

# Inner Basin Waterline Restoration

10 January 2023



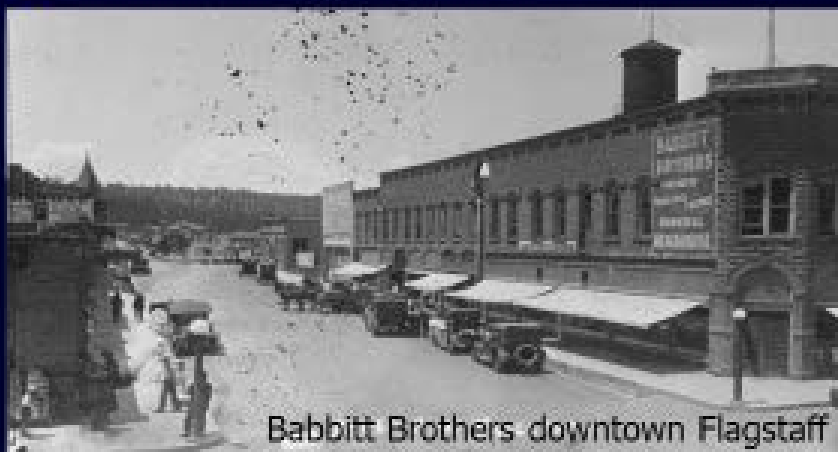
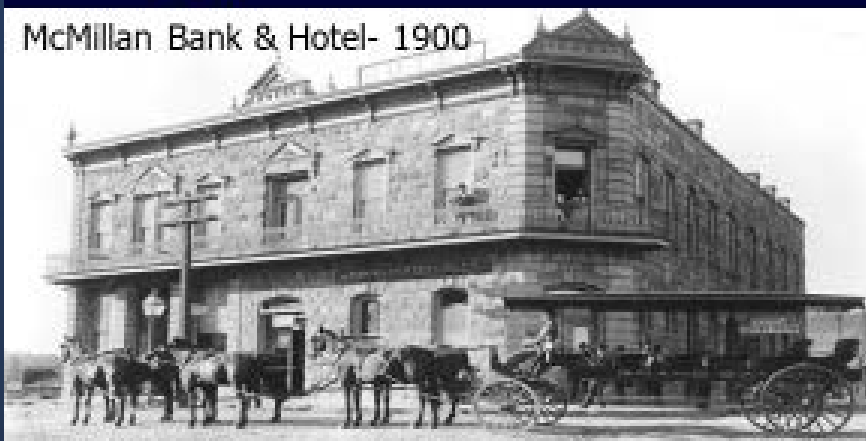
Early Flagstaff



## Growing Railroad and Timber Town

- Initial Inner Basin Pipeline had ~300 customers
- Paid \$2/month
- (2)50 M Gal non-covered storage tanks for entire winter

McMillan Bank & Hotel- 1900



Babbitt Brothers downtown Flagstaff

## PIPELINE OF THE PAST

3 pipelines: 1890s, 1930s, 1990s

*2.0 MGD Summer Peak Flow ~15% of demand*



**Discharge into Rio de Flag**

## PIPELINE OF THE PAST

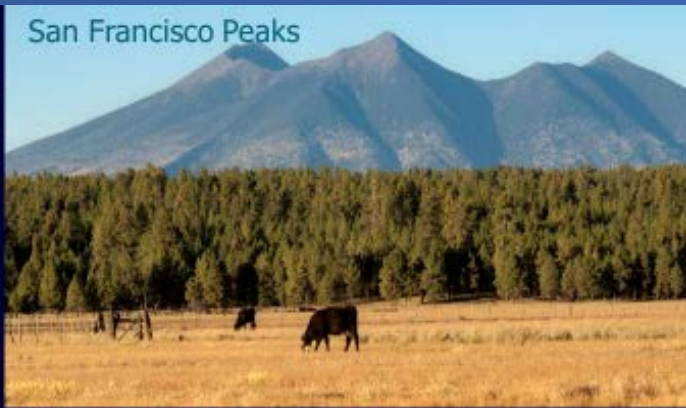
3 pipelines: 1890s, 1930s, 1990s

*2.0 MGD Summer Peak Flow ~15% of demand*

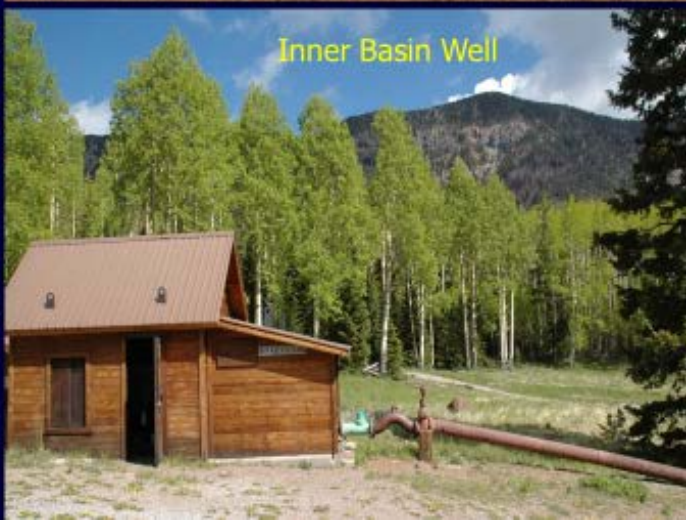




Waterline Road



San Francisco Peaks



Inner Basin Well



# San Francisco Peaks

Schultz Fire – June 2010  
~ 24 sq.miles burned

## Pipeline Fire – June 2022

26,582 acres





# Post Fire Flood Damage

## Schultz Fire - 2010



## Pipeline Fire - 2022





# Waterline Infrastructure (Springs)



- Flagstaff's first major water supply, late 1800s
- Flagstaff's most inexpensive water source
- Current summertime peak flows of 2MGD
- Dependent on winter snowpack







# Waterline Infrastructure (Wells)



- Drilled/added in 1960s & 70s
- Capacity of 300-700gpm each, variable
- Combined capacity of 2-3mgd
- Off-grid/diesel powered
- Requiring delivery via Waterline, weekly



# Waterline Infrastructure (NRFP)



- North Reservoir Filtration Plant treats both Inner Basin Spring and Well Water
- Design Capacity of 4mgd
- One of water production locations with back-up power capabilities



# Waterline Infrastructure (Fires)



- Unused spring water used to fill NRFP vintage reservoir and used for fire-fighting purposes

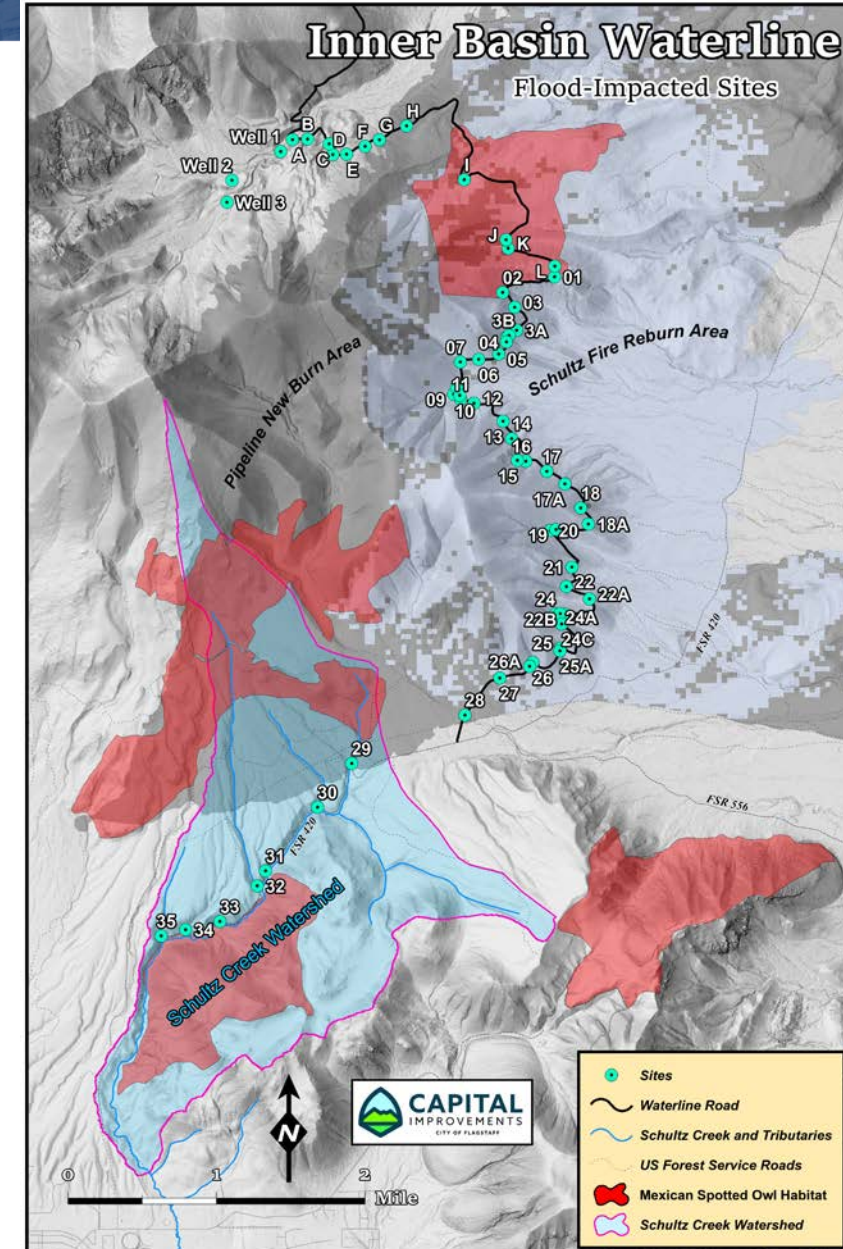


# NEPA Process



## Inner Basin Waterline Post Fire Repairs and Road Reconstruction Project

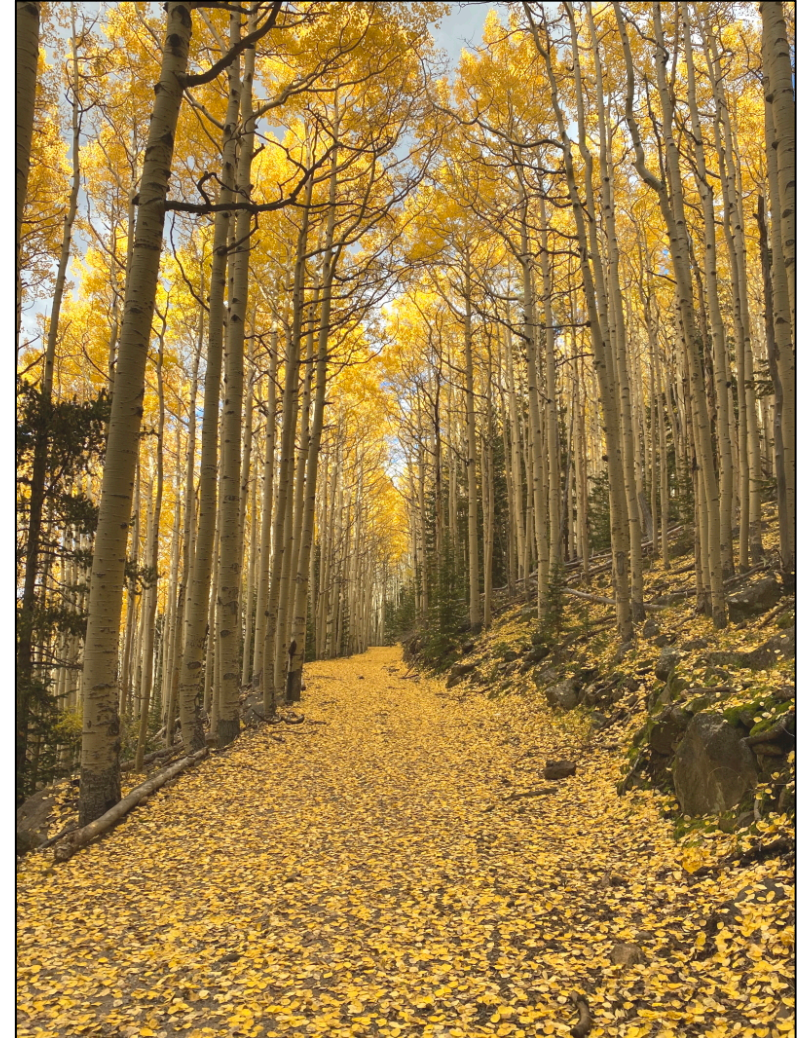
- Categorical Exclusion
  - Internal Scoping
  - Public Scoping
  - Tribal Consultation
  - National Historic Preservation Act
  - Fish and Wildlife Consultation
  - Decision Memo





# Project Stakeholders

- **US Forest Service**
- **AZ Dept. of Emergency Management & Military Affairs (DEMA)**
- **Hunter Contracting**
- **Jacobs Engineering**
- **City Staff**
- **Coconino County**



*Waterline Road – Inner Basin*



# Guaranteed Maximum Price

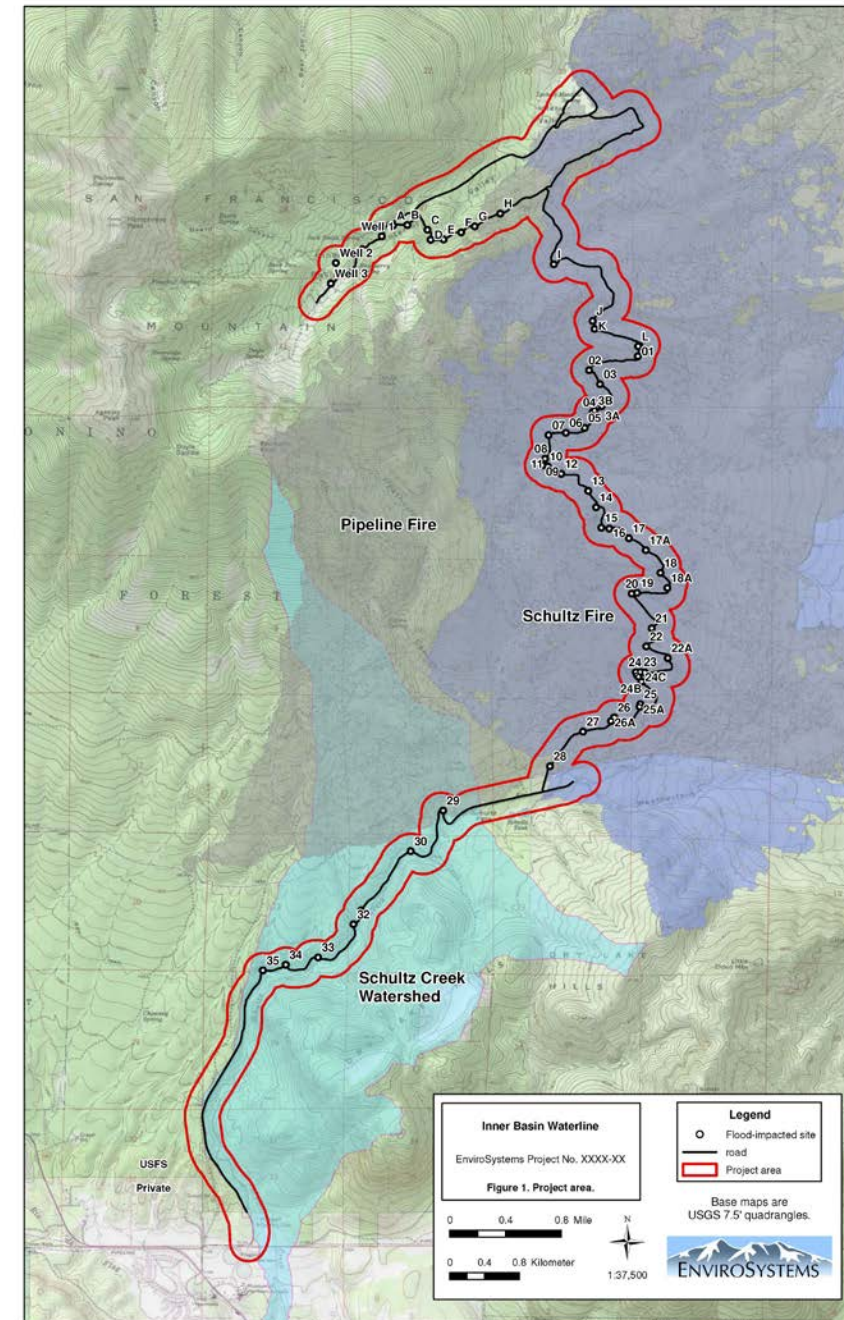
## GMP - 1

## Contractor

- Hunter Contracting Company
  - Jacob's Engineering

## Details

- \$189,694
- Contract Period of 150 Calendar Days
- 30% Plan Design for 45+ Impacted Sites
- Estimate of Construction Costs
- Class I Environmental Study/Reporting



Project Map



# Contract & Project Timeline

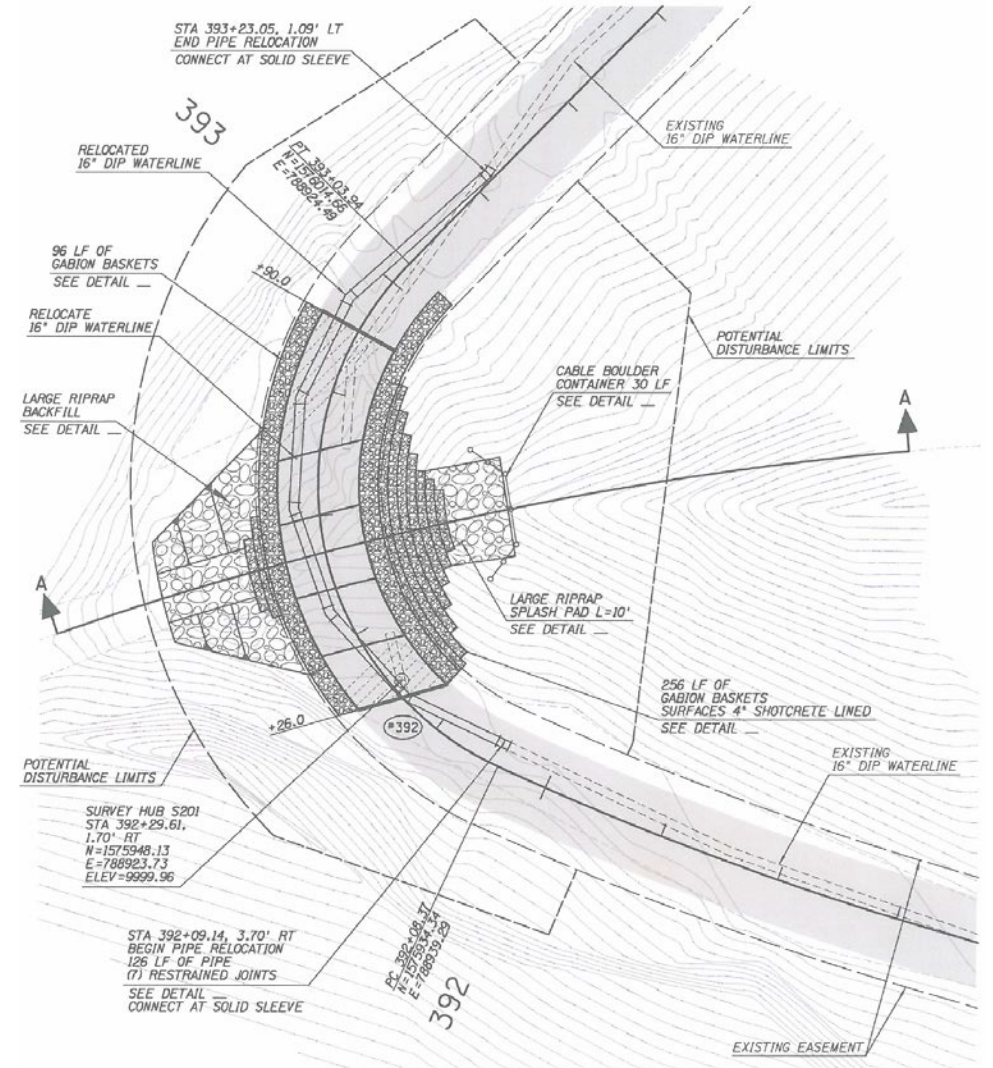
## Design/Build Contract(s)

- **Design-Build Services (GMP-1)**

- 30% Design Effort
- Through Spring 2023

- **Design-Build Services (GMP-2)**

- Final Design for Waterline Road and Water Infrastructure
- Spring through September 2023





# Contract & Project Timeline

## Construction Contract(s)

- **Construction Services (*GMP-3*)**

- Repair of Infrastructure
- Actual Construction
- Late Summer/Fall 2023

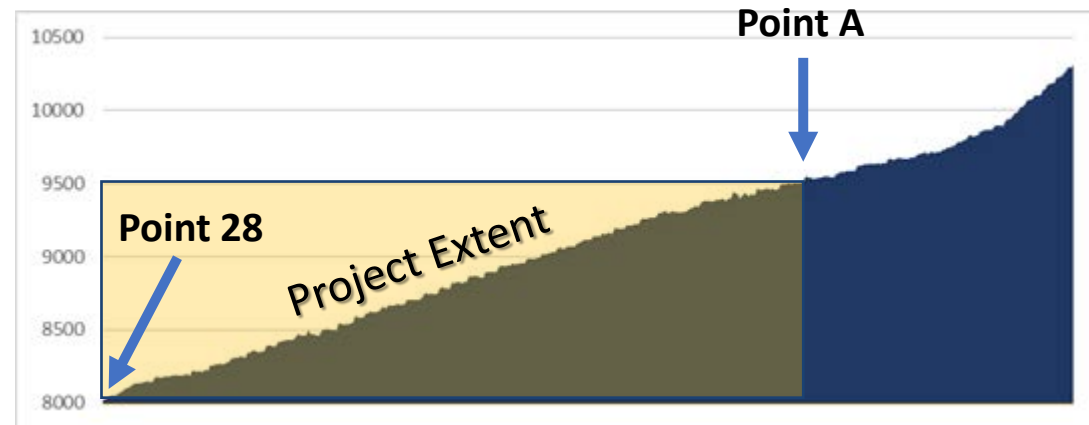
- **Inspection Services Contract**

- Necessary to Ensure Construction and Material Integrity
- Implemented During Post Schultz Fire Construction as well
- Contractor Procured through Request for Statements of Qualifications (RSOQ)

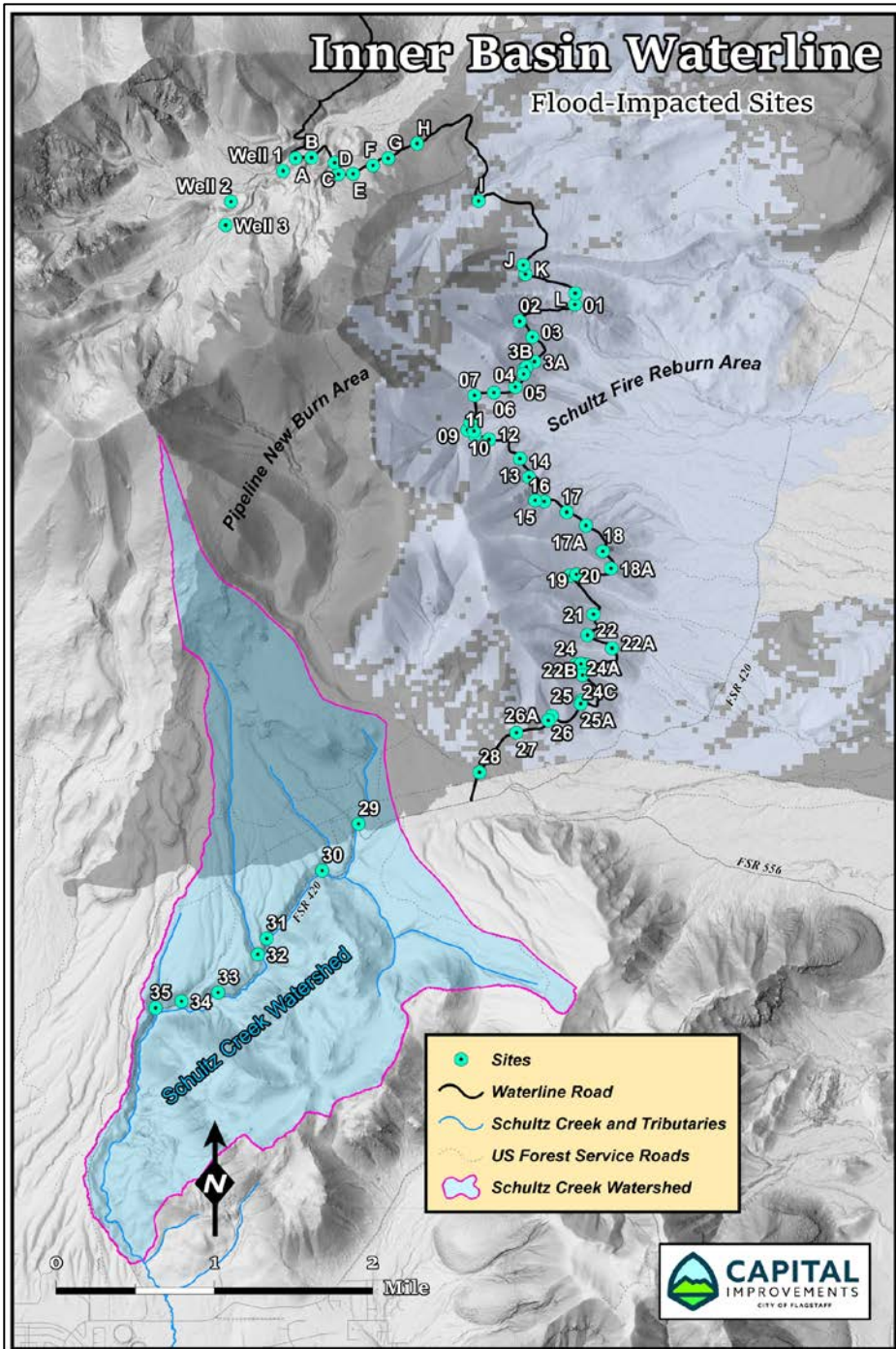




- **Pipeline Fire**
  - 26,532 acres
  - Started 12 June 2022
- **Schultz Fire Reburn Area**
  - Sites 1 through 28 (*Schultz Fire-Impacted Sites*)
- **Pipeline Fire Impacted Sites**
  - A through L and 28 through 35
  - Sites are South and North of Previous Impacts
  - Elevations Range from 7600' to 9500' AMSL



*Elevational Profile of Waterline Road*



# Project Sites – Good, Bad, Ugly



**Point 4A**

*All photos from 7 September 2022,  
unless stated otherwise*

**45+ Total Sites; 10 Shared in this Presentation**



**Point A**

# Project Sites – Good, Bad, Ugly



***Point 3B***



***Point 25***

# Project Sites – Good, Bad, Ugly



***Point 24***



***Point 22***

# Project Sites – Good, Bad, Ugly



***Point 7***



***Point 9***

# Project Sites – Good, Bad, Ugly



**Point 32**



**Point 32**

**Waterline is Now Broken**

# Project Sites – Good, Bad, Ugly



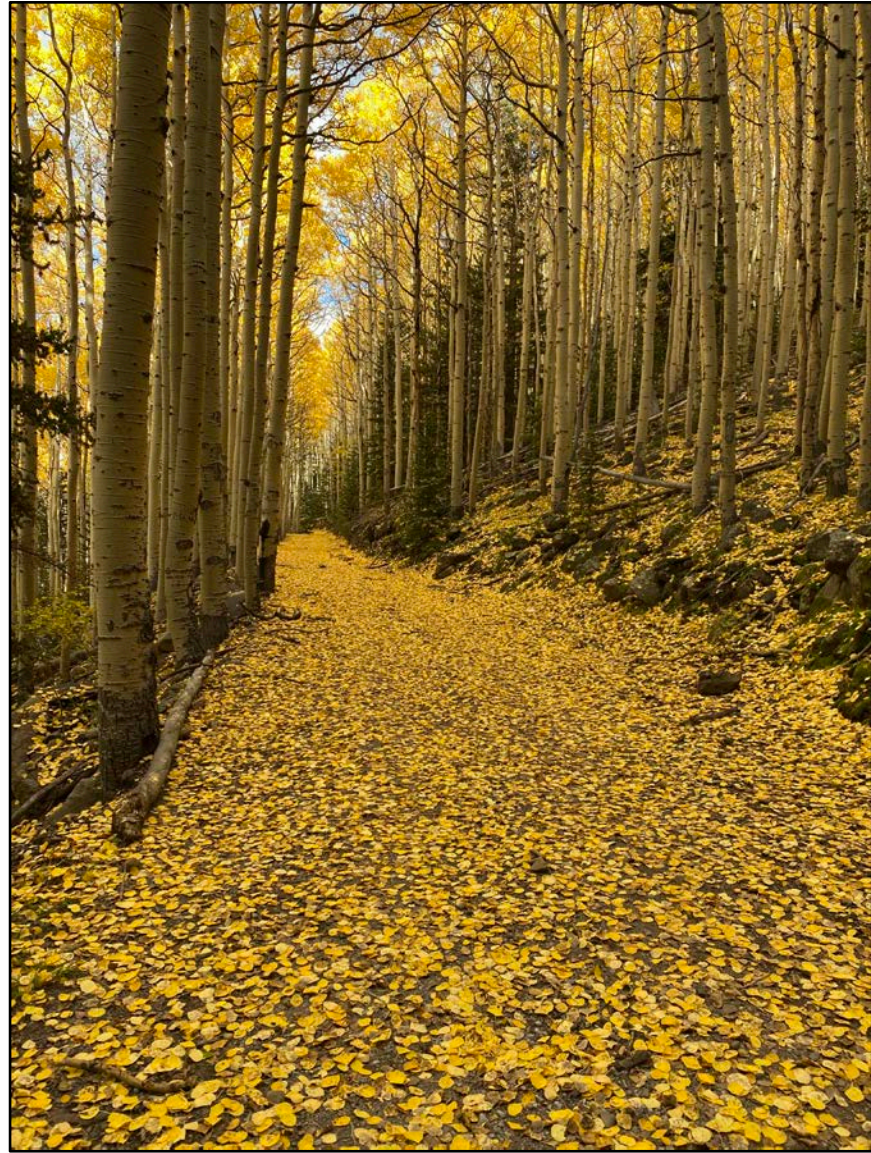
*Point I*



*Point I*



# Waterline Road Unburned







# Aspen Regeneration



# Biological Legacies



TEAM FLAGSTAFF  
WE MAKE THE CITY BETTER





# Funding Sources

- **AZ Department of Emergency Management & Military Affairs, Public Assistance Program**
  - Pre-Disaster Restoration/Repair
  - State Declarations 2302, 2303, & 2305
- **AZ Department of Forestry and Fire Management, HB 2001**
  - Post-Fire Flood Mitigation
- **AZ Department of Emergency Management & Military Affairs, Hazard Mitigation Grant Program, Post-Fire FY2022**
  - Improvement Work for Long-Term Hazard Mitigation Measures

# Questions & Comments

