone ADMP Projects



# Questions

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