

# **WORK SESSION AGENDA**

CITY COUNCIL WORK SESSION  
TUESDAY  
NOVEMBER 23, 2021

COUNCIL CHAMBERS  
211 WEST ASPEN AVENUE  
3:00 P.M.

## **ATTENTION**

### **IN-PERSON AUDIENCES AT CITY COUNCIL MEETINGS HAVE RESUMED WITH LIMITED CAPACITY**

The meetings will continue to be live streamed on the city's website  
(<https://www.flagstaff.az.gov/1461/Streaming-City-Council-Meetings>)

### **\*\*\*PUBLIC COMMENT\*\*\***

#### **WE ARE NO LONGER USING TELEPHONE COMMENTS**

All verbal public comments will be given through a virtual public comment platform

If you want to provide a verbal comment during the Council Meeting, use the link below to join the virtual public comment room.

#### **[VIRTUAL PUBLIC COMMENT WAITING ROOM](#)**

Written comments may be submitted to [publiccomment@flagstaffaz.gov](mailto:publiccomment@flagstaffaz.gov). All comments submitted via email will be considered written comments and will be documented into the record as such.

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## **AGENDA**

### **1. Call to Order**

#### **NOTICE OF OPTION TO RECESS INTO EXECUTIVE SESSION**

*Pursuant to A.R.S. §38-431.02, notice is hereby given to the members of the City Council and to the general public that, at this work session, the City Council may vote to go into executive session, which will not be open to the public, for legal advice and discussion with the City's attorneys for legal advice on any item listed on the following agenda, pursuant to A.R.S. §38-431.03(A)(3).*

### **2. ROLL CALL**

*NOTE: One or more Councilmembers may be in attendance telephonically or by other technological means.*

MAYOR DEASY  
VICE MAYOR DAGGETT  
COUNCILMEMBER ASLAN  
COUNCILMEMBER MCCARTHY

COUNCILMEMBER SALAS  
COUNCILMEMBER SHIMONI  
COUNCILMEMBER SWEET

**3. PLEDGE OF ALLEGIANCE, MISSION STATEMENT, AND LAND ACKNOWLEDGEMENT**

**MISSION STATEMENT**

*The mission of the City of Flagstaff is to protect and enhance the quality of life for all.*

**LAND ACKNOWLEDGEMENT**

*The Flagstaff City Council humbly acknowledges the ancestral homelands of this area's Indigenous nations and original stewards. These lands, still inhabited by Native descendants, border mountains sacred to Indigenous peoples. We honor them, their legacies, their traditions, and their continued contributions. We celebrate their past, present, and future generations who will forever know this place as home.*

**4. Public Participation**

*Public Participation enables the public to address the council about items that are not on the prepared agenda. Public Participation appears on the agenda twice, at the beginning and at the end of the work session. You may speak at one or the other, but not both. Anyone wishing to comment at the meeting is asked to fill out a speaker card and submit it to the recording clerk. When the item comes up on the agenda, your name will be called. You may address the Council up to three times throughout the meeting, including comments made during Public Participation. Please limit your remarks to three minutes per item to allow everyone to have an opportunity to speak. At the discretion of the Chair, ten or more persons present at the meeting and wishing to speak may appoint a representative who may have no more than fifteen minutes to speak.*

**5. Flagstaff Pulliam Airport Paid Parking Program**

This is a work session for the Council to hear further about the proposed paid parking program at the Flagstaff Pulliam Airport, along with rates we plan to bring forward for consideration at a Council meeting in December. City staff also will provide more information about the parking system mechanics and intended use of the paid parking revenues.

**6. Museum Flood Mitigation Plan - Citizen Petition**

City staff will provide updates on mitigation efforts and discuss options with City Council for communication with impacted residents.

**7. Public Participation**

**8. Informational Items To/From Mayor, Council, and City Manager; future agenda item requests**

**9. Adjournment**

**CERTIFICATE OF POSTING OF NOTICE**

The undersigned hereby certifies that a copy of the foregoing notice was duly posted at Flagstaff City Hall on \_\_\_\_\_, at \_\_\_\_\_ a.m./p.m. in accordance with the statement filed by the City Council with the City Clerk.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

\_\_\_\_\_  
Stacy Saltzburg, MMC, City Clerk

## **CITY OF FLAGSTAFF**

### **STAFF SUMMARY REPORT**

**To:** The Honorable Mayor and Council  
**From:** Barney Helmick, Airport Director  
**Co-Submitter:** Rick Tadder  
**Date:** 11/15/2021  
**Meeting Date:** 11/23/2021



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#### **TITLE**

#### **Flagstaff Pulliam Airport Paid Parking Program**

#### **STAFF RECOMMENDED ACTION:**

This is a work session for the Council to hear further about the proposed paid parking program at the Flagstaff Pulliam Airport, along with rates we plan to bring forward for consideration at a Council meeting in December. City staff also will provide more information about the parking system mechanics and intended use of the paid parking revenues.

#### **EXECUTIVE SUMMARY:**

The Flagstaff Pulliam Airport is a key component to the global marketplace, facilitating local, national, and international commerce as well as supporting our number one economic driver, tourism. Business activity is dependent upon the existence of efficient access to all transportation modes, one being local air service. A recent economic study, performed by Arizona Department of Transportation, identified that the Flagstaff Pulliam Airport generates \$60 million annually for our economy.

American Airlines and United Airlines both provide commercial service daily at our airport. American has routes to Phoenix and Dallas-Fort Worth and United provides a route to Denver. With the addition of United Airlines, our passenger enplanements grew by 72%. In 2020, during the height of the COVID pandemic, over 86,000 passengers continued flying out of Flagstaff Pulliam Airport with our highest enplanement year in 2019 reaching 123,957. This increased patron activity added to our need to increase parking capacity by constructing a second parking lot that will be complete in 2022.

Important to mention that long before we added more passengers to our footprint, we had several other factors that created parking issues for our patrons. We had several people parking at our airport that did not have airport business but merely were meeting at the airport, parking, and driving to their other destination. We also had some residents actually parking other vehicles in our lots as though it were a storage unit. In order for us to remove people that have no airport business from our lots, as well as serve our increased patron enplanement traffic, we recommend a paid parking program for both our existing lot and the new lot that is almost complete. A paid parking model will help offer more spots to our flying public as well as create a long term revenue source for the airport to recover the cost of construction, provide for ongoing operational and maintenance and help the Airport become self-sustaining as an enterprise fund.

Our new parking lot will add 413 parking spaces to the total inventory, a bus turnout, wider sidewalks leading to the terminal, bicycle lanes, and we are including artwork and internal walk paths. The existing lot has 385 parking spaces and will need upgrades that will begin next summer. These upgrades will

include a pavement seal coat, curb improvements, fencing, and paint striping.

The City of Flagstaff Management Services Division has prepared a financial plan including a rate analysis for the Flagstaff Pulliam Airport Parking Plan. The proposed rates are to ensure our Airport Fund has sufficient revenues to meet operational and capital obligations. It is our desire to establish service charges and rates that fully fund operations, maintenance, and capital for present and future airport funds.

#### **INFORMATION:**

The airport paid parking system will be different from our downtown ParkFlag's system in that airport users do not typically park by the hour. We will use a gate arm system that will include possible other elements within the airport terminal with a kiosk and even an ability to pay from your phone. These elements will be further discussed with our parking vendor. We have researched and found that we should not use a kiosk solely model like ParkFlag. Staff proposes a gated system will also help with security of the parked vehicles and much more.

Even though the airport system will be different than downtown's, our intent is to have the program managed by the same team within ParkFlag. Costs for staff and additional needs have been put into the attached financial plan. We anticipate that there will be efficiencies in using the same staff to manage the two programs, and we will have the parking experts monitoring all areas.

Prior to 2019, parking at the airport was always a negative situation during the key holiday travel periods. When the increase in passenger usage began in 2019 this impact became year around. This year we have seen a return of 95% of the 2019 passenger counts. We fully expect to see continued growth which will increase demand and a paid parking system will be a key solution to making sure our flying public has a good experience.

In 2022, we plan to monitor usage of both lots. This will allow us to continually look at options in the future to encourage alternative methods of travel to the airport that don't require always parking.

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**Attachments:**     [Presentation](#)  
                             [Airport Parking Financial Plan & Rate Analysis Report](#)



# Flagstaff Pulliam Airport Paid Parking Program Update





# History of Current Terminal Lot

- The existing lot consists of 385 space
- It was built in two phases
- Thought it would meet the need of the airport until 2025
- The new lot location was proposed in the 2007 Master Plan
- **With the increase in patron enplanements, ride share parking, and parking as storage - we do not have efficient parking for all patrons thus a second lot has been constructed**







# Benefits of Parking Program

## **Ability to achieve many objectives**

- Expansion of parking spots
- Reduce transient parking
- Electric Vehicle Charging Stations
- Cost recover for capital investment
- Support ongoing parking operations/maintenance
- Support overall airport needs
- Reduce/eliminate reliance on General Fund



- 413 spaces
- Internal walkways
- Head light wall
- 8' wide sidewalk to the terminal
- Two entry and exit locations
- Paid parking will be installed







# Electric Vehicle Charging Stations

## New and Future

- First Electric Vehicle (EV) Charging stations being built
  - Outside of paid parking
  - # of Spaces
- Future developments within paid parking lots
  - Main
  - Extended





# Airport Parking Rates Outreach

- Discussed rates with Airport Commission October 2021
- Airports contacted for comparison

Airport	Parking Lot	Free Period	Hourly Rate	Daily Rate	Notes
Prescott Regional	Main	N/A	Free	Free	Up to 10 days free
Laughlin/Bullhead International	Main	N/A	Free	Free	
Montrose Regional	Main	½ hour	None	\$8.00	\$95 monthly & \$750 annual
St. George Regional	Main	½ hour	None	\$7.00	
Durango – La Plata Co.	Main Terminal	½ hour	\$2.00	\$7.00	\$1 per 30 min up to daily rate
	Credit Card	None	\$2.00	\$7.00	\$1 per 30 min up to daily rate
Tucson International	Hourly	None	\$2.00	\$13.00	\$1 per 30 min up to daily rate
	Daily	None	\$2.00	\$10.00	In front of Terminal
	Economy	None	None	\$4.50	Requires shuttle ride
PHX Sky Harbor International	East Economy (Uncovered)	None	\$4.00	\$12.00	Requires Sky Train ride



# Benefits of Paid Parking

## **Parking:**

- The new lot will increase existing inventory, provide for bus use, future expansion of electric vehicle charging, and bicycle paths

## **Revenues:**

- The revenues from the paid parking will pay for the construction costs and will help us with ongoing operational and maintenance needs.





# New Terminal Economy Lot

## Costs:

- The new lot and upgrades to existing lot \$4.9 million
- Parking Staff \$80,000
- Increase utilities \$10,000
- Snow management \$19,000
- Hardware and software \$48,000
- Credit card fees \$90,000
- Annual pavement maintenance \$20,000
  - Total \$288,000







# Financial Plan

## Addresses: Capital Investment Recovery, Future Capital Investments, Operation Expenses, General Fund Reliance

Financial Plan	FY 2021-22 (5 Months)	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
Beginning Balance	\$ -	245,000	20,520	6,760	4,541	13,596
Resources						
Parking Revenue	\$ 365,000	893,520	1,062,880	1,083,320	1,103,760	1,124,200
Other Revenue	-	-	-	-	-	-
Total Resources and Balance	\$ 365,000	1,138,520	1,083,400	1,090,080	1,108,301	1,137,796
Uses of Funds						
Capital Investment Recovery	\$ -	330,000	330,000	330,000	330,000	330,000
Operations Expenses	\$ 120,000	288,000	296,640	305,539	314,705	324,147
Capital Improvements	-	500,000	450,000	300,000	-	-
Airport Operations	-	-	-	150,000	450,000	450,000
Total Uses of Funds	\$ 120,000	1,118,000	1,076,640	1,085,539	1,094,705	1,104,147
Ending Balance	\$ 245,000	20,520	6,760	4,541	13,596	33,649



# Proposed Parking Rates

Rates developed to achieve a balanced financial plan

Staff Proposed Rates	Effective January 21, 2022	Effective July 1, 2023
1 <sup>st</sup> hour	Free	Free
Per hour rate (after 1 <sup>st</sup> hour)	\$ 2.00	\$ 2.00
Per day rate Terminal Lot	\$ 7.00	\$ 8.00
Per day rate – Terminal Economy Lot	\$ 5.00	\$ 6.00
Weekly rate – Terminal Lot	\$ 42.00	\$ 48.00
Weekly rate – Terminal Economy Lot	\$ 30.00	\$ 36.00



# Sequence of Events

- 10/22/2021 – 60-day notice to public
- 11/23/2021 - Work Session
- 12/7/2021 - First read of Parking Rates
- 12/21/2021 - Second read of Parking Rates
- 12/22/2021 to 1/20/2022 - Market new rates
  - Airport Commission Recommendation
  - Flagstaff Chamber of Commerce
  - Tourism Commission
  - Additional public outreach
- 1/21/2021 - Ordinance in effect

# Flagstaff Pulliam Airport

# QUESTIONS?

THANK YOU!





# **CITY OF FLAGSTAFF, ARIZONA**

## **Airport Parking**

### **Financial Plan and Rate Analysis Report - 2021**



Management Services and Economic Vitality Divisions

October 2021

# Executive Summary

The City Management Services Division has prepared a financial plan, including a rate analysis for the Airport Parking Plan of the Economic Vitality. The proposed rates are to ensure the Airport Fund has sufficient revenues to meet their operational and capital obligations.

The City desires service charges and rates that fully fund operations, maintenance, and present and future capital costs for Airport Fund. The purpose of the fiscal analysis is to provide a financial review of revenues that will cover the necessary expenditures.

Staff intends to provide City Council with a recommendation for parking rates at the December 7, 2021 and December 21, 2021 Council meetings. It is anticipated an Ordinance will be adopted with the new rates at the December 21, 2021 Council meeting with an effective date of January 21, 2022.

## **Airport Overview**

The Flagstaff Pulliam Airport is a key component of Flagstaff's link to the global marketplace, facilitating local, national and international commerce as well as support the local tourism industry. Business activity is dependent upon the existence of efficient access to local air service. A recent economic study performed by Arizona Department of Transportation identified that the Flagstaff Pulliam Airport generates \$60 million annually.

American Airlines and United Airlines both provide commercial service daily. American has routes to Phoenix and Dallas Fort-Worth and United provides a route to Denver. With the addition of United Airlines, our passenger enplanement has grown by 72%. Last year, over 86,000 passengers flew out of Flagstaff Pulliam Airport with our highest enplanement year reaching 123,957.

The airport offers 61 airport hangars that can be rented on a monthly basis for storage of personal aircraft. Out of the 61, we have 5 that are executive style that offer a larger storage capacity. The Airport Business Park has numerous businesses, such as T-Gen North, Joy Cone, and the airport has a partnership with Wiseman Aviation as our fixed based fuel operator.

The Airport Funds operates as an enterprise fund within the City of Flagstaff's municipal operations. Enterprise Funds are used to account for operations that provide services to the general public for a fee. Under GASB Statement No. 34, enterprise funds are also required for any activity whose principal revenue sources meet any of the following criteria: 1) any activity that has issued debt backed solely by the fees and charges of the activity, 2) if the cost of providing services for an activity, including capital costs such as depreciation or debt service, must legally be recovered through fees and charges, or 3) it is the policy of the City to establish activity fees or charges to recover the cost of providing services, including capital costs.

# Airport Parking Cost Considerations

## Overview

The City of Flagstaff's Airport Fund is investing approximately \$4.9 Million to construct additional parking capacity and upgrade to a paid parking program. When developing the parking rates, staff is considering several components to assure our Airport Fund can sustain operations as an enterprise fund. Four areas developed within the rates are: recovery of capital investments, new operational expenses, capital investments for parking lot improvements/parking capital equipment and reducing the impact to the City's General Fund.

### ***Capital Investment Recovery***

The first portion of the parking rates consideration is to recover costs related to the capital investments made to expand parking at the airport. The airport utilized a short-term loan from our General Fund to complete the design, construction and upgrades related to the expanded parking. It is recommended that parking rates assist with paying for the investments made. The recovery period is currently set for a 15-year return which would require \$330,000 in annual revenues.

### ***Operational Expenses***

Next, we have analyzed the cost of maintain a paid parking program including increase parking capacity. Airport staff has identified the following increased annual costs for the program:

- Parking Staff: \$80,000
- Increased utilities: \$10,000
- Increased landscape maintenance: \$21,000
- Increase snow management: \$19,000
- Hardware and software maintenance: \$48,000
- Credit card fees: \$90,000
- Annual striping and pavement maintenance: \$20,000
  - Total annual costs: \$288,000

As part of the long-range plan, staff is including an annual 3% inflation factor to the annual cost to assure that parking rates cover future growth in expenditures.

### ***Capital investments for parking lot improvements/parking capital equipment***

The existing premium parking lot will need to undergo improvements over the next 2-5 years at a cost of approximately \$1,250,000. The project is expected to be phased in over multiple years as paid parking revenues are available. As the lot is related to the parking program, it would be important to include these costs in the rates being adopted.

### ***Reducing the impact to the City's General Fund***

While the Airport Fund operates as an Enterprise type fund, there is often a reliance on the General Fund to assist funding of annual budget requests. Our goal with this rate adoption is to allow the Airport Fund to be self-sustaining through annual revenues. This approach is critical to allow the city airport to make operational and capital decisions with our competing for limited revenues on an annual basis. The airport has benefited from recent federal funding during the pandemic which has eliminated the reliance on the General Fund, however these funds are one-time benefits. In the Fiscal Year 2021-2022, the Airport Fund shows a \$450,000 annual ongoing need beginning in Fiscal Year 2024-2025. The parking rates proposed will allow for the Airport fund to eliminate its revenue reliance.

### ***Summary Airport Fund Cost Recovery***

Below is a summary of the cost being considered with the new paid parking program.

Financial Plan	FY 2021-22 (5 Months)	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
Costs						
Capital Investment Recovery	\$ -	330,000	330,000	330,000	330,000	330,000
Operations Expenses	120,000	288,000	296,640	305,539	314,705	324,147
Capital Improvements/Equipment	-	500,000	450,000	300,000	-	-
Airport Operations	-	-	-	150,000	450,000	450,000
Total Cost for Recovery	\$ 120,000	1,118,000	1,076,640	1,085,539	1,094,705	1,104,147



# Airport Parking Rate Proposal

## Staff Proposal

Staff has developed a parking rate proposal that will meet the proposed cost considerations for the airport. Parking rates were developed based on two considerations. First is the financial consideration to assure that rates meet the cost recovery needs of the airport. Rates are proposed that will provide a balanced financial plan. We recognize that rate increases may be necessary in the future and recommend an increase effective July 1, 2023 after the initial rates go into effect to assist in keeping up with inflationary impacts. Rates also take into consideration of utilization of the airport parking lots after implementation. Our rates are proposed base on an estimated 400 cars utilizing the airport paid parking program. For simplicity of this analysis, we broke down the utilization with 200 daily use in the premium lot and 200 daily use in the economy lot. We look forward to gathering data after implementation of the parking program to reassure our revenues are meeting the airports revenue needs.

The second consideration is related to parking rates that other communities charge at their airports. Airport staff reviewed rates from seven airports in the region, which are summarized in the table below.

Airport	Parking Lot	Free Period	Hourly Rate	Daily Rate	Notes
<b>Prescott Regional</b>	Main	N/A	Free	Free	Up to 10 days free
<b>Laughlin/Bullhead International</b>	Main	N/A	Free	Free	
<b>Montrose Regional</b>	Main	½ hour	None	\$8.00	\$95 monthly & \$750 annual
<b>St. George Regional</b>	Main	½ hour	None	\$7.00	
<b>Durango – La Plata Co.</b>	Main Terminal	½ hour	\$2.00	\$7.00	\$1 per 30 min up to daily rate
	Credit Card	None	\$2.00	\$7.00	\$1 per 30 min up to daily rate
<b>Tucson International</b>	Hourly	None	\$2.00	\$13.00	\$1 per 30 min up to daily rate
	Daily	None	\$2.00	\$10.00	In front of Terminal
	Economy	None	None	\$4.50	Requires shuttle ride
<b>PHX Sky Harbor International</b>	East Economy (Uncovered)	None	\$4.00	\$12.00	Requires Sky Train ride

These airports can be broadly placed in three categories in relation to the Flagstaff Pulliam Airport, which has currently has nine arrivals daily. Prescott Regional Airport and Laughlin/Bullhead International Airport have fewer flights than Flagstaff with one to three arrivals daily. Durango – La Plata County Airport, St. George Regional Airport, and Montrose Regional Airport have slightly more

flights than Flagstaff with between 10 and 15 arrivals daily. Phoenix Sky Harbor International Airport and Tucson International Airport are significantly busier than Flagstaff with dozens or hundreds of arrivals daily.

Based on these considerations, staff is proposing the following rate structure:

Staff Proposed Rates	Effective January 21, 2021	Effective July 1, 2022
<b>1<sup>st</sup> hour</b>	Free	Free
<b>Per hour rate (after 1<sup>st</sup> hour)</b>	\$ 2.00	\$ 2.00
<b>Per day rate – Premium Lot</b>	\$ 7.00	\$ 8.00
<b>Per day rate – Economy Lot</b>	\$ 5.00	\$ 6.00
<b>Weekly rate – Premium Lot</b>	\$ 42.00	\$ 48.00
<b>Weekly rate – Economy Lot</b>	\$ 30.00	\$ 36.00

Relative to the comparison airports, the proposed rates are higher than the airports with less traffic (Prescott, Laughlin/Bullhead), and lower than or comparable to the airports with slightly more traffic (Durango – La Plata Co., St. George Regional, Montrose Regional).

Staff also recognizes that we will need to develop an employee parking program for businesses operating out of our airport. The cost of the program should also be covered by the businesses that will be utilizing the parking lots. These rates will be brought forward for Council adoption.

### **Review of five-year plan**

Base on the parking rate proposal and the costs being considered, staff has developed a five-year plan to demonstrate the balanced approach.

Financial Plan	FY 2021-22 (5 Months)	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27
Beginning Balance	\$ -	245,000	20,520	6,760	4,541	13,596
Resources						
Parking Revenue	\$ 365,000	893,520	1,062,880	1,083,320	1,103,760	1,124,200
Other Revenue	-	-	-	-	-	-
Total Resources and Balance	\$ 365,000	1,138,520	1,083,400	1,090,080	1,108,301	1,137,796
Uses of Funds						
Capital Investment Recovery	\$ -	330,000	330,000	330,000	330,000	330,000
Operations Expenses	\$ 120,000	288,000	296,640	305,539	314,705	324,147
Capital Improvements	-	500,000	450,000	300,000	-	-
Airport Operations	-	-	-	150,000	450,000	450,000
Total Uses of Funds	\$ 120,000	1,118,000	1,076,640	1,085,539	1,094,705	1,104,147
Ending Balance	\$ 245,000	20,520	6,760	4,541	13,596	33,649

### **Airport Commission Meeting**

At the October 14, 2021, staff has provided the Airport Commission the parking rate considerations. Commission was supportive of the rates that staff proposed.

### **Public Outreach Meetings**

City staff presented to the Airport Commission on October 14, 2021. Information about the airport paid parking was presented in the last Flagstaff Business News. Staff will be preparing a presentation to the Tourism Commission on November 23, 2021. Staff will provide a press release related to airport paid parking program in November as well as posting notices about the proposed airport parking rates at in the airport terminal.

### **City Council Meetings**

On December 7, 2021, the City will hold a public hearing and staff will present an ordinance along with the rate analysis information to the Council. Council could accept staff recommendation or adjust, such as increasing or decreasing the parking rates. Or the Council could choose to not read the ordinance the first time and direct staff to bring the item back with amendments. If Council completes the first read of the ordinance, a second read will be required at the December 21, 2021 meeting prior to adopting the parking rates. To meet the funding outlined in this analysis, the parking rates would need to be effective January 21, 2022.

## CITY OF FLAGSTAFF

### STAFF SUMMARY REPORT

**To:** The Honorable Mayor and Council  
**From:** Shannon Anderson, Deputy City Manager  
**Date:** 11/17/2021  
**Meeting Date:** 11/23/2021



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#### TITLE

**Museum Flood Mitigation Plan - Citizen Petition**

#### STAFF RECOMMENDED ACTION:

City staff will provide updates on mitigation efforts and discuss options with City Council for communication with impacted residents.

#### EXECUTIVE SUMMARY:

The Museum Flood Coalition submitted a citizen's petition that was considered by City Council during the October 5, 2021 meeting. The petitioners requested answers to the 37 questions attached to the petition, a meeting with City and County representatives to discuss mitigation that has been done on the museum fire burn scar and watershed, resulting outcomes of mitigation, and what the short, mid, and long term plans are to address flooding. A copy of the petition has been attached to this staff summary.

City staff will review what has been completed, provide updates on mitigation efforts, and discuss potential communication options with City Council.

#### INFORMATION:

The 37 questions attached to the petition have been answered in the Flood Control District and/or City of Flagstaff FAQs (frequently asked questions) documents and the link to these documents have been provided in the presentation.

There was a joint meeting with City and County representatives on August 23, 2021 to discuss the emergency response, previous mitigation efforts, and future mitigation strategies. This presentation has been attached for the convenience of City Council and residents who may be interested in revisiting this information.

During this presentation on November 23, 2021, City staff will provide more recent updates on mitigation efforts. Staff will also discuss how City Council would like to continue to provide updated information to residents and effectively engage in two-way communication.

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**Attachments:**    [Citizen Petition](#)  
                          [August 23rd Joint Meeting Presentation](#)  
                          [November 23rd Presentation](#)

**PETITION TO FLAGSTAFF CITY COUNCIL**  
Pursuant to Flagstaff City Charter Article II Section 17  
and Flagstaff City Code Title I Chapter 12



Pursuant to the Flagstaff City Charter and the City Code, any citizen (resident) of the City may present a written petition to the City Manager, signed by a minimum of 25 citizens from the City of Flagstaff, which shall be presented to the City Council.

Title of Issue: Museum Flood Mitigation Plan - Answers to Attached Questions  
Action Requested: Request for a meeting with city and county representatives to obtain a comprehensive report of what mitigation has been done on the museum fire burn scar and watershed and what have been what are the short, mid and long term plans for flooding?  
Printed Name of Submitter: Tara Roark, Museum Flood Coalition  
(Submitter must also sign below and complete information)  
Contact Information: (630) 247-5204 / roarkte@yahoo.com  
(Phone Number and/or e-mail address)

**PETITION SIGNATURES**

DATE SIGNED	PRINTED NAME	RESIDENCE ADDRESS	SIGNATURE
9/8/2021	KIMBERLY KAHNER	3513 N. GRANDVIEW DR	[Signature]
09-08-21	SCOTT RICHARDS	3505 N. GRANDVIEW DR	[Signature]
9/8/21	Dave Kahner	3513 N. Grandview Dr	[Signature]
9/8/21	Brett Campbell	177 N. Canyon Terrace	[Signature]
9/8/21	Anissa Doten	1131 E Linda Vista Dr	[Signature]
9/8/21	Tess McDaniel	3509 N. Grandview Dr	[Signature]
9-8-21	RANDAL KELLEY	3119 N. Grandview Dr	[Signature]
9-8-21	Paige Snodgrass	3123 N. Grandview Dr	[Signature]
9-8-21	Louise Lovelace	3110 N. Grandview Dr	[Signature]
9-8-21	Cullen Kirk	3128 N. Grandview Dr.	[Signature]

RECEIVED BY CITY OF FLAGSTAFF		
DATE RECEIVED	BY	COUNCIL MEETING DATE
9/15/21	Stacy Saltzburg	10/5/2021

## PETITION TO FLAGSTAFF CITY COUNCIL (Continued)

TITLE OF ISSUE: Museum Flood Mitigation Plan

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DATE SIGNED	PRINTED NAME	RESIDENCE ADDRESS	SIGNATURE
9/9/21	Cacie Snyder	6165 N Dodge Ave	[Signature]
9/9/21	Christi Curtis	2185 W. Mission timber	[Signature]
9/9/21	Chelsea Zabio	1515 N. SUNSET DR.	[Signature]
9/9/21	Noelle Crouse	898 W. Lil Ben Trail E	[Signature]
9/9/21	JULIAN HANSON	4290 HOLLYGREEN RD	[Signature]
09/09/21	Ryan Wolfinger	3929 E. Thrush Ln	[Signature]
09/09/21	Dan Harberts	4102 S Joseph St	[Signature]
09/09/21	William T. Pribil	630 N. Locust St	[Signature]
9/9/21	Erez Salberg	2307 N. Talkington Dr.	[Signature]
9-9-21	Sally Baxley	5060 S. Opal Rd	[Signature]
9-9-21	Benjamin Moreno	2606 E. 4TH AVE	[Signature]
9.9.21	Melissa Kelly	411 W. Cedar Ave	[Signature]
<del>XX</del>			
9/9/21	Anne Kingley	2436 W Zephyr Ave	[Signature]
9/9/21	Tim Freriks	1721 Turquoise Dr.	[Signature]
9/9/21	Candyece Martinez	1580 E Everest Dr.	[Signature]
9/9/21	Alicia Rogan	3415 Foxlair Dr.	[Signature]
9/9/21	John Gould	3987 N. Zurich St.	[Signature]
9/9/21	HOUSTON HANSON	4004 E SUMMER RUN DR	[Signature]
9/9/21	REB EVANS	4940 E. Mt Pleasant	[Signature]
9/9/21	Melissa Rodriguez	#234 2347 E Elder	[Signature]
9/9/21	Erin Rasmussen	3612 N. Paradise Rd	[Signature]
9-9-21	Lisa Greene	3223 N. Grandview	[Signature]

**PETITION TO FLAGSTAFF CITY COUNCIL (Continued)**

TITLE OF ISSUE: Museum Flood Mitigation Plan

PAGE 3 OF 3

[illegible]

Request for a meeting with city and county representatives to obtain a comprehensive report of what mitigation has been done on the museum fire burn scar and watershed and what the outcomes have been. What are the short-, mid- and long-term mitigation plans for flooding?

1. Including answers to the following questions:
2. What state and federal entities, including but not limited to FEMA, DEMA, NRCS, National Guard and Army Corp of Engineers, have the city and county reached out to for assistance and what has been the response/outcome? We are requesting names and emails of the individuals the city and county have contacted to date.
3. Where will the funding for these projects come from and what has been done to secure these funds?
4. What assistance will be provided for sandbag and Jersey barrier removal after monsoon seasons?
5. What agreement has been reached with the owners of the Safeway building complex regarding residents parking there? What alternative plan does the city have for parking when the snow removal ordinance starts November 1<sup>st</sup>?
6. What consideration have the city and county given to accessibility to homes for elderly and disabled in alignment with American Disabilities Act related to current sandbags and Jersey barrier placements?
7. How much of the storm water fees collected from property taxes are being used to mitigate flooding?
8. How much of the storm water fees go to maintaining the inadequate storm water drainage system south of Cedar? What amount from the ARPA funding is going to go towards this storm water system?
9. The Museum Fire occurred on federal land and was caused by Smith Forestry Services under the direction of FWPP, a project funded by a bond measure and run by the city, county, and state. Why isn't the city, county and state sponsoring FEMA Flood Mitigation Assistance (FMA) and Building Resilient Infrastructure (BRIC) grants?
10. We are requesting the contract between FWPP and the Forest Service. Specifically what was in the contract related to timely removal of timber decks and slash piles? If this won't be provided a FOIA will be filed for the contract.
11. Residents of Grandview were originally told in 2019 and as late as June 2021 that the street would only "see overflow from the channel". In August of 2021 residents were told that the city and county had always planned to use Grandview and Linda Vista as their floodway. How is the city and county planning to support the neighborhoods effected by catastrophic flooding that was consciously and intentionally channeled?



12. The mitigation the city and county did at the top of Paradise changed the flow, height and velocity of water coming down to Grandview, instead of letting it spread out across multiple properties and streets. Knowing the culvert was a choke point why was the decision made to divert the flow?
13. Who decides which streets will become the main floodways and how is that decision reached?
14. What is the city and county doing to address the public safety issue of possible loss of life due to drowning from raging floodwaters?
15. What were the original amounts given to the city and county through state and federal aid to mitigate post fire flooding and what was that money used for? In addition, how much money does the city currently have set aside from the two state declarations?
16. What are the damage amounts the city and county reported to the state for each emergency declaration? How much of that money has been spent on paying the city and county back for debris cleanup and other streets/public works mitigation? How much is being set aside to actually put in use for the residents impacted?
17. What is the trash services plan going forward? Residents should not have to buy new cans when they float away. Residents should not be forced to place garbage in the street due to not being able to lift cans over sandbag walls. Residence of Grandview pay for city and county waste disposal services that have been canceled or interrupted without notice during the monsoon season.
18. What financial assistance can be given to those residents wanting to build masonry walls to protect their properties from future flooding? Why are residents being told that they cannot submit for a permit to build a wall without speaking first with a city engineer when there are no engineers or city officials speaking with us?
19. What assistance can be offered to the business owners who work out of their homes in the impacted neighborhoods since they don't qualify for the grant money generated by The Back to Work Small Business Hiring and Retention Grant?
20. Why isn't the call center following up with each call placed by homeowners? There is documentation of homeowners in different impacted areas still waiting for a call or email back for assistance and guidance.
21. Who at the city and county is responsible for completing full damage assessments of properties that have interior damage? Why aren't these reports being given to homeowners after the assessments are done? Is there a list of homeowners with damage and dollar amounts attached? How does the community get a copy of this report?
22. Why is the city and county advising residents to "sue" their neighbors? Why are the city and county telling residents specific property owners to blame for changing downstream flows? The city

and county either did the sandbag mitigation or guided the homeowners on what to do.

23. How do homeowners that signed the sandbag and barrier mitigation forms opt out of the contracts?
24. How are the engineering plans responding to the ever changing topography of the Spruce Ave Wash after the August 17<sup>th</sup> storm? Will the models be updated with the new topography and the erosion of the original alluvial fan mitigation work?
25. Has JE Fuller done an updated modeling of flow through the current topography? Our understanding is that this modeling can be done and were told it would take about six hours to do. If so, we would like a copy of that report.
26. How long are the sandbags intended to remain in place? We want a direct answer to their permanent or semi-permanent status. We want to know is the city and county going to remove them and help replace as the bags degrade. To date Grandview has had to rebuild the walls multiple times due to breach, destruction, and inadequate protection.
27. How do the sandbags on private property protecting public property factor into the City's flood control mitigation plan – is this plan written into their planning?
28. Has there been a formal adverse impact analysis done for any of the sandbagging or placing of concrete barriers and if so who completed it and when was it completed? We would like a copy.
29. We know FMA/BRIC grants are competitive but having watched the webinar on how to obtain them it is felt the city would qualify if a major disaster declaration is made. There is a specific section that talks about undersized culverts. Knowing the city has to have a 25% match why isn't the city setting aside 1.5 million in existing money to do so. We know that ARPA funding has a sub section for storm water and infrastructure funding why isn't any of that money being put towards those impacted by flooding? Council has not discussed any assistance for those impacted by flooding. It is foolhardy to think the infrastructure bill is going to be the saving grace. It is a mistake to be counting on this knowing it will delay funding, projects or put projects at risk of not being funded if the proposed legislation does not pass.
30. 27. What funding is the county receiving from ARPA and are they planning on using any to match grant funding or for use in the flood district?
31. Knowing the feasibility studies are going to take up to two years what is the cities plan in the short term in regards to mitigation for the private property they decided to use as public use for their flood channel? IE assisting with building walls on public property for the homeowners with 4-6 foot flows.

32. What is that status update on the legislation being written to cut through the red tape in regards to NRCS being able to mitigate immediately on Federal Lands? Is it true that Paul Babbitt is trying to streamline this process?
33. Does the city or county have contacts the public can reach out to for staffers under President Biden to write to in regards to the update on receiving the letter from our Arizona Representatives related to declaring a Major Disaster Declaration? Has the city and county asked Governor Ducey for Joint Preliminary Damage Assessment? If not why not?
34. The community impacted would like a sediment analysis from different areas. Breathing the dried sediment particulate matter along Grandview and more specifically Sunnyside is causing substantial breathing impacts for the elderly, those post COVID infection and those with lung disease. People would like to know what it is they are inhaling and possible health impacts.
35. Mold mitigation for renters and owners. The \$1000 dollars from United Way although appreciated doesn't even scratch the surface of what is needed. People need to do drywall replacement and have their homes inspected. Many don't even know where to begin. Meanwhile mold is growing in their walls. The long-term impacts to children and adults breathing mold is a health emergency. FEMA has funding specifically for this issue. What is the city doing to assist with this issue other than telling homeowners to civil suit each other? Those that have received quotes have been told it will be as high as 50K to do mold mitigation.
36. Per Ms. Leid a consultant hired by the county/city a permanent barrier at the top of Paradise road is being discussed. Those downstream want to know how this diversion is going to impact hitting the culvert that can only handle 325 cfs? With this choke point in place the widening may temporarily slow flows but once it hits the culvert those flows will hit the corner of Grandview with the same intensity and velocity correct?
37. Ms. Leid also discussed bypass and additional conveyance at the Linda Vista crossing. "The conveyance would be an underground storm drain or pipe that goes east or west of Grandview Drive". Knowing there is a gas line and water line under the culvert how will this be possible without moving the utilities? If you look at the culvert now the storm drain or pipes that are currently present cannot handle the sediment/debris and clog quickly what makes the city/county think adding another one will make the situation different. Besides adding another alluvial fan upstream to reduce sediment how will the pipe or storm drain stay clear?







JOINT CITY/COUNTY MEETING

# Museum Post-Wildfire Flooding

August 23, 2021





# Introduction



- Introductory comments by Museum Flood Co-Incident Commanders:
- Lucinda Andreani, Coconino County Flood Control District Administrator and Deputy County Manager
- Andy Bertelsen, City of Flagstaff Public Works Director

***Secure Flood Insurance No Matter  
Where You Live in the County!!!***



# Agenda



- Museum Flood Events, Impacts, Response & Costs
  - Joint Emergency Response
  - Operational Response
  - Assessment and Recovery
  - Financial Impact
  - Long-Term Mitigation Strategies
  - Support Services
- Greater Flagstaff Area Flood Events
  - East Flagstaff
  - University Heights
  - Forest Hills
  - Rio de Flag

# Museum Flood Area

- **2019 & 2020 Museum Flood mitigation efforts**
- **2021 Museum Flood Events, Impacts, Response & Costs**





# Museum Flood Area Mitigation 2019 - 2021



Apr 17, 2020 at 12:20:25 PM





# 2019 & 2020 Mitigation



## Flood Analysis

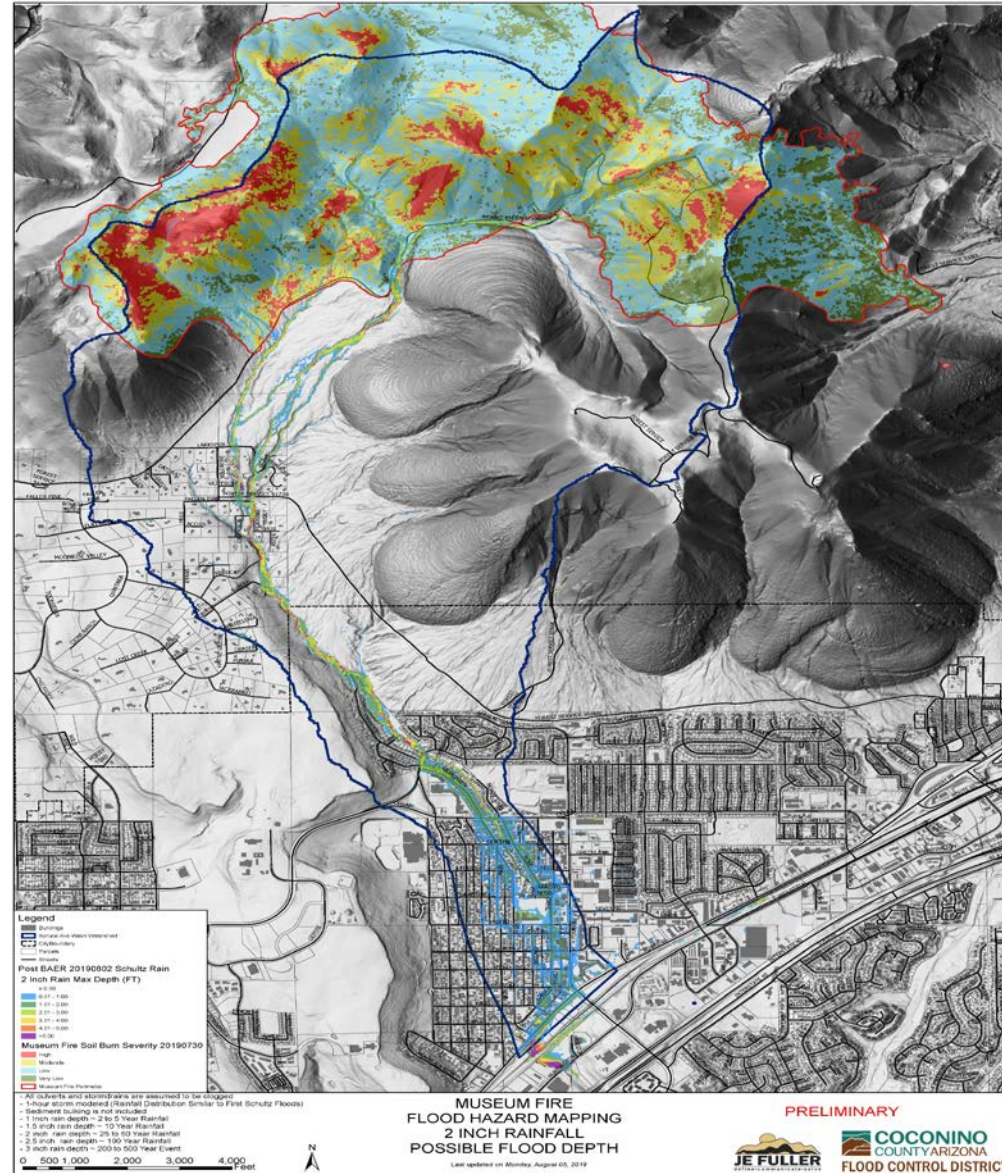
- JE Fuller Hydrology & Geomorphology conducted flood hazard modeling
- Used 2" storm given data from Schultz flood area & results showed severe and repetitive flooding
- Anticipated impacts to over 400 homes and 35 businesses
- Coconino County Flood Control District (District) immediately developed a flood mitigation plan based on the analysis and deployed concrete barriers and sandbags to the flood area
- Actual flooding events have largely reflected the modeling



# 2019 & 2020 Mitigation



## Flood Analysis





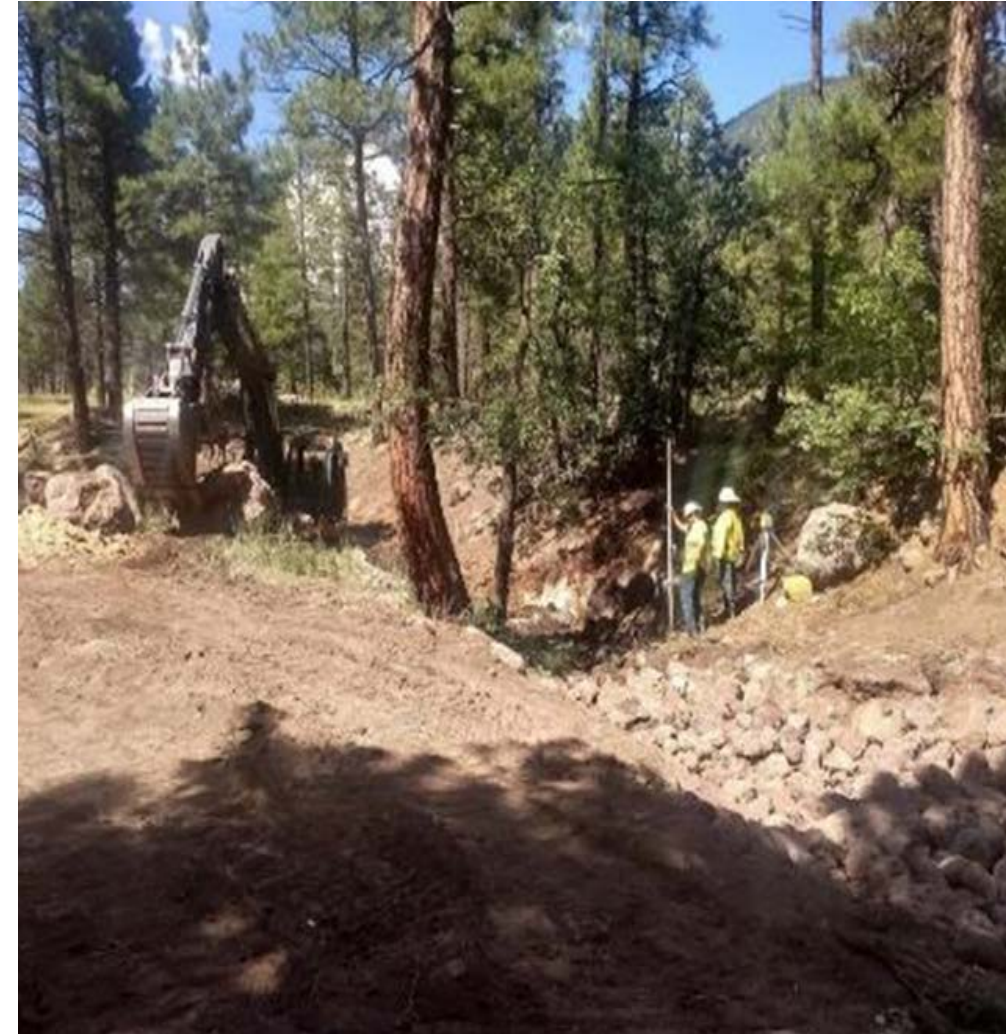


# 2019 & 2020 Mitigation



## District's Initial Projects

- FCD constructed rock weirs on an alluvial fan on forest above Mt. Elden Estates to stabilize the fan, which has captured over 6' of sediment & debris to date
- FCD constructed flood mitigation through the Mt. Elden Estates area to mitigate impacts to 20 homes at very high risk for home destruction
- Established flood monitoring & alert system

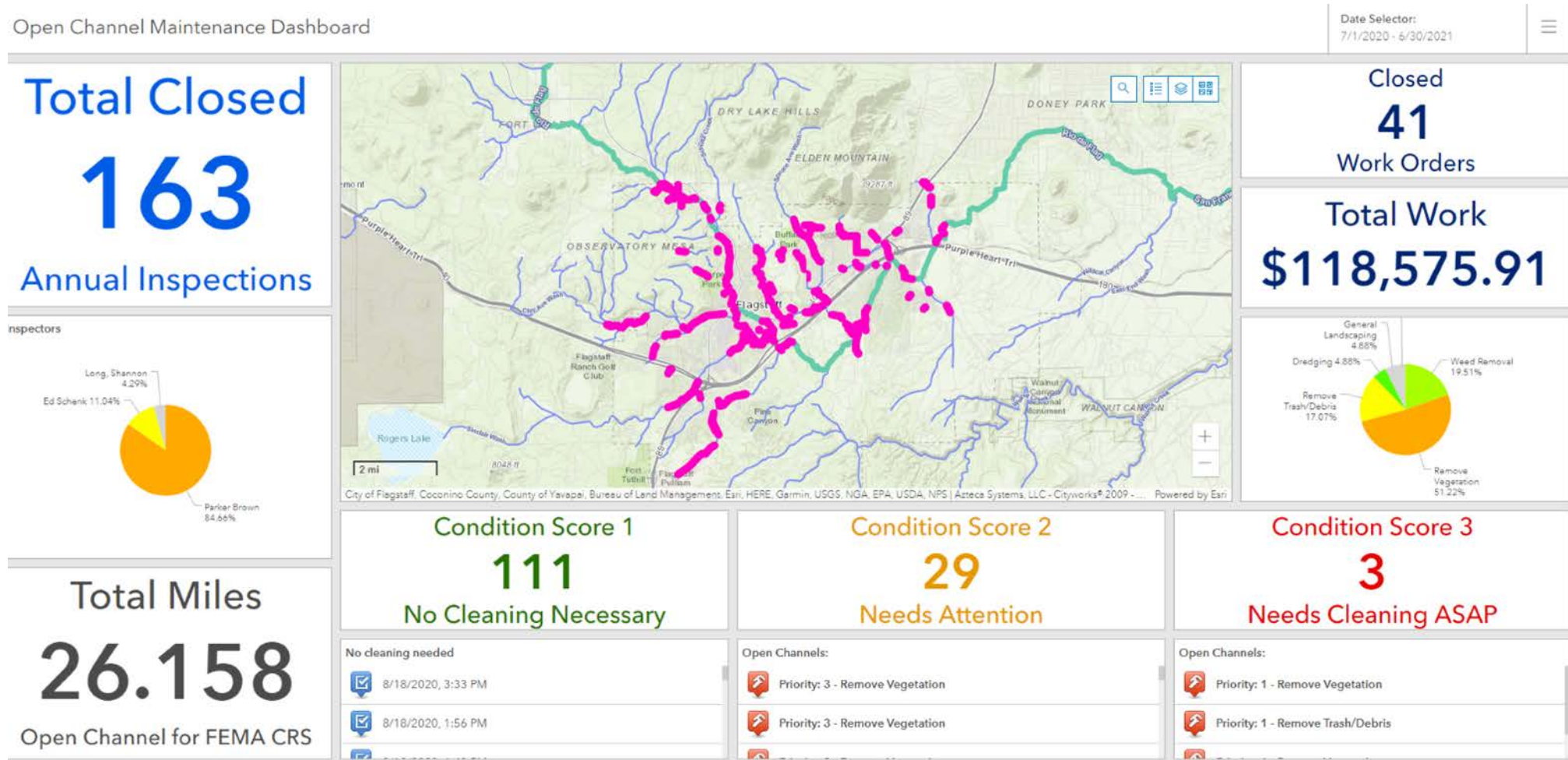




# 2019 & 2020 Mitigation



## City's Open Channel Maintenance







# 2019 & 2020 Mitigation



## City's Underground Stormwater Maintenance

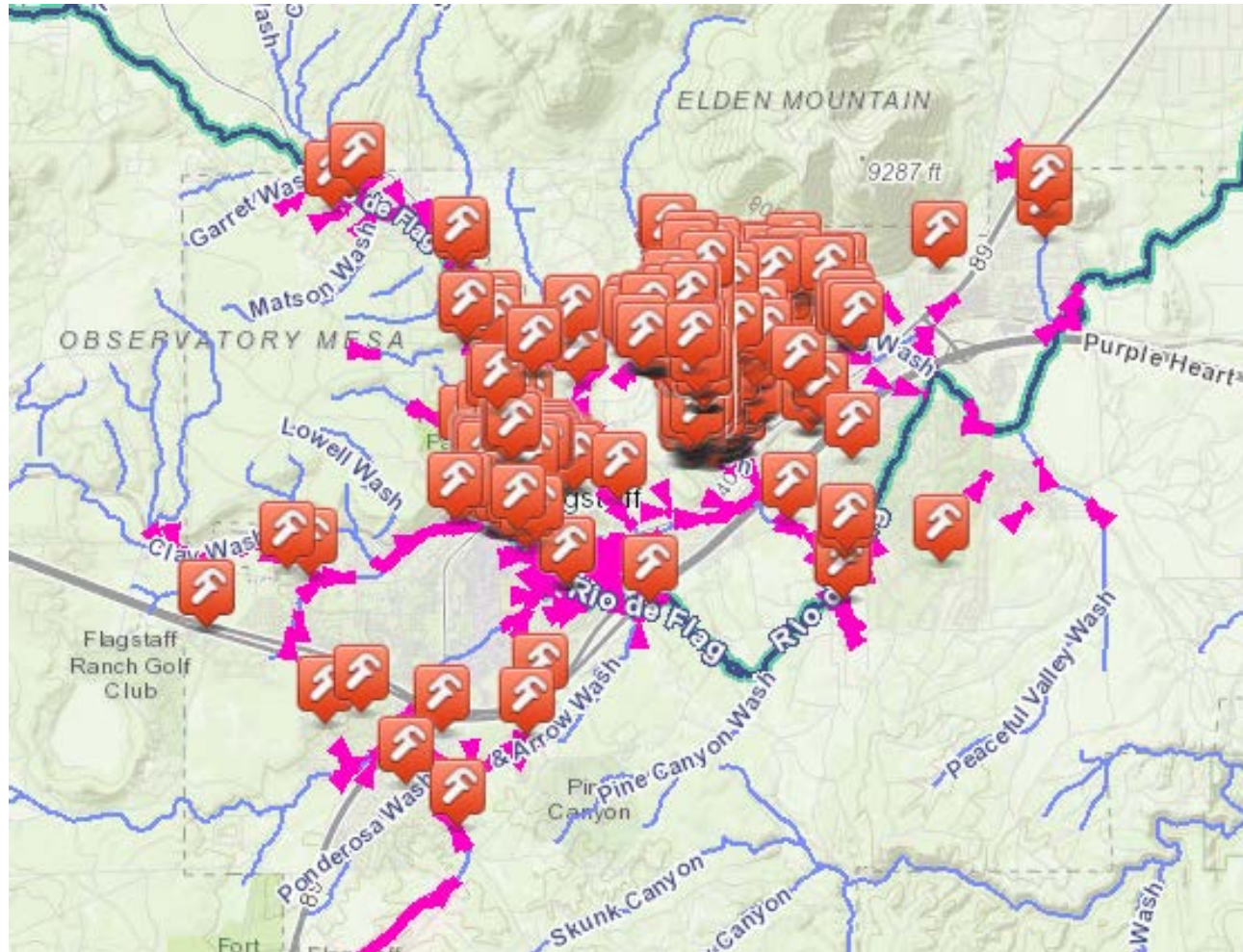
- Purchase of combo truck in December 2019 for better service of underground infrastructure.
- The Wastewater Collection crews were able to complete 1,501 Work Orders from July 1, 2020 – June 30, 2021. These Work Orders consisted of cleaning catch basins, storm pipes, culverts, trash racks on culvert and pipe inlets, and more.
- More focus on stormwater collection system to reduce risk of exposure to wastewater collection staff to COVID-19.
- Focus was on Sunnyside, Grandview, Paradise.



# 2019 & 2020 Mitigation



## City's Underground Stormwater Maintenance







# 2019 & 2020 Mitigation



## Spruce Avenue Channel Improvements

- Cedar to Dortha
- Improve channel from a narrow-grassed channel to concrete lined trapezoidal channel (design in progress).
- Re-design Dortha Inlet and Dortha Avenue street crossing to determine feasibility of greater flows and reduction of clogging.



# 2019 & 2020 Mitigation



## Cross-Vein Weirs

City of Flagstaff installed seven cross-vein weirs with 4-foot keystone members to protect existing water main and natural gas pipeline, and to reduce erosion thus sediment into the neighborhoods







# 2019 & 2020 Mitigation



## Channel Dredging

- Summer 2020
- Spruce Wash channel dredging and re-configuration at Cedar Avenue







# 2019 & 2020 Mitigation



## Culvert Upsizing

- Summer 2020
- City added second culvert at Linda Vista
- The additional culvert had to be sized to match the downstream channel and culvert at Cedar Avenue so downstream impacts were avoided







# 2019 & 2020 Mitigation



## Debris Bollards

- City installed new debris bollards
- Located at Linda Vista and Dortha culvert locations







# Museum Flood Area Mitigation - 2021



- Shore-up of mitigation took place again during spring 2021
- Sandbags delivered to neighborhoods and held meetings in the streets throughout the Museum Flood Area
- Over 600,000 sandbags in the Museum Flood Area & 6,600 feet of barrier at start of monsoon

# 2021 Museum Flood Events, Impacts, Response, Costs, Mitigation & Support





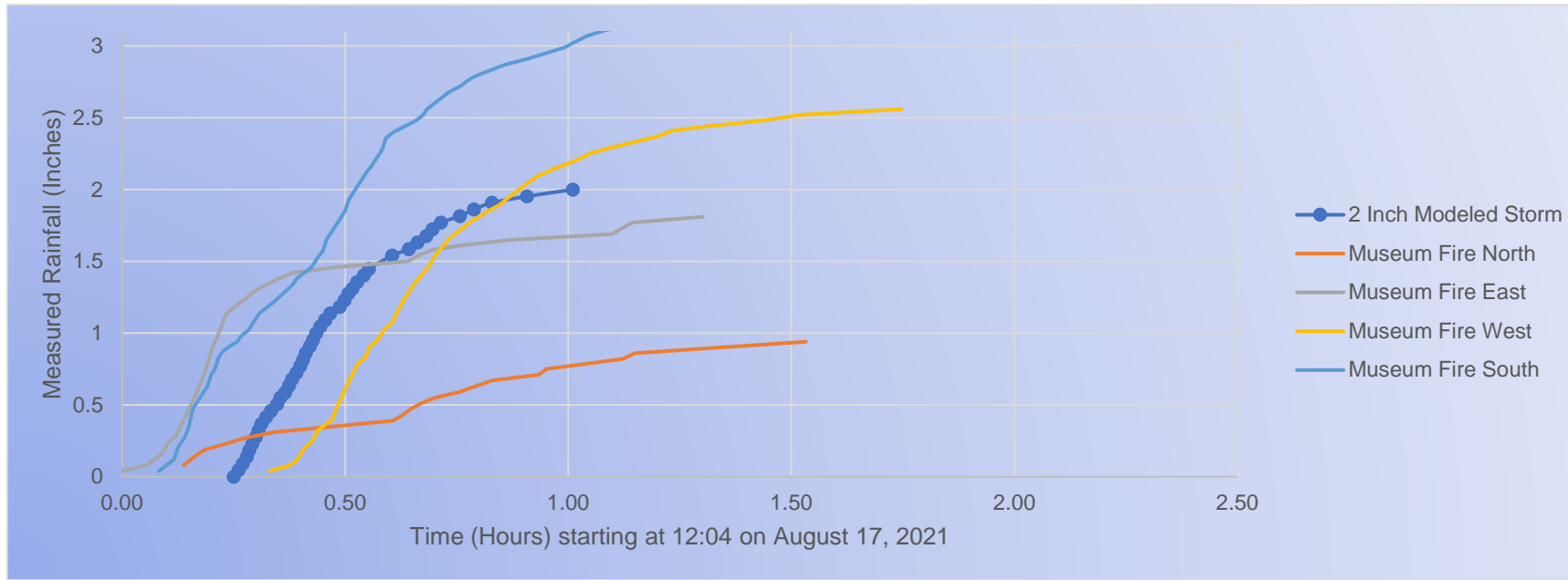


# Museum Post-Wildfire Flooding

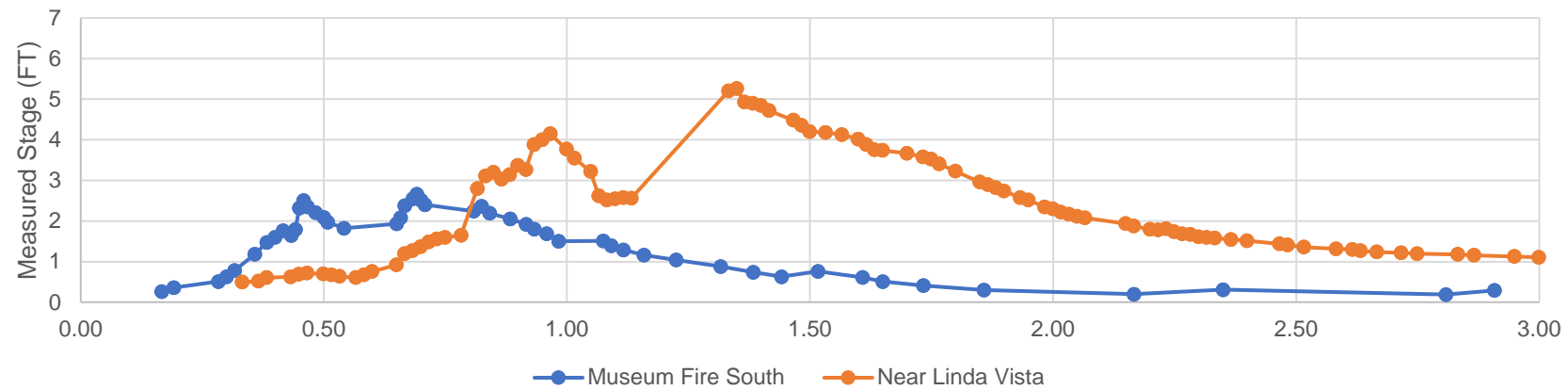


- Flooding events began on July 13, 2021
- Experienced 6 rainfall events that resulted in Emergency Notifications
- Most significant rainfall occurred on August 17<sup>th</sup>
- 3.07" of rainfall in 1-hour; 1.14" in 15 minutes (at two gauges)
- Equivalent to 200+ year rainfall event, 0.5% probability





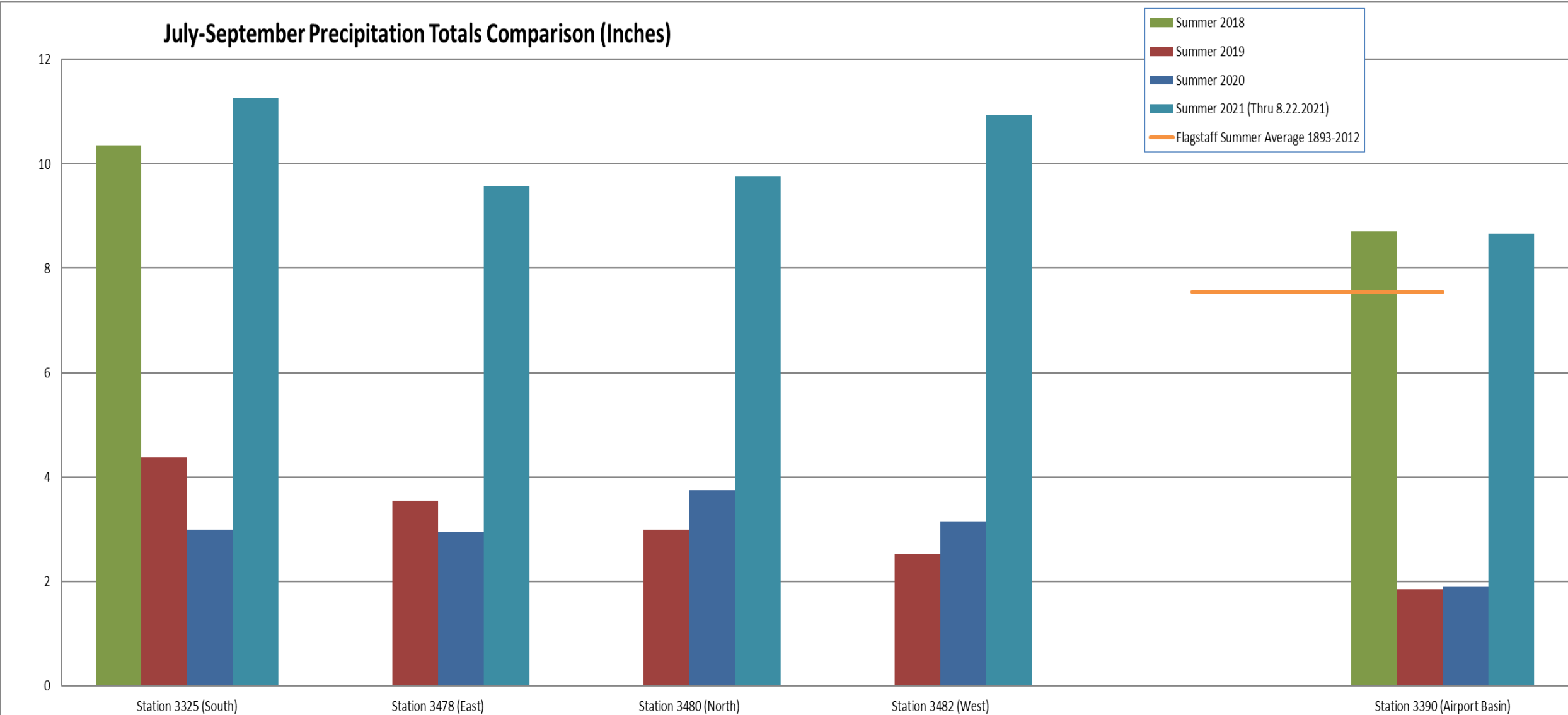
Stages along Spruce Ave Wash during 8.17.2021 Event



# August 17, 2021, Flood Event Hydrograph & Stream Gauge Data



# Museum Burn Scar Rainfall



*The East, North, and West rain stations were installed in the Museum Fire burn scar in late July 2019*



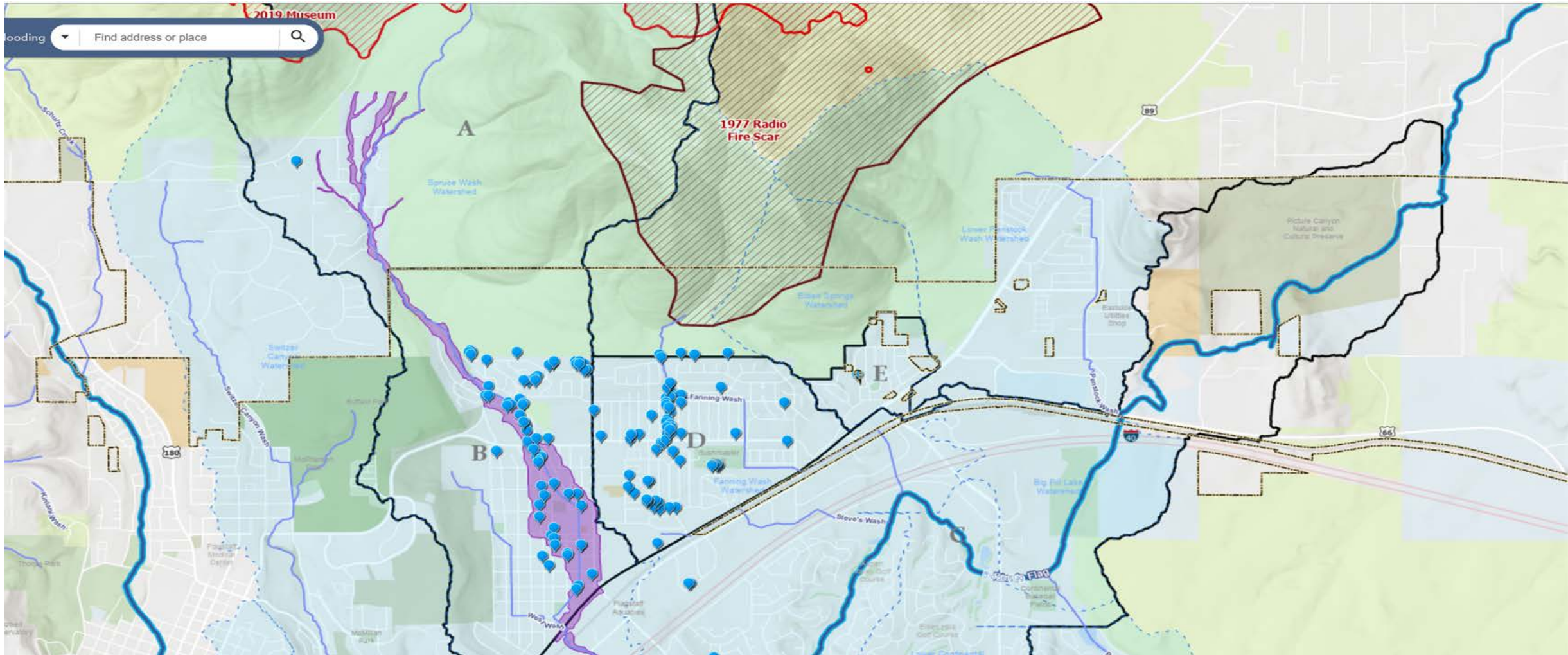
# Museum Private Property Impacts



## Museum Flood Area

**46 interior private property assessments with a total damage estimate of \$1,013,900**

# Museum Flood Specific Area (in Purple)





# Museum Public Infrastructure Impacts

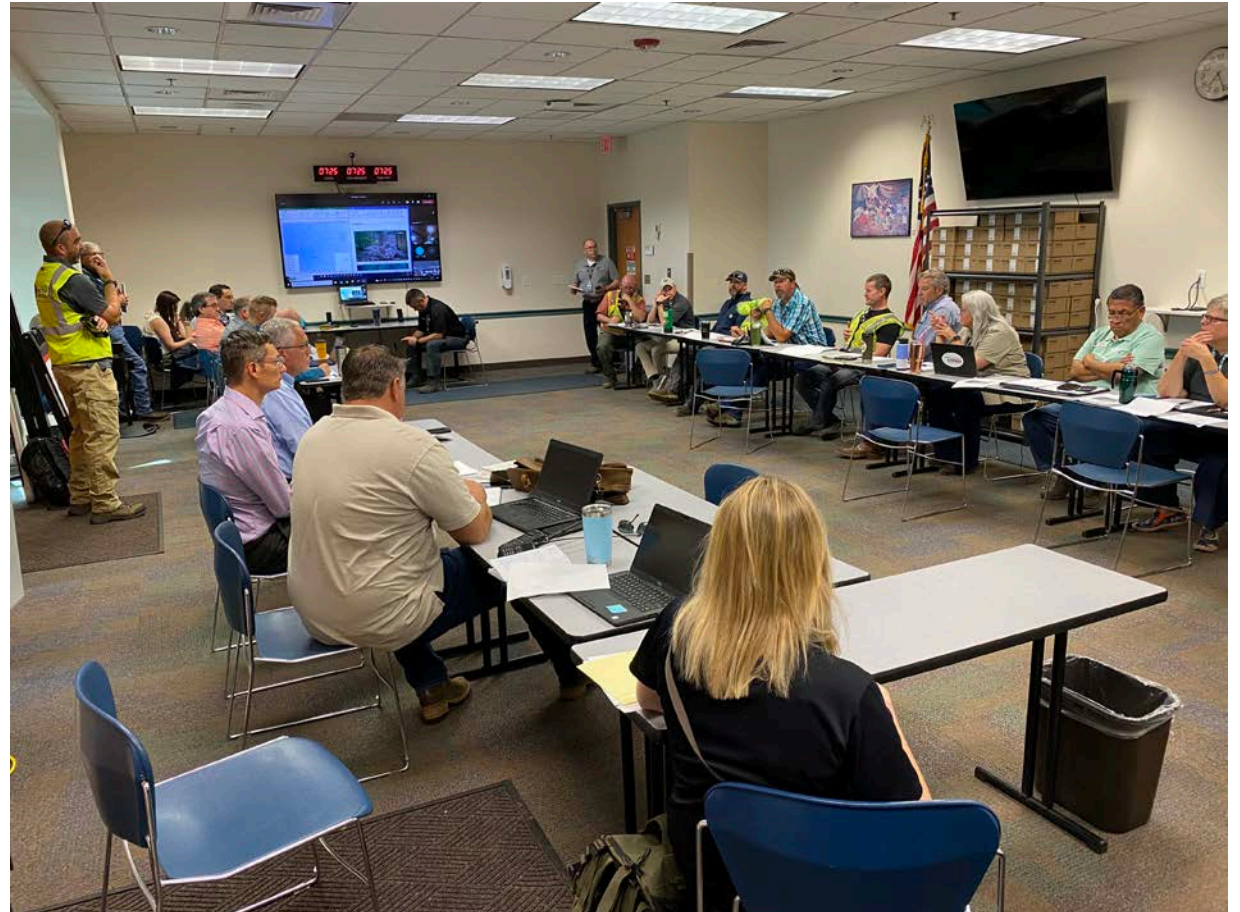


- **Pre-August 17<sup>th</sup> Storm Damage**
  - 19 sites
  - \$1.3 million
- **August 17<sup>th</sup> Storm Damage**
  - 33 sites
  - Approximately \$1 million



# Joint Emergency Response

- Flood Alert System
- Incident Management Team
- Emergency Operations Center
- Declaration of Emergency





# Flood Alert System



- National Weather Service participated in Emergency Operations Center providing critical updates
- Flash Flood Warnings were issued by the National Weather Service
- Each week a Flood Director is assigned to monitor radar, watch rain gauges and cameras for potential flooding, communicate with the NWS and to request the Emergency Manager to issue alerts
- Field Observers report flooding characteristics and impacts to infrastructure to Flood Director





# IMT & EOC



The **Incident Management Team (IMT)** plans and executes daily & future operations to meet response needs – “Boots on the Ground”

The **Emergency Operations Center** manages support services for the IMT, including:

- Logistics support (the “Amazon” for the IMT)
- Call Center
- Tracks public infrastructure impacted by flooding
- Conducts private property damage assessments for residents and businesses with flood damage
- Public & Media communications by the Joint Information Center
- Tracks all costs associated with response



# Declaration of Emergency



- City and County declared a state of emergency on July 15, 2021
- Governor declared a state emergency on July 16, 2021
- Declarations provide an opportunity for the City, Flood Control District and the County to pursue reimbursement for up to 75% of flood response costs deemed eligible by the Arizona Department of Emergency Management
- No funds have been received and generally reimbursements take two to three years
- Unlikely to exceed thresholds for Individual Assistance or Public Assistance Funds





# Operational Response





# Operational Response



- Joint City/County Public Works Response
- Water Services Response
- Engineering Response
- Joint Information Center & Call Center
- Volunteer & Corps Efforts
- Partner Recognition



# Joint Public Works Response



- Flood waters laden with silt, rock and forest debris
- Over 8,000 tons of sediment & debris transported to Cinder Lake Landfill
- Currently 700,000 total sandbags and 7,600 lineal feet of barrier installed in Museum Flood area
- All roads were cleaned swiftly and made passable
- Sweeping was extensive and provided 24 hours a day for 3 weeks and will continue for weeks
- ADOT and private contractors were utilized to support the effort, in addition to City and County Public Works crews.





# Water Services Response



- Water Distribution and Wastewater Collection crews assisted in flooding response
- Inspected system for any clearing needs
- Cleared stormwater drains and pipes of debris
- Worked on keeping culverts clear of debris
- Opened up outlets to support water flowing out of culverts



# Water Services Response

## Orders

### Description

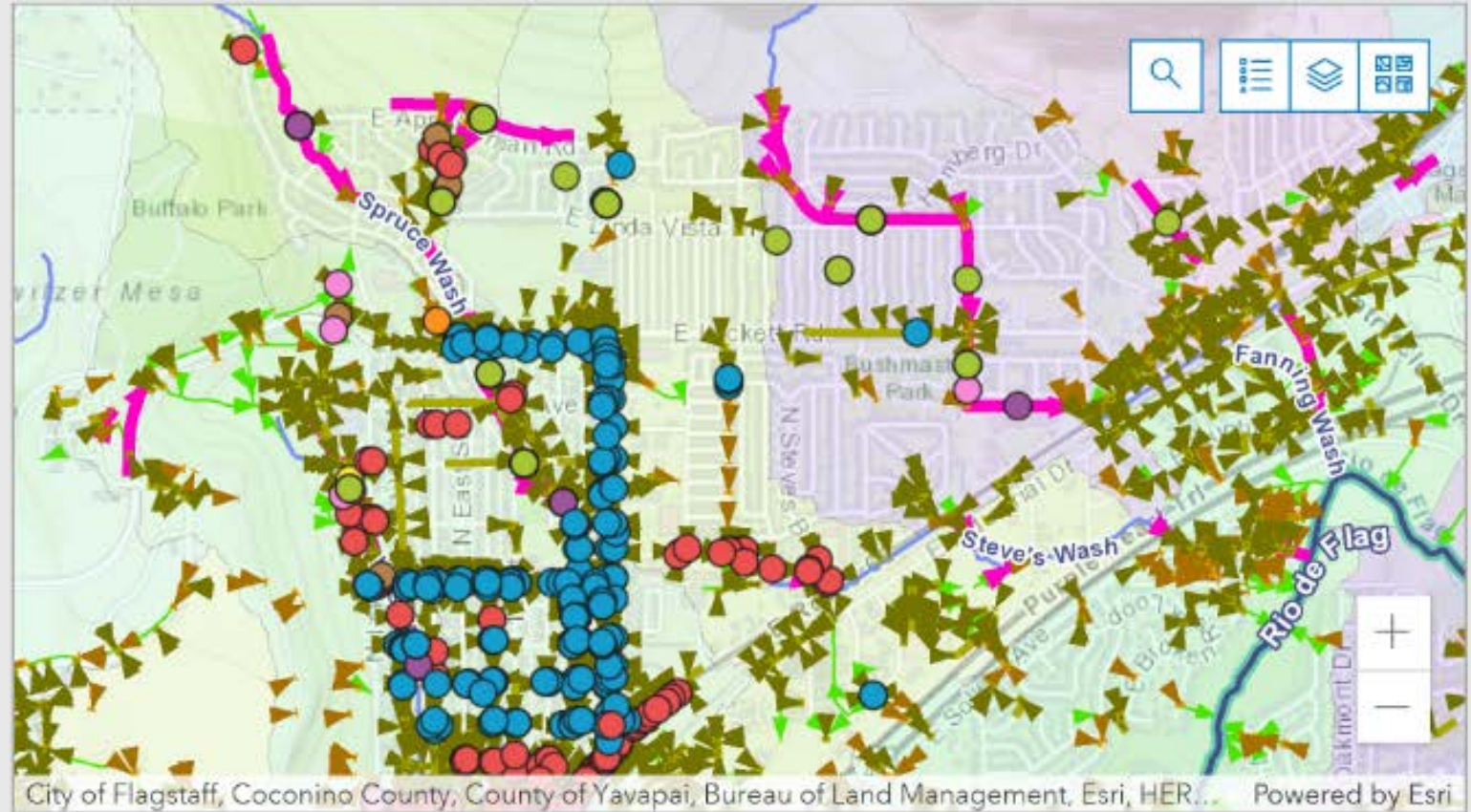
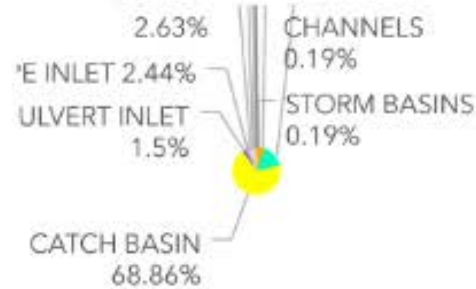
- Catch Basin Cleaning
- Clean Catch Basin Grate
- Post-Flooding Clean-Up (Nearby Road etc)
- Damage Assessment (DEMA)
- Erosion Control
- P/M Clean
- Culvert Inlet Cleaning
- Pipe Inlet Cleaning
- Remove Trash/Debris
- Open Channel

## Total Number

 **533**

Completed Work Orders

### Asset Type



City of Flagstaff, Coconino County, County of Yavapai, Bureau of Land Management, Esri, HERE... Powered by Esri

### Completed Work Orders by Day





# Engineering Response



- Conduct site assessments to assist property owners with identifying appropriate mitigation strategies
- Evaluate impacts to infrastructure and overall mitigation measures and determine repairs and improvements
- Partnered with JE Fuller using online tools for modeling and potential outcomes of mitigation strategies
- City & County GIS supported the efforts

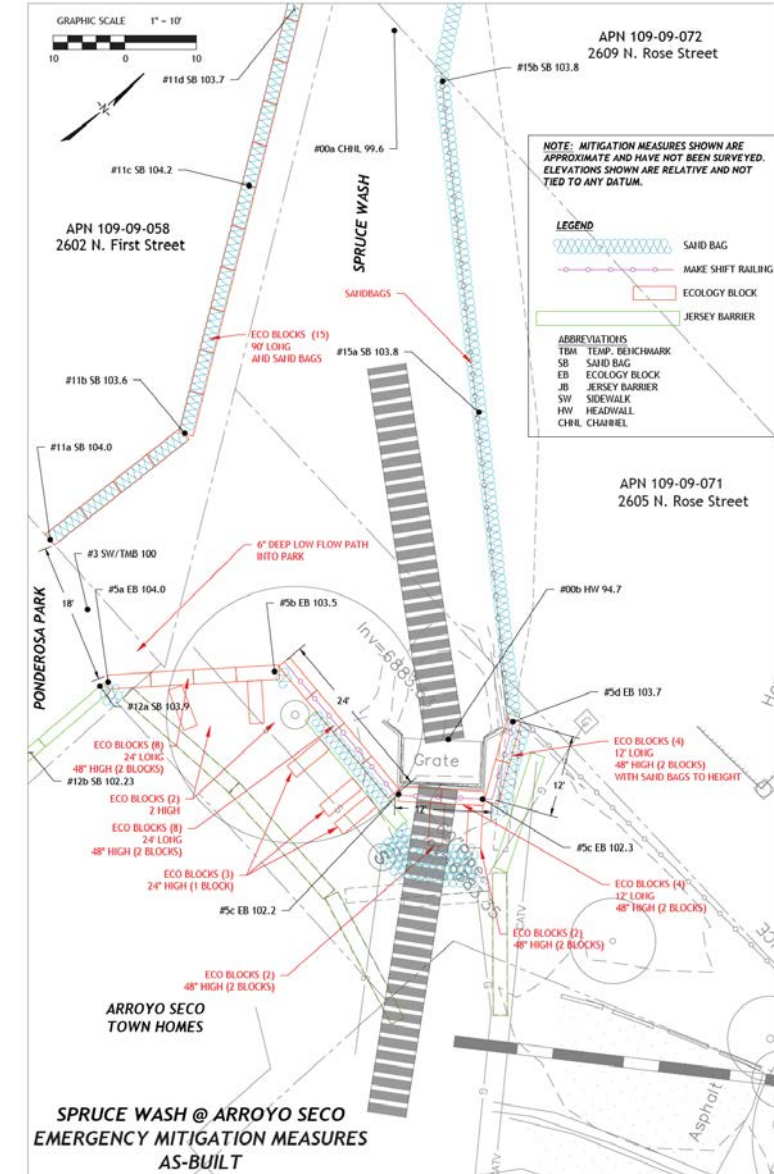




# Arroyo Seco Example



## Improved Mitigation





# Joint Information Center



- A Joint Information Center (JIC) was stood up inside the Emergency Operations Center
- Includes staffing from both City and County
- Call Center produces emergency communications to the media during flood events and provides a variety of communications to the Museum Flood Area
- Call Center has received 704 calls to-date
- Call Center staff using Salesforce to track calls, damage and resident & business needs



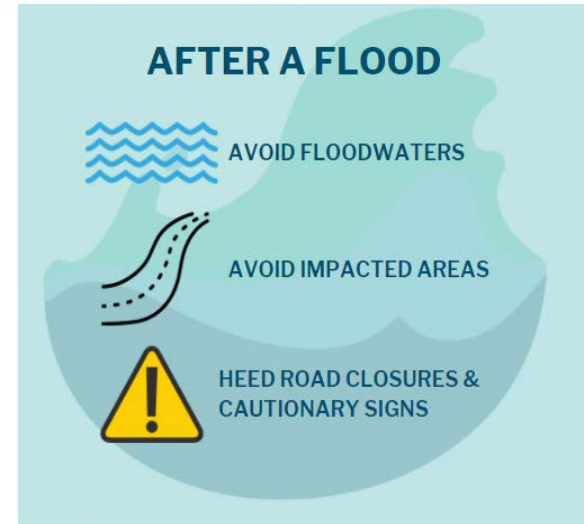


# Joint Information Center

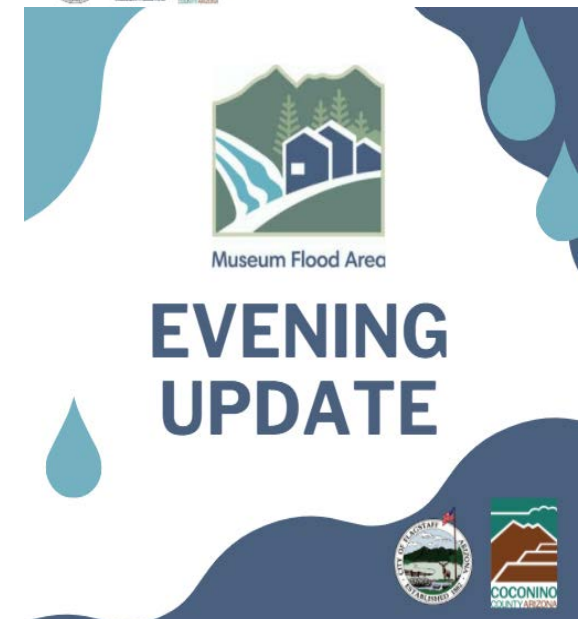


## Planned Communications

- Flood communication letter sent to all residents in the post-wildfire flood risk area
- Creating nightly emails to residents and media (during high activity periods), and safety messages on social media
- Routine updates via email to the Museum Flood Area residents, social media, websites and media advisories



[coconino.az.gov/museumfire/floodarea](http://coconino.az.gov/museumfire/floodarea)







# Joint Communication Center



## Community Meetings

- Before the monsoon season started there was a series of “Meet In the Street” community meetings
- An outdoor meeting was held with Mount Elden Estates residents to review the emergency project plan funded by the FCD & NRCS
- Any additional meetings will be virtual due to flood risk & COVID-19





# Volunteer & Corps Efforts

- 717 volunteers to date through United Way of Northern Arizona
- Over 60 sandbag placements for elderly and/or disabled
- Crews from Arizona Conservation Corp, American Conservation Experience, Team Rubicon and others helped place & build a stock sandbags
- 75,000 sandbags deployed in four days after July 13 flood event & 20,000 deployed after Aug. 17<sup>th</sup> flood event





# Many Partners...

AZWARN

National Guard

Tiffany Construction

Eagle Mountain Construction

Joe Dirt Excavating

C&E Paving and Grading

Fastenal

Badger Daylighting

United Pumping Services

JE Fuller Hydrology

Peak Engineering

Natural Channel Design

CivilTech Engineering

Mark Lamer

SWI Engineering

Turner Engineering

Woodson Engineering

\* List may not be all inclusive





# And Many Other Partners...

United Way of Northern Arizona  
Arizona Conservation Corps  
American Conservation Experience  
Team Rubicon  
Flagstaff Wildland Fire  
C&S Sweeping  
Hubbard Merrell Engineering

Arizona National Guard  
Kinney Construction Services  
Quail Construction LLC.  
First Class Sanitation

\* List may not be all inclusive



# And More Partners...

Performance Staffing

United Methodist (shower trailer)

Bandoleros66

Jimmy John's

Jitter's Lunchbox

Toasted Owl

La Fonda

ATL Wings

Chick-fil-A

Firehouse Subs

Texas Roadhouse

Cracker Barrel

Sam's Club

\* List may not be all inclusive

# Museum Flood Financial Impacts

## Museum Flood Total Mitigation & Response Costs to Date:

- Coconino County Flood Control District has invested over \$3.4 million since July 20, 2019
- City's response costs are \$1.8 million since July 13, 2021

**Grand Total: \$5.2 million**





# Museum Flood Long-Term Mitigation Strategies

- Engineering Summit
- NRCS Exigency
- Regional Detention at Killip Elementary School





# Engineering Summit



- Bring together experts in post-wildfire flood mitigation in an Engineering Summit
- Goal to further identify potential, conceptual long-term mitigation measures
- Very fortunate to have significant local expertise
- Summit Report to County Flood Control District and City Leadership will be conducted through a virtual meeting Report session will be streamed for public viewing
- Friday, August 27th from 12:00 - 1:00pm
- Link will be made available and will be on the Museum Flood webpage



# NRCS Exigency



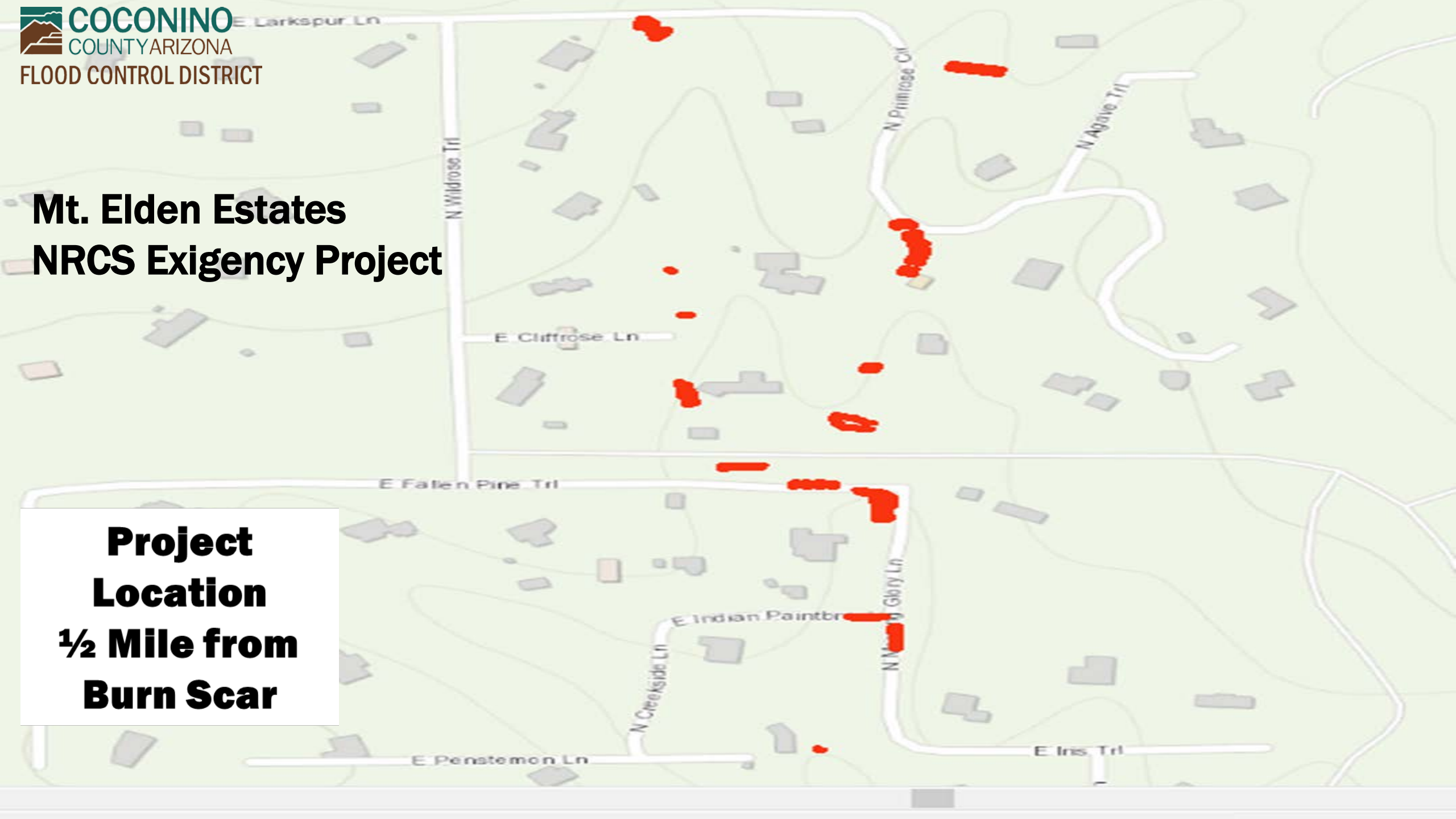
- The main goal of the project is to stabilize stream channels which will decrease erosion
- Erosion is destroying private property, roads and threatens to destruct homes
- Erosion also sources sediment, which is then transported downstream and negatively impacts downstream infrastructure and homes





## Mt. Elden Estates NRCS Exigency Project

**Project  
Location  
½ Mile from  
Burn Scar**

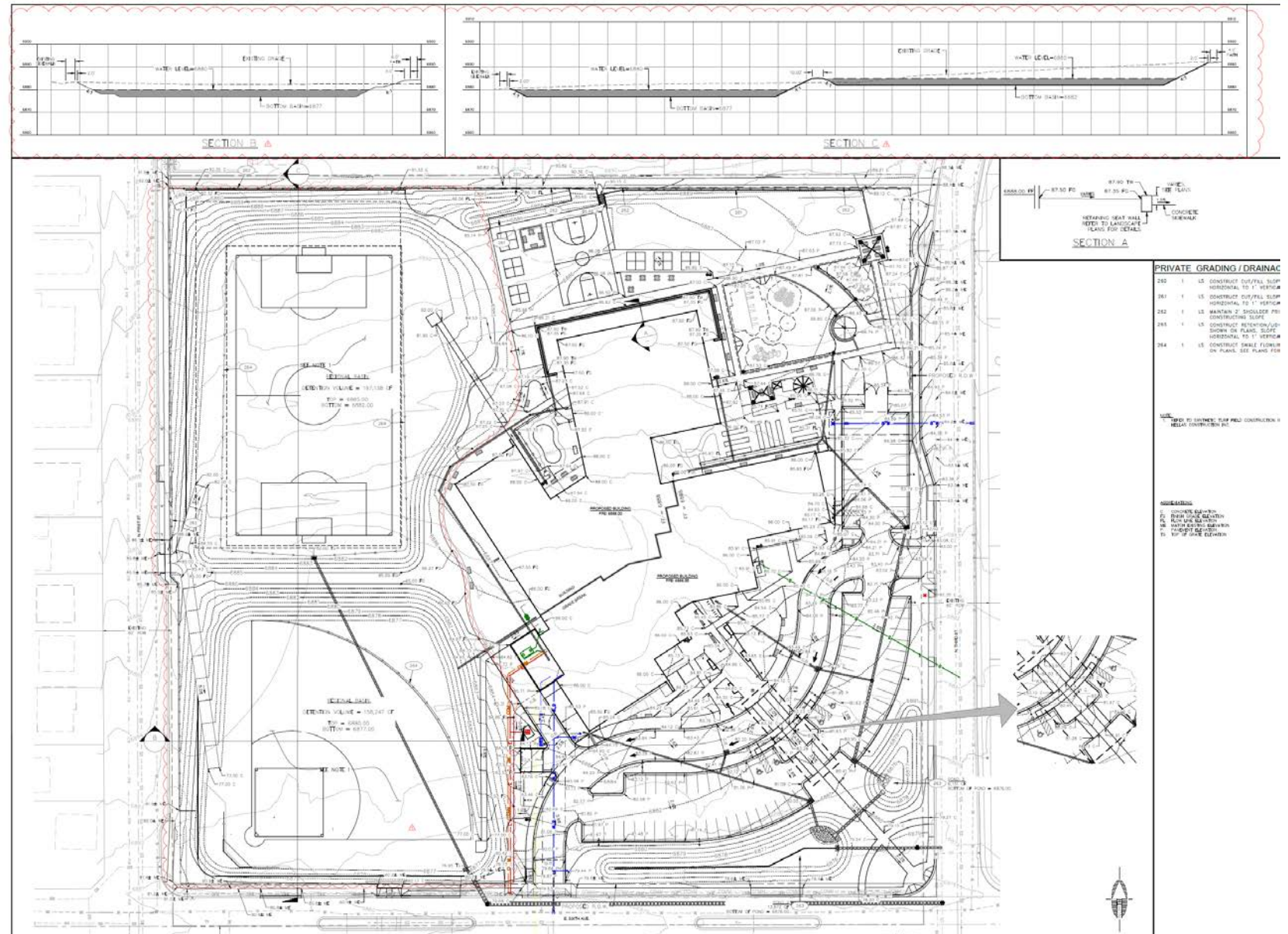




# Detention at Killip Elementary



## Regional Detention at Killip Elementary School





# Legislative Advocacy



- The District and City are working closely with our Congressional Delegation to identify and seek out potential federal funding
- Rep. O'Halleran and Senators Kelly and Sinema have pledged strong support for our efforts
- Key challenge is securing re-funding of the Emergency Watershed Protection Program and to extend the use of those funds to National Forest lands
- Infrastructure bill in Congress, if passed may be a potential source of funding, but likely very competitive process



# Support Services

- **Virtual Assistance Center**
- **Home repair assistance program for low-income homeowners**





# Virtual Assistance Center



- Website for citizens and businesses to receive information and services to meet their needs
- Current services are accessed through the Call Center
  - Property Assessment
  - Food
  - Rental Assistance
  - Shelter Needs
  - Mental Health Assistance



# Home Repair for Low Income Homeowners



- United Way of Northern Arizona and the Arizona Community Foundation are collecting donations
- \$24,114 has been collected to date
- Monies collected will be used to help low-income residents with interior damage due to flooding

## **Please donate by going to:**

- UWNA webpage: <https://nazunitedway.org/crisis-response/>
- ACF Webpage: <https://www.azfoundation.org/Giving/Flagstaff-Flash-Flood-Disaster-Relief-Fund>

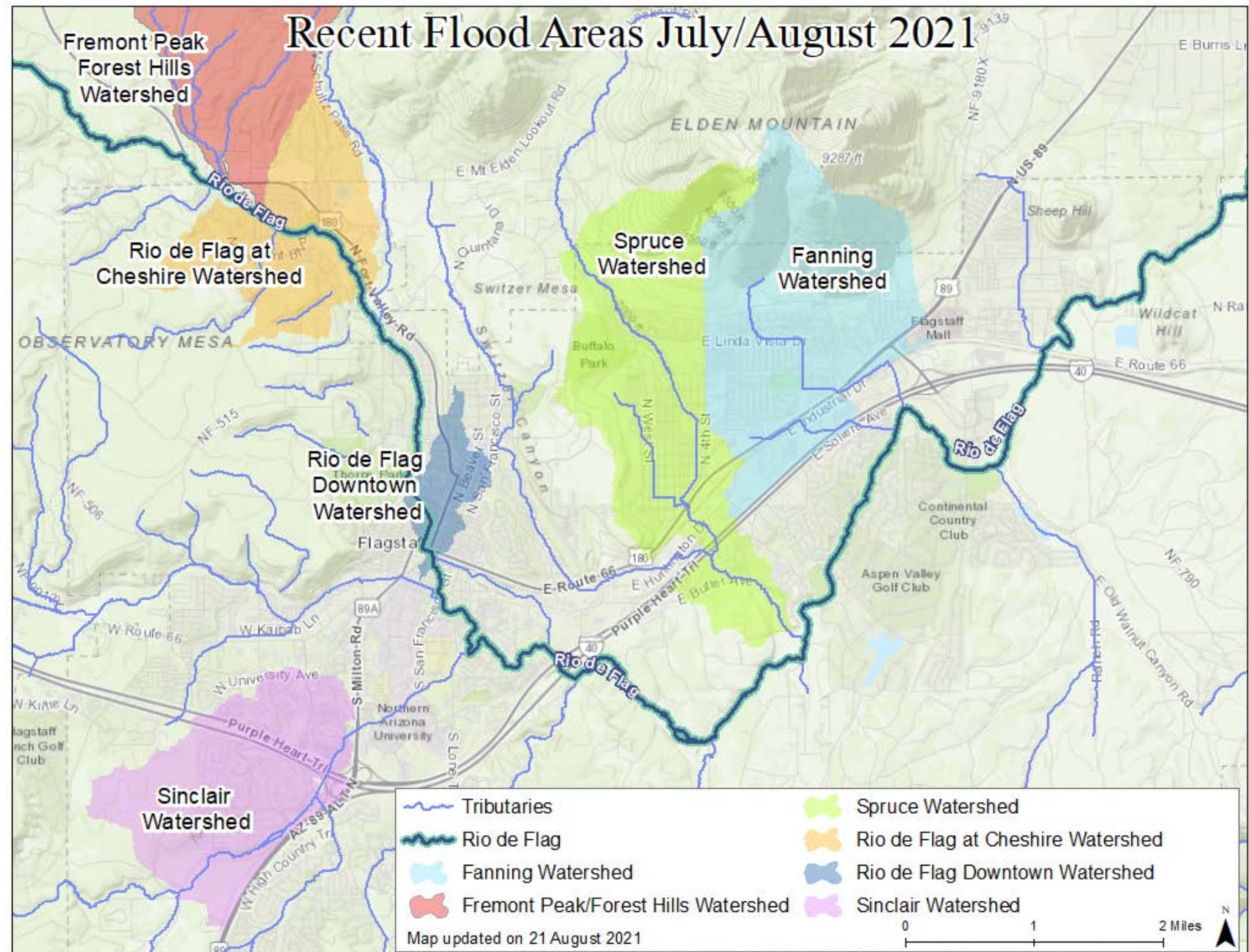


# Greater Flagstaff Area Flood Events

- 100-year rainfall event in East Flagstaff
- 50-year rainfall event in University Heights
- 300+ year rainfall event impacted the Forest Hills area and Rio de Flag



# Map of Watersheds





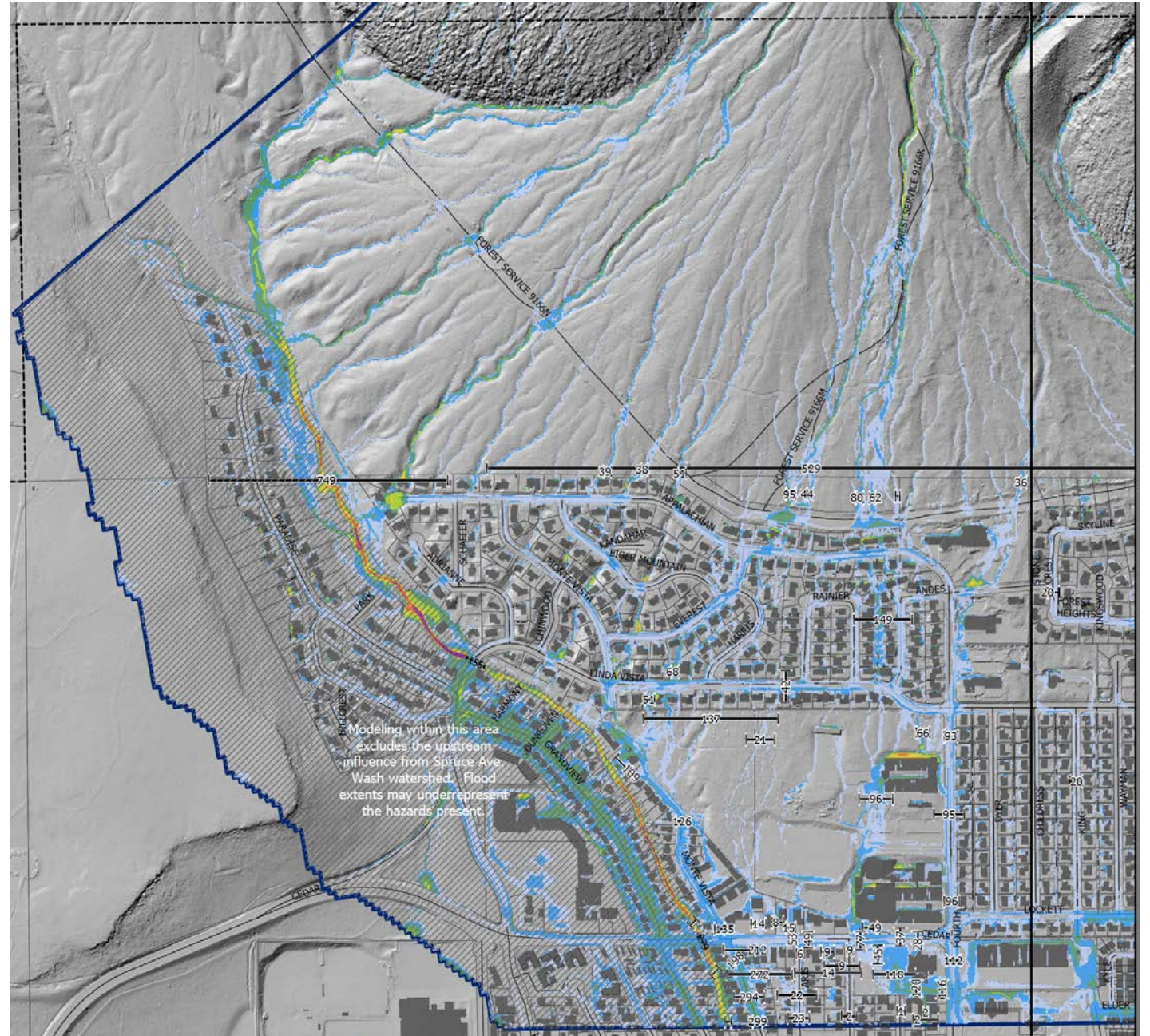


# 100-yr Event in East Flagstaff

- July 14th, 2.56" in one hour at the Fanning Wash gauge, a 100-year event or a 1% probability
- Very intense storm, 1.8" fell in 15 minutes = 200- year storm with 0.5%
- Substantial flooding along Fanning Wash, Shadow Mountain and Mobile Haven due to Mount Elden runoff
- Area was identified in 2007 Northeast Area Master Drainage Study as a flood concern
- Fanning Wash was partially upsized in the last decade but only near Thomas School and Siler Homes
- Headwaters of the watershed are now severely incised (higher flood threat)



# East Flagstaff Flood Event





# Damage Along Fanning Wash







# Engineering Response

- Engineering response to East Flagstaff
- Several site visits at affected properties including meetings with Kinder Morgan (natural gas pipeline)
- A new FLO-2D model of both the event and a 100-year storm
- Ground truthing of the model including storm damage and highwater marks
- Very complex situation given the City's stormwater system does not now extend to this area
- Extremely costly to develop system to address large events given the watershed dynamics on Mt. Elden



[illegible]





# Engineering Response



City is working with AZGS to determine new flood risk based on new channel character







# 50-yr Event in University Heights

- July 24th event, 3 inches of rain in 1 hour at the Sinclair Wash gauge near University Heights South (~ 50-year rainfall event equals a 2% chance )
- Localized flooding along minor drainage conveyances and ditches
- Damage to public infrastructure is minimal but maintenance was required immediately after the rain
- Future neighborhood stormwater spot improvements need to be assessed



Ancestral Land crew cleaning detention basin  
near DeMiguel Elementary School





# 300+yr Event in Forest Hills



- Weather radar shows very large and intense thunderstorm over the drainage that flows through the Forest Hills area
- Likely in excess of a 300-year rainfall event which has a 0.33% chance of happening in any given year
- Two homes in the Forest Hills area and one home in Cheshire experienced interior flooding
- This rainfall event combined with localized rainfall in the City also produced flooding along the Rio de Flag
- Storm produced flooding and run-off for at least 24 hours



# Rio de Flag



- Rio de Flag gauges showed 2-3" rain in 1 hour, greater than 100-year rainfall event or a 1% probability
- One home damaged in Cheshire
- Impacts to downtown Flagstaff



# Private Property Impacts

## Outside of the Museum Flood Area

- 106 private property assessments with a total damage estimate up to August 17<sup>th</sup> event of \$1,207,300
- 8 interior private property residential damage assessments with a total damage estimate of \$1,600,500
- As of August 17<sup>th</sup> - 8 exterior residential and commercial property assessments with a total damage estimate of \$28,000

**Private Property Damage Grand Total: \$2,835,800**





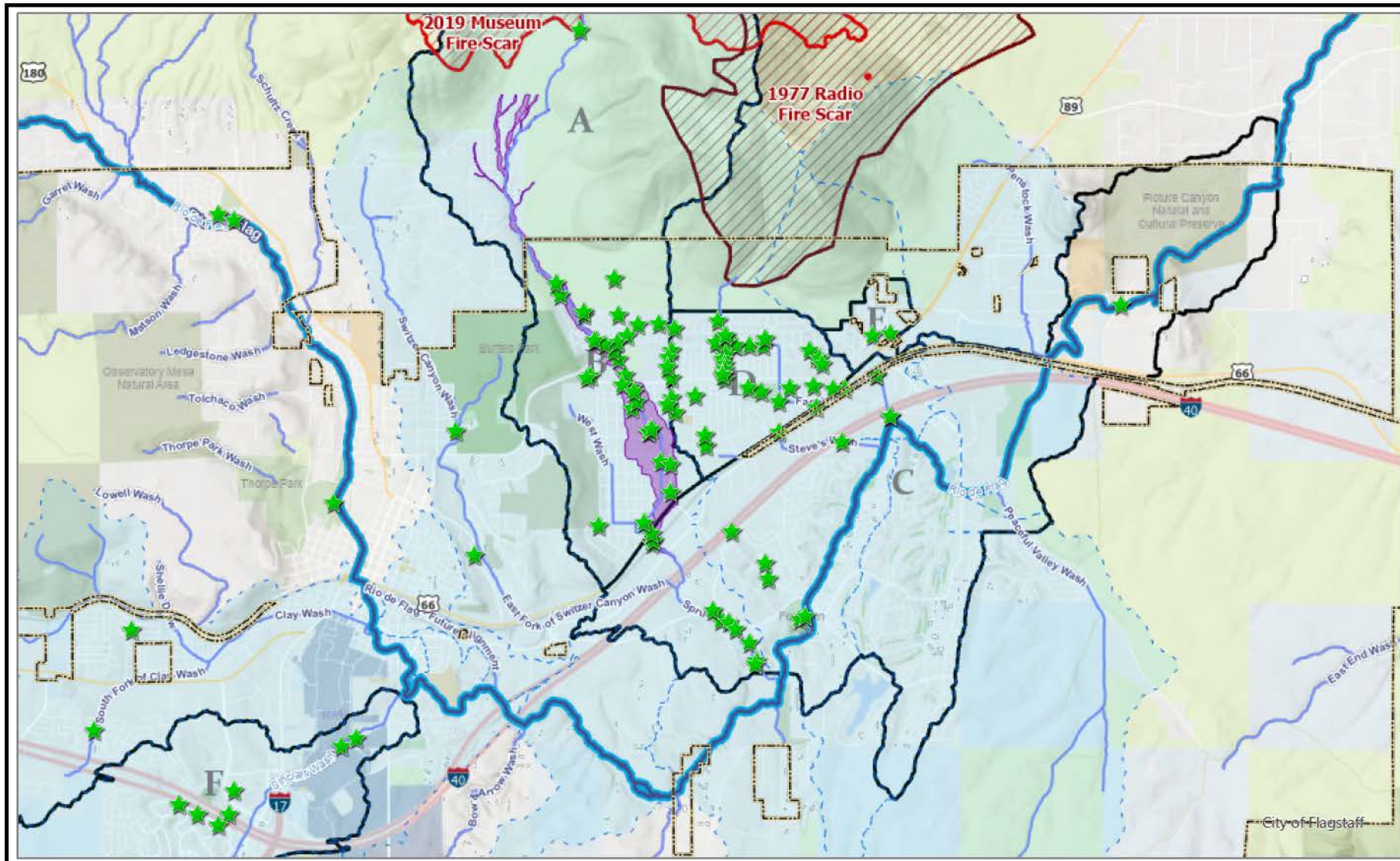
# Public Infrastructure Impacts

## Outside of the Museum Flood Area (within City limits)

- 117 sites
- \$4.5 million

# PUBLIC INFRASTRUCTURE ASSESSMENT & RECOVERY GIS MAP

- Inspector
- Date/Time
- Damage Categories per DEMA
- Description and Impact of Damage
- Cost Estimate
- Photo(s)



## 2021 Monsoon Flood Damage Assessment



City of Flagstaff maps and data are updated on a regular basis from data obtained from various sources. The City of Flagstaff endeavors to provide accurate information, but accuracy is not guaranteed. You are strongly encouraged to obtain any information you need for a business or legal transaction from a surveyor, engineer, title company, or other licensed professional as appropriate. Information is provided subject to the express condition that you knowingly waive any and all claims for damages against the City of Flagstaff relating to use of this information.



8/13/2021 7:54 AM



# Comments & Questions from Council and Board





# Public Member Questions



**PLEASE EMAIL US AT**  
**[museumfloodinfo@coconino.az.gov](mailto:museumfloodinfo@coconino.az.gov)**





# Museum Flood Mitigation Plan

November 23, 2021







# Citizen Petition

- 2021-09 Museum Flooding (attached to Staff Summary)
- October 5<sup>th</sup> Council Meeting
- Answer questions
- Meeting with City and County representatives
- Comprehensive report of completed mitigation on museum burn scar and watershed
- Outcomes of completed mitigation
- Short, mid and long-term plans for flooding
- August 23<sup>rd</sup> Joint Meeting (attached to Staff Summary)





# Agenda



- Mitigation Plan Updates
  - USFS Representatives Visit
  - Natural Resource Conservation Service (NRCS)
  - Paradise Channel Stabilization and Restoration
  - Dortha Inlet and Channel
  - Killip Detention Basin
  - Flooding Feasibility Alternative Analysis
- Funding of Mitigation
- Communication with Residents



# Mitigation Plan Updates

## USFS Representatives Visit

- Impacts of Museum Post-Wildfire Flooding
- Federal funding for watershed restoration
  - Significantly reduce large amounts of sediment
  - Mitigation efforts are ineffective when fill up with sediment
- Mitigation for 400 homes and 35 businesses
- Chief's \$3.5 million pledge



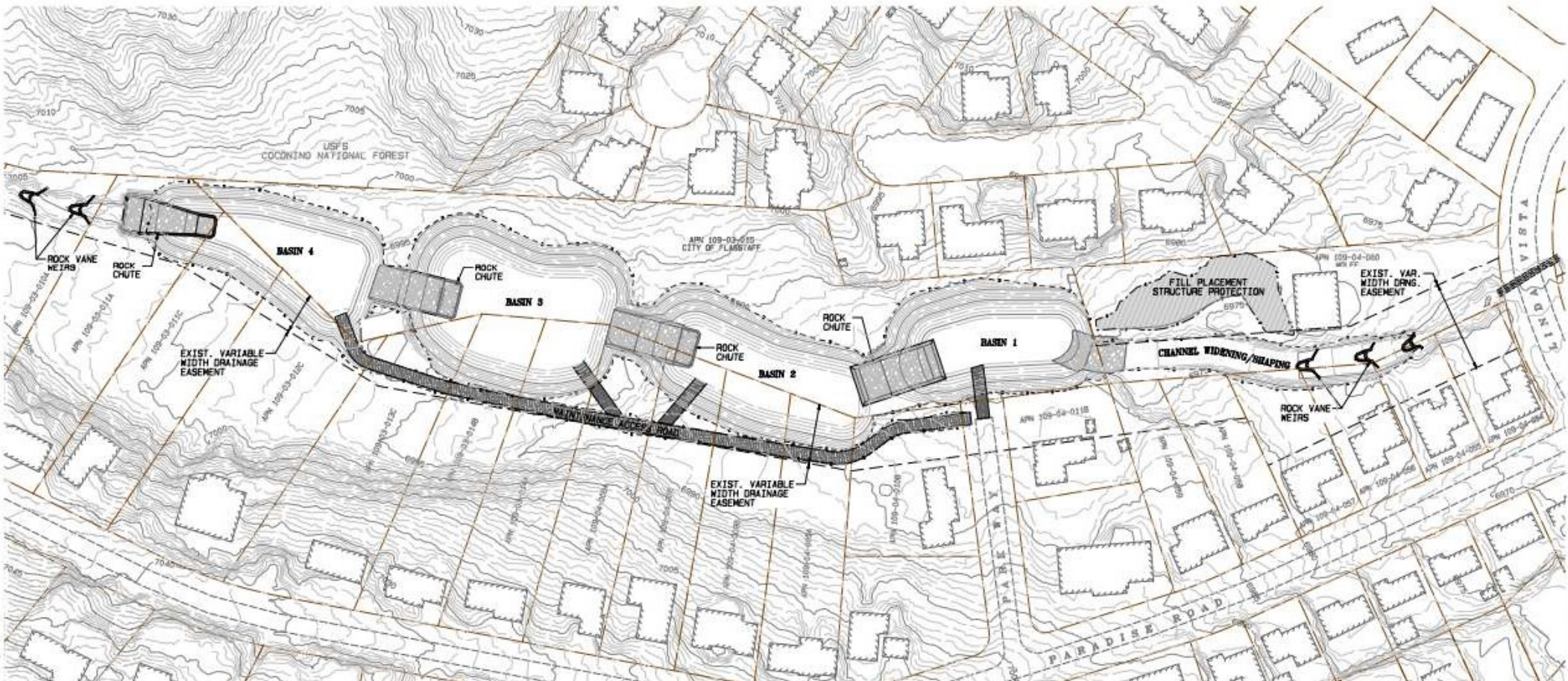
# Mitigation Update

## Natural Resource Conservation Service (NRCS)

- Grant application submitted by Flood Control District
- City and privately owned property
- Two land parcels
  - 40 acres above Mt. Elden Estates
  - 3.6 acres behind Paradise and Park Way
- Flood Control District Match of 25%
- Estimated cost between \$3.5 – \$4.0 million



## The image shows the official seal of the City of Flagstaff, Arizona, on the left. The seal is circular with a mountain, a river, and a flagpole. Text around the seal includes "CITY OF FLAGSTAFF", "ARIZONA", and "ESTABLISHED 1887". To the right is a graphic with the text "TEAM FLAGSTAFF" in a bold, sans-serif font, with a stylized sunburst or mountain range graphic below it. Below the graphic, the text "WE MAKE THE CITY BETTER" is written in a smaller, sans-serif font.







# Mitigation Update



## Paradise Channel Stabilization and Restoration





# Mitigation Plan Updates

## **Dortha Inlet & Channel**

- Reinforce to protect from level and velocity of flows
- Protect utilities
- Future maintenance consideration given post-wildfire debris
- Add enhancements to increase capacity flow
- Focused segment for feasibility analysis
- Estimated construction cost will be \$1.6 - \$2.0 million





# Mitigation Plan Updates

## Killip Detention Basin

- New elementary school construction
- IGA with FUSD
- Working with Core and SWI
- Underground stormwater infrastructure design for conveyance from basin to 3<sup>rd</sup> Avenue



# Mitigation Plan Updates

## **Flooding Feasibility Alternative Analysis**

- Contract with Peak Engineering
- Feasibility study of mitigation alternatives
- Development of ranking criteria
- Prepare an alternatives report
- Preliminary design of highest-ranking alternative
- Resumed weekly Museum Strategic Planning meeting



# Funding of Mitigation

**Sediment reduction is a critical prerequisite to the functioning of existing infrastructure and future expansion**

- Spruce Channel Master Plan Development
- Paradise Channel Improvement
- Park Way area detention/retention
- Linda Vista culvert improvement
- Cedar culvert improvement
- Dortha Inlet improvement
- Arroyo Seco Diversion
- Killip School Detention Basin
- Channel Improvements (various)

Estimated cost between  
\$12-18 million





# Communication with Residents

- Frequently Asked Questions
  - City website  
([https://www.flagstaff.az.gov/DocumentCenter/View/70842/11\\_17\\_21\\_Museum-Flood-QA-Document](https://www.flagstaff.az.gov/DocumentCenter/View/70842/11_17_21_Museum-Flood-QA-Document))
  - Flood Control District website  
([https://coconino.az.gov/DocumentCenter/View/29365/Museum-Flood-Area-FAQ\\_11102021?bidId=](https://coconino.az.gov/DocumentCenter/View/29365/Museum-Flood-Area-FAQ_11102021?bidId=))
- Request Tracker to log concerns
  - Supplements Call Center
  - Addresses request for web-based resource
- Council Work Sessions for updates
- Public Relations consultant services

# Council Discussion

