

Post-Wildfire Flooding Update

August 29, 2022





Agenda



- Museum Flood Area updates
 - 2022 monsoon season
 - Capital projects
 - Finance
 - Communications
- Pipeline West Area updates
 - 2022 monsoon season
 - Capital projects
 - Finance
 - Communications



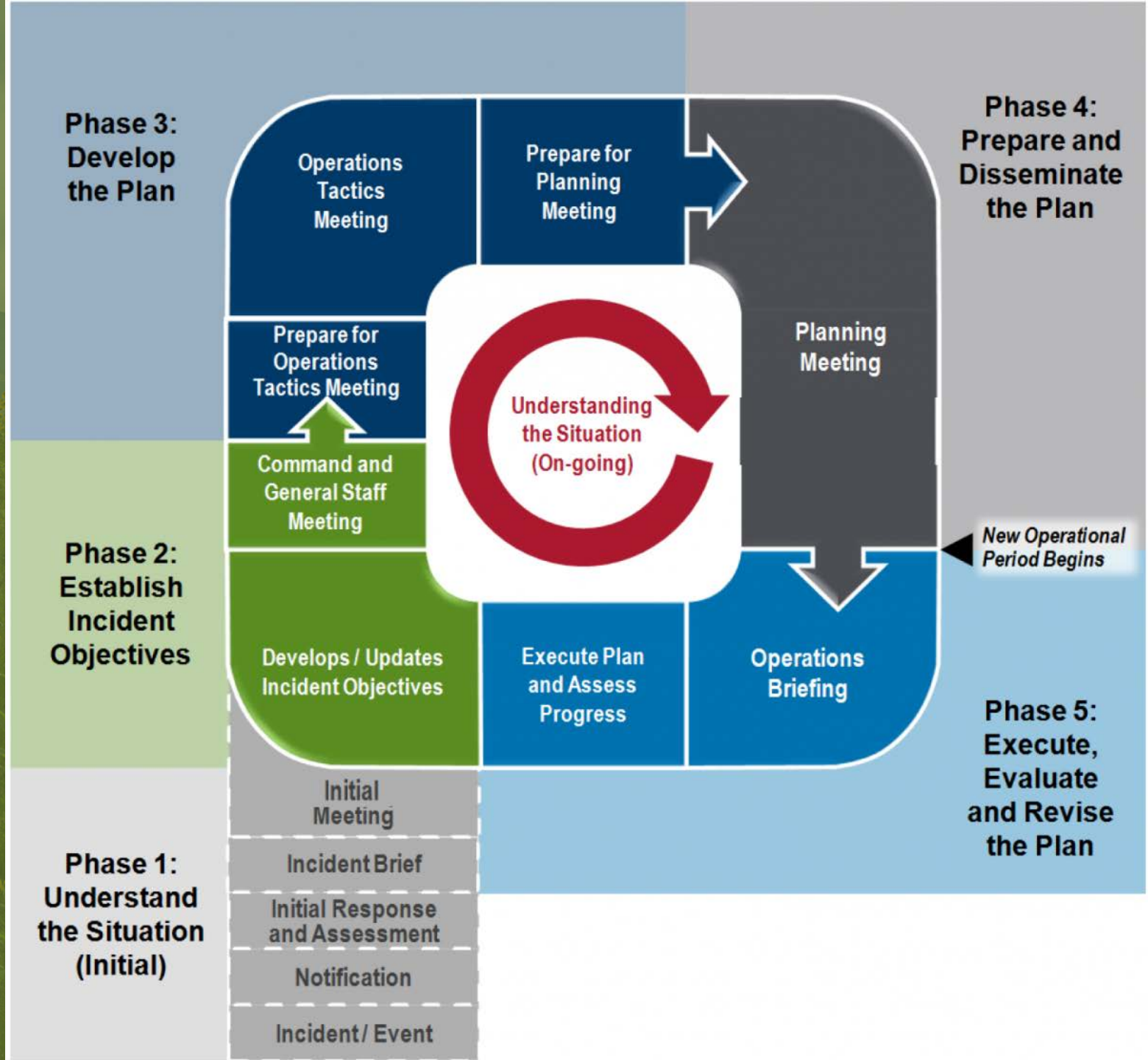
Incident Management Team

- Staffing from multiple divisions
 - Public Works, Water Services, PROSE, Management Services, CMO, Sustainability, Fire, Police, Engineering, Community Development, Human Resources & Risk Management
- Community response partners
 - Engineering consultants, contractors, vendors, volunteers
- Policy Group/ Agency Administrator
 - Mayor Deasy/ Vice Mayor Sweet/ Shannon Anderson/ Emergency Management

Incident Planning

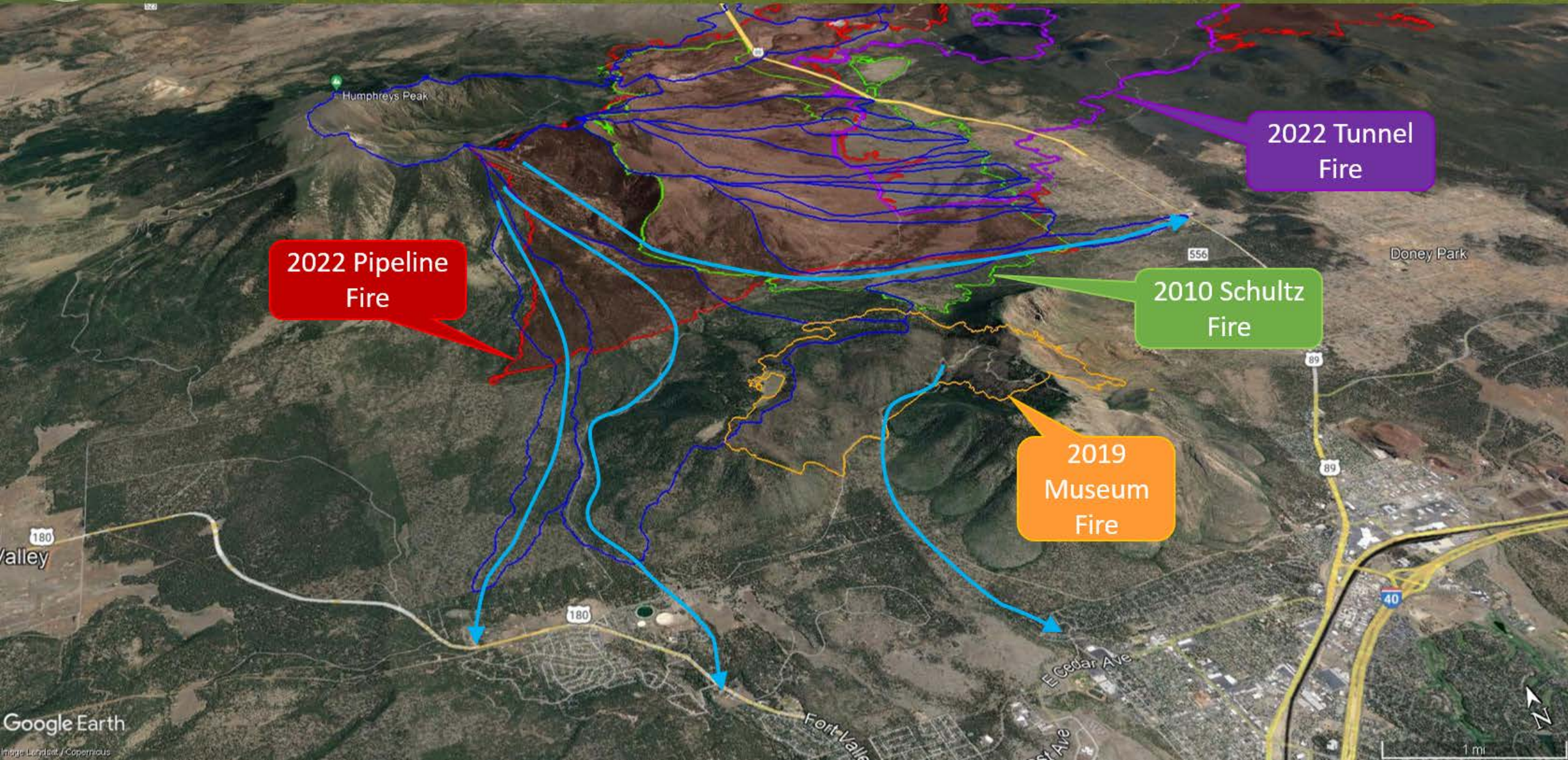
ICS Planning

- Driven by the Planning Section





Flood Risk Assessment Overview



2022 Pipeline Fire

2022 Tunnel Fire

2010 Schultz Fire

2019 Museum Fire



Museum Flood Area





2022 Monsoon Season

- Risk of post-wildfire flooding in the Museum Flood Area remains high.
- Mitigation measures installed to lessen impacts of flooding – do not eliminate threat.
- Little rain fell on Museum Fire burn scar in 2022

Largest Events on Museum Fire Burn Scars for 2021			
Rainfall Event Date	Rainfall Totals (Inches)		
	Maximum 15 Minute	Maximum 60 Minute	Daily Total
7.13.2021	1.02	1.81	2.17
7.14.2021	0.67	1.15	1.22
7.16.2021	0.63	1.38	1.42
7.21.2021	0.60	1.26	1.26
8.17.2021	1.14	3.07	3.35

Largest Events on Museum Fire Burn Scars for 2022			
Rainfall Event Date	Rainfall Totals (Inches)		
	Maximum 15 Minute	Maximum 60 Minute	Daily Total
7.15.2022	0.67	1.10	1.14
7.27.2022	0.55	1.22	1.42
7.29.2022	0.83	1.06	1.46



Dortha Channel Improvements

- **Project Completed – Thank You Team!**

- Tiffany Construction Company
- SWI

- **Dortha Avenue** is open to through traffic

- **Real Estate** drainage easement procurement ongoing





Killip Detention Basins

- Students have returned and the new school is open.
- The regional detention basins are ready for water flow and did see some localized flow this summer.





On-forest Alluvial Fans

- Alluvial fans completed and functioning well;
 - West Tributary
 - Mount Elden Estates
 - End of Paradise



8/7/22, West Tributary



8/7/22, Mount Elden Estates



Parkway Basins

- Project at 60% design and important piece of the overall system.
- NRCS time extension has been requested and the project is now entirely designed City owned property.
- Utility relocations and primarily survey work this Fall and major excavation will be in early Spring 2023.
- Trail access is identified and incorporated but not eligible for NRCS funds.
- This is a major landscape change, and we are working with neighbors as much as possible.



Phase 2 Feasibility Study

- Peak Engineering & JE Fuller
 - Proposed projects for reducing flood impacts:
 - Grandview Drive Improvements
 - West/Cedar Basin Development: "The Wedge"
 - Linda Vista & Cedar Avenue Crossing Upgrades
 - Channel Improvements
 - Arroyo Seco Inlet Modifications



Phase 2 Feasibility Study

- **Peak Engineering & JE Fuller**
 - Hydraulic modeling
 - Show benefits of investment
 - Identify Sequencing of improvements
 - Provide Information for Council Discussion on policy for assessing impacts
 - Strong alignment with the bond education campaign and providing good detail to inform the community and move the best projects to final design and construction.

Pipeline West Flood Area



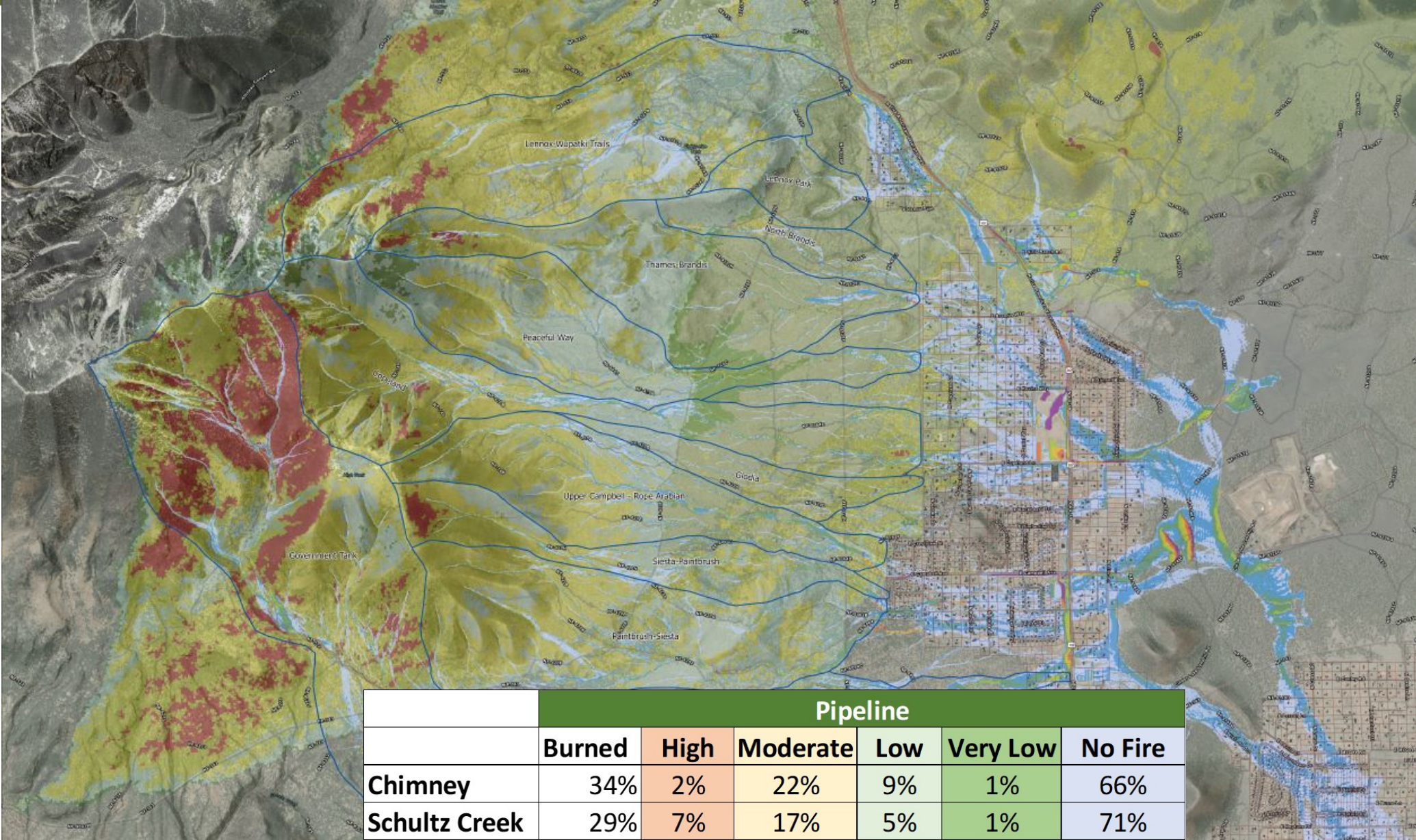


Pipeline Fire Summary





Pipeline Fire Summary



	Pipeline					
	Burned	High	Moderate	Low	Very Low	No Fire
Chimney	34%	2%	22%	9%	1%	66%
Schultz Creek	29%	7%	17%	5%	1%	71%

Flood Response

- 7-events in the Pipeline West area
- Response Stakeholder for events
 - ADOT
 - County
 - Flagstaff Fire Department
 - Flagstaff Police Department
 - Summit Fire District
 - FUSD



Response Activities

- Field spotters
- Road closures
 - Traffic control operations
- Debris and sediment removal from roadways and FUTS
- Street sweeping operations





Stormwater Response

- Francis Short Pond, flood management
- Vac-truck operations
- Short term mitigations support
 - Sandbags
 - Tiger Dam





Community Damage



Long-term Projects

Immediate mitigation projects

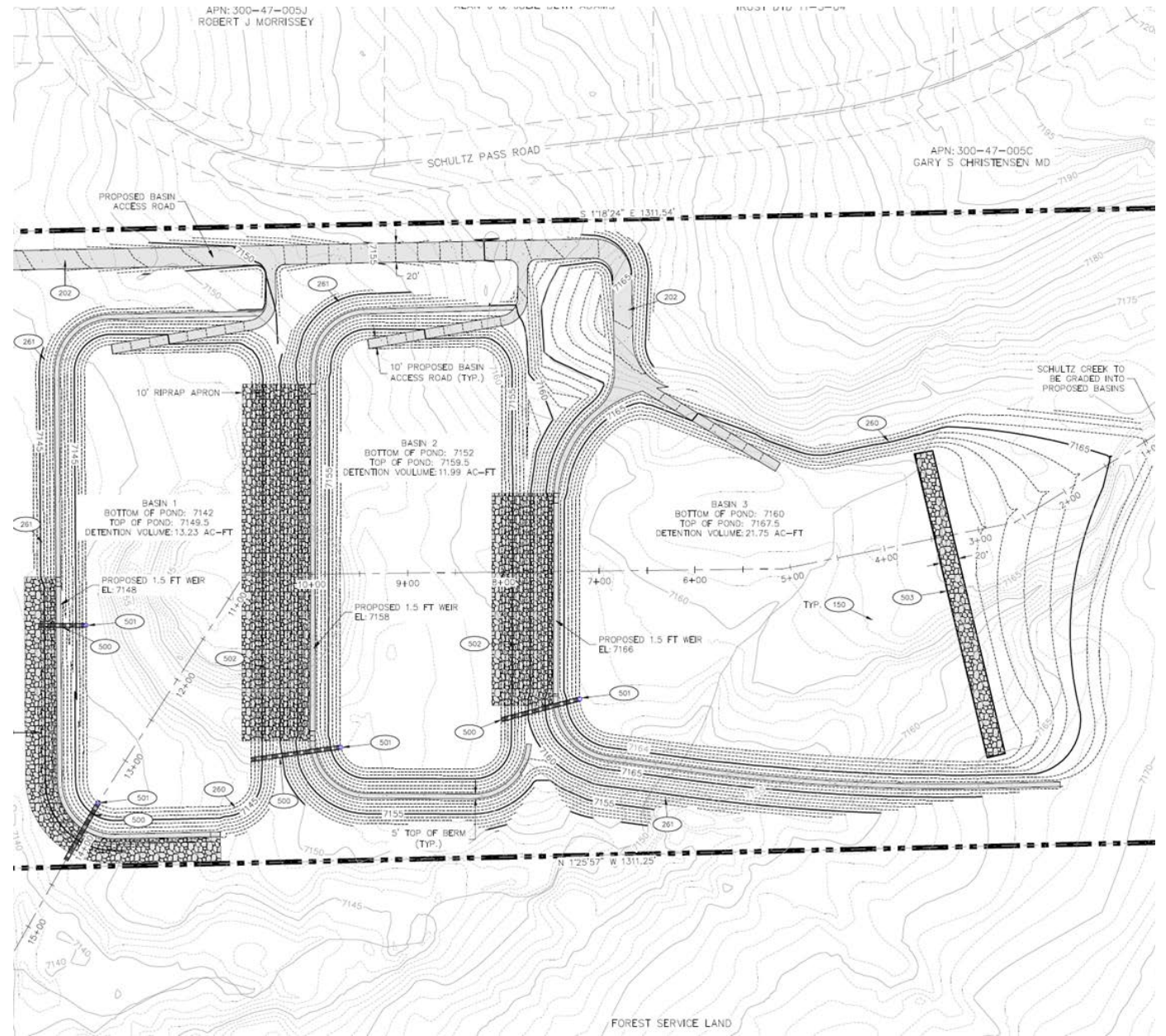
- 20-acre Schultz Creek Sediment & Detention Basins
- Schultz Creek Downstream Channel Stabilization

Long-term mitigations

- Box culvert improvements at Hwy 180
- Inner basin Pipeline repairs and mitigations

Schultz Creek Detention Basins

- 20-acre City owned Parcel
- Incorporating trail access, trailhead parking, historic interpretation, and landscaping.





Schultz Creek Detention Basins





Pipeline West Financial Update

- 2022 Pre-season mitigation (Pipeline & Museum): \$471,040
- Flood Response costs/commitments: \$477,070
- Private property damage estimate: \$95,500
- Public infrastructure damage estimate: \$5-10M
 - Inner Basin Water Line
 - Other Minor Damage Locations
- NRCS EWP 25% Grant Match: \$768,041
 - Funded by Dept of Forestry and Fire Management
- Schultz Creek Basin Design: \$68,000

Flood Control District Update





COCONINO
COUNTY ARIZONA

FLOOD CONTROL DISTRICT

***Pipeline West
Flooding Area***

Lucinda Andreani

Administrator

Flood Control District

Post-Wildfire Flooding Severe & Repetitive

- Pipeline Fire – 27,000 acres = nine watersheds; reburn from 2010 Schultz Fire
- Severely burned steep slopes of several watersheds not previously burned; Lenox Watershed burned more severely on steep slopes
- 42 major flood events
- 153 NWS Flash Flood Warnings
- 43 County RAVE Emergency Notifications
- 1,500+ homes at risk for flooding
 - Property Valuation - \$1.3 Billion
- Multiple closures of State highways



COCONINO
COUNTY ARIZONA
FLOOD CONTROL DISTRICT



 **COCONINO**
COUNTY ARIZONA
FLOOD CONTROL DISTRICT



Major Emergency Mitigation & Response Efforts

- Produced 882,400 sandbags
- Placed about 4 miles of concrete barriers
- Mitigation exhibits for about 1,000 properties
- Repaired on-forest measures damaged by wildfires
- Continuous removal of debris from mitigation measures & roads
 - *Thousands of truckloads of sediment removed by only one contractor*
- District secured \$2M in NRCS EWPP Exigency funding for barriers and sandbags
- District expects to spend +\$6 million this season; normal monsoon...

Pipeline West Mitigations

On-Forest Watershed Restoration

- **Schultz Creek \$3.6 Million**



Hwy180 Drainage Improvements

- **Highway 180 \$7 Million**



Summary of Mitigation Costs

- On-Forest Watershed Restoration
\$35 - \$40 Million
- Flood Mitigation in the Neighborhoods
\$50 - \$55 Million
- Highway Drainage Improvements
\$40 - \$45 Million


GRAND TOTAL: \$125 - \$145 Million**

***Costs are estimates at conceptual level of engineering and evaluation of potential adverse impacts and other factors will impacts total costs*




Monsoon Season Communications

- 14 E-newsletters sent
- 10 community information boards installed
- 20+ social media posts
- 2 mailers + door-to-door flyer delivery
- 6 press releases
- Community meeting
- Numerous media interviews (TV/ print/ radio)
- Numerous resident questions answered
- Documents translated; stakeholder databases expanded; websites created and maintained



Community meeting
for residents impacted by
post-wildfire flooding in the
Pipeline West Area

Thursday, August 4 from 6:00 – 7:30 p.m.
at Flagstaff City Hall (211 W Aspen Ave)



CITY OF
FLAGSTAFF



**NATIONAL FLOOD
INSURANCE PROGRAM**

**FREE FLOOD
INSURANCE WEBINAR**
MONDAY AUGUST 22 6:30pm
JOIN VIA ZOOM LINK



Museum Flood Area Communications

How to stay connected



For more information and to
sign up to receive updates, visit

[MuseumFloodProjects.com](https://www.museumfloodprojects.com)

Questions?

info@museumfloodprojects.com

[928-213-2102](tel:928-213-2102)



Pipeline West Communications

How to stay connected

For more information and to sign up to receive updates, visit

Flagstaff.az.gov/PipelineWest

Questions?

info@pipelinewestflooding.com

[928-213-2102](tel:928-213-2102)

SCAN ME



Questions?

