

Post-Wildfire Flooding Update

November 14, 2023





Objectives for tonight

- Schultz Creek updates
 - Infrastructure projects, modeling and temporary mitigations
- Spruce Wash updates
 - Infrastructure projects, modeling and temporary mitigations
- Discussion and questions

Schultz Creek/ Pipeline West





Infrastructure Improvements

- A comprehensive set of mitigations for Schultz Creek
- From upstream to downstream:
 - 2023 – On-forest measures (County)
 - 2022 – Schultz Basins (City) - Used in 2023
 - 2023 – Elden Lookout Road (County)
 - 2023 – Lower channel stabilization (City)
 - 2023 – ADOT Highway 180 improvements (ADOT and City)
 - 2024 (planned) - Highway 180 (City)
 - 2023 – Stevanna Way ditch (City)
- 2023 – Frances Short Pond dredge and repair (City)





On-forest measures



Purpose: Reduce amount of sediment going downstream

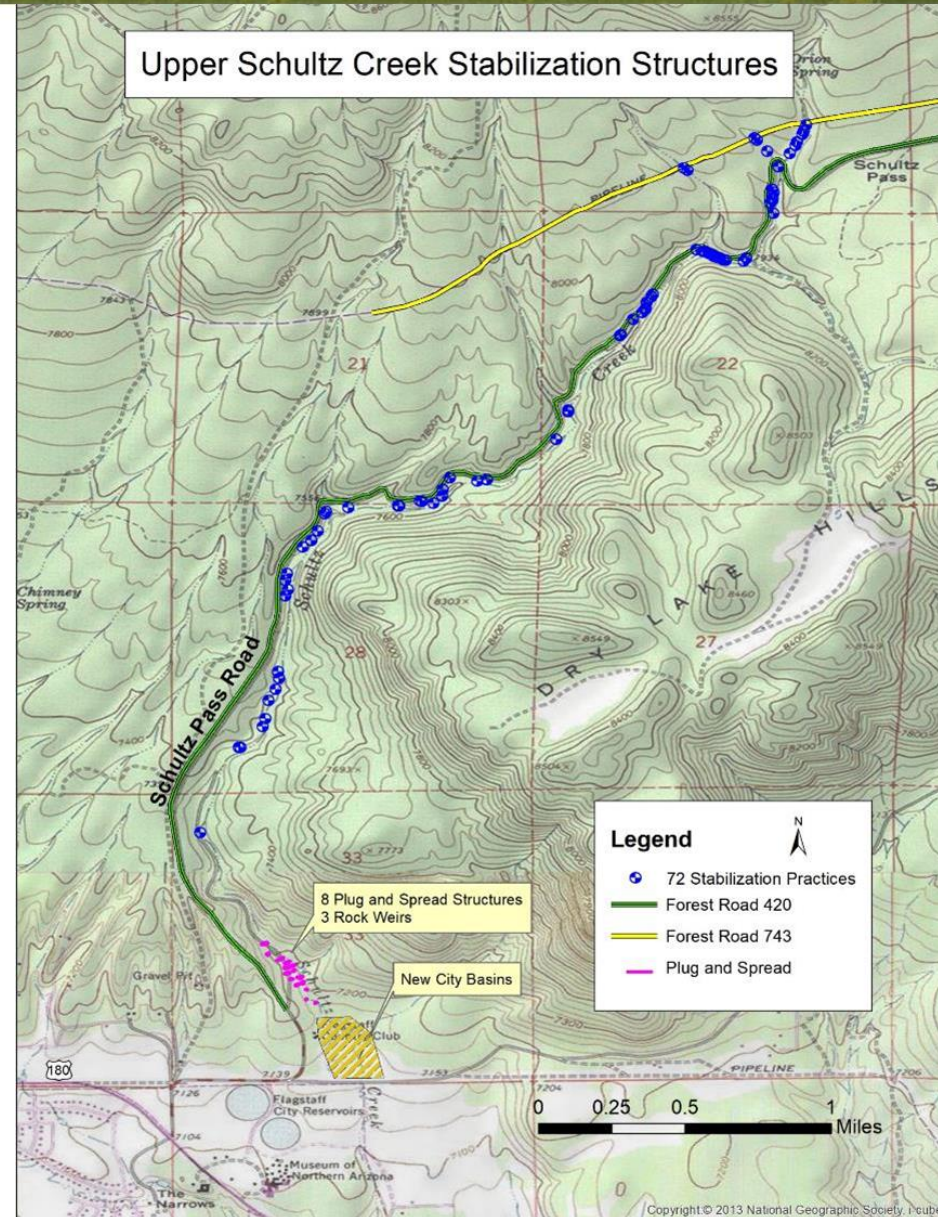
Cost: \$5.4M

Timeline: Winter 2023

Contractor: Tiffany Construction

Design: Natural Channel Design

Funded by: Federal government (NRCS), County Flood Control District



Stream Stabilization Structures Installed:

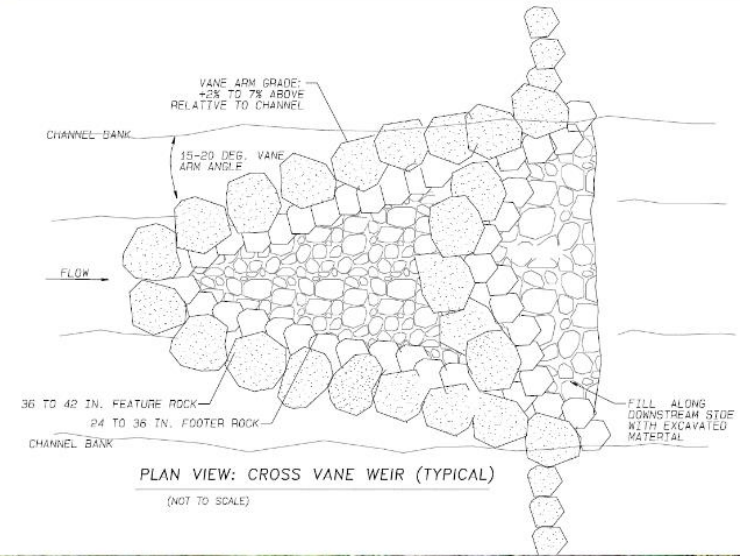
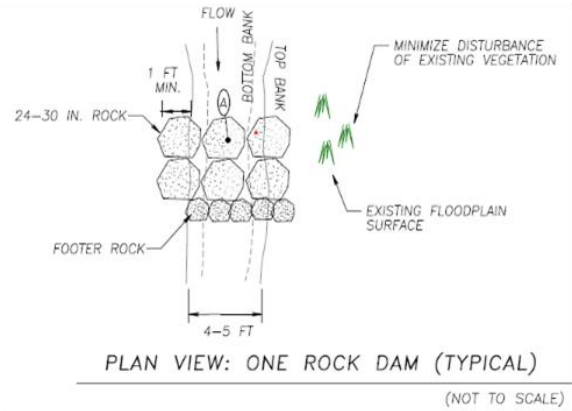
- 46 Cross-Vane Weirs
- 14 One-Rock Dams
- 3 J-Hook Vanes
- 9 Modified Zuni Bowls
- 8 Plug and Spread
- Gully Fill and Channel Clearing



On-forest Sediment Reduction

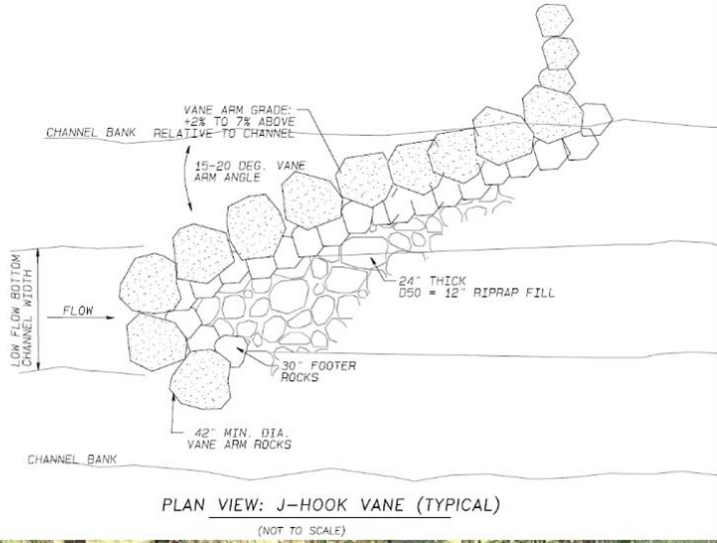


Stream Stabilization Structures Installed:





On-forest Sediment Reduction



8 Plug and Spread Structures





Schultz Creek Basins



Purpose: Detain floodwaters

Cost: \$2.2M

Timeline: Completed Oct. 2022

Contractor: Fann Contracting

Design: SWI-Ardurra

Funded by: Federal and Arizona state government

*Project was awarded the 2023 American Public Works Association project of the year for Arizona emergency projects.





Elden Lookout Road



Purpose: Prevent road closures during floods

Cost: \$1.85M

Timeline: Completed summer 2023

Contractor: Banicki Construction

Design: Natural Channel Design

Funded by: County Public Works





Schultz Creek Channel Stabilization

Purpose: Prevent sediment and debris sourcing and transport

Cost: \$0.9M

Timeline: Completed fall 2023

Contractor: Tiffany Construction

Design: Natural Channel Design

Funded by: Federal government & City of Flagstaff





Highway 180 Culvert Improvements



Emergency project:

Purpose: Emergency repair and capacity

Cost: \$2M

Timeline: Completed in July 2023

Contractor: Fann Contracting

Funded by: Arizona Dept. of Transportation

Long-term project:

Purpose: Provide 100-year storm capacity

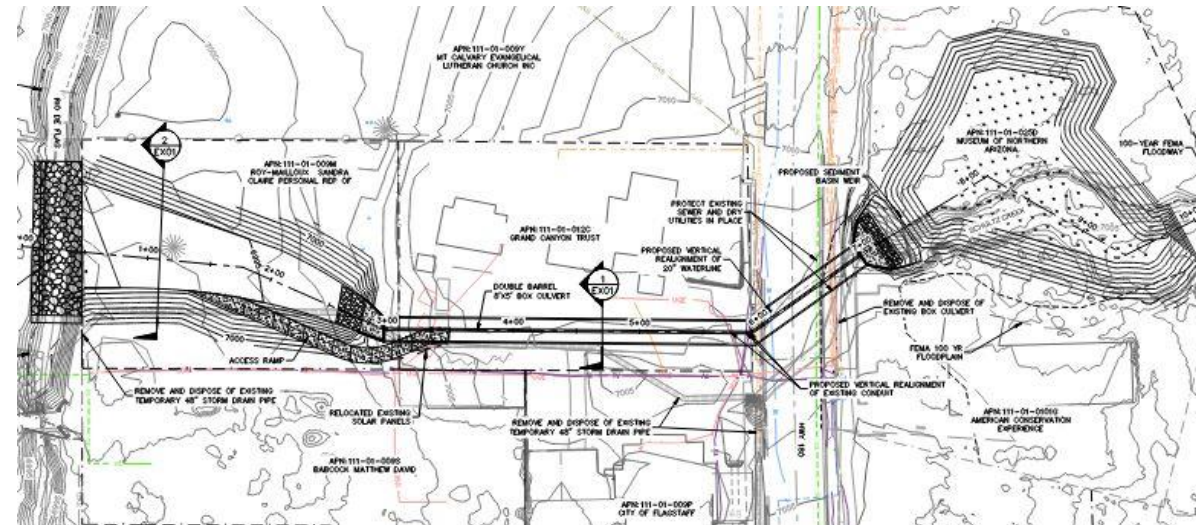
Cost: To be determined

Timeline: Construction starting Spring 2024

Contractor: TBD – Construction Manager at Risk

Design: SWI-Ardurra

Funded by: City of Flagstaff





Stevanna Channel



Purpose: Provide drainage from Stevanna Way ponding

Cost: \$0.35M

Timeline: Completed summer 2023

Contractor: Markham Construction

Design: SWI-Ardurra

Funded by: AZ Department of Emergency and Military Affairs - Disaster Recovery





Frances Short Pond

Purpose: Restore pond function and flood retention capacity

Cost: \$0.4M

Timeline: Completed fall 2023

Contractor: Joe Dirt Excavating, Eagle Mountain Construction, NJ Shaum

Design: Natural Channel Design, SWI-Ardurra

Funded by: AZ Department of Emergency and Military Affairs - Disaster Recovery and City of Flagstaff

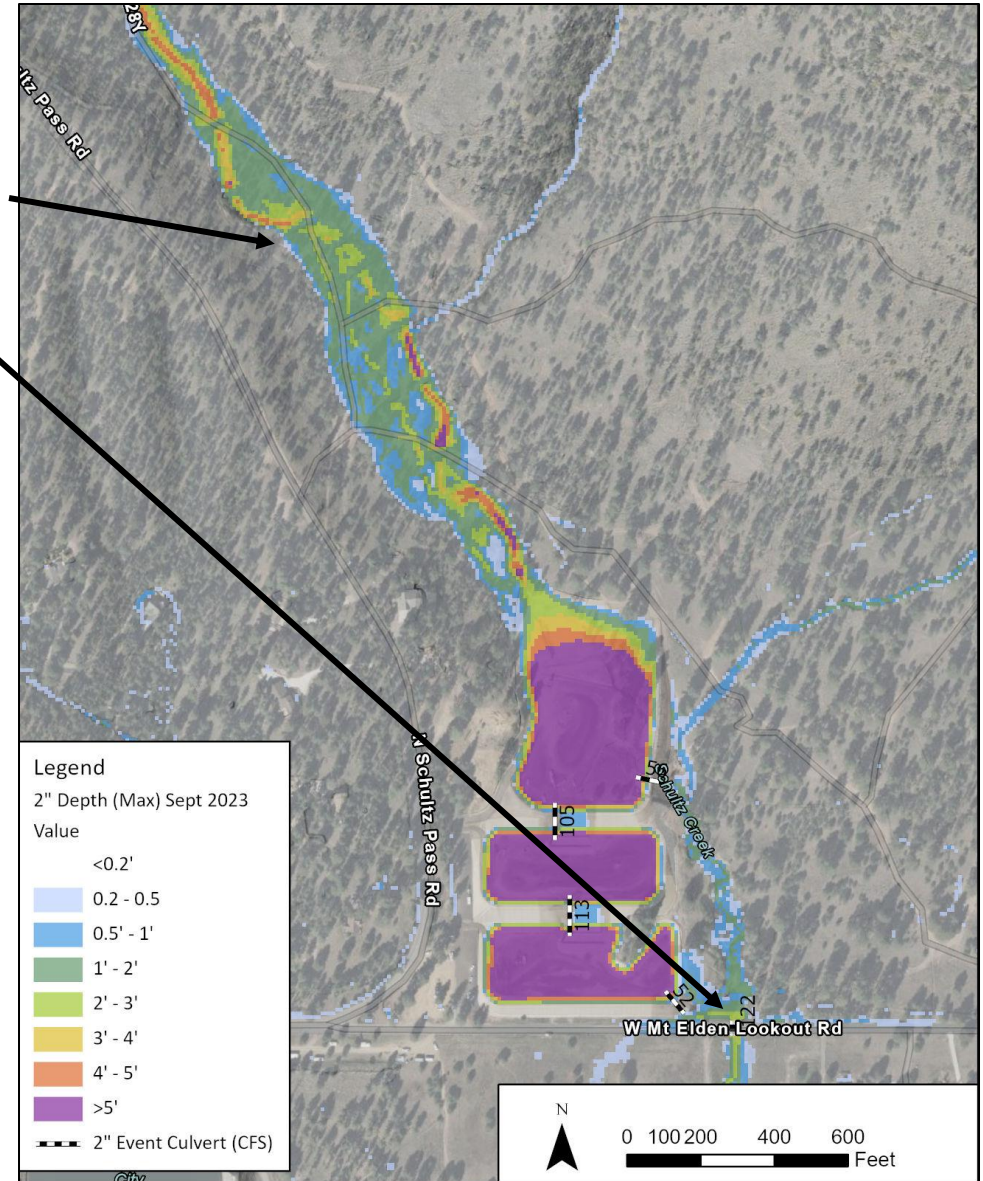




Modeling/Mapping Update

- Model Updates

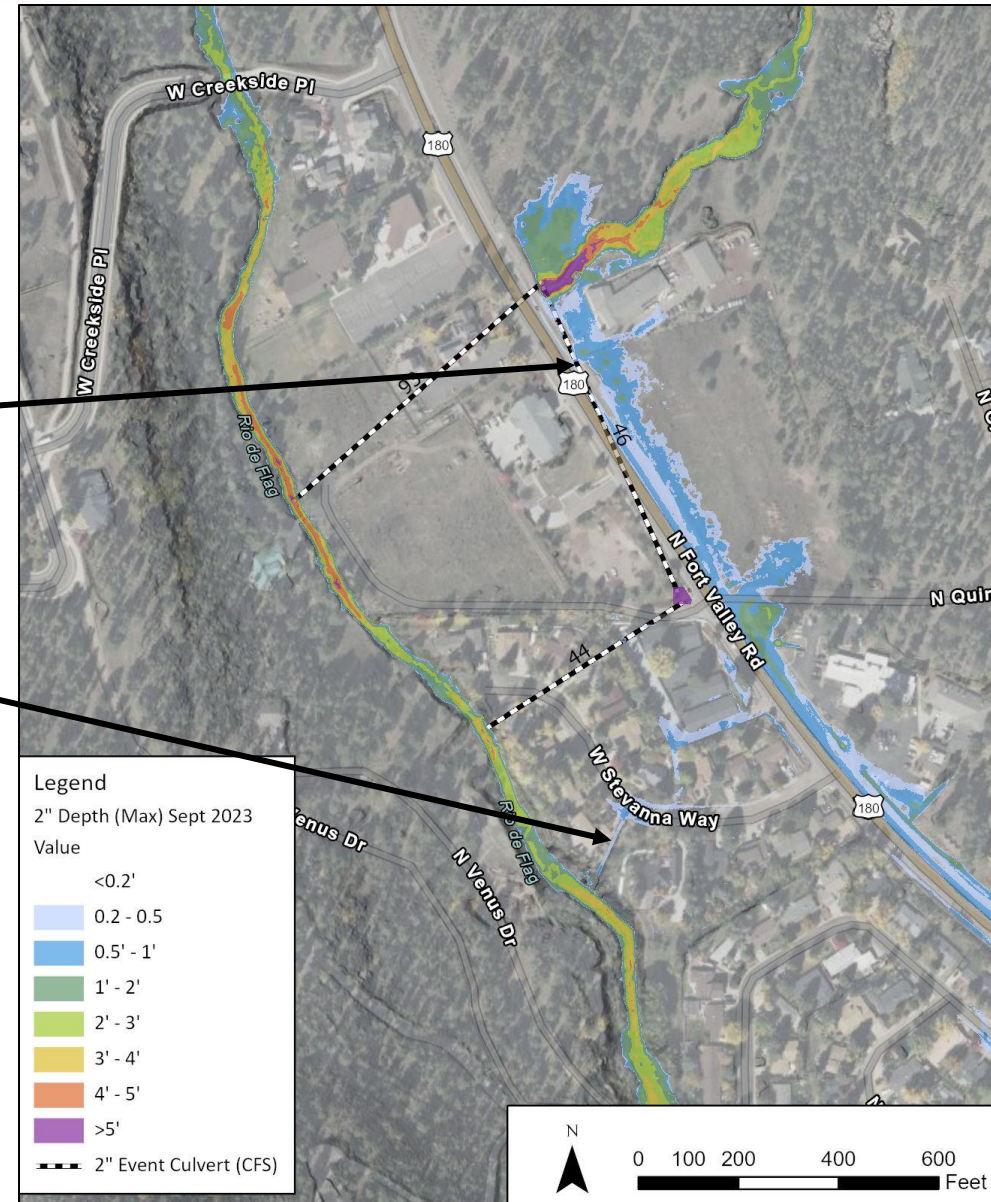
- Plug and Spread above Schultz Basins
- Mount Elden Lookout Road Culvert
- Highway 180 Storm drain
- Stevanna Channel





Modeling/Mapping Update

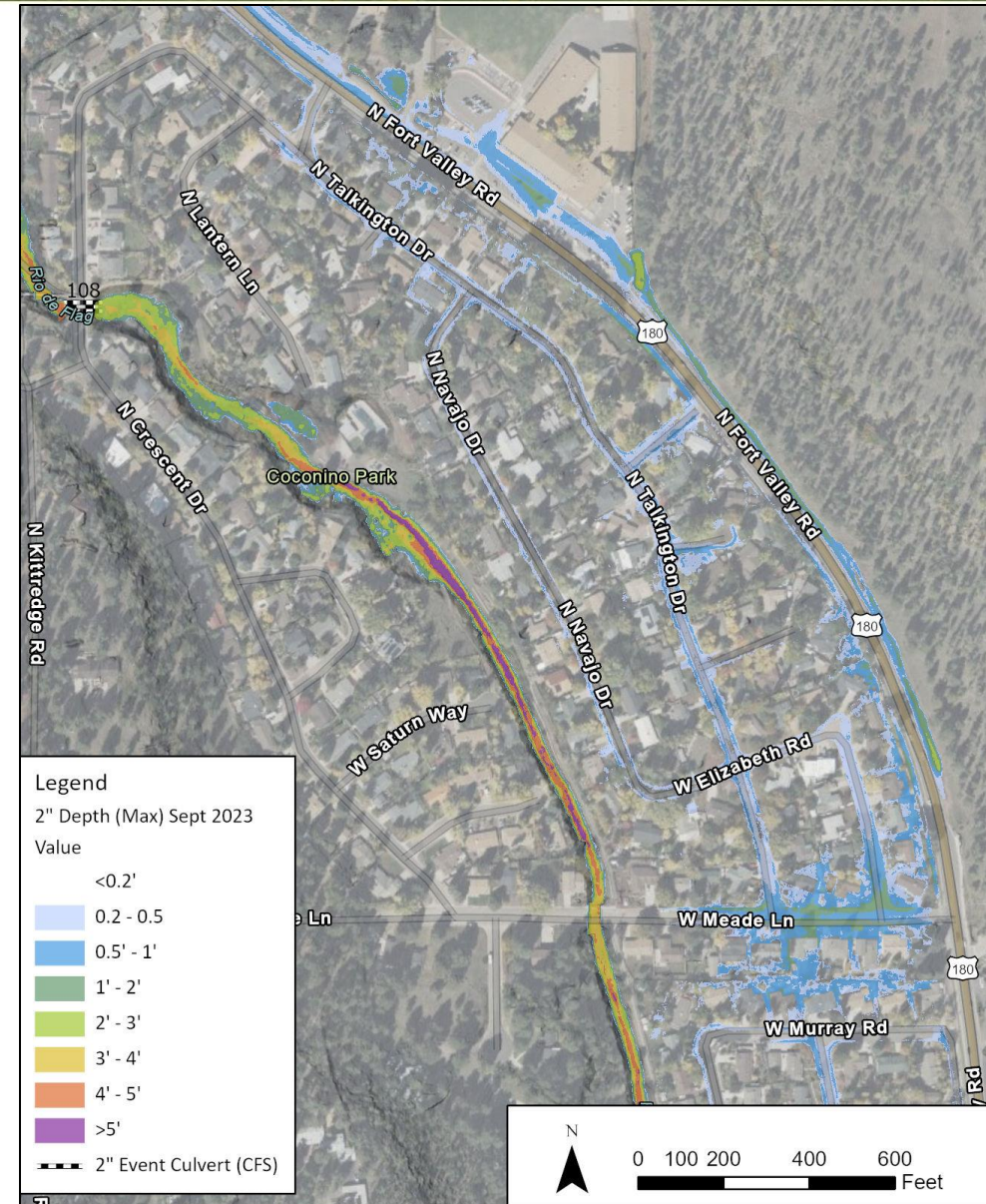
- Model Updates
 - Plug and Spread above Schultz Basins
 - Mount Elden Lookout Road Culvert
 - Highway 180 Stormdrain
 - Stevanna Channel





Modeling/Mapping Update

- Model Updates
 - Flood risk from Sechrist to Meade has not changed significantly.
 - Once the Highway 180 long term project is constructed, post-fire flood risk will be significantly reduced.





Temporary mitigations

- Engineering assessments based on 2022 flood modeling map
 - No changes are recommended at this time, will re-assess in spring
 - 928-213-2102 service request line
- Sandbags may be removed as crews are available, but the flood risk is still very present until the Highway 180 culvert is complete
- **Residents are encouraged to keep mitigations in place until Spring when all projects have been constructed**

Spruce Wash/ Museum






Suite of projects



Key Flood Projects

1. Grandview Drive Reconstruction
2. "The Wedge" Detention Basin
3. Linda Vista Drive Crossing
4. Cedar Avenue to Linda Vista Drive Channel
5. Cedar Avenue Crossing
6. Arroyo Seco Drive to Dortha Avenue Channel
7. Arroyo Seco Drive Inlet
8. Killip Basins Outlet
9. Killip Basins Inlet
10. Park Way Basins

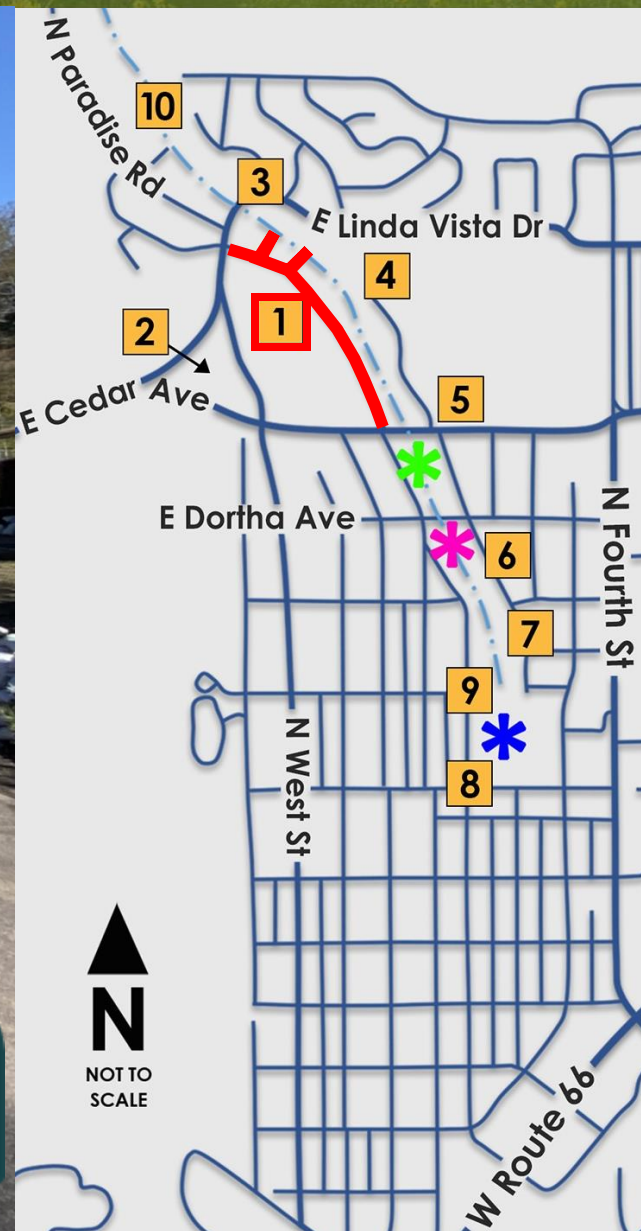
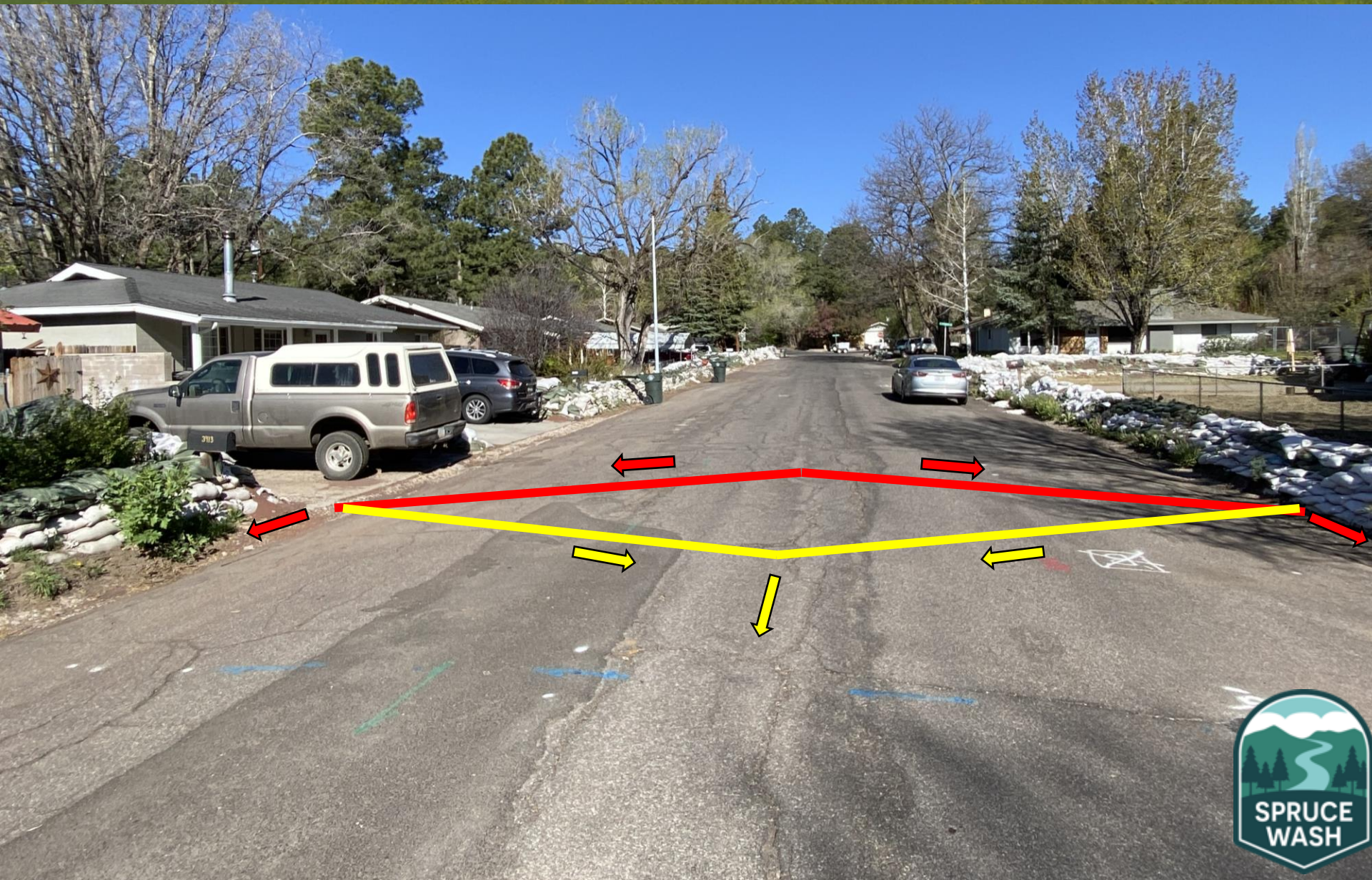
Completed Key Flood Projects

-  Spruce Wash Channel Improvements Project (Cedar Avenue to Dortha Avenue)
-  Spruce Wash Channel Improvements Project (Dortha Avenue Inlet)
-  Killip School Regional Detention Basins Project





Grandview Drive Reconstruction



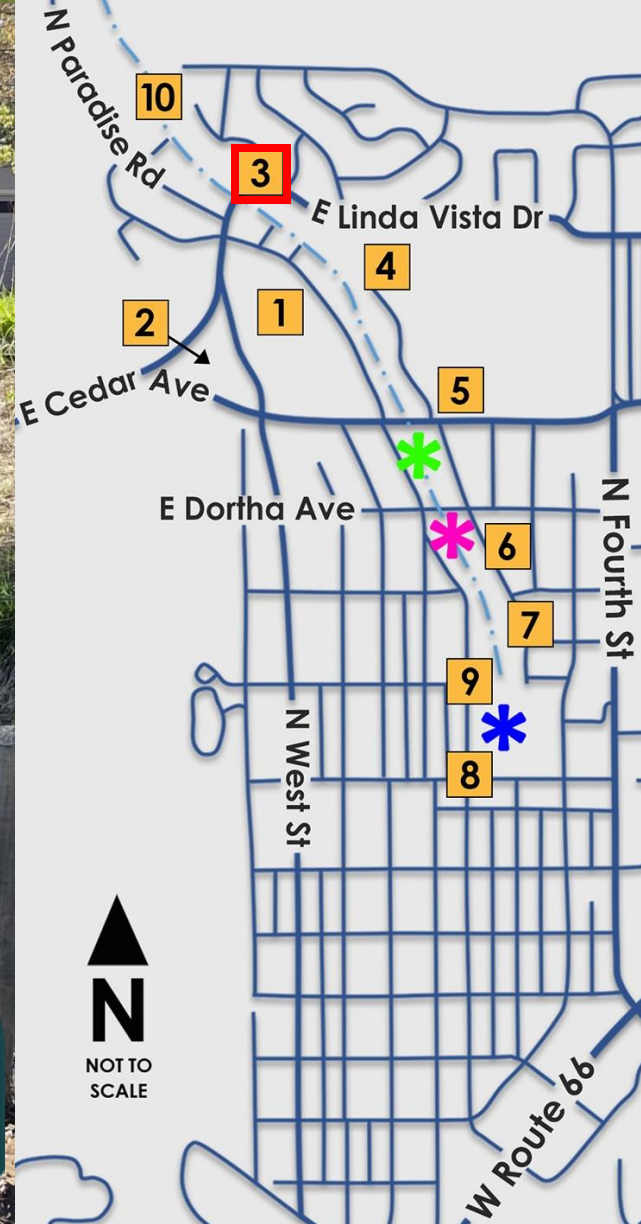


The Wedge Detention Basin



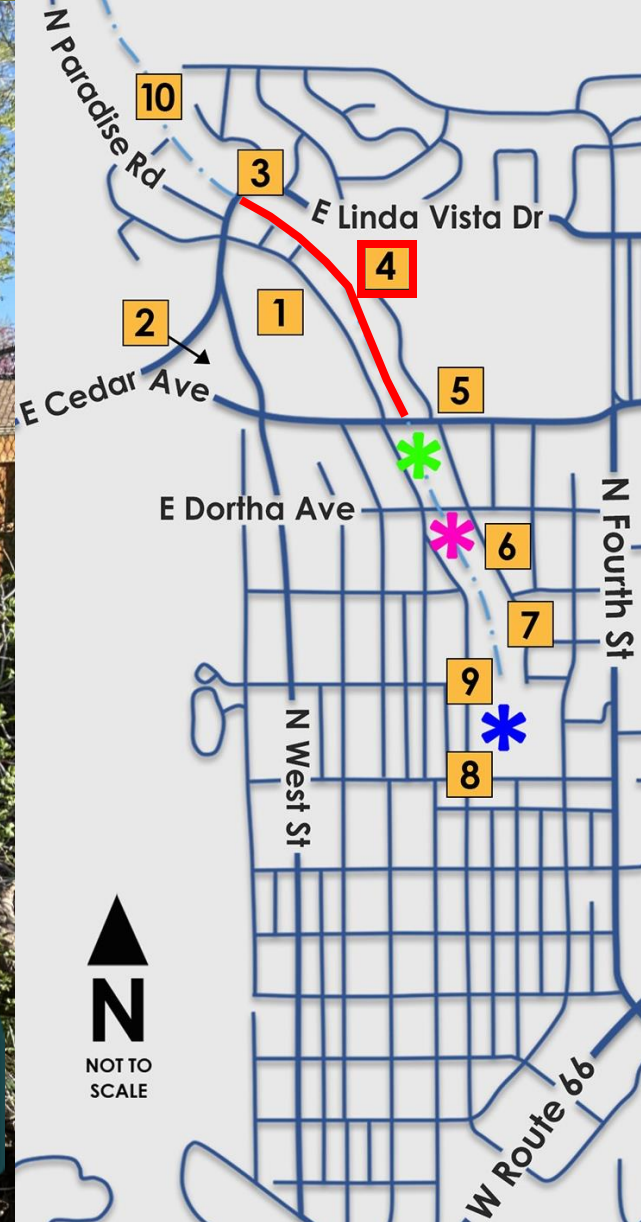


Linda Vista Drive Crossing



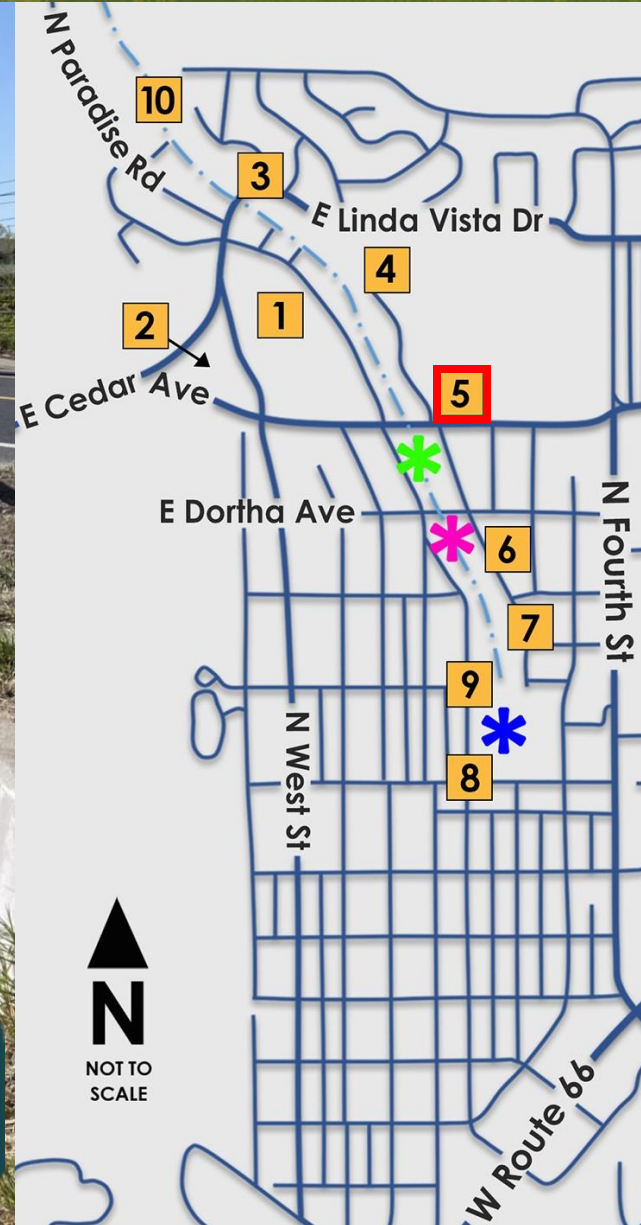


Cedar Avenue to Linda Vista Drive





Cedar Avenue Crossing



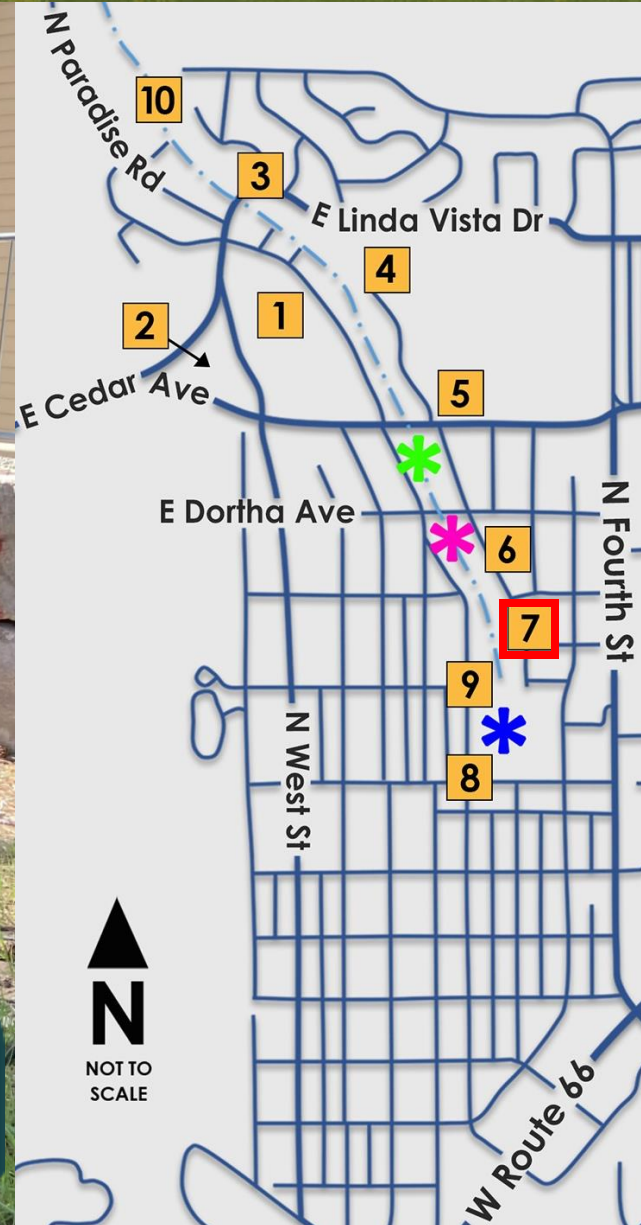


Arroyo Seco Drive to Dortha Avenue



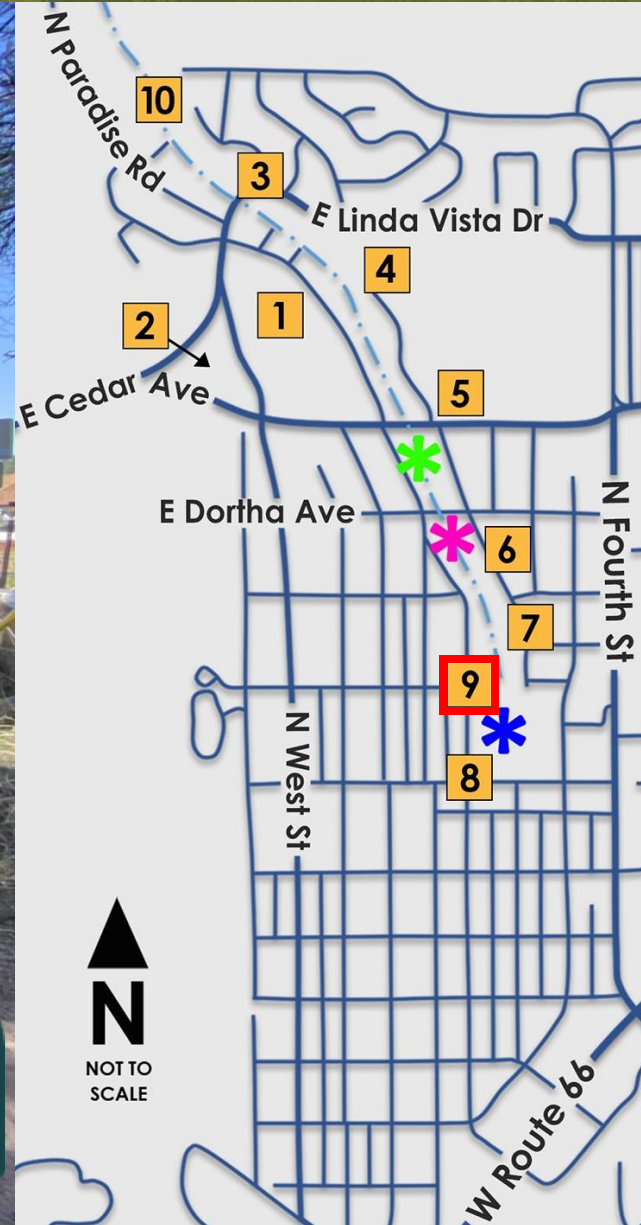


Arroyo Seco Drive Inlet





Killip Basins Inlet





Killip Basins Outlet



Milestones





Milestones



Construction





Grandview Utilities Construction

- Started September 5, 2023
- Complete Spring 2024
- First Sewer Improvements
- Second Water Improvements
- Access Maintained
- Snow Removal By Contractor
- No Winter Parking Ordinance





Park Way Basins Phase II Construction



- Started October 23, 2023
- Complete December 31, 2023
- Series of 3 Sediment Basins
- 1st Basin Completed Summer 2023
- Flood Control District Project
- Kinney Construction Services
- Alternative Forest Access Identified

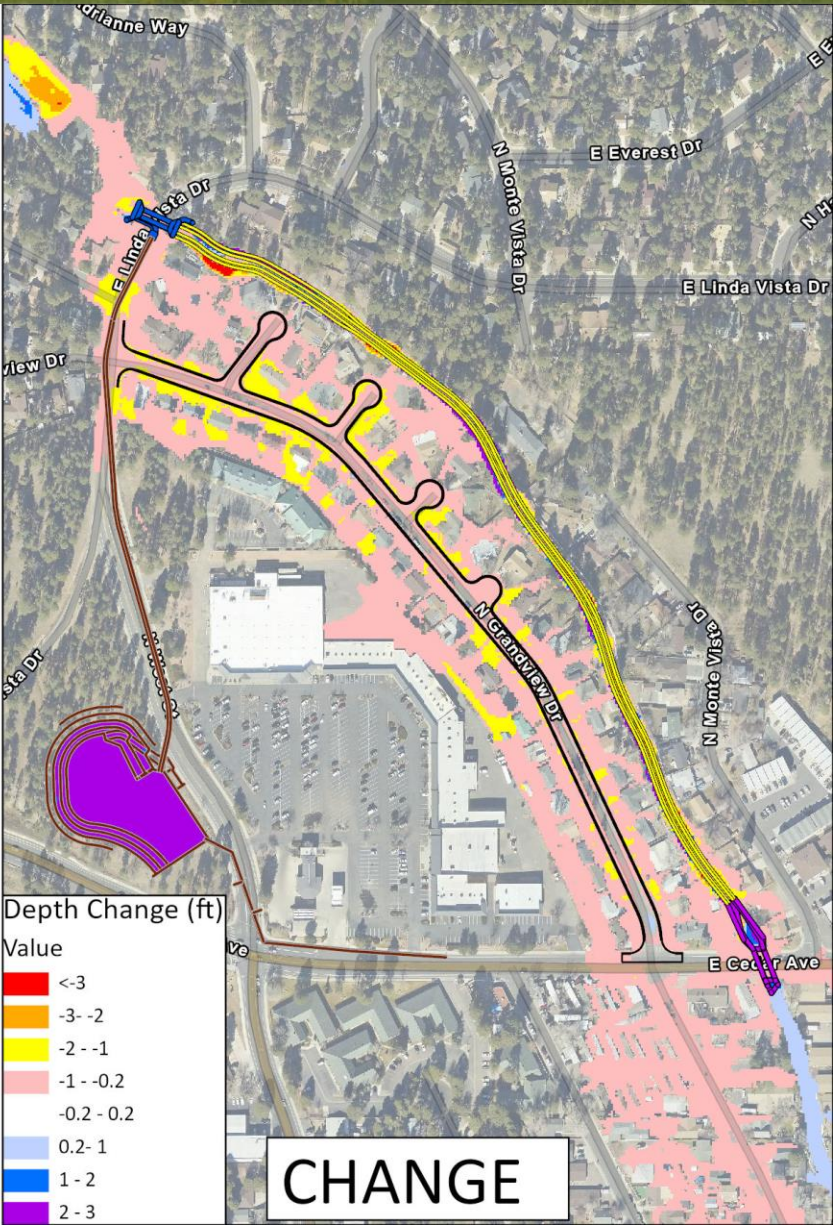
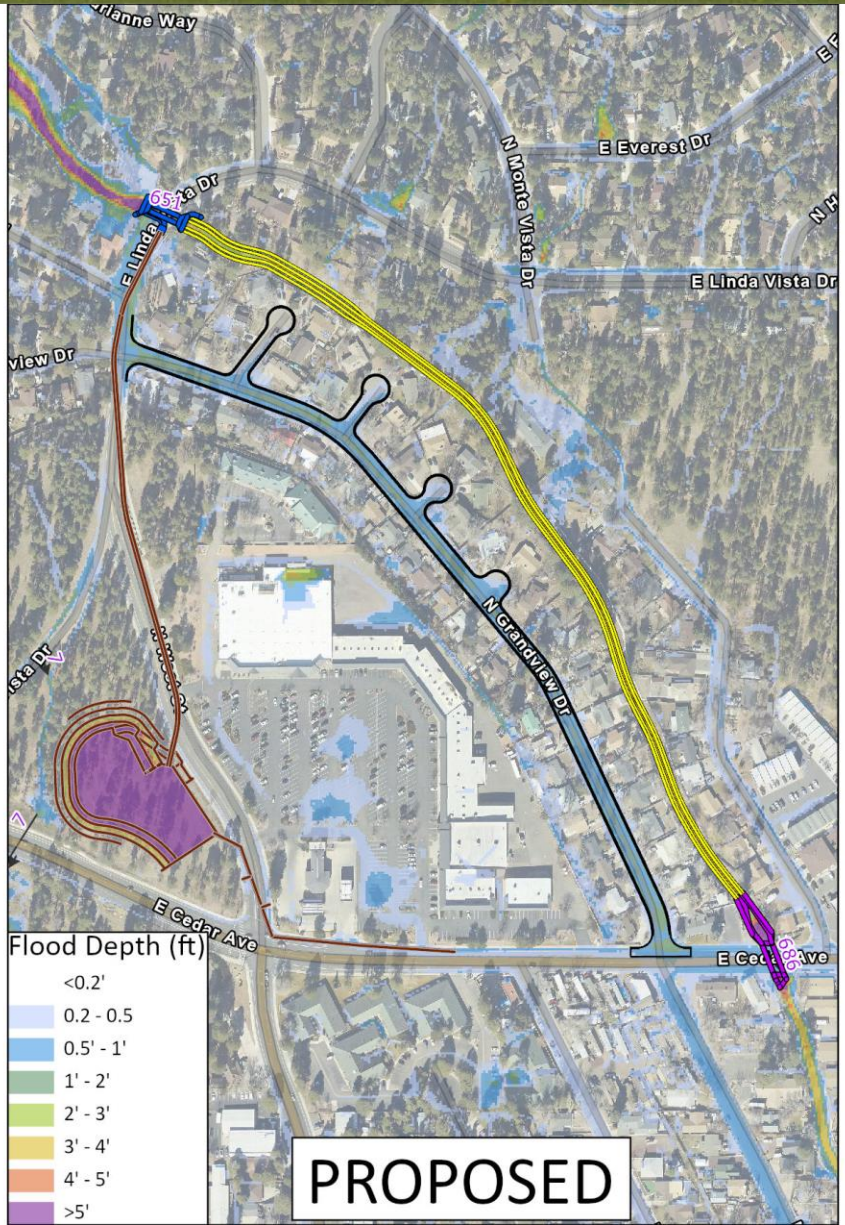
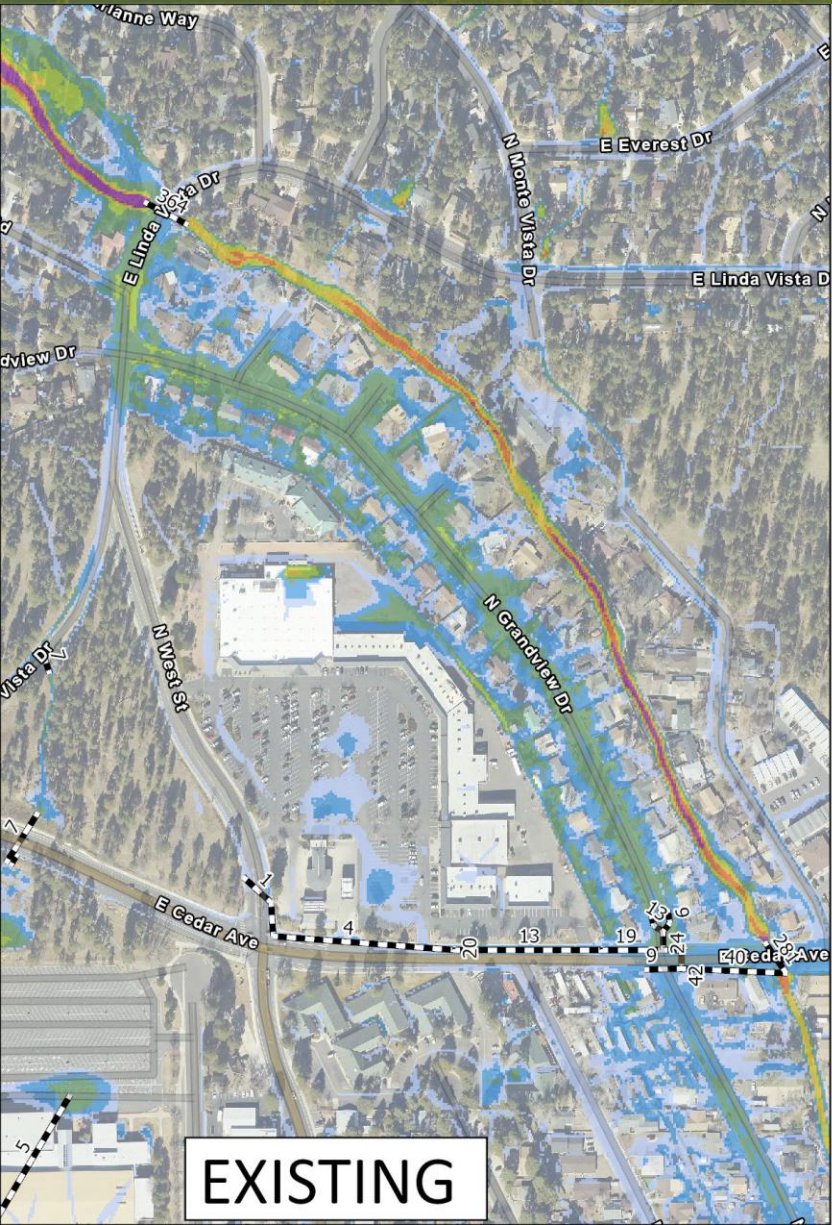


Modeling



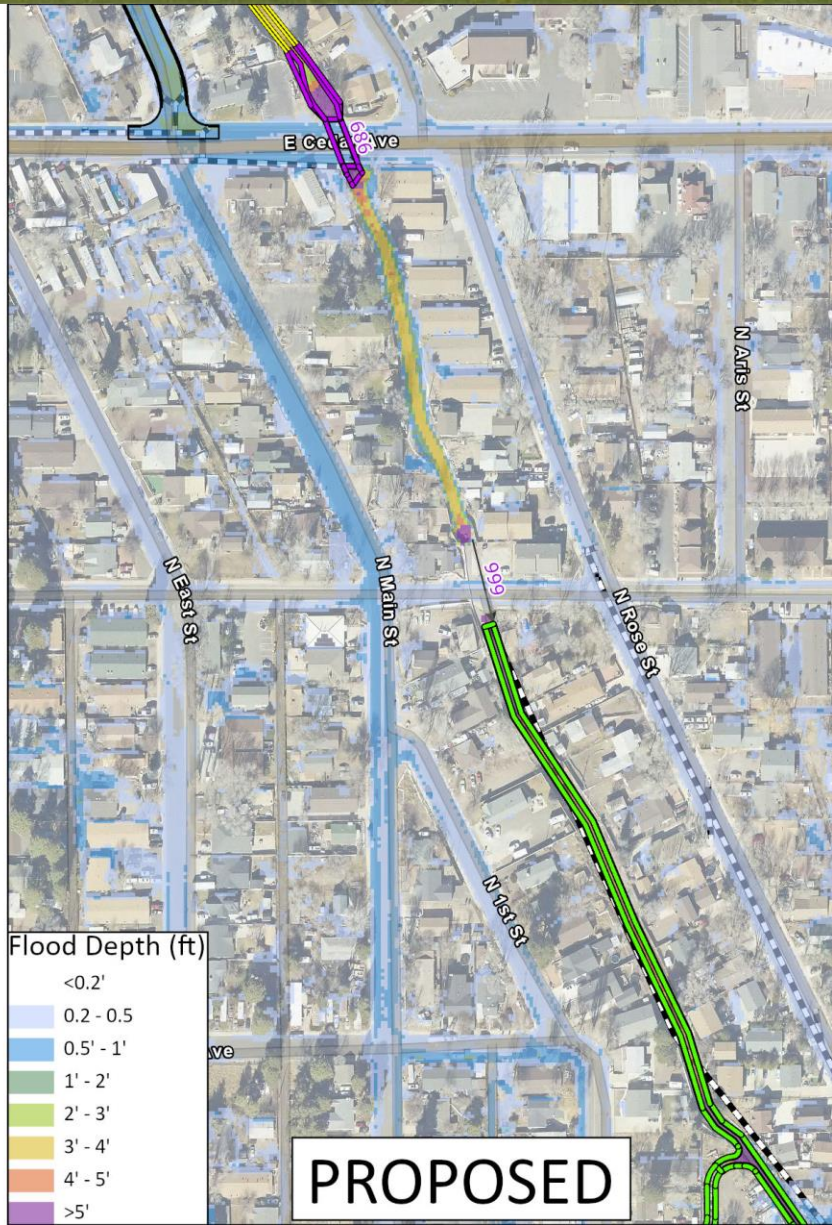
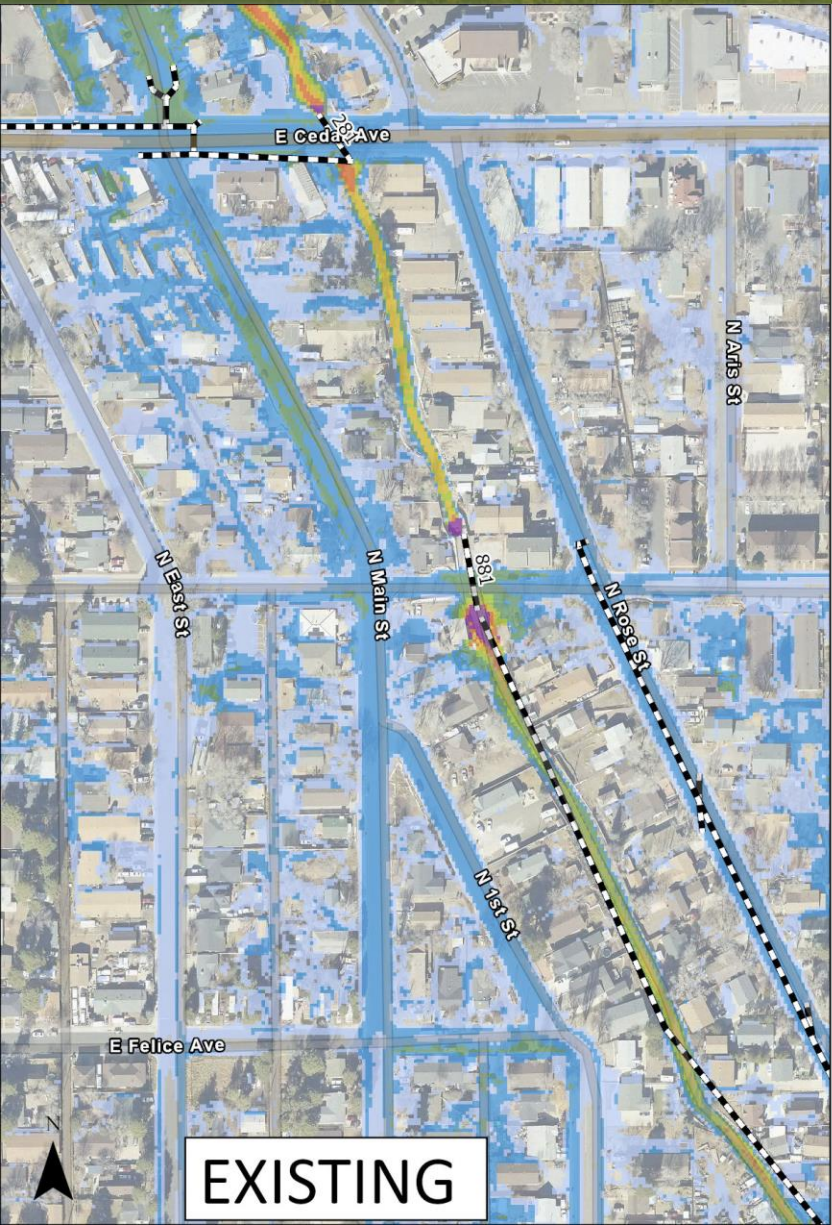


Draft Modeling Results - 2" Storm





Draft Modeling Results - 2" Storm



Flood Depth (ft)

<0.2'
0.2 - 0.5
0.5' - 1'
1' - 2'
2' - 3'
3' - 4'
4' - 5'
>5'

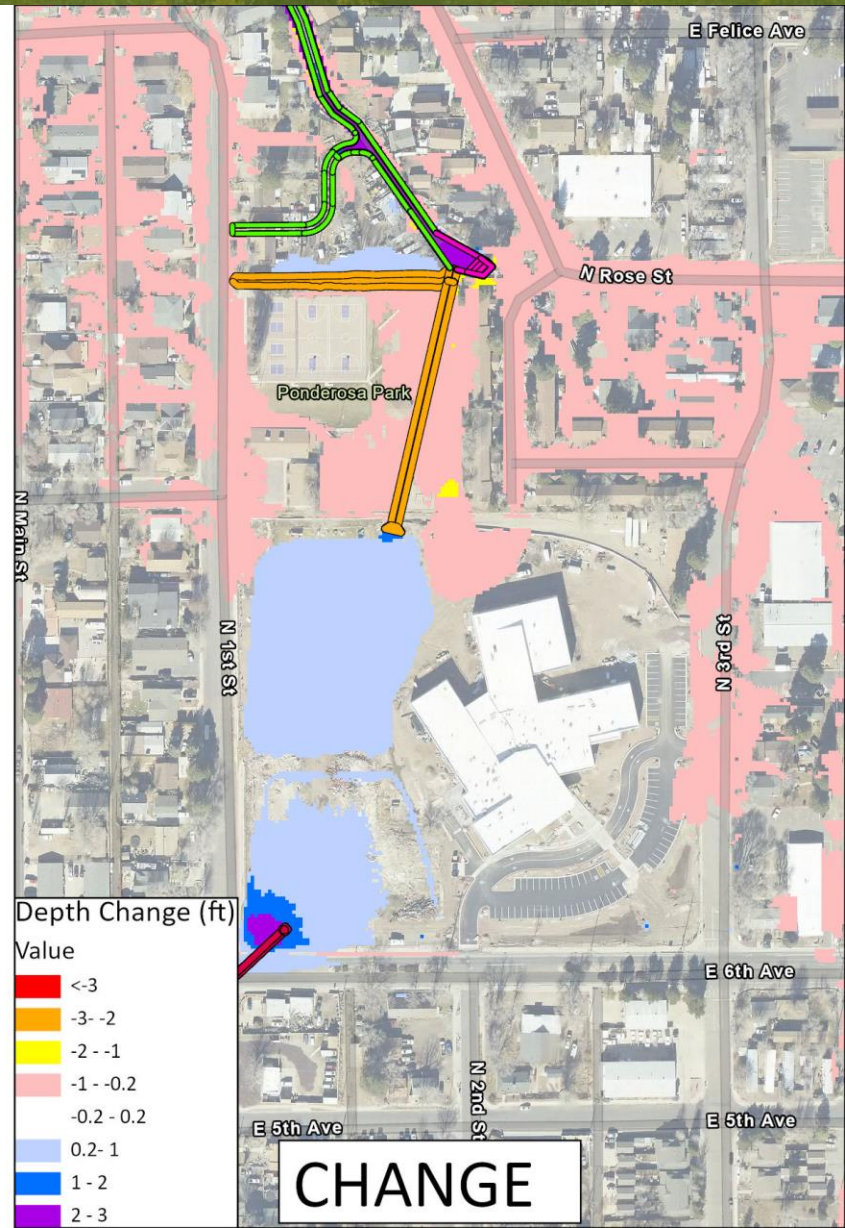
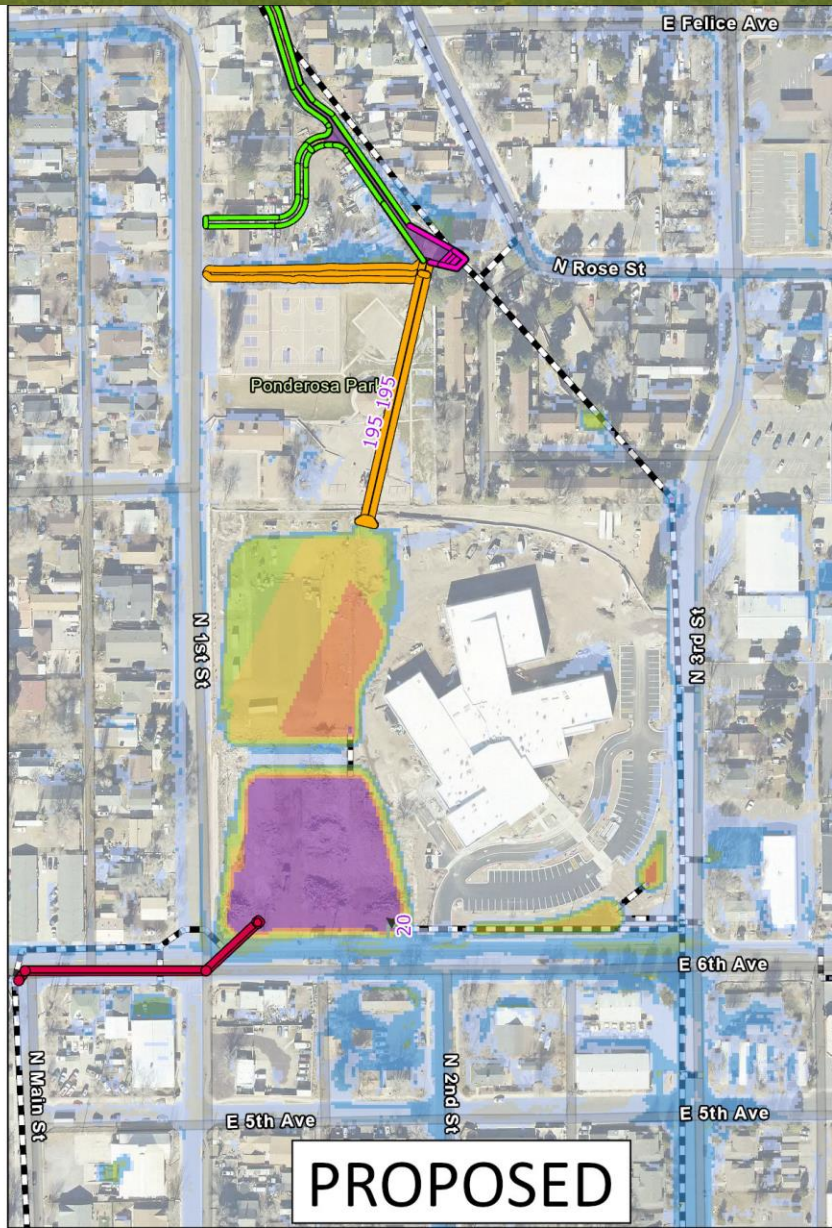
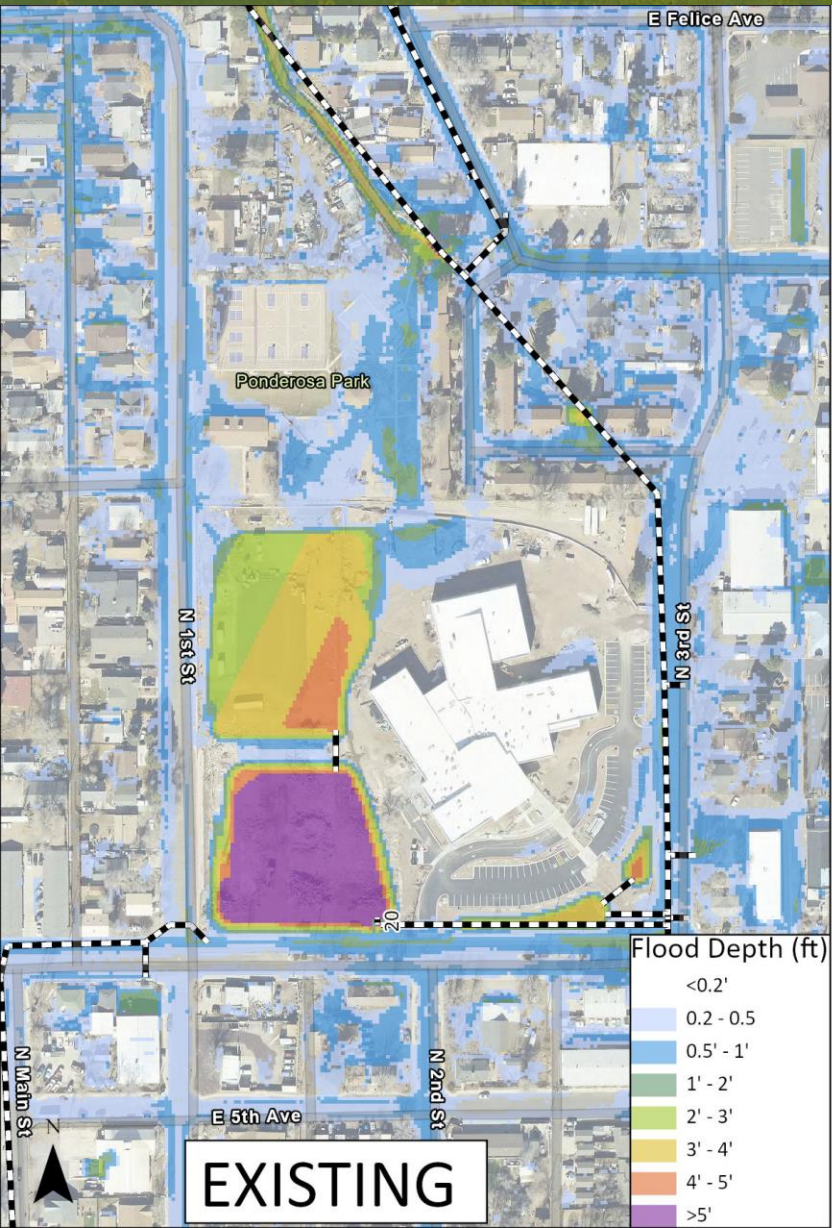
Depth Change (ft)

Value

<-3
-3 - -2
-2 - -1
-1 - -0.2
-0.2 - 0.2
0.2 - 1
1 - 2
2 - 3



Draft Modeling Results – 2" Storm



Mitigations





Short-term mitigations

- Plan for near future/ winter
 - The contractor will be removing or adjusting some sandbags on Grandview as necessary for both utility connections and street improvement.
 - No changes to sandbags will be made outside of Grandview.
 - Residents in the Spruce Wash should keep mitigations in place at this time.



Short-term mitigations

- Longer-term plan
 - Based on what improvements are shown by future modeling, the City and its contractor will work with residents to salvage or replace sandbags to mitigate to a 2inch/ 45-minute event until the entire suite of improvements is complete.
 - Once all improvements are complete, individual property owners can assess whether they want to remove sandbags based on modeling

Questions?

