SEWER INTERCEPTOR PROJECT

RUIDOSO NEW MEXICO

CITY OF RUIDOSO DOWNS

HIGH WATER MARK

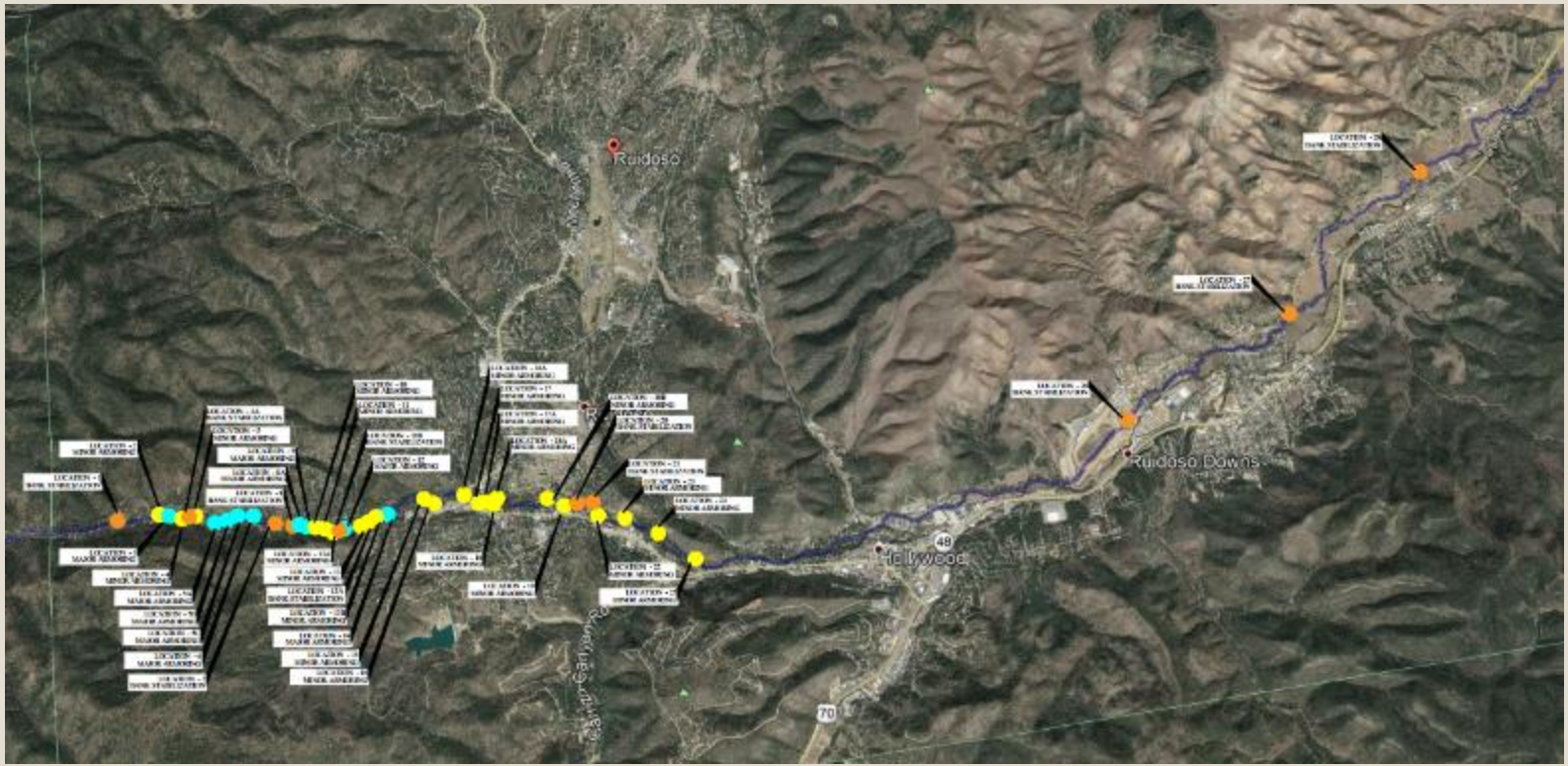
MOLZENCORBIN ENGINEERS | ARCHITECTS | PLANNERS

D.T. Collins & Associates, PC

Public Meeting

Tuesday, December 4, 2018

RUIDOSO SEWER PROJECT



HURRICANE DOLLY - JULY 27, 2008

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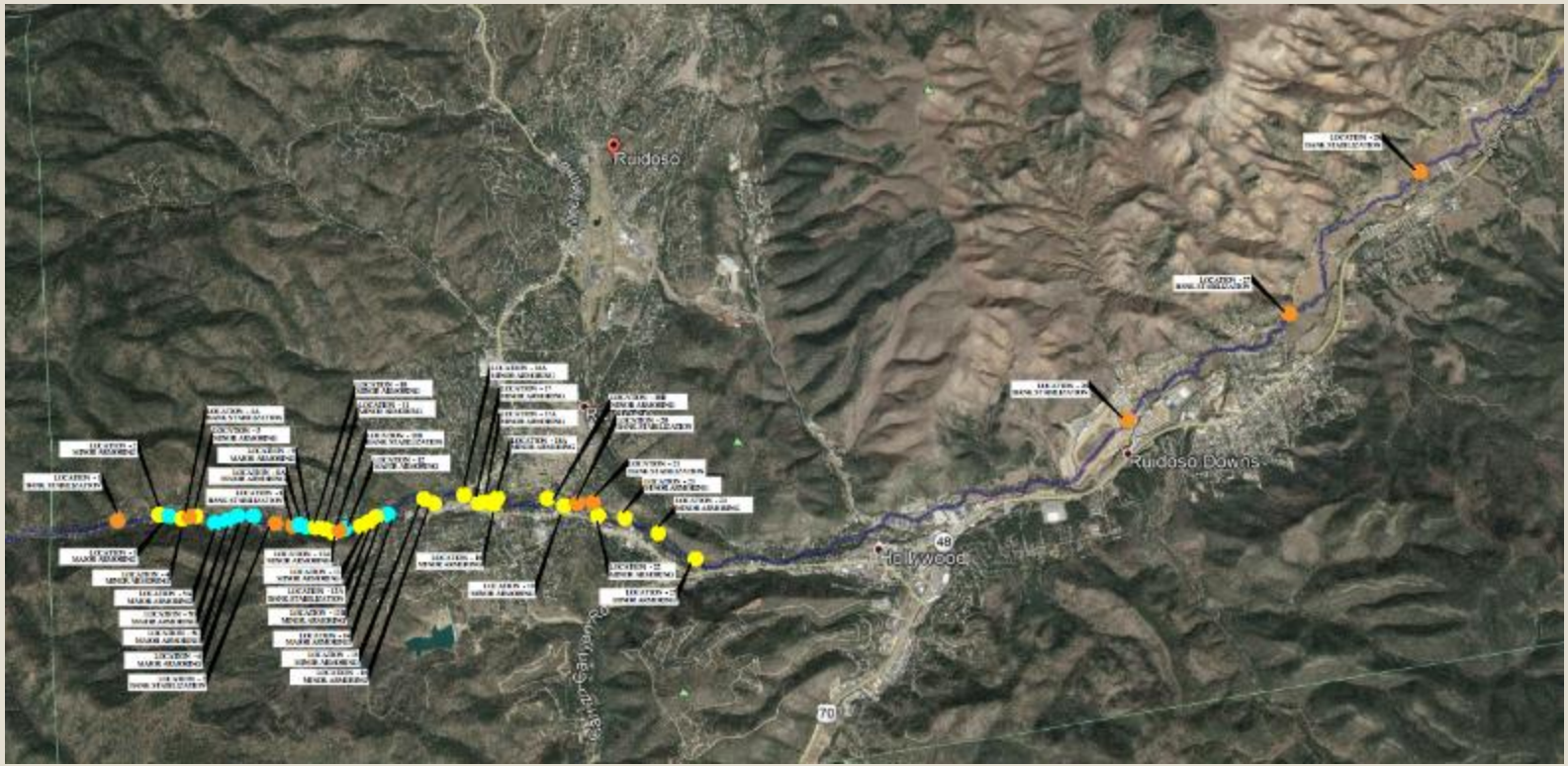
Flood Statistics:

- 6 to 9 inches of rainfall
- Damaged 12 bridges
- 8 bridges needed replacement
- 1 person drowned
- 300 people needed to be rescued
- 500 structures were damaged


SPEED
LIMIT
25

RUIDOSO SEWER PROJECT

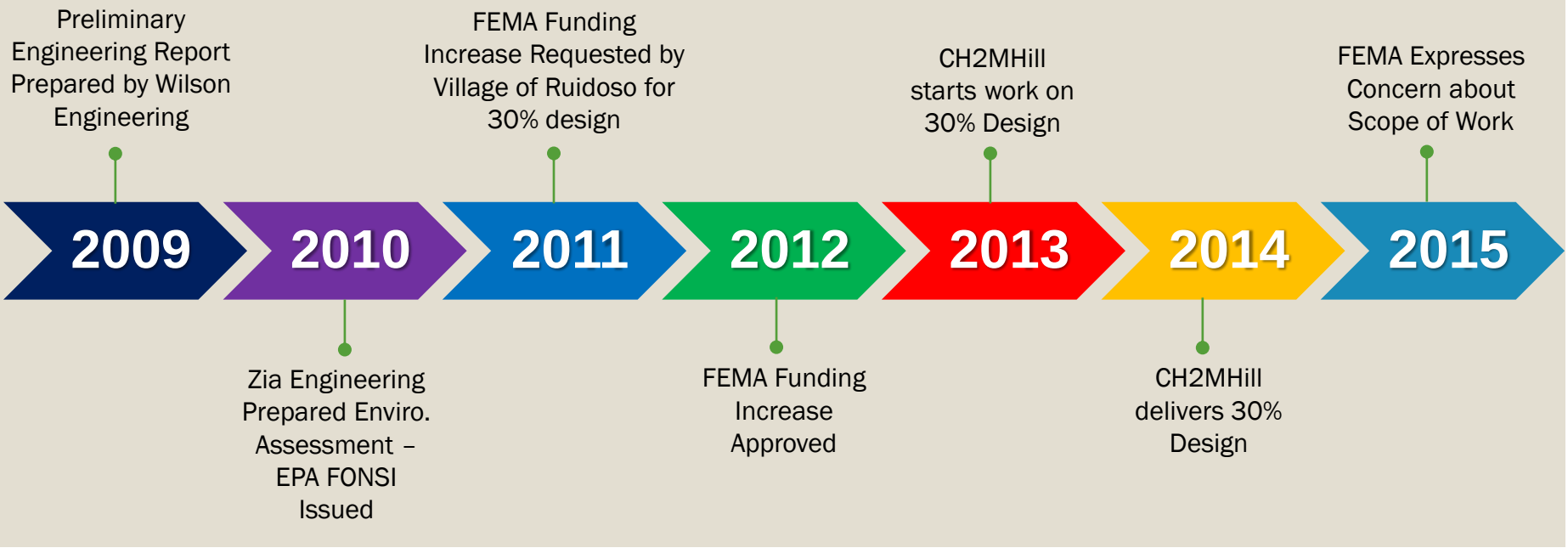


Exposed Sewer Crossings

Exposed Sewer Crossings

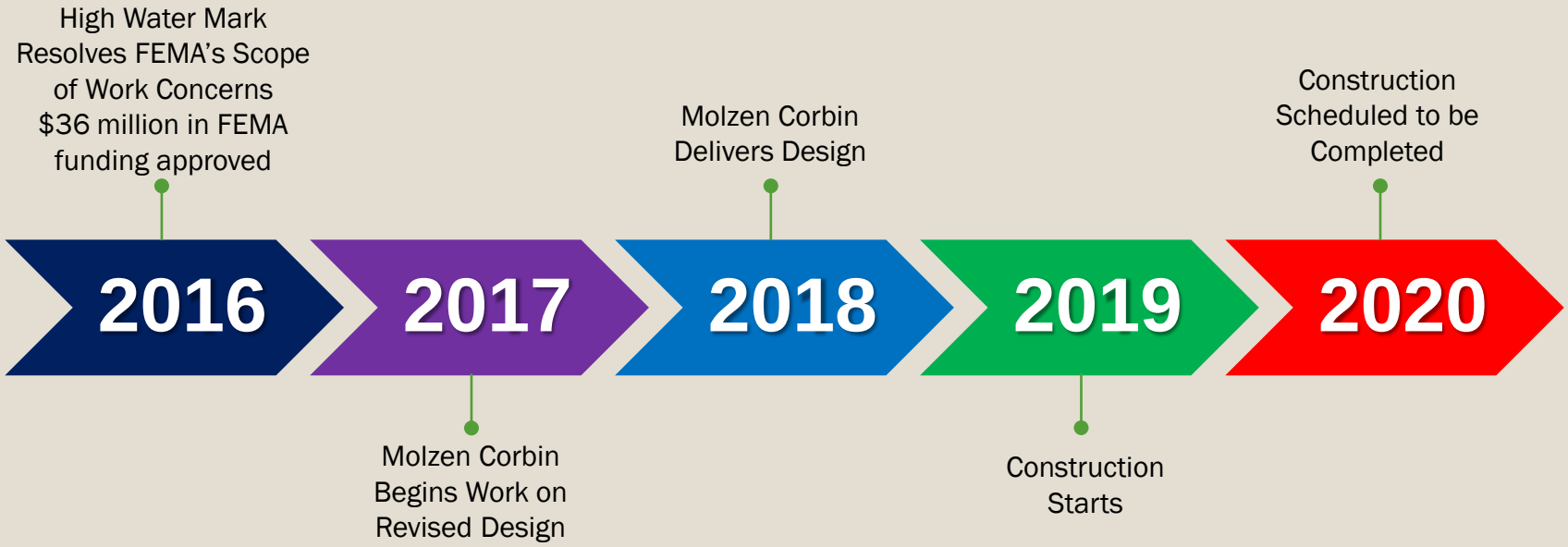
TIMELINE

Ruidoso Flood – July 27, 2008



TIMELINE (continued)

Ruidoso Flood – July 27, 2008



THE THREE PROJECTS

Project #1:
Restoration of Existing Sewer Lines and Manholes

- Trenchless Pipe Rehabilitation
- Insitu Manhole Repair

Project #2:
Lift Stations and Forcemains

- Abandonment of Damaged and Vulnerable Locations
- New Lift Stations and Forcemains to Convey Sewage

Project #3:
Hazard Mitigation and Stabilization for Sewer Lines

- Protect River Crossing Locations of Sewer Lines
- Protect Sewer Lines Parallel and Proximate to the River

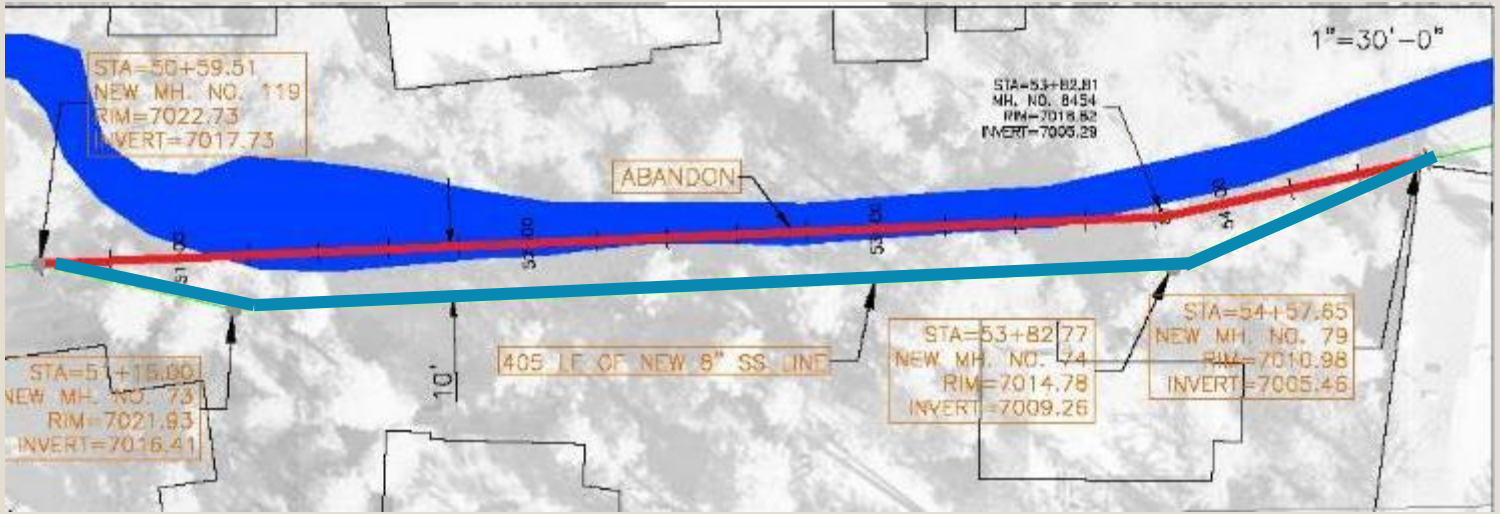
PROJECT #1: RESTORATION OF EXISTING SEWER LINES AND MANHOLES

Trenchless Rehabilitation Methods:

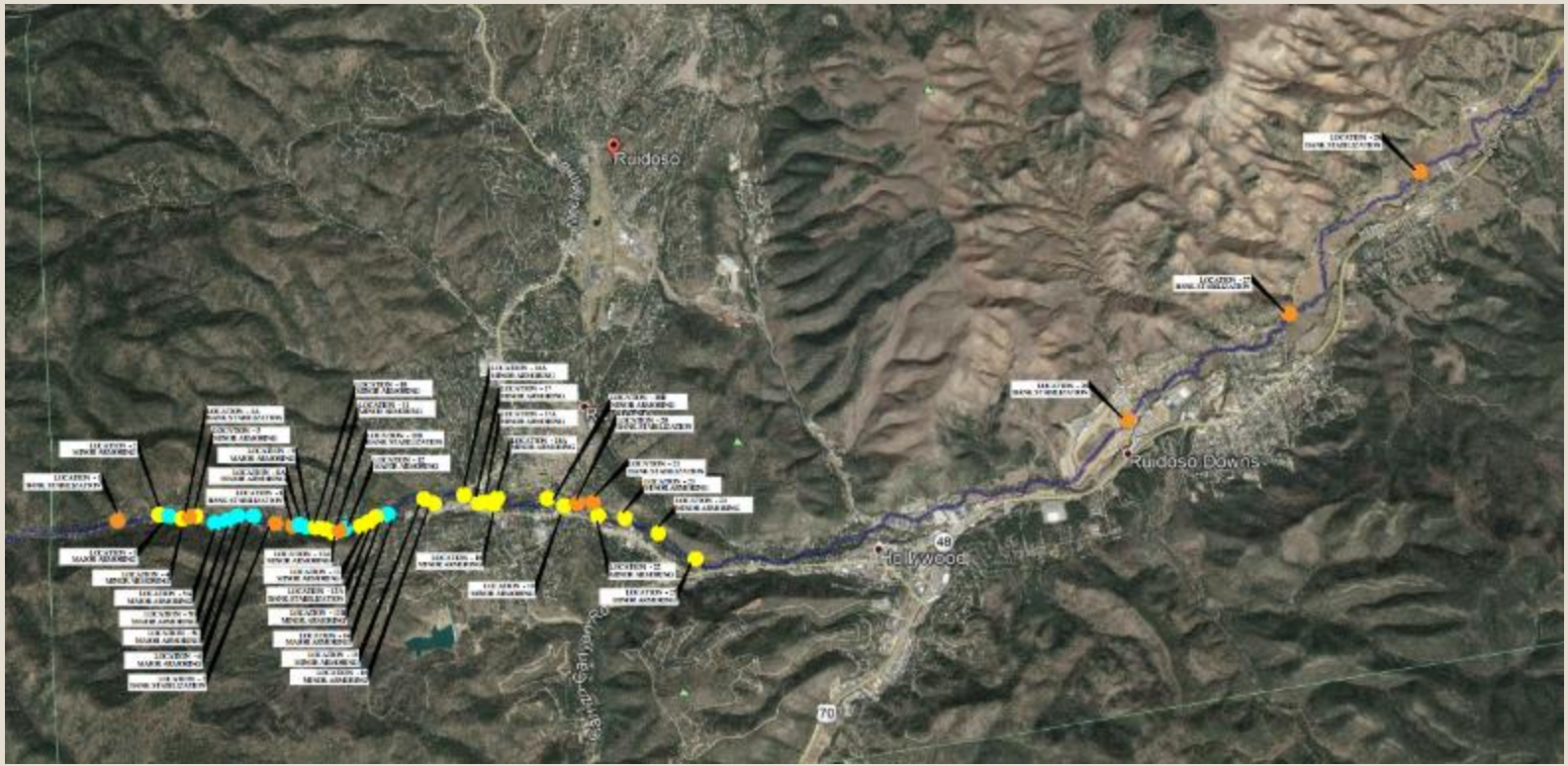
- Sliplining
- Cured-In-Place Pipe
- Thermoformed PVC
- Spiral Wound PVC
- Pipe Bursting

PROJECT #2: LIFT STATIONS AND FORCEMAINS

- Sewer will be moved away from river in select locations to provide protection from future flood hazards



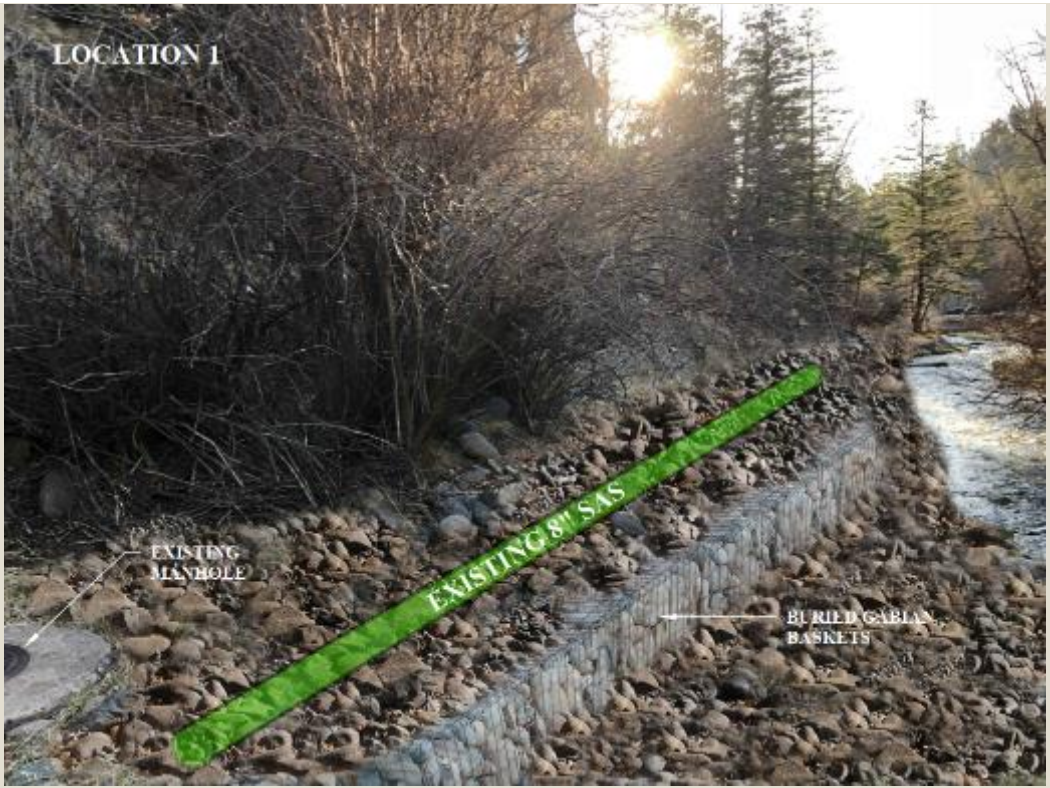
PROJECT #3: HAZARD MITIGATION AND STABILIZATION FOR SEWER LINES



LOCATION 1

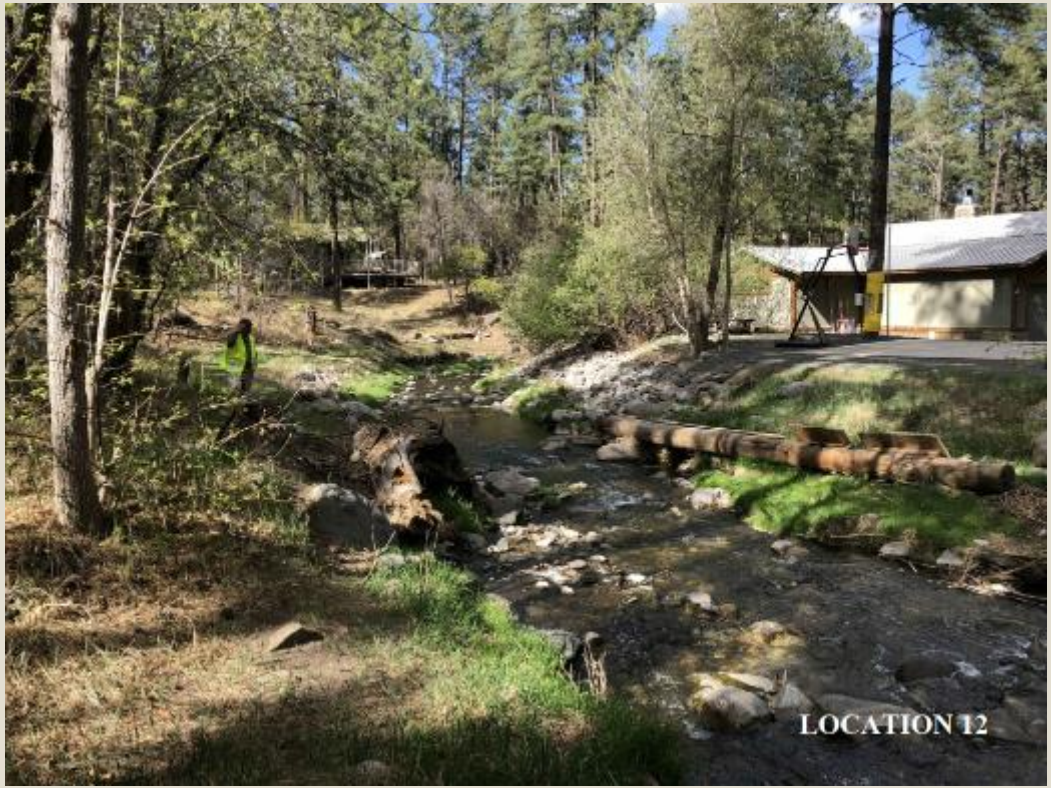
LOCATION MAP (SITE 1)

LOCATION 1 - AFTER



POST CONSTRUCTION

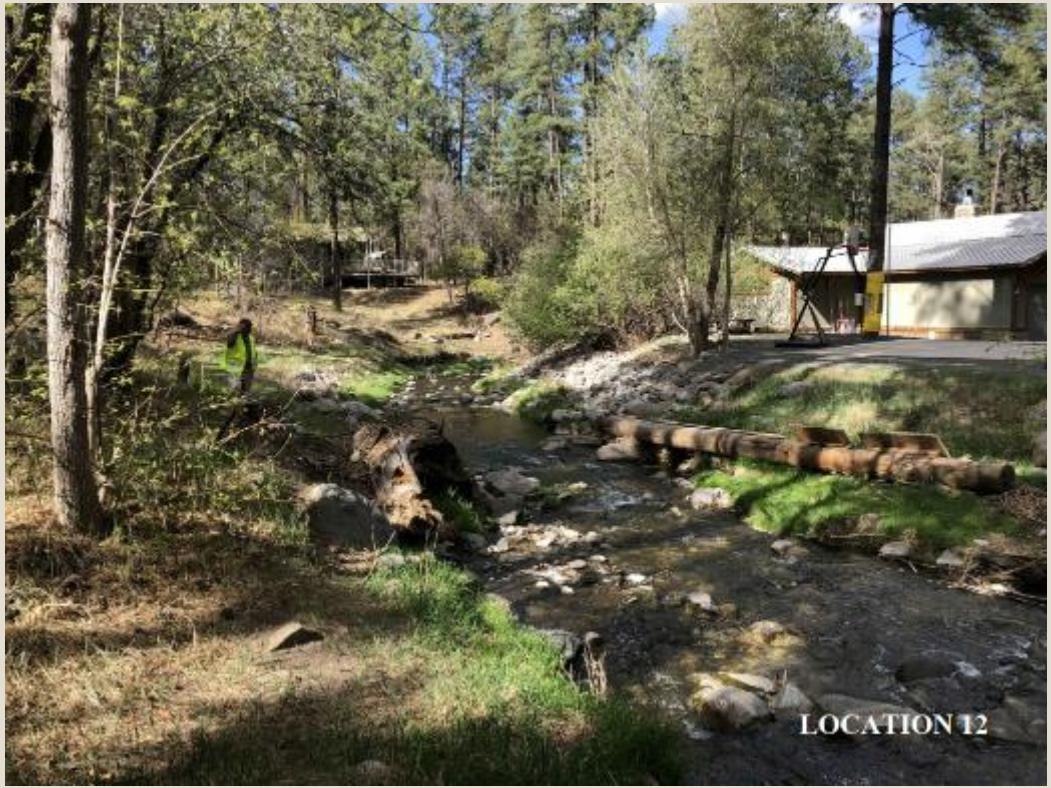
LOCATION 12 - BEFORE



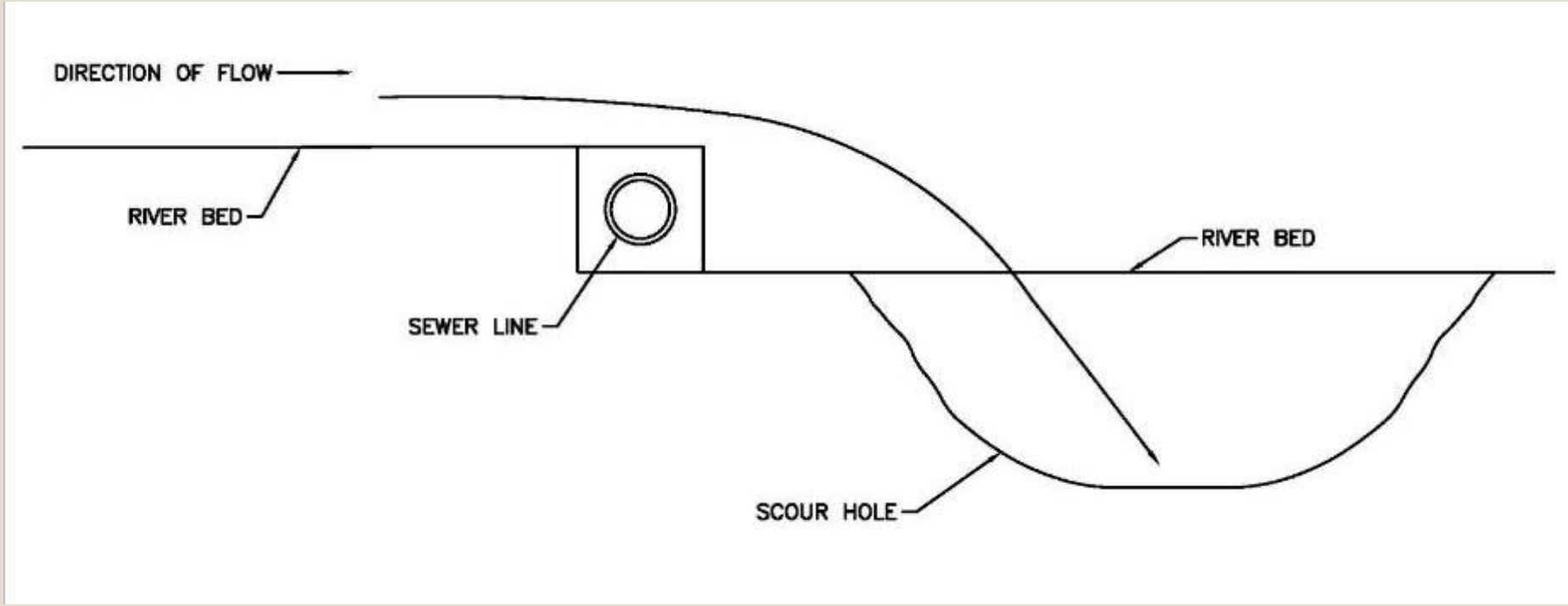
LOCATION MAP (SITE 12)

LOCATION 12 - AFTER

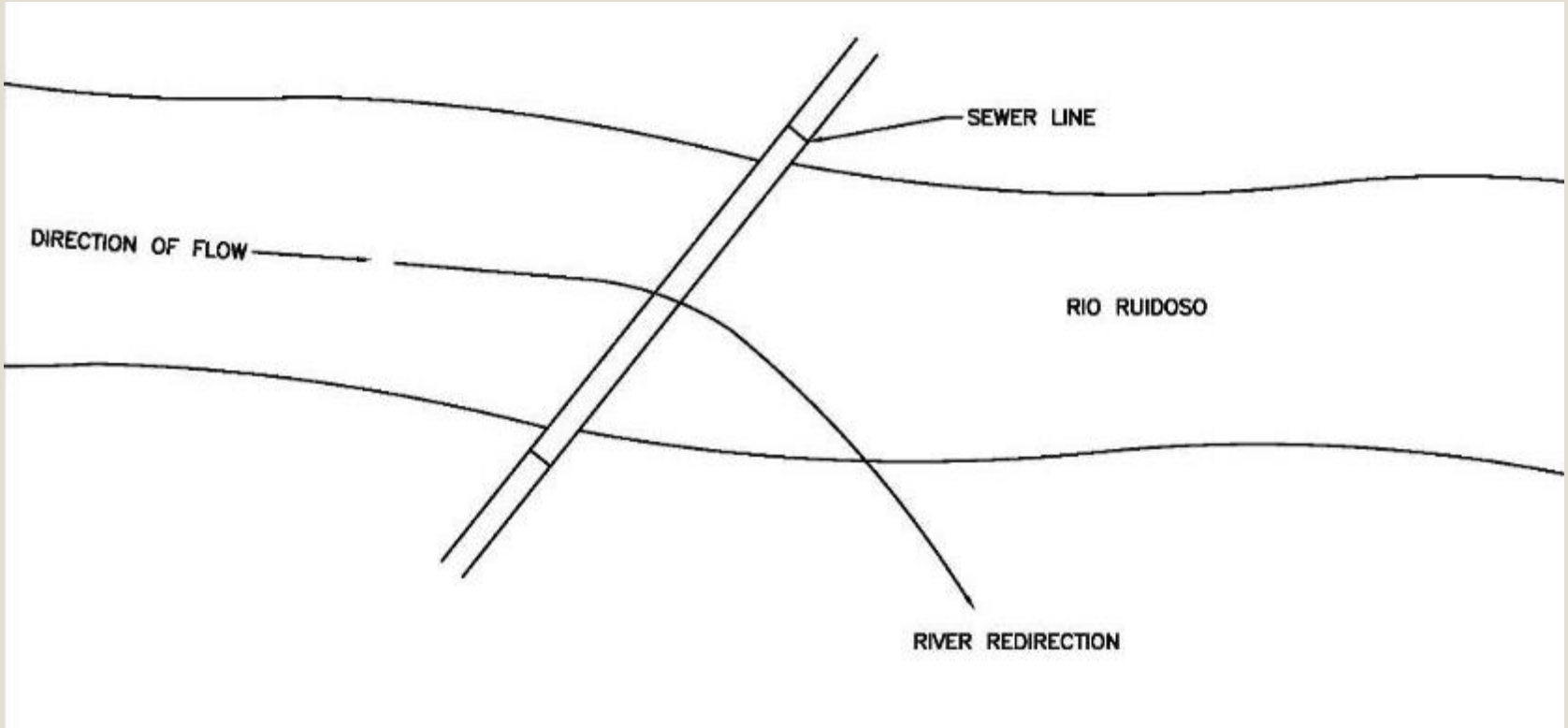
LOCATION 12 – POST CONSTRUCTION



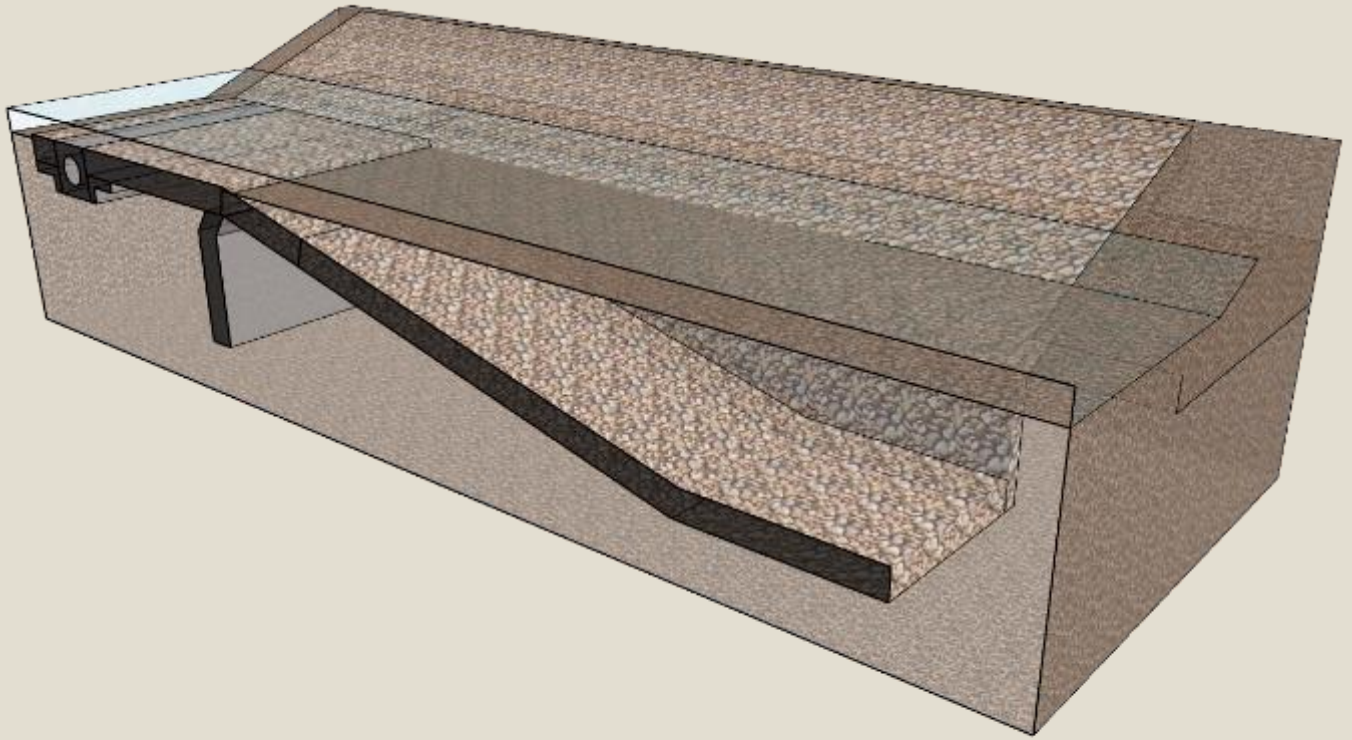
SCOUR HOLE



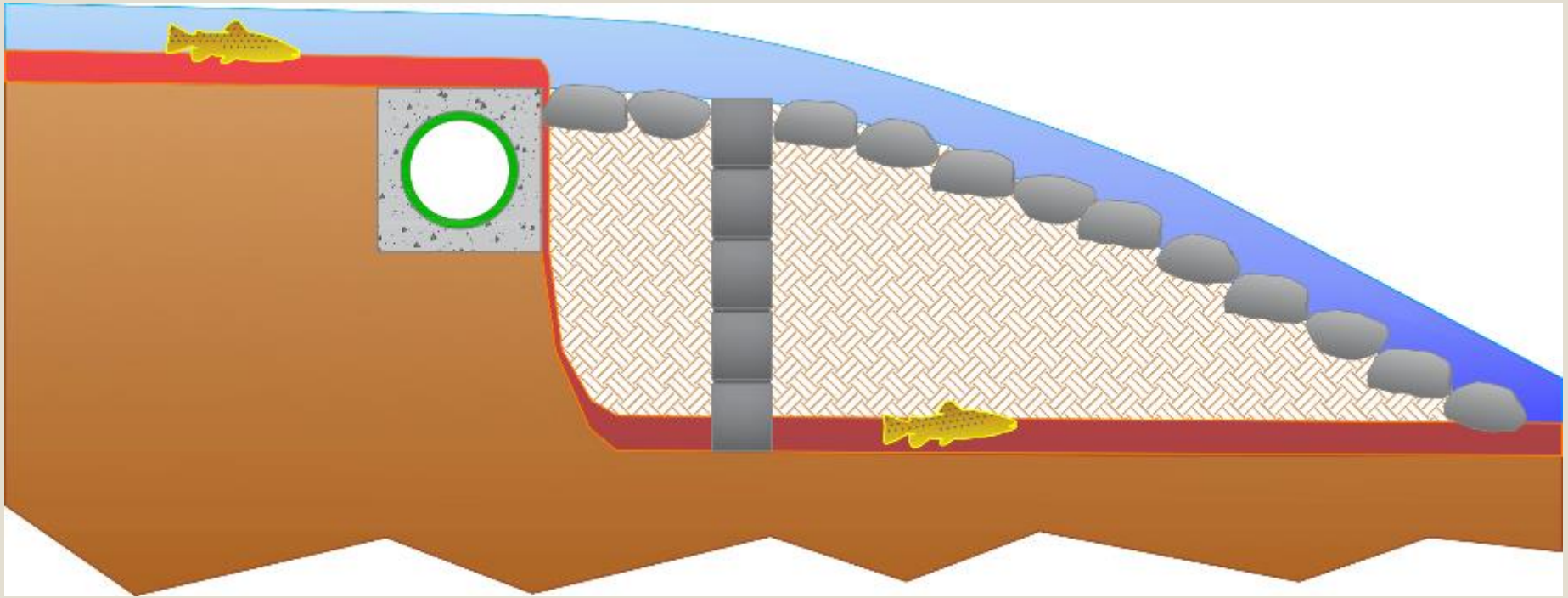
CHANGE DIRECTION OF RIVER



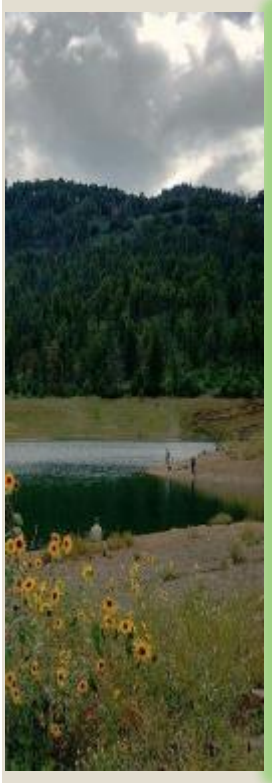
ROCK RAMP



EXAMPLE OF FISH HABITAT



CONSTRUCTION



RUIDOSO RIVER

BANK STABILIZATION
LANDSCAPE & REVEGETATION

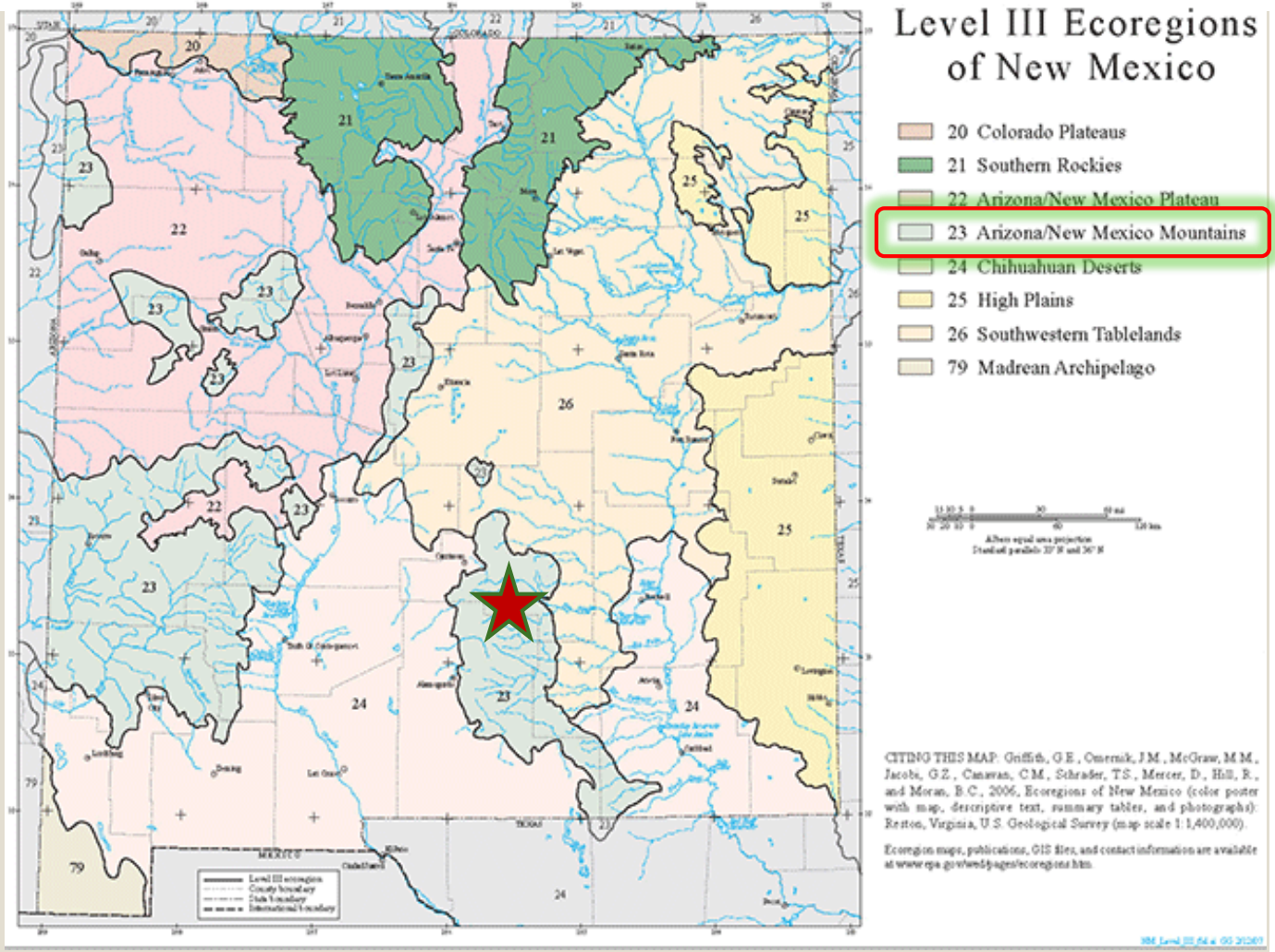
OVERALL SITE

Locations of Armoring and Bank Stabilization Sites

- Roughly 12 miles of River / Sewer
- Approximately 40 sites

Ecoregions of New Mexico

Zone Map



Arizona/
New Mexico
Mountains
ECOREGION

Arizona/New Mexico Mountains

Higher elevations mostly covered with both open and dense ponderosa pine forests

Sub-ecoregions:

Montane Woodlands * Montane Conifer Forest * Rocky Mountain Coniferous Forest

Plant Species may include:

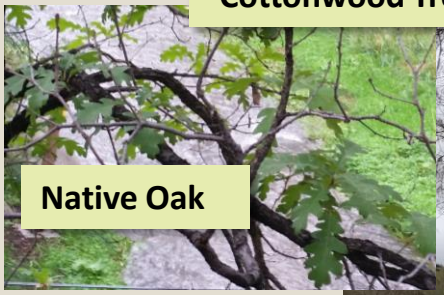
Douglas Fir
Pinon Pine
Ponderosa Pine
Alligator Juniper
Gambel Oak
Chinquapin Oak
Red Osier Dogwood
Blue Stem Willow
Serviceberry
Golden Currant
Narrowleaf Cottonwood

Ecoregion Montane

Riparian Corridor

Existing Tree / Plant Examples

Native
Rocky Mountain Tree
Box Elder

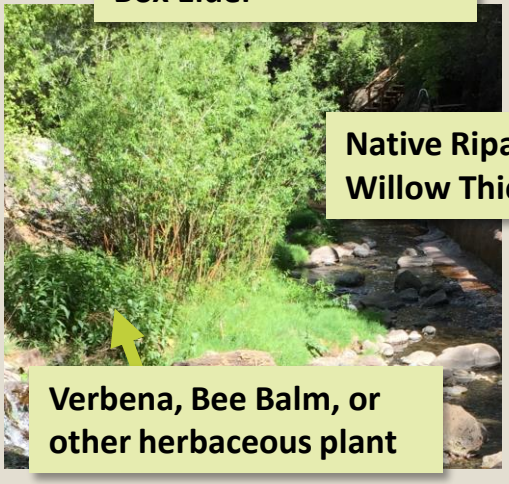


Native Oak

Riparian
Cottonwood Tree

Invasive
Siberian
Elm

Noxious
Kochia



Native Riparian
Willow Thicket

Verbena, Bee Balm, or
other herbaceous plant

ECOREGION
Native
Wildflowers

ECOREGION
Native Grasses

REVEGETATIVE PLANTING

Revegetative Seeding
groundcover mitigates surface erosion

Pole Planting
willow thickets stabilize soil

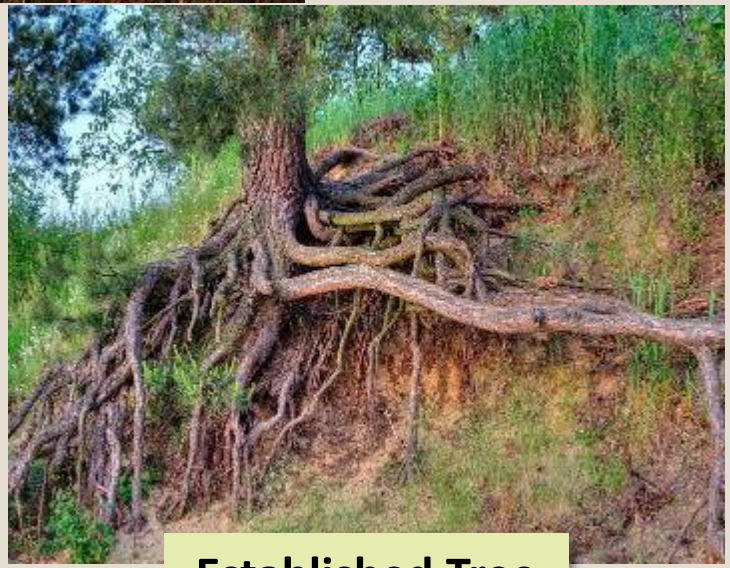
Tree Replanting
trees removed shall be replanted to minimize disturbance

New Tree Planting
bank stabilization, habitat improvement, & beautification

PLANTING for Bank Stabilization

Roots of established native plantings hold soils in place and help mitigate bank destabilization

Willow Pole Plantings



Established Tree

Unintended **BENEFIT**

Habitat Improvement

- **Plantings stabilize soils and foster plant communities**
- **Riparian thickets create habitat for aquatic animals**
- **Trees provide shade to improve fish habitat**

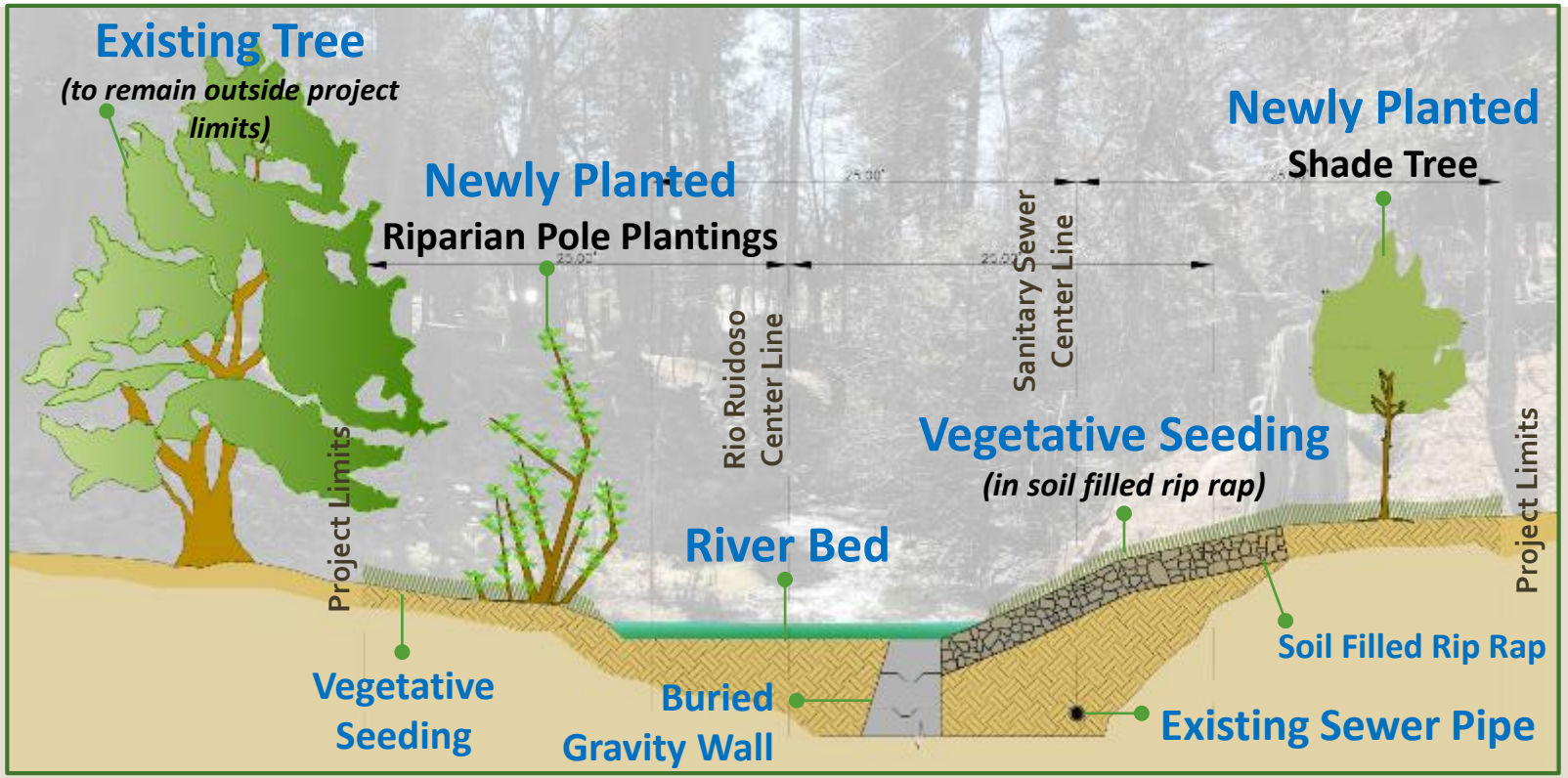
REVEGETATIVE SEEDING Methods

Disk Seeder

Hydraulically Applied Mulch

Manual Seed Broadcast

EXAMPLE PLANTING WITHIN PROJECT LIMITS



CONSTRUCTION LOCATION (EXAMPLE 1)

CONSTRUCTION LOCATION (EXAMPLE 2)

CONSTRUCTION LOCATION (EXAMPLE 3)

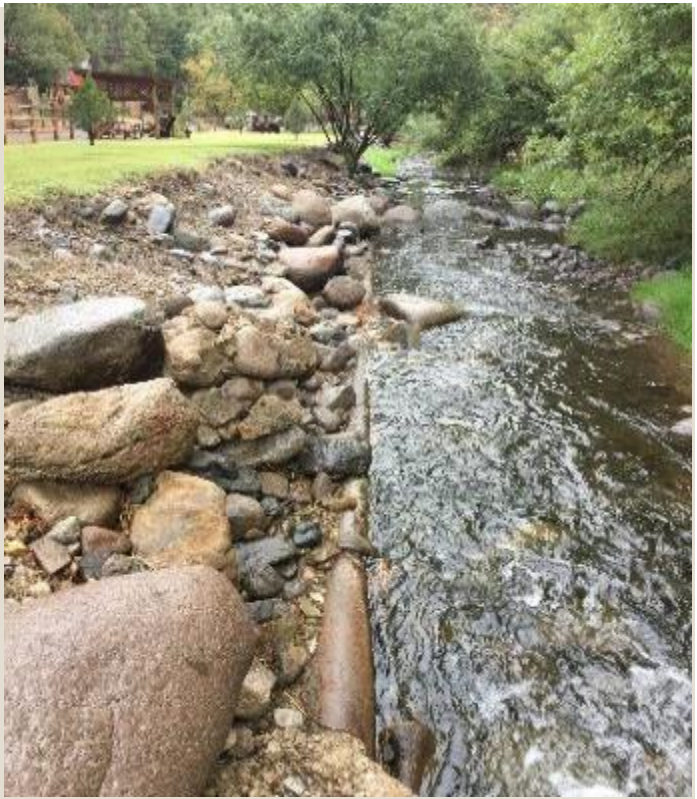
ADDITIONAL EXAMPLES

Location A

- This location will be armored
- The existing structure or wall, will remain

Location B

- Existing Sewer Pipe will be relocated
- After relocating, pipe will no longer be exposed/visible



SUMMARY OF PROJECT BENEFITS

- Keep Sewage out of the River
- Stabilize River so homes are protected
- Improve river ecosystem with native plantings
- Facilitate fish migration
- Create shade for fish habitat

AGENCY STAKEHOLDER COORDINATION

NMED

- Primarily concerned about future flood damage and sewer inputs into river
- Agreeable to rehabilitation versus relocation for this FEMA funded project
- Responsible for Section 401 Water Quality Permitting

USACE

- Require LEDPA
- Recognize constructability issues and environmental impact of relocation
- Agreeable to rehabilitation for this FEMA funded project
- Will administer the Section 404 Permit for the Project

FEMA/NMDHSEM

- HWM has coordinated keeping agencies abreast of project progress and milestones
- Rehabilitation more closely reflects restoring "form and function" of the damaged infrastructure

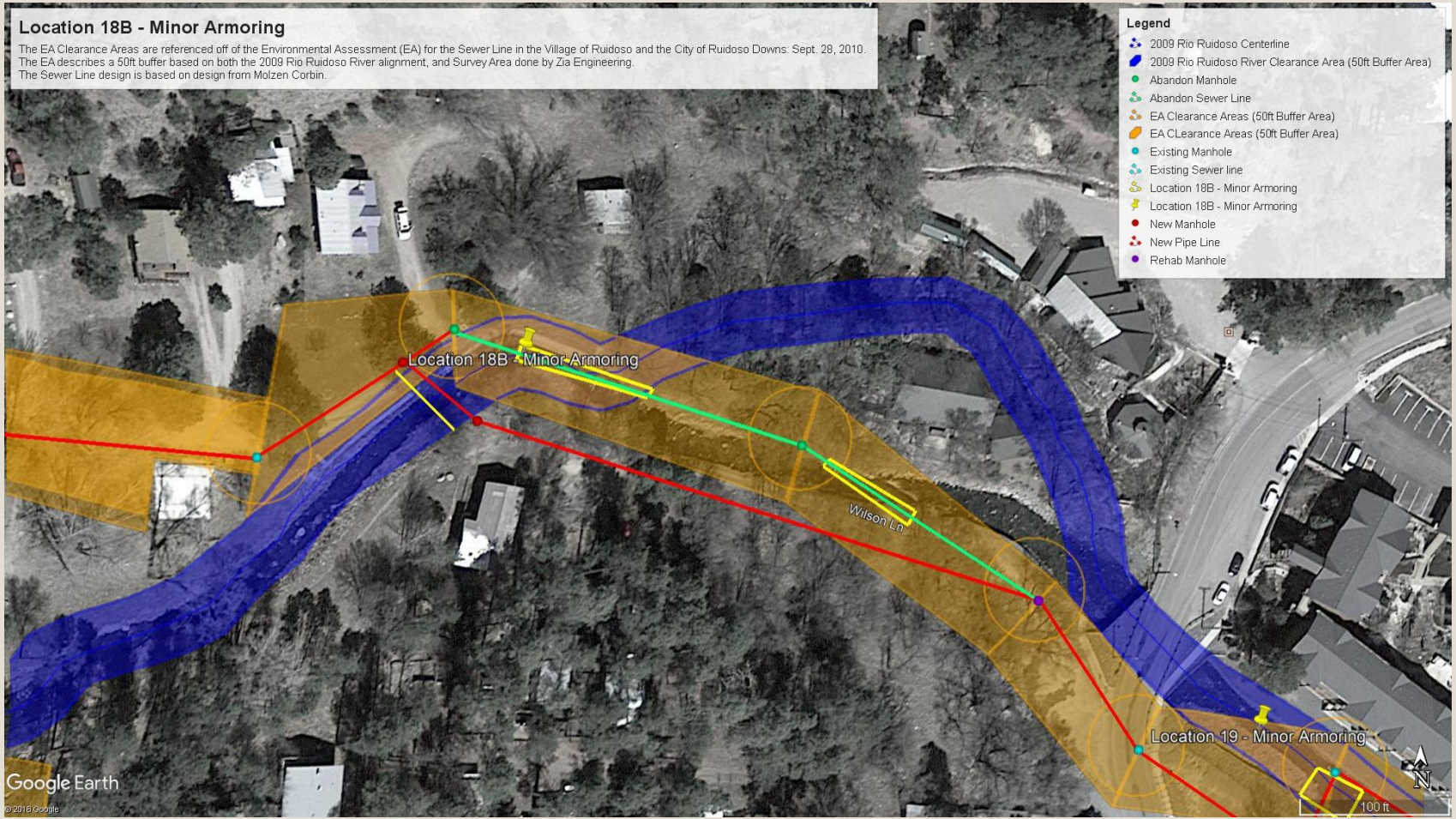
High Water Mark will be performing the necessary steps to fulfill all permitting requirements with the help of Molzen Corbin and the Village of Ruidoso

AGENCY COORDINATION AND PERMITTING UPDATES

- The Environmental Assessment (EA) will need an amendment to include any additional areas that are outside the original EA boundary areas and to update impacts to vegetation and biological resources that has developed within the project area.
- FEMA will be the lead agency coordinating the EA amendment.
- The Village of Ruidoso, High Water Mark, and Molzen Corbin have been having bi-weekly conference calls with FEMA and NMDHSEM to make sure deliverables are being met and to discuss any questions or concerns.

Permitting:

- Need a few more documents and deliverables before the 401 and 404 applications are finalized.
  - Final Design and design report for the Hazard Mitigation and Stabilization phase of the project prepared by Molzen Corbin.
  - Wetland Delineation, that High Water Mark will be performing.
  - EA Amendment that High Water Mark will be working on in collaboration from Molzen Corbin, and FEMA.
- There will be a public comment review for the EA amendment, and for 401 and 404 permits that are required for the project.
  - Involvement with all participating parties and the community members. The community will be notified at least once for review on how they will be impacted by the project. Depending how the agencies coordinate the notices, the public could receive up to three notices.


Location 18B - Minor Armoring
The EA Clearance Areas are referenced off of the Environmental Assessment (EA) for the Sewer Line in the Village of Ruidoso and the City of Ruidoso Downs: Sept. 28, 2010.
The EA describes a 50ft buffer based on both the 2009 Rio Ruidoso River alignment, and Survey Area done by Zia Engineering.
The Sewer Line design is based on design from Molzen Corbin.
Legend
2009 Rio Ruidoso Centerline
2009 Rio Ruidoso River Clearance Area (50ft Buffer Area)
Abandon Manhole
Abandon Sewer Line
EA Clearance Areas (50ft Buffer Area)
EA CLearance Areas (50ft Buffer Area)
Existing Manhole
Existing Sewer line
Location 18B - Minor Armoring
Location 18B - Minor Armoring
New Manhole
New Pipe Line
Rehab Manhole
Location 18B - Minor Armoring
Wilson Ln
Location 19 - Minor Armoring
Google Earth
© 2018 Google
100 ft
N

MAJOR MILESTONES SINCE LAST PUBLIC MEETING

September 2018:

- Molzen Corbin submits 90% Design on the Rehabilitation of Sewer Line and Manhole phase of the project.

October 2018:

- 90% Design on the Rehabilitation of Sewer Line and Manhole submittal is sent to NMDHSEM and FEMA for review.
- Meeting with the Village of Ruidoso, Molzen Corbin, and High Water Mark to discuss comments on the 90% Design on the Rehabilitation of Sewer Line and Manhole phase.
- Additional site visit to define the ordinary high water mark for design and permitting purposes.
- Refining and defining the EA clearance areas for Hazard Mitigation and Stabilization phase.
- Presentation of the project by Molzen Corbin and High Water Mark to the Rotary Club.

November 2018:

- Site Visit with NMDHSEM, the Village of Ruidoso, High Water Mark and Molzen Corbin.
- Meeting with the Village of Ruidoso, High Water Mark, Molzen Corbin, and Harcrow Surveying to discuss the easements on the project.
- Molzen Corbin submits 90% Design on the Hazard Mitigation and Stabilization phase of the project.
- 90% Design on the Hazard Mitigation and Stabilization for the Sewer line is submitted to NMDHSEM and FEMA for review.

In between then, we've had:

- 5 meetings with Molzen Corbin and High Water Mark to continue working on the permitting and design aspect for the Hazard Mitigation and Stabilization on the sewer line.
- 5 meetings and conference calls with NMDHSEM, FEMA, the Village of Ruidoso, High Water Mark and Molzen Corbin to address any questions or concerns from their reviews, discuss any project updates and next steps to keep the project moving to meet the 2020 deadline.

By showing progress and continuing to meet major milestones, we can keep the project moving forward and *funded*.

QUESTIONS?

RUIDOSO NEW MEXICO

HIGH WATER MARK

MOLZENCORBIN
ENGINEERS | ARCHITECTS | PLANNERS

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