

## **WORK SESSION AGENDA**

**CITY COUNCIL WORK SESSION  
TUESDAY  
APRIL 26, 2022**

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

**All City Council Meetings are live streamed on the city's website  
(<https://www.flagstaff.az.gov/1461/Streaming-City-Council-Meetings>)**

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

**Verbal public comments may be given through a virtual public comment platform or in-person**

**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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#### **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 through other technological means.*

MAYOR DEASY  
VICE MAYOR SWEET  
COUNCILMEMBER ASLAN  
COUNCILMEMBER MCCARTHY

COUNCILMEMBER SALAS  
COUNCILMEMBER SHIMONI

#### **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. Review of Draft Agenda for the May 3, 2022 City Council Meeting**

*Citizens wishing to speak on agenda items not specifically called out by the City Council may submit a speaker card for their items of interest to the recording clerk.*

### **6. City Manager Report**

Information Only

### **7. Arizona Department of Transportation (ADOT) North Central District seasonal project update.**

This item is to share information and discussion.

### **8. Draft Rio de Flag Watershed Management Plan Work Session**

The Friends of the Rio are seeking input from the City Council on how the city would like to proceed with:

- Participation in the Watershed Alliance for the Rio de Flag (WARF)
- Execution of a Master Participating Agreement for the WARF patterned on other existing City agreements
- Cooperation on Projects of Interest to the City with appropriate levels of approval

### **9. Flood Projects Updates**

For information only

### **10. Discuss potential bond projects for the November 2022 election**

Direction from City Council on any bond projects that need to be removed from further consideration.

**11. Public Participation**

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

**13. 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 \_\_\_\_\_, 2022.

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

## **CITY OF FLAGSTAFF STAFF SUMMARY REPORT**

**To:** The Honorable Mayor and Council  
**From:** Stacy Saltzburg, City Clerk  
**Date:** 04/22/2022  
**Meeting Date:** 04/26/2022



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### **TITLE:**

**City Manager Report**

### **DESIRED OUTCOME:**

Information Only

### **EXECUTIVE SUMMARY:**

These reports will be included in the City Council packet for regularly scheduled Council meetings, excluding Work Session meetings. The reports are intended to be informational, covering miscellaneous events and topics involving the City organization.

### **INFORMATION:**

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**Attachments:**    [City Manager Report](#)  
                         [April Work Anniversaries](#)  
                         [Water Services Monthly Report](#)  
                         [Economic Vitality Monthly Report](#)  
                         [Sustainability Monthly Report](#)



# City Manager's Report

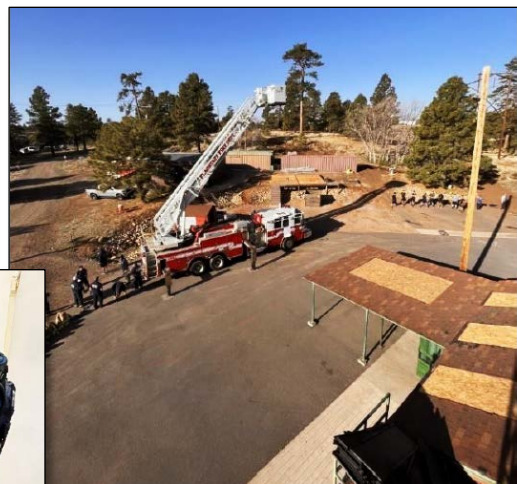
April 25, 2022

Council and Colleagues, greetings. These reports will be included in the City Council packet for regularly scheduled Council meetings. The reports are intended to be informational, covering miscellaneous events and topics involving the City organization.

We will be covering work anniversaries at this week's Council Work Session. Also, appended to this report is the monthly update from Economic Vitality, Sustainability, and Water Services.

## Fire Department

- Fire crews responded to a tenth of an acre wildfire off Woody Mountain Road. Crews arrived and were able to quickly get a line around the fire and use tank water to contain it. This fire was human caused and under investigation with FPD. There was another wildfire behind Little American reaching a fourth of an acre.
- The Fire Department conducted two days of GFR hiring practical assessments. Crews completed the wildland refresher training at Highlands Fire Department. They also trained on their Ballistic Protective Equipment that will be utilized in ASHER incidents



- FFD held a public education session with the Sechrist Elementary School AM & PM preschool classes at Station 5.



- Also on the topic of our Fire Department, it is notable that USFS Chief Randy Moore announced that 4FRI is receiving an additional \$12M in FY22 as part of the USDA Wildfire Crisis Strategy. Press see link: <https://www.fs.usda.gov/news/releases/biden-administration-announces-bipartisan-infrastructure-law-wildfire-mitigation>
- Finally, on the very current topic of the Tunnel Fire, there have been public debriefings, including the community meeting on Saturday, April 23<sup>rd</sup>. The City is currently working on a public statement related to the City's role in this fire, and this should be posted today or tomorrow. The Community meeting was well attended and very informative. There will be much more on this event as time progresses.



### **Human Resources & Risk Management**

- Staff members have been working with the Leadership Team to talk through potential changes to compensation policies. We are grateful for Council's consideration of the compensation items discussed in the Budget Retreat, and similarly we appreciate Council's action toward enabling staff to address the remote working policy adjustments.
- Risk Management Director, Maria Robinson, has been working hard to remind City staff members about the danger of distracted driving. Thank you Maria!

## Police Department

- The Police Department celebrated the *National Public Safety Telecommunicators Week* from April 10<sup>th</sup> through 16<sup>th</sup>. Our dispatchers have the superpower of being the informational hub and nucleus of our public safety family and the City. They are the calm in chaos, the trusted lifeline between our citizens and field personnel; they are efficient, brilliant and creative. They have the ability to power through a pandemic, a severe staffing shortage, and stepped up to train several new employees. They have proven that they are resilient, dedicated, and passionate about what they do. Thank you to the City's communication team!
- Lt. Hernandez served as a judge for the Boys and Girls Club *Youth of the Year* contest. Thank you Lt. Hernandez for your service here. Good stuff.
- A call was dispatched for a suicidal person. Upon arrival at the site, Officer Dustin Eberhardt, a veteran officer who grew up in Flagstaff, recognized the individual from prior law enforcement contacts. He immediately established a rapport with him by building on past positive contacts, exhibiting extreme compassion, patience, and calmness. After approximately 25 minutes, the individual agreed to allow Officer Eberhardt to approach him safely and prepare him for transport to the Guidance Center.



Officer Eberhardt's ability to communicate in a manner that showed extreme care for human life was paramount in this situation. He is commended for his actions on this call. Officer Eberhardt, thank you for saving a life!

- Lt. Seay and Lt. Turley conducted a safety meeting in coordination with the Downtown Business Alliance to help our liquor establishments prevent violence.
- Also in the subject of close calls, Officers Jackson Potts and Brant Chapin both responded to the call of a potential overdose. The reporting party provided details and an address of the individual who was suspected to be experiencing an overdose. Upon arrival at the subject residence, both officers knocked and loudly announced their presence several times. Upon no response and knowing the urgency of the situation, they forced entry into the residence and found the individual who was unresponsive and unconscious. They called for immediate medical assistance and administered two separate doses of Naloxone to reverse the overdose. Upon administering the two doses, the female became conscious and was further treated by medical staff that had then arrived on scene.

The individual was transported to the Flagstaff Medical Center for further treatment and was expected to make a full recovery. Life is the highest value of the Flagstaff Police Department, and the mission of the Flagstaff Police Department is, first, to protect and preserve life. Officers Jackson Potts and Brant Chapin both proved their alignment with the Flagstaff Police Department's mission and values by saving a life that night. They are hereby award the lifesaving medal. Officer Potts picture on the left and Officer Chapin on the right. Officers Potts and Chapin, well done! Our Community is grateful for your life-saving heroics.



## PROSE

- Double high-fives to the staff working the amazing maintenance week at the Aquaplex this week as the pool, fitness, guest services and other areas are all being touched to prepare for a re-opening on Monday, April 11<sup>th</sup>!
- Have you ever heard of Afterschool Alliance? This is program PROSE is doing is being highlighted across the country. Parents are grateful for efforts in addressing mental and physical health, bullying, providing information on community resources, and offering a safe space for their children to play, socialize and have fun!





- Congratulations to Dan Carrick who was recently promoted within the PROSE Division to Jay Lively Activity Center Supervisor. Dan has a Masters degree in Sports Management and has been with the City for over eight years, most recently as Recreation Coordinator II in the Athletics Program. Dan is also very involved in local youth and adult hockey leagues as a coach and organizes leagues and tournaments for the City. We are very appreciative of Dan's experience and talents and are excited to see the innovations and new programming he plans to work on in his new role at the ice rink. Congratulations Dan!



- Also, congratulations also to Ryan Reynolds (no relation to the actor, so he tells us) who was recently promoted within the PROSE Division to Aquaplex Supervisor. Ryan has been with the City for five years and also has Recreation experience with the Cities of Tempe and Avondale. Ryan has honed his facilities management experience in those cities and at the Jay Lively Ice Arena, and is excited to put those skills to work at the Aquaplex. We are excited to see Ryan's growth into this management role, especially at the Aquaplex which is certainly a unique facility and has a lot of opportunity as we all emerge from the pandemic. Way to go, Ryan! Well done!



### **Public Works**

- Streets has been focusing on pothole repair, dirt road maintenance, sign repair and replacement, streetlight repair, and sweeper clean up.
- Facilities has been busy working on doors at the Airport, performing building inspections, repairing the ADA button at Joe C Montoya, emergency light repairs at Hal Jensen, repairing a roll up door at Fleet, and lighting and drinking fountain repairs at the Visitor's Center.

- A great shoutout of appreciation to Manny Rivera and Brian George with Facilities, Steve Camp, and Krista Snow with Water Services, and our Landfill Engineers Matt Morales and Ken Fergason for working through and solving a potable water issue at the Landfill.
- And here's a sign of spring. The Concrete crew started on curb repair and replacement this week.



- The Pulliam Airport's new long-term parking lot anticipated completion date is April 29<sup>th</sup>. Woohoo! Just in time for the busy summer season, and thanks to all who were involved in this great project!
- Jonathon McClanahan started at a new Mechanic Assistant/Lubrication Technician – welcome to the team Jonathon!
- Fleet Services will be addressing worn and damaged vehicle decals and trim as equipment comes through the shop this spring.
- Solid Waste staff are preparing for NAU move-outs that begin April 28<sup>th</sup> and continue through May 6<sup>th</sup>. Let the fun begin!

### **Meetings**

- The Alliance meeting occurred on April 15<sup>th</sup>, and thanks to FUSD for hosting. We had a great presentation from CCC regarding the May ballot measure (Prop 438) and heard from NAU re pending tuition programs. It was a well-attended meeting and thanks to those from the City who attended and spoke.



- Also on the 15<sup>th</sup>, a group of us met with Congressman O'Halleran at the Pulliam Airport to discuss our support of the airport funding and needed building space to accommodate the heavy snow equipment, as seen in the below images. It was a good meeting.



That's it Council ... it's a wrap. Enjoy the Division updates as appended.





# Five Year Anniversaries



Ryan Sherf  
Police Officer

Alaxandra Pucciarelli  
Current Planning Manager



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# Five Year Anniversaries



Doug Slover  
Water Services Project Manager



# Ten Year Anniversaries



Lee Williams  
Water Services Supervisor



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# Fifteen Year Anniversaries



Dave McIntire  
Community Investment Director

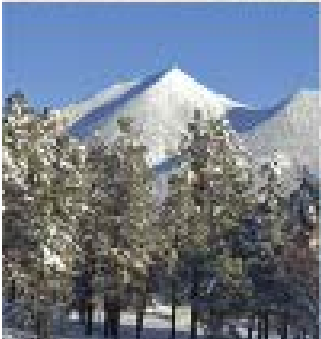
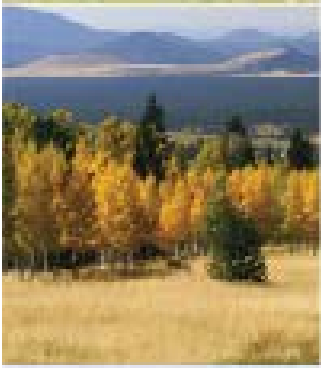
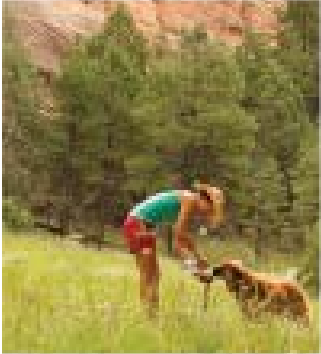


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# Twenty Year Anniversaries

Tracey French  
Housing Manager - Finance



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# 25 Years Plus!!!

**Pat Staskey** began his 30-year career as a Firefighter in April 1992. He was promoted to Engineer in 1995, Captain in 1997, Battalion Chief in 1999, Fire Marshall in 2015 and Deputy Fire Chief in 2018.

He earned a masters degree from Oklahoma State, received his Chief Fire Officer certification, and is an Arizona State Fire Instructor trainer.

Pat has been very instrumental in promotional testing for over 25 years. A dedicated, passionate and caring employee, peer and leader. He is known for his work ethic and his willingness to help outside of work. Always shows up to help unselfish and humble.

Chief Gaillard shared, "Pat has been a thoughtful leader for so long. We've enjoyed watching him transition into the Grandpa role. During the pandemic it was not uncommon for Pat to brief the Shift with a beautiful grandbaby in his arms. It was quite the site. Pat is a valued member of the Command Staff and a pleasure to work with on a daily basis, I'm going to miss him."



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# 25 Years Plus!!!

**Rick Tadder** has been with the City for 27 years. He began his career with the City in April 1995 as an Accountant. He was promoted to Accountant II in 1997, Customer Service Manager in 2006, Finance Director in 2009, and Management Services Division Director in 2015.

Rick has received numerous awards recognizing his performance in going above and beyond in exhibiting the City's values. He received his first quality service increase in 2002 and another one in 2014. He was recognized as a wonderful outstanding worker in 2006, twice in 2012, and 2016. He received a City Manager's Excellence Award in 2013 and 2014 and Leader of the Year in 2019.

"Rick's service to the City of Flagstaff has been invaluable. He is truly knowledgeable about our finances, revenues and much more. We are so fortunate to have him part of Team Flagstaff."



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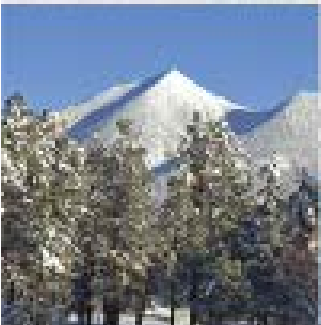
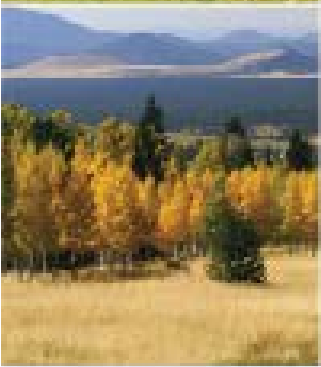


# 25 Years Plus!!!

When **Mike Brehm** started at the downtown Library, there was no East Flagstaff Community library. The internet was not commonly available yet and cell phones did not exist. At the time, the library had six stand-alone computers. Since then, Mike has been part of every technology advancement at the libraries. He's been part of adding new libraries to the District, renovating existing libraries, and expanding the library computer network to over 450 internet computers. Among his recent accomplishments are implementing Microsoft Office 365/Teams and coordinating the Integrated Library System migration. He supports the public computer labs as well as the staff computing environment. His overall success is based on his technology skills, but just as importantly on his people skills. While the computer profession has largely moved toward each person specializing in one area, Mike's broad experience makes him a generalist -- and a valuable asset for the Library IT Team.



The downtown Flagstaff library was the first public library in Arizona to offer internet access to the public (circa 1994). An early, local Internet Service Provider -- InfoMagic -- gave the Library 1 personal computer with a 14.4K modem. Mike was asked to make a presentation about this at the Arizona Library Association conference that year. Other public libraries soon followed. Such were Mike's early contributions to the library.



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# 25 Years Plus!!!

**Tyler Boswell** started back on 04/26/1995 with the City of Flagstaff as a Water Meter Reader.

He applied for and was hired into Water Distribution on 12/15/1997 as a Maintenance Worker I and promoted to a Maintenance Worker-Water Meter Specialist 11/02/2000.

Tyler has volunteered for many roles within the City. He has taken on the Contractor/Supervisor Asbestos Safety Coordinator, served many terms on E.A.C. throughout the years, served as a member of the City's Safety Committee, held his Backflow Prevention certification for years, all without additional pay 😊

He enjoys the outdoors, fly fishing, camping, hiking, hunting, etc.



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# 25 Years Plus!!!

**Mike Stress** joined the City as a temporary employee in 1992. In 1993, he officially joined as a Maintenance Worker in Streets. Mike was promoted in December 1997 to an Equipment Operator II and Equipment Operator III in June 2002. He became a Public Works Supervisor in February 2015.

Mike was recognized as a wonderful outstanding worker twice in 2008 for his contributions.

Scott Overton shared with us, “Mike has become a senior leader that the entire public works team looks up to for guidance and best practices. He brings a high level of quality to everything he does. He is dedicated, loyal, and a go to guy for emergency response.”



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# WATER SERVICES DIVISION



## WS Monthly Update March 2022

March was a busy month for Water Services with budget, capital planning, grant applications and presentations.

### Water Commission Agenda

- Update on Water Awareness Month – Tamara Lawless/Emily Melhorn
- Update on Wastewater Bond Presentation – Jim Huchel
- Proposed 2023 Capital Improvement Plan – Gary Miller
- Upcoming Rate Study and Policy Discussion – Erin Young

### Section Updates (alphabetically)

#### **Admin – Budget & Communications**

- Working on FY23 Budget, presentations, capital planning and finding new funding sources
- Recruitment is a critical issue right now. We're looking at hiring in under needed levels, then training our own.
- Communications' NAU public Health intern is spearheading a Poo in the Park campaign, in partnership with Parks, to develop stewardship attitudes.
- The Strategic Plan is updated and on the website through December 2021. Lisa Deem is preparing a presentation at AZ Water conference on the Strategic Plan and its use as a dialogue for investment.

*Poo in the Park class training*



#### **Engineering**

- Engineering has devoted considerable effort on working on Stormwater and Water Reclamation capital needs.

#### **Regulatory Compliance**

- ADEQ conducted sampling for PFAS/PFOS for the Rio and Foxglenn wells on March 30.
- Krista Snow passed her Grade 2 Water Distribution test

## ***Water – Wastewater – Reclaimed Water – Stormwater***

### **Administration Offices**

2323 N. Walgreens St., Suite 1  
Flagstaff, Arizona 86004

- We should have the annual water quality report completed by May.
- We are developing the MS4 program to meet the new permit which became effective in September 2021, with implementation due by September 2022
- ADEQ lab audits are coming up in April for Wildcat and Lake Mary labs.

### **SCADA Information Systems**

- Industrial Internet of Things (IIOT) – These are the devices that monitor flows and other data in the system. We have begun data collection -monitoring flows for a potential lift station to bring more flows to Rio- supporting the flow diversion project to address short-term capacity issues. We are monitoring every source into Rio and two other locations to potentially move flow to the Rio de Flag WRP.
- We continue to work on improvements to upgrade and modernize our Operational networks. This month, we worked on Controls Improvements to the wellfields and reclamation plants.
- Tim is working on revising job descriptions for the SCADA electrician position and new SCADA specialist.
- Information Systems is wrapping up updates to the GIS maps.
- We have created an *As-Built Review Group* with Distribution and Collections teams, to review the accuracy of infrastructure locations along distribution/collections systems.
- We are also working on detail mapping in the plants, to include not only valves, pumps and actuator, but also infrastructure such as air lines and data communication lines in GIS.

### **Stormwater**

- Spruce Wash
  - Dortha Inlet and channel project has started, with Christine Cameron as Project Manager
  - The Ponderosa Park interim inlet has begun, Chase McLeod is PM
  - Killip School Regional Detention Basins is nearing completion on the excavation phase; Adam Miele is PM
  - Weekly engineering meetings are fleshing out details in the feasibility Study and its probable costs.
  - FEMA grants are being applied for (many thanks to Lisa and Sharon Masek Lopez for helping out)
- Engineering
  - Doug continues to help with WS Engineering WISA reviews and general development review.
- Planning

- Sharon Masek Lopez is helping the Friends of the Rio wrap up their watershed management plan, with Sara Dechter working on this as well.
- Impervious surface updates are going through scoping with help from SCADA/IS (Thanks Tim and Corryn).
- Rate adjustment invitation to bid will go out this week (Thanks Erin for help).
- Stormwater continues to support the Division and the City on ongoing litigation/notice of claims.
- FEMA Cooperating Technical Partners grant is entering its last phase with the statistical analysis of rainfall-runoff being completed this month.
- Flood Response
  - Two sets of spot improvements are being worked on this month; one set is awarded to Kinney Construction and another to Tiffany Construction, with Chris Palmer as Project Manager.
  - The Stormwater Combo Truck operators are working on clearing the Rio de Flag channel behind Cheshire Park. They also worked on extending a 12" pipe on Appalachian and opened up a channel in Railroad Springs.
  - A new combo truck and mini-excavator have requisitions in procurement. This will go to Council as a consent item on April 19<sup>th</sup>. Funding is through AZ DFFM.

*12" stormwater pipe extended on Appalachian Way*



*Mogollon St. repair*



### **Wastewater Collections**

- We have a new hire - Ryan Townsend started March 21<sup>st</sup>
- Collections installed four, new 4" service taps.
- A repair on N. Mogollon Street was completed.
- They responded to three private service calls.
- We performed three walk-throughs for new construction permits.
- Regular preventive maintenance continues in the collections system.

### **Water Distribution**

- We have a crew working on upgrading/replacing wye strainers to the potable water feeds at the Rio De Flag and Wildcat WRPs. This upgrades the existing wye strainers at the backflow prevention assemblies, as they were not supportive of needed fire flows.
- Crews continue fire hydrant inspections, with roughly 1,000 remaining for inspection this fiscal year.
- Capital improvement projects and private development are keeping crews busy, assisting contractors working on our infrastructure, both routine and on an

emergency basis. This includes new meter set requests, wet taps, final construction walk-throughs and whatever else is needed.

- A huge thank you to Distribution crew members -Rick and Juan, and Information Systems Team members -Sophie and Corryn, for their concentrated efforts on updating and correcting our Atlas/GIS As-Builts and subsequent field verification. This is a very big deal for us!
- Patrick O'Connor continues to work with Community Development's I.D.S. Team to review and discuss future proposed development. Development Engineering meetings occur each Tuesday, with the larger I.D.S. Meetings scheduled every other Thursday.

### **Water Production**

- Staff cleaned up the County Fairgrounds (Fort Tuthill) culverts and ditches used for Pump Development and Aquifer Testing of Tuthill #2 well, returning the site to original condition as requested by the County ahead of events scheduled for May.
- Operations, Maintenance and SCADA staff collaborated on resolving new McAllister Well chorine analyzer issues. The analyzer is now fully functional.
- Upper Lake Mary has increased about 14% (from a low of 21% to current level of 35%) and increasing.
  - This week, Operations filled our Sedimentation Basin #1, which had been empty since last October due to low lake levels and minimal surface water production.
  - The full basin will be used to clean out Basin #2 as part of bi-annual cleaning in April, as it is anticipated both basins will be in use this summer.
  - Brian is revising Water Production Plan for 2022, incorporating newfound surface water available for production.
- We received five new DR300's (pocket colorimeters) used to calibrate chlorine analyzers in the field at any of our ten Entry Points to the Distribution System (EPDS), kept on hand in vehicles. This was ordered last October.
- We've been working on repairing, replacing and shelving standby (back-up) booster pumps for Foxglenn/Sinagua, McAllister & Tuthill wells, as lead times for repairs/replacements are running 24 weeks out.
- We received ADEQ Approval of Construction for Continental Well Upgrades Project.
- We are working with Gary, Mac McNamara, Procurement and Brown & Caldwell consulting engineers to resume Lake Mary Water Treatment Plant Sedimentation Basin Upgrades project.

### **Water Reclamation Plants**

- Carbon was replaced at the Rio de Flag WRP influent and primary odor control units. The new carbon was tested at Rio to produce a baseline. However, the Wildcat Odor control system has failed. We are working on replacement costs.
- The Rio de Flag facility hosted ADEQ testing on March 24 and 25<sup>th</sup>.
- We conducted tours of both water reclamation plants for the Bond Committee, with ongoing discussions, both internally and with the committee.
- The dredge has been placed back in the pond for season.
- Paul Adams (a core employee) announced his departure on April 25, to work down in Prescott Valley. Retention remains an issue.
- There are ongoing discussions about treatment capacity, and short-term management options.
- We submitted an NOI to ADEM, under the Hazardous Mitigation Grant Program 4524 (Covid) for backup Generators at the Rio de Flag WRP facility.
- We've been in Budget planning meetings for FY 22/23.
- We completed the Primary Effluent Pump Station 90% plan review.
- Jim Huchel was on two panel discussions at conferences with Rural Water Association and AZ Water.
- We re-instated weekly meetings after coming off the (staggered) COVID Schedule.
- Noresco, the Sustainability contractor, was at the plants, looking for efficiency projects.
- We attended a (virtual) WIFA presentation on how and what can be submitted for State Revolving Fund Loans.
- We had our first update on the Reclaim Modeling project.
- We tested Ozone equipment at the Rio Influent Pump Station. It worked a little too well, causing a minor upset at the plant.

## **Water Resources and Conservation**

### **Water Resources**

- Working to strategize funding opportunities through WIFA and Reclamation, for all Water Services projects – and specifically those that impact efficiency, reuse, water resources, drought mitigation efforts for water resources program
- Developed Scope of Work for a Rate Study Advisor for Water and Sewer
- Assisted with a Letter from City Council requesting technical assistance from Bureau of Reclamation on their Rural Water Supply program under the Bipartisan Infrastructure Law
- Held a Water Services Manager's Meeting to discuss next steps for a Reuse Master Plan.
- Worked with Water Resources Technician to install monitoring equipment in the ULM and LLM watershed.



- Water Resources Technician is about 50% into completion of a baseline hydrology data report to satisfy the NPSF Grant
- Preparing for a talk at AZ Water on Flagstaff's Non-Revenue Water program
- Spearheading AZ Water Professionals Appreciation week, April 11-17, with a City Council Proclamation on April 12, and an event at Museum Club on April 15 in collaboration with AZ Water Association and Arizona Hydrological Society.

### **Water Conservation**

- The Nonrevenue Water Audit draft feedback has been submitted to Cavanaugh, the consultant.
- Presented "Water-Wise Gardening" program to 49 participants at Coconino Master Gardeners Association on 3/10/22
- Created Social Media campaign for Fix a Leak Week, including participating in national Twitter Party on 3/14/22.
- We did six presentations with 109 students for World Water Day with Flagstaff Junior Academy on 3/22/22.
- Assisted with two Poo in the Park presentations, reaching 89 students.
- Conducted first "Rainwater Harvesting" program of the season on 3/27/22 with 21 participants and distributed 17 rain barrels.
- **Residential**
  - Working with local retailers to spread awareness about residential toilet rebate and provide more eligible in-house options for ultra-efficient toilets.
  - Offered free moisture meters in the Village at Elk Run HOA quarterly newsletter. Working on future collaboration to highlight all water conservation services for this community.
  - Tested a portion of Continental Townhome's property with low-water turf, as a part of Water Conservation's Research Grant.
  - Conducted 2 residential consultations; one had a substantial water leak. We provided information and resources to resolve the issue.
- **Commercial**
  - We continue to work with DoubleTree Hotel, replacing showerheads and aerators with low-flow options for all 173 rooms.
  - **School Retrofit**
    - Mountain School retrofit still in progress. Replaced most aerators and researching ultra-efficient toilet options for the bathrooms.
    - Conducted an initial retrofit consultation with Haven Montessori on 3/10/22. We replaced aerators and are researching ultra-efficient toilet options for the bathrooms.





# Economic Vitality Division

Enhancing Quality of Life 365 Days a Year

AIRPORT • COMMUNITY INVESTMENT

LIBRARY • TOURISM

## MARCH 2022



### AIRPORT

#### AIRPORT SHUTTLE PILOT PROGRAM:

In partnership with Mountain Line, we have a door-to-door shuttle service happening through the end of June that is grant funded. This pilot project will allow us (and Mountain Line) time to see how successful this type of service is and the overall need.

## \$2 Door-to-Door Airport Shuttle



**DOWNLOAD** the Mountain Line Go! app



**BOOK** a shared shuttle trip on Mountain Line Go!



**RIDE** anywhere in Flagstaff city limits to/from Flagstaff Pulliam Airport.



**FLY... EASY!**



mountainline.az.gov/goairport

#### ARIZONA AIRPORTS ASSOCIATION SPRING CONFERENCE – FLAGSTAFF CHOSEN: A HUGE THANK YOU TO BARNEY HELMICK AND JESSICA YOUNG for their work to secure this new business for Flagstaff!

Through the encouragement of the Flagstaff Airport Team the Arizona Airports Association announced that they will be holding the 2023 "Dutch Berthoff Annual Spring Conference in Flagstaff. This conference typically brings over 200 aviation management members to the annual conference staying for 4 days.

**AIRCRAFT STORAGE:** Phase I of the maintenance on the roofs of the Aircraft Storage unit was completed this month. This also include work on the large bi-fold doors on the storage hangars.

#### AIRCRAFT RESCUE FIRE FIGHTING (ARFF)/OPS:

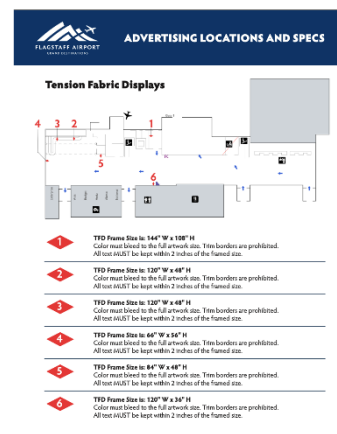
- Multiple staff members went to Dallas this month to get their annual Aircraft Rescue Fire Fighter (ARFF) annual recertification this month. There are limited locations in which to take what they

call a live burn training. Dallas has a state of the air facility where classroom and live ARFF training where many airport ARFF teams train.

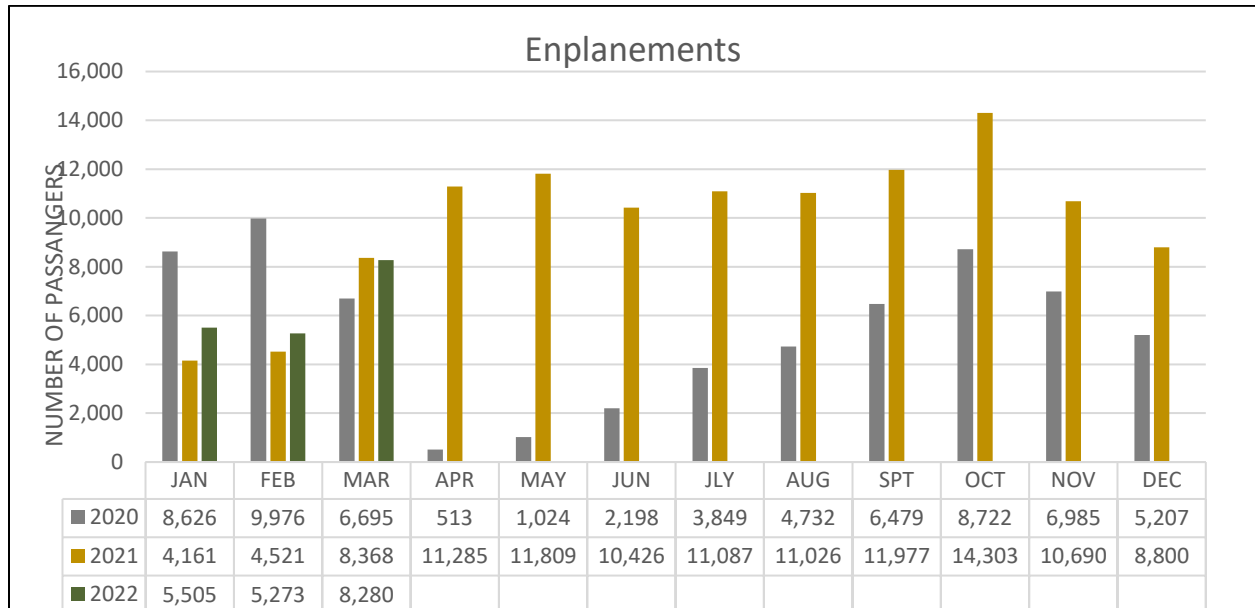
- **ARFF crews gave kindergarteners from De Miguel Elementary station tours** this past month. Crews showed the kids and their teachers the specialized equipment and provided a demonstration with the ARFF truck! The tours were held on two separate days to accommodate over 80 kids! **Special thanks to aircraft rescue firefighters: Greg Jay, Matt Beckham, Chris Magnan, Skyler Lofgren, and Joel Barnett for facilitating the tour**, answers their questions, and demonstrating the equipment!



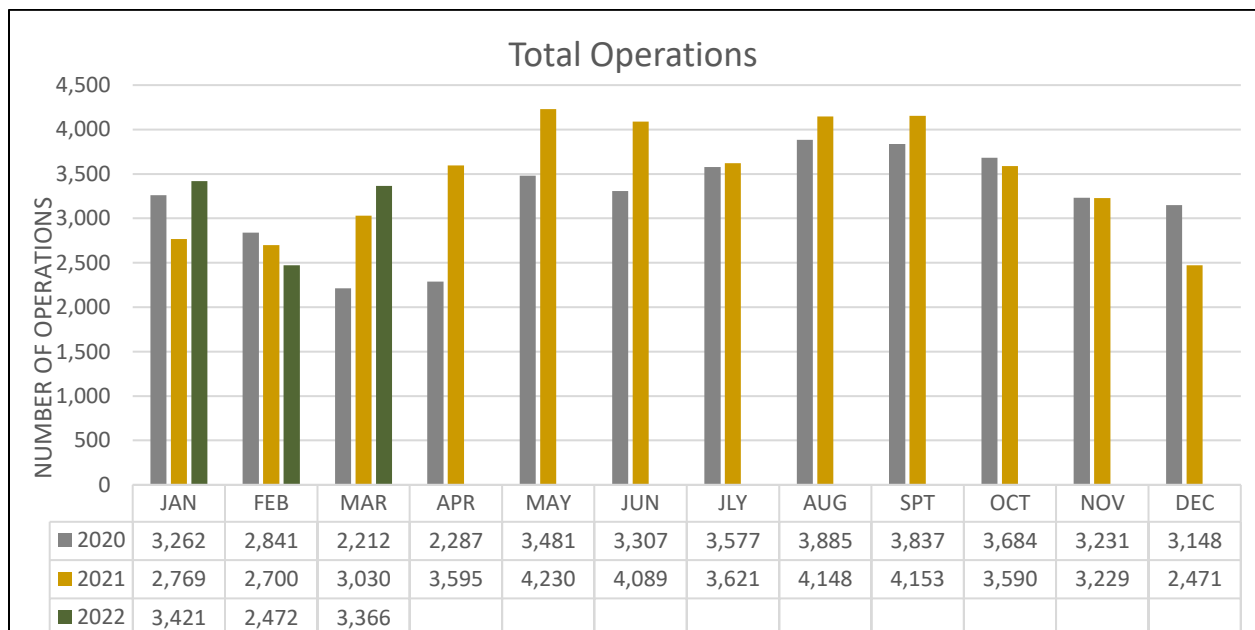
**AIRPORT MARKETING CONTINUES & OPPORTUNITIES TO ADVERTISE ARE OPEN:** We continue to market to our target audiences to **FLY FLAGSTAFF FIRST**. We also took all advertising in the terminal in-house and have been signing contracts with our businesses. Please reach out to [hhansen@flagstaffaz.gov](mailto:hhansen@flagstaffaz.gov) if you are interested in advertising at our airport!!! With over 110,000 enplanements per year...you will have major eyes on impression!



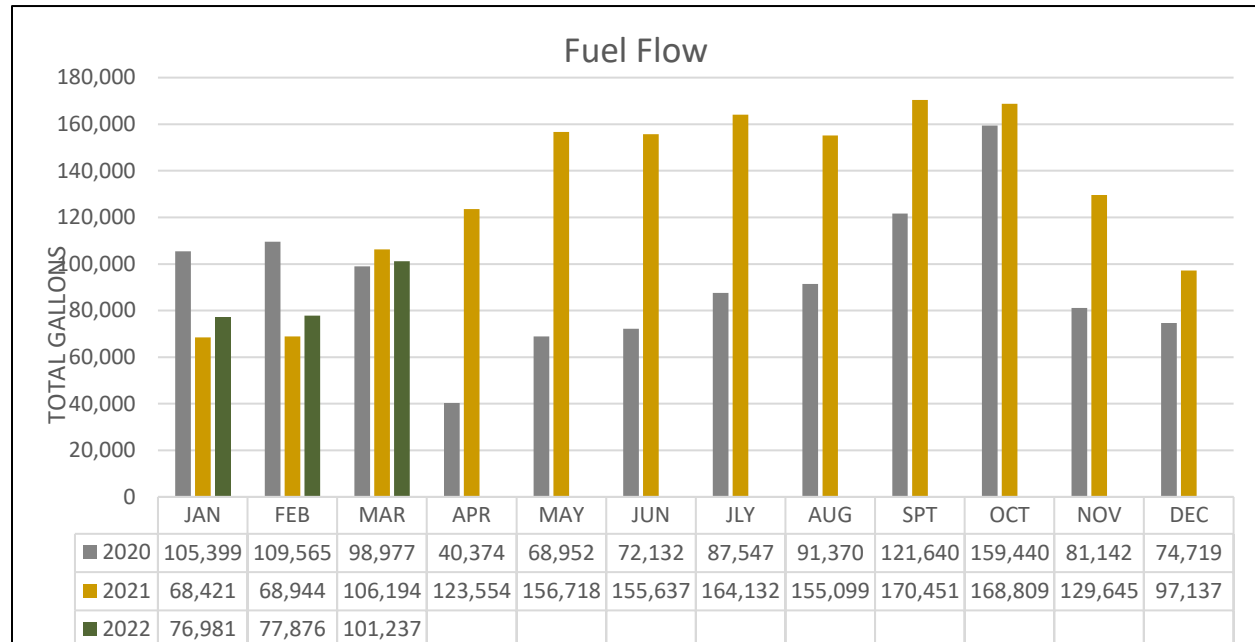
**ENPLANEMENTS:** Enplanements slightly down compared to 2021 due to now events. Overall enplanements at 8,280 for March.



**Total Operations: At 3,366, increase over 2021 numbers.**



**FUEL FLOW:** Numbers were still strong, but with flight changes and cancellations due to snow, they were slightly down from 2021.



CHOOSE  
FLAGSTAFF

## COMMUNITY INVESTMENT

### BEAUTIFICATION AND ARTS & SCIENCE:

#### COMPLETED PROJECT

**'Two Spot' Locomotive Interpretive Signage Installed:** Our program recently replaced damaged signage for this locomotive which is located next to the Visitor Center. We kept the look and content of the original sign. This old locomotive once hauled huge tree trunks from the forest to the mills.



## PROJECT UPDATES

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- **Airport Art - *Coconino Scroll*:** Final proofs were approved for the bronze medallion fabricators and notice to proceed given. A selection panel reviewed and selected the metal/glass cutting vendor for the art fence fabrication. Initiated procurement for fence fabricator and installer for the final phase of the project. The survey for fence measurements was completed.
- **Downtown Connection Center** – The artist team presented art glass and sculpture concepts for feedback to Mountain Line’s Southside Stakeholders group on March 10.
- **Flowers:** Ordered materials for the growing season; finalized a Request for Proposals for the fabrication of 2 planters for Fourth Street and Route 66.
- **Historic Southside Community Garden** call closed on March 4, with 3 applicants.
- **Indigenous Representation at Sawmill County Park** – City and County Staff created an announcement to solicit volunteers for a project working group made up from members of relevant City and County Commissions/Councils; and initiated the required license agreement for the City to use the County Park.
- **Library Entry** – Artist submitted a package for potential expansion to glass door entry design, and staff initiated a contract amendment for this additional design work. The City of Flagstaff team met on outreach plan for construction phase.
- **Lone Tree Overpass Art/Aesthetic Elements:** Four public artists were interviewed by City consultant and staff team, and the selection panel recommended a public artist for the project. The Community Forum survey to help inform the artistic and aesthetic elements closed with **148 responses**. Focus group invitations were sent out to community members.
- **Route 66 & Fanning Landscaping:** Met with the contractor and water services to provide input to final design for this project. The project includes climate-appropriate plantings, boulders, and sections of FUTS fencing with several Route 66 metal shields to tie-in to existing landscaping and nearby features.
- **Thorpe Park Annex** – Staff attended a community informational meeting.
- **Tree Wells:** Walkthrough to look at treatment examples downtown and discuss options forward with Parks, Economic Development, the Downtown Business Alliance, and Streets.

## PROGRAMS & OUTREACH

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- **AmeriCorps VISTA 6-month Check-in:** Met with our host site out of NAU for the 6-month service check-in.
- **Art Festival Planning:** Met with Creative Flagstaff’s festival steering committee several times to discuss options for branding the new Flagstaff Arts Festival, which will begin in 2023 o4 2024.
- **Beautification in Action Grants Received:**
  - Staff received **five** community applications for our spring March 15 deadline. Applications include bus murals for the ‘Community Action Team’ bus (CAT focuses on assisting people experiencing homelessness), an art wrap in the Heritage Square alley near the creperie, a mural on the Murdoch Center, a memorial mural at the Sheep Crossing Trail bike underpass, and the revamping of a small garden on Birch Avenue downtown.
  - Presentations from applicants will be at the April 11 BPAC meeting.
- **Commission Approved Capital Budgets for FY23:** BPAC approved to recommend the Art & Sciences and Beautification capital budget move forward to Council.
- **Creative Flagstaff’s Grantmaking Committee:** Attended a committee meeting to determine the path forward with applicant’s that had to change their scope of work, considered some of the



logistics of the \$150,000 in ARPA funding to support the art, science, and culture nonprofit sector.

- **Foundation Directory Online:** Staff were trained in this resource by library staff to assist Creative Flagstaff's grant research efforts.
- **Information-Sharing with Grand Junction, CO:** An arts organization in Grand Junction reached out about our programs as a model from a similarly sized city; they are hoping to create a position and program for arts and culture through their City Council. Staff compiled information for them.
- **Potential Indigenous Art Market:** Met with the Visitor Center and partners to explore what is possible in the historic core for this summer and beyond.
- **Public Art Map:** Added notes to current map reflecting discoveries from "ground truthing" of art pieces at NAU and other sites. Timeline of the full map update will be determined soon.
- **Outreach:** Attended a Sunnyside Neighborhood Association meeting to understand topics of interest to that group and how/where meetings are occurring. Met with a representative from Culture Connections, a new art and culture nonprofit, and met with a community member pursuing a memorial project for a bicycle underpass. Contacted the Community Assistance Teams of Flagstaff with information on the Beautification in Action grants to help pay artists working on painting the outside of their outreach bus.
- **Southside Community Association Presentations: Historic Southside Community Garden and Downtown Connection Center:** Staff attended this month's meeting to present the artist applications for the Historic Southside Community Garden. Staff also presented the Downtown Connection Center art glass and sculpture concepts for feedback.
- **Viola Awards Selection Panel:** Selected winner with other panelists for the Excellence in Storytelling in this year's annual Viola Awards.

HIGHLIGHTED ACTIVITY BY A NONPROFIT SUPPORTED BY BBB  
TAX FUNDS

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Tynkertopia presented **FOUNDATIONS OF DANCE!** In this [class](#), students will learn the basics of vocabulary, position, posture, musicality, and artistic expression that form the building blocks of virtually every type of dance from Ballet to Hip-Hop.






## PARKFLAG:

### ParkFlag Operations

**OPERATIONS INCREASED:** March 1<sup>st</sup> marked the one-year anniversary of the reimplementation of ParkFlag's paid parking program. Due to the impacts of COVID-19 the program was suspended for

almost an entire year in support of the downtown businesses. We are currently operating at approximately 20% above our revenues this time last year.

#### KIOSK FIXES:

- The construction on Phoenix Ave. was completed during the month of March. The kiosk that was removed from that location was repaired and reinstalled.
- 
- 
- 
- This was accomplished with help from many hands, **including ParkFlag team members, Erica Day and Creag Znetko, and IT team members** who were at the right place at the right time and were able to assist with the heavy lifting required for re-installation.
  - Staff members continue to receive and correct error codes on certain kiosks within the district. These notification codes require minimal maintenance to be performed at each kiosk once received. We are in constant communication with Flowbird, our kiosk vendor, and are currently waiting on parts to make repairs that will hopefully resolve the issue.

#### ParkFlag Recruitment Process:

ParkFlag conducted successful interviews in March, and now working through the offer process. We have one candidate starting by April 18<sup>th</sup>.

#### ParkFlag Community Involvement:

ParkFlag continued to strengthen community relationships by attending the Flagstaff Downtown Business Alliance's monthly Stakeholder Meeting. This meeting was the first in-person committee meeting since 2020. ParkFlag was able to present information on the new available parking lots, employees permit, and how to be a VIP commuter in partnership with Mountain Line.

## BUSINESS ATTRACTION:

#### Attraction Efforts:

- *Pipe Trades Association* – Our Economic Development Team and ECoNA continue to assist the Pipes Trade Association as they look for a permanent home in Flagstaff. They have narrowed their search to one property and will be looking to secure this site in the coming weeks. They have currently scheduled a pre-application meeting to assess any potential challenges with this parcel. We will continue to assist this group as they begin to make a new home in Flagstaff.
- *Two Men and A Truck* – Is expanding their moving business to Northern Arizona. Two Men has over 350 locations worldwide and will now help provide this much needed service to NAU

students and residents that are moving to and from our town. Two Men will open at the beginning of April, and we are very excited to welcome them to our community. [TWO MEN AND A TRUCK | The Movers Who Care](#)

- *Broadband & Fiber* – Economic Development and Information Technology staff have been meeting with several broadband provider companies over the last several months. Flagstaff has been on the radar for many of these companies and the interest level has seen an increase in the last several weeks. Fiber is an absolute need to grow our economy and quality of life in Flagstaff and we hope that these conversations will lead to a high gigabit lifestyle in the not-too-distant future.

#### **Airport 31.45 Acre Parcel:**

- The Airport 31.45-acre master development process is continuing to progress. Staff has been meeting with Genterra regularly for the past several months, negotiating a ground lease agreement. Staff received additional direction from Council in December to finalize the last few negotiation terms that are still pending. Staff has selected a business that will conduct a third-party review of this agreement, which will be the last formal step in this process before bringing the ground lease to Council.

#### **Conferences, Trainings & Professional Development:**

- The Arizona Association for Economic Development is hosting their spring conference in Tucson. The dates are set for April 20<sup>th</sup> – 22<sup>nd</sup> and staff will be attending.

#### **Community Collaboration:**

- The Economic Collaborative of Northern Arizona (ECoNA) held their Advisory Committee Meeting this month which was well attended by stakeholders and City staff. Presentations were provided by Coconino County, Coconino Community College, the Arizona Commerce Authority (ACA) and Arizona Snowbowl.

#### **Other Attraction Highlights:**

- The Flagstaff Mall continues to make renovations to their site with more improvements planned for the near future. Bowlski, a new bowling alley and restaurant is now expected to open by the end of April. Additionally, Barnes & Noble has found a new home at the Flagstaff Mall. We are very excited to keep their business here in town!
- Staff was interviewed by a PHX radio network this month and provided information on the Sustainable Automotive Sales Tax Rebate program. To date we have received 22 successful rebate applications and have awarded over \$10,000 to purchasers of sustainable vehicles. To learn more about this program please visit: [Sustainable Automotive REBATE PROGRAM - Choose Flagstaff the City of Innovation](#)
- Whataburger – Is currently under plan review and making their way through the IDS process. They will be locating at the former Giant Gas





Station that is adjacent to Safeway on the west side of town. We are excited to welcome them to our community! Stay tuned for a grand opening.

## BUSINESS RETENTION & EXPANSION:

### MARKETING

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**FLAGSTAFF BUSINESS NEWS:** Community Investment staff delivered content to the Flagstaff Business News to celebrate Economic Development Week 2022.



**ARIZONA DAILY SUN:** Community Staff also contributed the State of Flagstaff Economic Development Update 2022 to the Arizona Daily Sun.



### PROJECT UPDATES

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**IRONWOOD FIELD DAY RUCK:** The innovative workforce solution delivered by Ironwood Forestry has been captured by Larry Hendricks who is creating what hopes to be the first installment of a library of community workforce development wins. The ARIZONA@WORK Coconino County Workforce Development Board may create a library for other community Innovative Workforce Solutions from other sectors in the region to celebrate unique successes.



**LONE TREE OVERPASS PROJECT:** The project is impacted by the Rio de Flag project which was the subject of a recent meeting between the City of Flagstaff, the Army Corps of Engineers, the Burlington Northern Santa Fe (BNSF) Railroad, and Senator Kelly's Office. One big takeaway from the meeting is the creation of a master coordinating calendar.

**MICROELECTRONICS MANUFACTURING:** The development team bringing trusted microelectronics facilities to Arizona continues to explore locations in and around Flagstaff. Staff connected the team to an area landowner and developer to assist with their identification of property for the facilities.



## LIBRARY | CITY & COUNTY

### MARCH LIBRARY STATS:

		22-Mar	21-Mar	Difference
Circulation	Downtown	20,877	13,030	60.2%
	East Flagstaff	9,089	4,569	98.9%
	<b>TOTAL</b>	<b>29,966</b>	<b>17,599</b>	<b>70.3%</b>
Value of Loaned Materials	Downtown	\$385,354.12	\$199,098.81	93.6%
	East Flagstaff	\$166,263.88	\$68,329.87	143.3%
	<b>TOTAL</b>	<b>\$551,618.00</b>	<b>\$267,428.68</b>	<b>106.3%</b>
In-House Use	Downtown	20,230	15,937	26.9%
	East Flagstaff	6,606	0	660500.0%
	<b>TOTAL</b>	<b>26,836</b>	<b>15,938</b>	<b>68.4%</b>
Door Count	Downtown	11,839	0	1183800.0%
	East Flagstaff	6,438	0	643700.0%
	<b>TOTAL</b>	<b>18,277</b>	<b>0</b>	<b>1827600.0%</b>
Wi-Fi Use	Downtown	1,216	565	115.2%
	East Flagstaff	949	575	65.0%
	<b>TOTAL</b>	<b>2,165</b>	<b>1,140</b>	<b>89.9%</b>
Public Computer Use	Downtown	1,389	0	138800.0%
	East Flagstaff	645	0	64400.0%
	<b>TOTAL</b>	<b>2,034</b>	<b>0</b>	<b>203300.0%</b>
Number of Programs	Downtown	20	157	-87.3%
	East Flagstaff	7	14	-50.0%
	<b>TOTAL</b>	<b>27</b>	<b>171</b>	<b>-84.2%</b>
Program Attendance	Downtown	331	7,088	-95.3%
	East Flagstaff	87	84	3.6%
	<b>TOTAL</b>	<b>418</b>	<b>7,172</b>	<b>-94.2%</b>
Reference Help	Downtown	2,443	972	147100.0%
	East Flagstaff	1,207	502	70500%
	<b>TOTAL</b>	<b>3,650</b>	<b>1,474</b>	<b>217600%</b>

**EFCL STAFF REFERRALS:** Felicia got an email recently from one of our partner organizations, One-n-10. A client of theirs was asking for resources for their trans niece, including housing and job assistance. Felicia was able to help with their request and recommend community connections, to help them feel less alone.

**EFCL REOPENING PREP:** in preparation for reopening on April 11, we have begun to empty the community room and restore the building back to its pre-pandemic state. Caregivers and little ones are especially pleased that we once again have a room full of children's toys!

**EFCL STAFFING:** Dee Hoagland, a longtime employee pre-pandemic, has returned to the EFCL team effective Mar 29 as a Clerk. Welcome back, Dee!

**EFCL STAFF TRAINING:** On Mar 16, 10 EFCL staff engaged in a conflict intervention simulation training developed and facilitated by our own Sarah Andrews. Sarah felt she needed more practice in de-escalating certain situations so decided to create role-playing scenarios that we could all use to practice. It was of great benefit to everyone who attended!

**EFCL DATA WOES:** On Sun, Mar 27, our ILS Koha had an issue that wiped out all our data from Sat Mar 26. Since EFCL was open that day, this meant that staff has had to work hard manually re-entering checkouts, holds placed, check-ins, renewals, and library cards created throughout the following week.

**EFCL DONATED BOOKS:** We have added another organization to our list of places we give discarded books to, if we can't sell them through Baker & Taylor – Golden Rule Pantry! They picked up 2 boxes of books the last week of March.

**PUBLIC MEETING ROOMS:** The Downtown and East Flagstaff Community Libraries will begin offering meeting room bookings on April 11<sup>th</sup>. Reservations will open soon.

**BRILLE ITEMS:** Thanks to our Friends of the Library, Downtown was able to purchase 34 braille titles. These books are largely Juvenile and YA and contain popular titles like *How to Train your Dragon* and *I Am Malala*.

- Did you know the library also has a Perkins Brallier? A machine for writing braille. Staff is using this machine to create the labels for our new braille titles, but it is also available for public use within the library.



## TOURISM & VISITOR SERVICES

### TOURISM METRICS:

In March, Flagstaff continued to shine as a destination that folks want to explore, and this demand has kept the tourism economy strong in our amazing mountain town. The accommodations industry in Flagstaff took a strong stance on rate again for the month of March, giving the Smith Travel Report record numbers for average daily rate. But this did come at a cost with a lowered occupancy by 1.3% to March 2021.

Following is a snapshot of the metrics for March 2022.

March	2020	2021	2022	Diff
OCC	46.3%	77.8%	76.8%	-1.3%
ADR	\$82.41	\$113.96	\$130.08	14.1%
RevPAR	\$31.51	\$88.69	\$99.91	12.6%

### MARKETING & MEDIA RELATIONS: (24 print articles and 420 digital articles)

March media coverage focused on the Flagstaff food scene and spring activities:

- Broadcast featured Arizona Family Channel 3 and CBS5 broadcast programming on the “Flavors of Flagstaff” covering Atria, Brix, and the Flagstaff Brewery Trail. Discover Flagstaff assisted with the story development and interviewed for the segment
- The Travel Channel continues to broadcast “Most Terrifying Places” featuring Hotel Monte Vista and in April the season finale of the “Dead Files” will feature Flagstaff’s haunted history
- March print articles recognized industry stakeholders with Atria’s Chef Rochelle named as a James Beard semi-finalist
- 20 under 40 recognized Molly Baker at the Orpheum and Jonathon Stone at Creative Flagstaff
- Dark Sky Brewing Company was announced as a finalist for the 2022 Viola Philanthropist Award
- Arizona Forward Environmental Excellence Awards celebrated sustainability with Awards of Distinction for the Mother Road Brewery Conserve and Protect Golden Ale and the Flagstaff Carbon Neutrality Plan.
- Digital supported outdoors, spring activities and restaurants on websites such as travelawaits.com; azcentral.com, phoenixmagazine.com, thrillist.com and more.
- Discover Flagstaff procured six stories and had four media assists in the month of March. Print (circ: 985k/value: \$9k) Broadcast (reach: 3.6m/value: \$33K) Digital (reach: 1.5b/value:

\$13.8m) International Coverage (circ. 255m/value: \$2.3M). March 2022 resulted in a 950% increase in AVE compared to 2019 and a 326% increase in REACH compared to 2019.

**Please enjoy the highlights:**



**Flagstaff becoming up and coming foodie destination with resurgence of new restaurants**

<https://www.azfamily.com/2022/03/18/flagstaff-becomes-up-and-coming-foodie-destination-with-resurgence-new-restaurants/>

**Spring training in Arizona: Top 10 things to do when you're not at a Cactus League game**

<https://www.azcentral.com/story/travel/arizona/2022/03/23/arizona-spring-training-things-to-do/7094095001/>

**Mother Road Brewing wins Environmental Excellence Award for collab beer with Arizona Game and Fish Department**

<https://www.craftbrewingbusiness.com/news/mother-road-brewing-wins-environmental-excellence-award-for-collab-beer-with-arizona-game-and-fish-department/>

**My 7 Favorite Spots in Arizona for Great Pizza**

<https://www.travelawaits.com/2742250/best-pizza-in-arizona/>

**The Ultimate Guide to the Grand Canyon, America's Most Iconic National Park**

<https://www.thrillist.com/travel/nation/what-to-know-before-visiting-the-grand-canyon>

**This Restaurant Has the Best Fries in All of Arizona (Diablo Burger Flagstaff)**

<https://krq.iheart.com/content/2022-03-31-this-restaurant-has-the-best-fries-in-all-of-arizona/>

**Craft Beer Experts Reveal the Most Underrated Brews from Their Home States**

<https://uproxx.com/life/the-most-underrated-beers-by-state-according-to-beer-experts/>



## Spring Break Escapes

<https://fabulousarizona.com/arizona-best/spring-break-escapes-arizona/2/>



The Arizona Republic • KIMI Robinson , Shanti Lerner , Jill Cassidy  
US | Mar 23 • 7:00 AM

Spring training in Arizona: Top 10 things to do when you're not at a Cactus League game

Here's your guide to the best places to drink craft beer in **downtown Flagstaff**. Tucson: Saguaro National Park and much more Tucson is an



downtown Flagstaff, Flagstaff, Historic Brewing, Dark Sky Brewing

fabAZ  
FABULOUS ARIZONA

SEE & DO • FOOD & DRINK • HOMES • PHILANTHROPY • PEOPLE • EVENTS • ABOUT US



### Spring Break Escapes

Written by Melissa Lerner • Published on March 14, 2022 • in See & Do, Travel & Adventure



### Spring Skiing and Stargazing in Flagstaff

Now through March 25, provide kids can head to Bradshaw to enjoy the World's Best Spring



### NEARBY POSTS

Restaurant of the Week: Once & Land

Spring Break Escapes

Spring Break Escapes to Great Wolf Lodge  
Scottsdale

Arizona Beauty and Wellness: Tropicana Working  
2022

Lawrence and Elaine Anderson at Adobe  
Valley Library



## WEBSITE:

### Analytics compare 2022 to pre-Covid 2019:

- Domestic sessions increased 52%: Metro-Phoenix drive market is up 56%, Ca is up 51% primarily due to LA increasing 100% and San Diego increasing by 62%. TX is up 9%, Vegas up 132%.
- International sessions are seeing a rebound: Germany up 103%, UK up 110%, and France up 35%.
- Top performing pages: Webcam landing page was top performing, followed by Things to do, Where to Stay was the 4th most visited page, events was #5.
- The average session increased to 1:35 from 1:28.
- There were 399 VG requests and 244 opt-in email requests.
- Booking engine results were: 1,019 sessions, searches indicated an average stay of 2.4 nights, and for Q1, the top 10 accommodations with views included Little America at #1, Residence Inn, Motel DuBeau and the Weatherford Hotel.

## EMAIL CAMPAIGN:

- Discover Flagstaff email campaign benchmarks are set at 17% open rate and 1% CTR by trustworthy sources such as Constant Contact, Mail Chimp and Campaign Monitor. The March email drip was sent to our master list of 19,300 contacts with a heavy focus on events and outdoor content.
  - March 2022
    - Reach: 19,300
    - Open rate: 46%

- The Flagstaff Local e-newsletter continues to perform strongly with people continuously scrolling to the bottom of the newsletter, with the click-through rate to prove it. The open rate decreased MoM, as did the CTR. A send-time of 9am is performing the strongest over any other launch time for this email campaign. Content routinely focuses on community support, engagement, and action.
  - March 2022 compared to March 2021
    - Reach 828, slight decrease -1.3%
    - Open rate: +46.8%

## **SOCIAL MEDIA:**

Along with the Discover Flagstaff business platforms our staff is also responsible for Flagstaff local and has, as of this year, taken on full responsibility of Flagstaff 365 platforms. We have established a new CRM platform for social media with Agora pulse and hope to not only track likes/follows but also track engagement and compare with industry benchmarks.

- Discover Flagstaff shows growth from 2019. Our current strategy is to include more short video content increasing reach through stories.
  - Flag Local has grown by 8% in total likes.
  - Flagstaff 365 has grown by 3% in total likes.
- YouTube shows improved performance with new videos, organic and paid, being uploaded.
- Instagram shows improved performance compared to prior years, with some loss compared to previous month due to heavy performance with Instagram stories during beer week.
- Twitter has reached 10k followers, impressions are down this month, reasons unclear as to why the impressions were so high the previous years.
- Flagstaff 365 Page views have grown by 27% and the Discover Flagstaff Events page has grown by 269% since 2021 and is the top 5<sup>th</sup> page searched for March.



**Discover Flagstaff**  
March 8 · 🌐

It's #InternationalWomensDay and we would like to offer congratulations to chef Rochelle Daniel of Atria Restaurant in Downtown Flagstaff AZ, who was recently announced as a 2022 Beard foundation award semifinalist!

The James Beard Foundation is a nonprofit organization with a mission to celebrate, support, and elevate the people behind America's food culture and champion a standard of good food anchored in talent, equity, and sustainability.

Add Atria to your foodie destination list. You'll be very glad you did.

Photos provided by Phoenix Cooks via Write On Rubee

#StayandPlayResponsibly #wipethesmileonyourface



**Discover Flagstaff**  
March 10 · 🌐

We are loving the snowfall in Flagstaff today. You can watch it too, on the Discover Flagstaff webcam. Go to <https://www.flagstaffarizona.org/webcams/>

#StayandPlayResponsibly #AZwinterwonderland Photo via @charliemccallie



👍 **Get more likes, comments and shares**  
When you boost this post, you'll show it to more people.

16,706

People reached

789

Engagements

Boost post

👍👍👍 Carlos Villarreal, Jamil Shalalda and 176 others · 6 Comments · 33 Shares





## **SALES:**

### **International Travel Trade:**

#### **MEETINGS/EVENTS:**

- RTO (Receptive Tour Operator) Summit West Trade Show – 25 appointments  
With international travel companies in Los AngelesUSA Mexico Tour Operator Appointments – 11 zoom appointments
- Joker Reizen Travel, Belgium Fam Group – 9 attendees
- National Park Express Meeting
- Profi Tours, Czech Republic – October Agricultural Tour Group
- Meeting with U.S. Dept of Commerce
- American Incoming Tour Group – welcome bags

#### **MARKETING & MEDIA:**

- Group Tours Media Ad finalized for April magazine
- TourOperatorland March Newsletter sent to 1,400 travel companies worldwide

### **Meetings/Events/Conferences:**

#### **CONFERENCE/ROOMS LEADS/BOOKINGS:**

- 3 Leads were sent out in the month of March for a total of 660 room nights and total estimated economic impact of \$197,340. 2 Leads booked in the month of March for a total of 870 room nights and total estimated EEI of 260,130.

#### **MEETINGS/CONFERENCE SERVICES:**

- Staff attended Creative Flagstaff Committee Meetings, Tourism Commission Meeting, FLP Board Meetings, Meeting with NALTRA to discuss upcoming groups and partnerships, attended the EAC meeting, coordinated site tours for AZAA 2023 annual meeting, and had meetings with 7 planners with upcoming events/conferences.

## **VISITOR SERVICES:**

March	2020	2021	2022	+/- 2021	+/- 2020
Walk-ins	4,463	6,654	10,748	26%	141%
Retail Sales	\$10,871	\$24,689	\$34,429	43%	226%

- **WALK-INS/RETAIL:** This was the busiest March on record for both retail sales and Walk-ins, with 10,748 Walk-ins and \$34,429 in retail sales!
- **MODEL TRAIN:** Model Train ran 268 times in the month of February.
- **BREWERY TRAIL:** Visitor Center gave out 218-pint glasses for brewery trail redemptions!

## CREATIVE SERVICES:

### ADVERTISING:

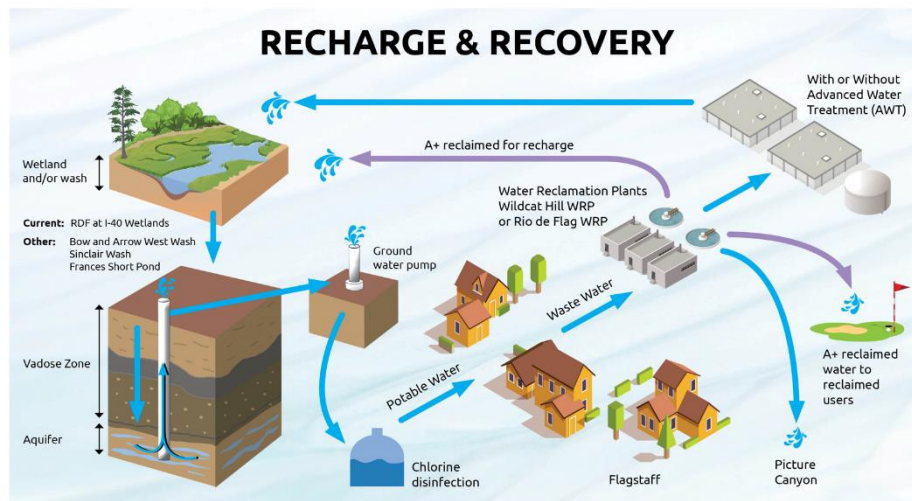
- **DIGITAL ADVERTISING (DRIVE MARKET/OUT-OF-STATE):** Created/running 11 campaigns for April Datafy supporting: Flagstaff Festivals (May-June), Flagstaff Festival Sweepstakes, 8 National Parks & Monuments, Pledge for the Wild, Tourism Service Day (local audience), Airport flights-Dallas, Denver, and Verde Valley markets; digital banners for TripAdvisor, Woo box.
- **PRINT ADVERTISING (DRIVE MARKET/OUT-OF-STATE):** Created full-page ad for *Phoenix Magazine* supporting festival season.\
- **2022 FLAGSTAFF OFFICIAL VISITOR GUIDE:** Currently being printed (following a paper delivery delay).
- **LEGENDS DISTRICT BILLBOARD (PHOENIX):** Currently being installed by Chase Field (following a workman shortage delay).
- Assisted with website and social media adjustments to promote Spring Training with Madden Media
- **MEDIA REQUESTS:** Provided photo assets to Denver 5028 magazine for an upcoming Dark Sky feature
- **SUSTAINABILITY:** Presented concept to promote sustainability to visitors and locals
- **MEDIA REQUESTS:** Provided b-roll for an upcoming PBS segment
- **VIDEO:** Worked with videographer to create the DF March video
- **PHOTO REQUESTS:** Supplied requested photos for the Art and Architecture Magazine
- **MOUNTAIN LINE AIRPORT BANNER:** Finalized the Mountain Line shuttle banner for the Airport
- **LOCAL ADS:** Designed the AZ Daily Sun and Flagstaff Business News April print and digital ads
- **BAGGAGE CLAIM SIGN:** Created an airport baggage claim sign featuring the Visitor Center
- **PROGRESS SPECIAL SECTION:** Designed 4 AZ Daily Sun Progress special section ads
- **HIGHLANDS LIVING PSA PAGE:** Created the Highlands Living “PSA” page for May featuring festivals and microbreweries, bars and grills, and gastropubs
- **VDG:** Continued to work on Visit. Discover. Grow.



### CITY JOBS:

- **PICTURE CANYON BROCHURE:** Updated the Picture Canyon trifold brochure
- **EAST LIBRARY BANNERS:** Working on 2 banners for East Library Interior
- **FEDERAL LOBBYING PACKET:** Designed the 2022 Federal Lobbying Packet
- **WATER AWARENESS MONTH:** Created the 2022 Water Awareness Month materials
- **COF RECRUITMENT:** Coordinated photographer and videographer for upcoming shoots

- **COF RECRUITMENT:** Created ads promoting recruitment for local publications
- **WATER SERVICES:** Created an illustration for Water Services and business cards
- **ENGINEERING:** Created business cards
- **PARKS & REC:** Updated the logo to reflect PROSE
- **AIRPORT:** Created an airport advertising media kit



#### WEBSITE:

- **LISTING PHOTOS:** Updated listing photos and content on Discoverflagstaff.com
- **FESTIVALS & MUSIC CONTENT:** Updated the 2022 Festival page, uploaded a Blues and Brews blog, and created the Live Music page on discoverflagstaff.com

All Blogs > The Flagstaff Blues and Brews Returns This June!

## THE FLAGSTAFF BLUES AND BREWS RETURNS THIS JUNE!

Did you know that the Flagstaff Blues and Brews is the largest blues festival in Arizona?



Did you know that the Flagstaff Blues and Brews is the largest blues festival in Arizona? It takes a lot of work to achieve that title and after 8 years of this festival being around, it's not only the largest, but also it's the best. This year the festival starts at 2:00 pm on Friday June 10th and runs until 9 pm. Then it starts up again at 11:00 am on Saturday June 11th and is over at 8 pm. It's one of the best music festivals of the year and you will not want to miss it.



**BE A PART  
OF MAKING  
FLAGSTAFF  
THRIVE**



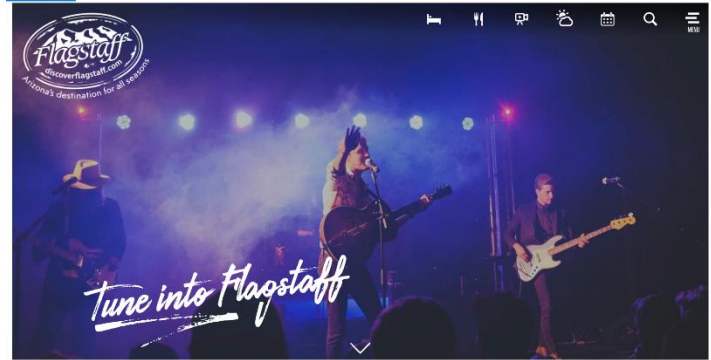
**National Tourism Week** May 1-7, 2022

**JOIN US** for an enjoyable day of giving back.

**FLAGSTAFF 365**  
EVENTS CALENDAR .com

**TOURISM SERVICE DAY**  
MAY 4

**STAY & PLAY RESPONSIBLY**



### LIVE MUSIC IN FLAGSTAFF

Little bit of blues, a whole lotta of jazz, rock, country, and symphony... it's all in Flagstaff.

By day or night, live music can be enjoyed at parks, concert venues, night clubs or festivals, indoors or outside as the season's permits. For those in search of the eclectic, we got that - historic and hippie cities.

### Calendar of Events

May & June 2022

## Festivals



May

20-22 Overland Expo

June

4-5 Huilabalao

4-5 Wool & Fiber Festival

10-11 State's Largest Blues & Brews Music Festival

11-12 Made In The Shade Beer Tasting Festival

18 Pride In The Pines

18-19 Folk Festival

There are 15 more festivals July - October



For a complete festival calendar, [flagstaffarizona.org/events/festivals](http://flagstaffarizona.org/events/festivals)

### SEE WHY

Food critics are raving about

## Flagstaff Restaurants



### Microbreweries, Bars & Grills and Gastropubs

- ☐ Altitudes Bar & Grill
- ☐ Beaver Street Brewery
- ☐ Bean Yaggers
- ☐ Charlie's Pub & Grill at the Weatherford Hotel
- ☐ Chili's Bar & Grill
- ☐ Collins Irish Pub & Grill
- ☐ Cornish Party Company
- ☐ Dark Sky Brewing Company
- ☐ Dirty Madras Sports Bar & Grill
- ☐ Flagstaff Brewing Company
- ☐ Historic Brewing Barrel & Bottle House
- ☐ Lumberyard Brewing Company
- ☐ Mother Road Brewing Company
- ☐ Mountain Top Tap Room
- ☐ Sportman's Bar & Grill
- ☐ The Grand Canyon Brewing & Distillery
- ☐ The Mayor
- ☐ The McMillan Bar & Kitchen
- ☐ Tiki Grill
- ☐ Upstream Pubhouse
- ☐ Wanderlust Brewing Company
- ☐ Whisk & Whiskey

For a complete list of restaurants, breweries and bars, visit [discoverflagstaff.com/dining](http://discoverflagstaff.com/dining).

**STAY & PLAY RESPONSIBLY**

**PLEASE JOIN US!!!**

RSVP to: [cnelson@flagstaffaz.go](mailto:cnelson@flagstaffaz.go)





# Sustainability Section

## Month in Review: March 2022.

### HOT TOPICS:

- Flagstaff's Carbon Neutrality Plan was awarded the AWARD OF DISTINCTION in Climate Action Solutions by Arizona Forward. More than 500 business leaders, elected officials, and their guests gathered on Saturday, March 19, 2022, for the Arizona Forward Environmental Excellence Awards.
- Earth Day 2022 Celebrations are scheduled for Saturday, April 23<sup>rd</sup> at Bushmaster Park, 11:00 AM – 2:00 PM. There will be a community litter clean up before the event from 8:45am-11:00am in the neighborhoods around the park. Following the clean-up there will be live music and free workshops from our many community partners.
  - To help you "move another way," Mountain Line is offering free bus transportation services on April 23, 2022, in celebration of Earth Day. FSO will be encouraging all attendees to walk, bike or take the bus.

### CLIMATE ACTION:

- The Youth Climate Advisory Group (YCAG) had their first two meetings in March.
  - The group consists of youth members, grades 8th-12th, representing schools in Flagstaff, and is full of great energy and creative ideas.
- As part of the Flagstaff Regional Plan Snapshot Series, Sustainability Staff offered two webinars in March in partnership with COF Community Development and Coconino County.
  - The topics discussed included climate mitigation and climate resiliency, to help inform the public about topics that will be addressed in the Regional Plan, current conditions in the region, and to prompt questions that can guide future conversations and plan development.
  - Regional Plan Snapshot Series webinars highlight current conditions in the region and prompt questions that can help guide future conversations and plan development.
- The Flagstaff Climate Ambassadors Program has been a model for a proposed Climate Change/Community Ambassador program in the City of Oshkosh, Wisconsin.
- Staff have joined the NAU Transportation Action Team, to increase collaboration between the City and NAU on transportation activities.
- After the Council adoption of the Residential Sustainability Incentive in early March, staff began processing the first building permit application that took advantage of the Residential Sustainable Building Incentive, Aura Flagstaff.
  - Aura reduced natural gas usage to approximately 1.5% of total energy usage, is located within a 5-minute walk of a transit line and will be 15% more energy efficient than the City's current code requires. As a result of the incentive, the development will be able to increase the number of housing units it provides.
- Staff is working with the Northern Arizona Healthcare team to discuss how the proposed NAH campus can align with the Flagstaff Carbon Neutrality Plan.

### COMMUNITY STEWARDS/LITTER PREVENTION:

- March Litter Cleanup Data:

Date	# of Volunteers	Total Hours	Bags of Trash	Bags of Recycling
3/3	1	2	3	1
3/5	12	18	4	0
3/10	1	1	1	0
3/10	1	1	1	0
3/13	2	3	2	0
3/16	1	2	3	0
3/16	1	2	3	0
3/19	4	7	5	4
3/26	12	24	5	5
3/26	1	6	8	0
3/26	11	17	5	4
3/26	85	170	150	0
3/27	7	11	4	1
Totals	139	264	194	15

## ENERGY:

- The Investment Grade Audit (IGA) for the municipal Energy Savings Contract (ESCO) continues to progress on schedule.
  - This month the ESCO provider, Noresco, delivered their 30% IGA update and identified several exciting opportunities for deploying energy conservation measures at numerous facilities that would result in energy savings and yield a return on investment that could be rolled into the ESCO framework.
- The Sustainability Office partnered with the Electric League of Arizona to offer a 1-hour educational webinar on Cold Weather Heat Pumps on March 31<sup>st</sup>.
  - 160 people registered for this first webinar on home electrification and heat pumps. Heat pumps can be cost-effective, efficient, and comfortable tools for heating your home in Flagstaff. This webinar covered advances in technology and the benefits of this heating tool.

## FOOD SYSTEMS:

- Members of the Waste and Food team, Kaeli, Jake, and Summer, attended the AZ Food Summit on March 23rd-24th hosted at Arizona State University
- Applications for plots at each of the three community gardens opened March 1st. Staff have received over 55 applications for the 2022 season, 41 of which are from new gardeners.
  - Plots are rented from May-October for \$65 each.
  - Applications will be accepted on a rolling basis from March-April.
- At-home chicken keeping and composting methods work together to provide healthy soils while keeping food waste out of the landfill. To promote these activities, the Sustainability



Office is piloting a rebate program to help reduce the cost of purchasing prefabricated chicken coops and composters.

- Rebates up to a maximum of \$100 are available to those who purchase prefabricated chicken coops, composters, or both after March 1st, 2022.
- Members of BPAC and the Southside Community Association voted on an artist to carry out the Beautification project planned for the Southside Community Garden (previously O'Leary). The artist will work alongside the community over the next few months to finalize artistic and historical elements to be included in archways, seating, and pathways.

## MATERIALS MANAGEMENT:

- The Residential Food Scraps Drop-off continues to have two self-service drop-off sites which have collected over 5,000 lbs. of food scraps since November of 2021. Staff plan to have an additional two staffed booths during the summer months again to provide onsite education.
- The 6-month "Trash Less, Save More!" pilot program concluded on March 10th, 2022. Through the program, Ponderosa Trails residents had the opportunity to sign up for a reduced size trash cart (48-gallon or 64-gallon) in exchange for a rebate on their City Services Bill. The goal of the pilot program was to incentive waste reduction and provide recycling outreach to residents
  - During the "Trash Less, Save More!" pilot program, City staff monitored recycling contamination rates by conducting recycling bin checks in Ponderosa Trails. Each recycling cart was checked three times, and "oops" tags and "looking good!" tags were administered based upon the contents of the cart.
  - The most commonly mis-recycled items in the neighborhood were:
    - Plastic spinach/ berry containers
    - Plastic to-go containers
    - Paper coffee cups and lids
    - Plastic bubble wrap/ packaging
    - Styrofoam
    - Plastic bags (including recyclables thrown away in plastic trash bags)
  - Staff is developing a plan for city-wide implementation of volumetric pricing. The goal is to offer reduced size trash cart options to all Flagstaff residents by 2024.
- On Saturday, March 26th, the Sustainability Office hosted a Fix-it Clinic from 10:00 am - 2:00 pm at the Joe C. Montoya Community & Senior Center.
  - Volunteers helped fix small household appliances, clothing, electronics, jewelry, and bicycles. In total, 74 items were brought in by community members, and 50 items (68%) were fixed.

- The Hazardous Products Center also hosted a mini Drop-off Day, where they collected 25 lbs. of alkaline batteries, 8 lbs. of lithium batteries, 17 CFLs, 3 4'-fluorescent tubes and 3 aerosol cans.
- This event diverted 260 lbs. of waste from the landfill.



#### SUSTAINABILITY COMMISSION:

- In the meeting on March 24<sup>th</sup>, the Housing and Sustainability Commissions met jointly to begin discussing areas of collaboration and shared goals. The Commissions will begin regular communication about how to achieve the goals of the Carbon Neutrality Plan and the 10-year Housing Plan. The Sustainability Commission also received part two of three of their Climate Ambassador Training.
- Next meeting: Thursday, April 28<sup>th</sup>, 2022, 4:30pm-6:30pm

#### UPCOMING SUSTAINABILITY COMMUNITY EVENTS:

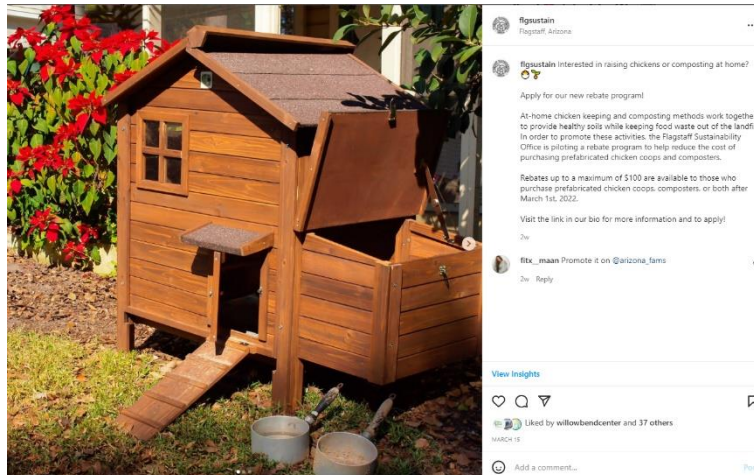
- The Sustainability Office is teaming up with Coconino County and the Forest Service to host to finish collecting any leftover snow play trash now that the snow has melted.
  - There will be three clean up opportunities with fun activities afterwards. They will take place on April 20<sup>th</sup>, 21<sup>st</sup>, and 22<sup>nd</sup> from 10:00am - 1:00pm.
- There will be a Drop-off Day on Saturday, April 30<sup>th</sup> from 10:00am-2:00pm at the Flagstaff Police Department.
  - Items accepted include:
    - Prescription Drugs
    - Medical Syringes
    - CFLs
    - Batteries
    - Aerosol Cans
    - Electronics
    - Documents for Shredding (2 Boxes/person max)
  - TVs, Liquids, and Commercial Waste will not be accepted.

#### SOCIAL MEDIA

- Our top post on Facebook was a post about Mountain Line's new service to the airport. This post received 57 reactions, seven shares and one comment.



- Our top post on Instagram was a post about our chicken coop and composting rebate program. This post received 38 likes and one comment.



## **CITY OF FLAGSTAFF STAFF SUMMARY REPORT**

**To:** The Honorable Mayor and Council  
**From:** Rick Barrett, City Engineer  
**Date:** 04/12/2022  
**Meeting Date:** 04/26/2022



---

### **TITLE:**

**Arizona Department of Transportation (ADOT) North Central District seasonal project update.**

### **DESIRED OUTCOME:**

This item is to share information and discussion.

### **EXECUTIVE SUMMARY:**

ADOT's North Central District is responsible for roadway maintenance and preservation of ADOT jurisdiction roadways in the Flagstaff area including Hwy 89, Hwy 89A, US180, Route 66/B40, I-40 and I-17. ADOT's Brenden Foley (District Administrator) will provide a presentation for active projects.

### **INFORMATION:**

Please refer to attached presentation.

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**Attachments:** [ADOT Presentation](#)



# Flagstaff City Council Meeting

## Northcentral District Projects Update

**Brenden Foley**  
**Northcentral District Administrator**

# Agenda

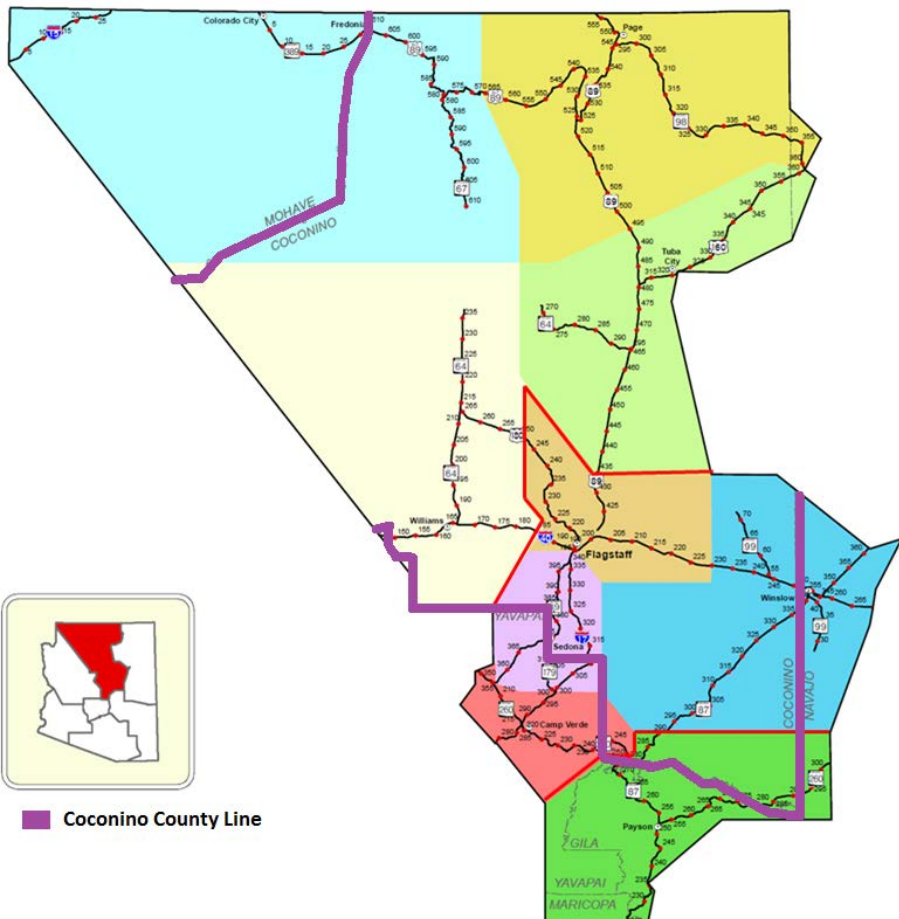
**A. Northcentral District**

**B. Projects in Construction**

**C. Upcoming Projects**







- District Area ~ 23,000 square miles
- Just under 2,800 lane miles, mostly in Coconino County
- Coordinate our construction & maintenance activities with over 40 Stakeholders
- Approximately \$150 million in Construction Contracts (continued from last year and starting this year) In Progress

# PROJECTS IN CONSTRUCTION

B40, RIO DE FLAG BRIDGE REPLACEMENT





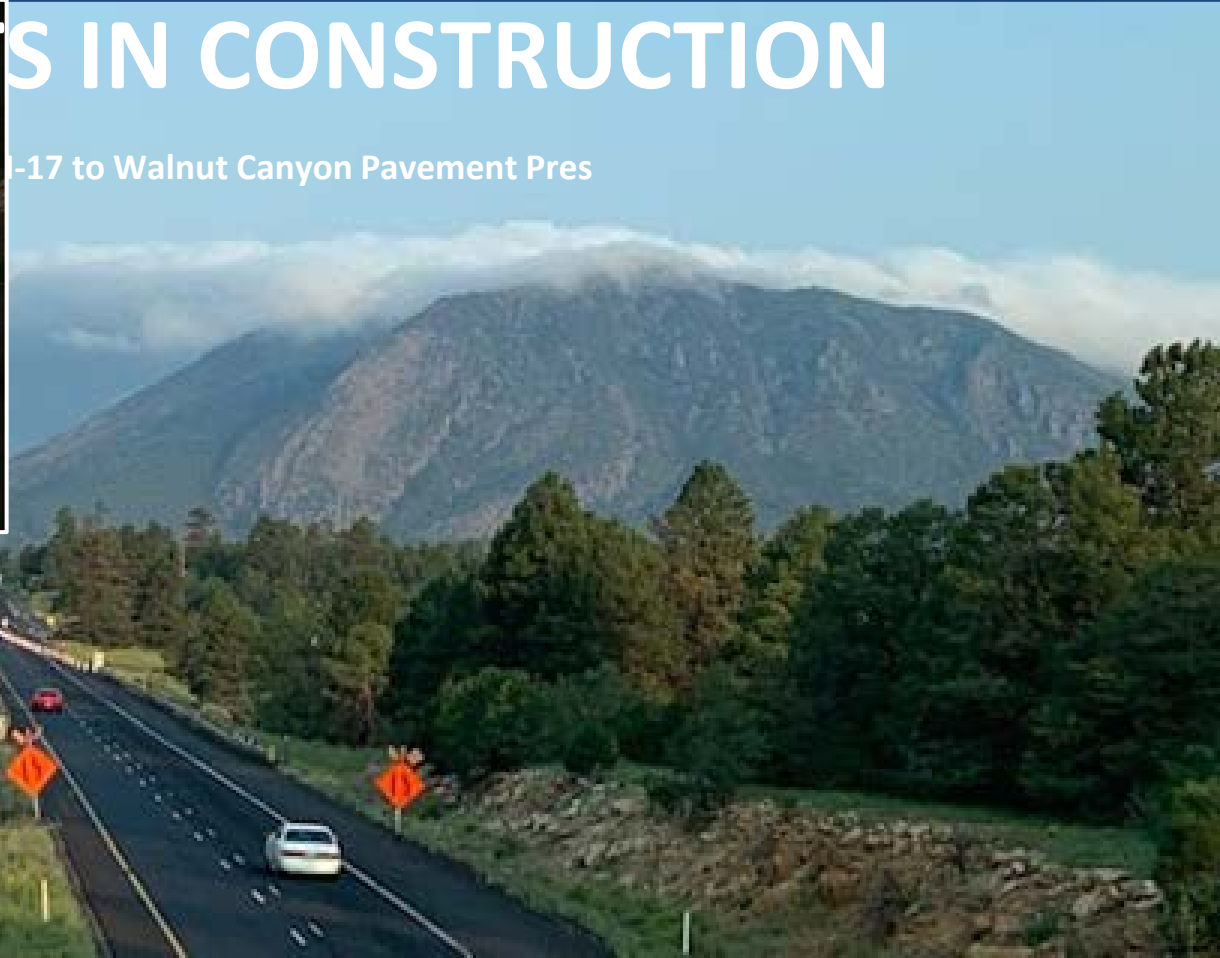
# PROJECTS IN CONSTRUCTION

I-40, West Flag TI Bridges Replacement



# PROJECTS IN CONSTRUCTION

I-40, I-17 to Walnut Canyon Pavement Pres





# PROJECTS IN CONSTRUCTION

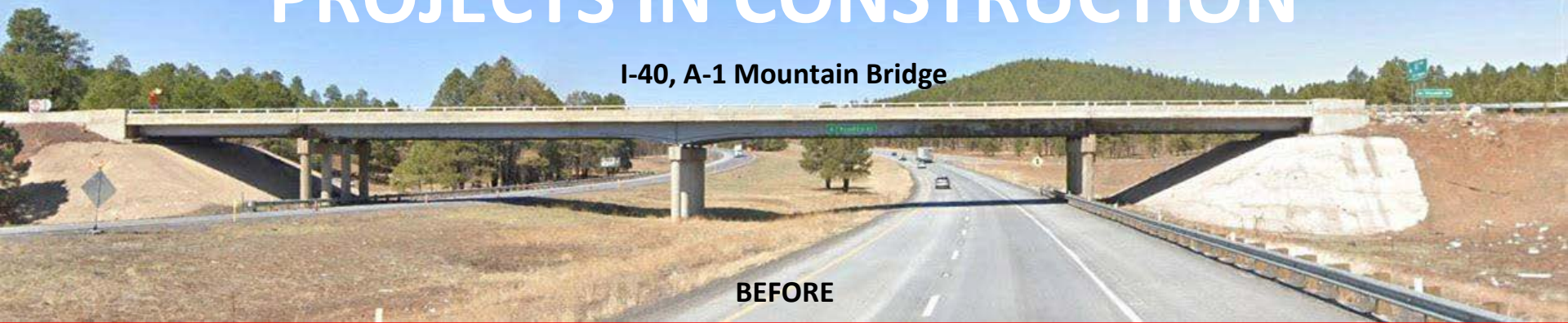
I-17, McGuireville RA to Flagstaff ITS Infrastructure





# PROJECTS IN CONSTRUCTION

**I-40, A-1 Mountain Bridge**



**BEFORE**

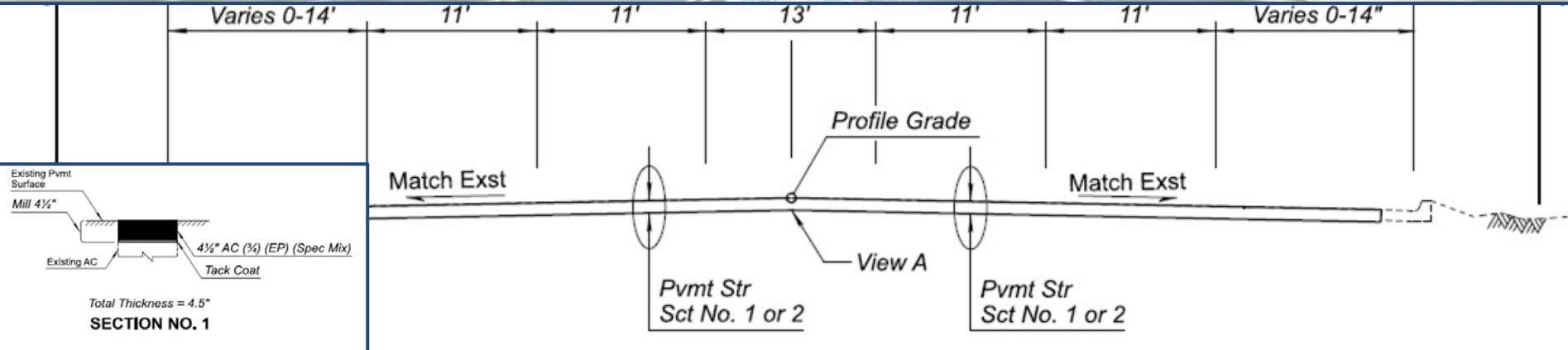


**AFTER (RENDERING)**



# PROJECTS IN CONSTRUCTION

SR89A/Milton Road Pavement Preservation



[illegible]

# UPCOMING PROJECTS

- **SR89A OAK CREEK CANYON IMPROVEMENTS**
  - **TRAFFIC CONTROL STARTED 4/18**
    - **EROSION AND SEDIMENT CONTROL**
    - **PUMPHOUSE WASH BRIDGE DECK REHABILITATION**
    - **ROCKFALL MITIGATION**
- **I-17 SOUTHBOUND PAVEMENT PRESERVATION**
  - **ANTICIPATED START MAY 2022**
- **I-17, JW POWELL BLVD / AIRPORT ROAD TI BRIDGE REPLACEMENT**
  - **IN DEVELOPMENT**
  - **ANTICIPATED ADVERTISEMENT FALL 2023**



# Thank You!

For more information, please visit us at:

<https://azdot.gov/projects/northcentral-district-projects>



## CITY OF FLAGSTAFF

### STAFF SUMMARY REPORT

**To:** The Honorable Mayor and Council

**From:** Sara Dechter, AICP, Comprehensive Planning Manager

**Co-Submitter:** Ed Schenk

**Date:** 04/04/2022

**Meeting Date:** 04/26/2022



---

#### TITLE:

**Draft Rio de Flag Watershed Management Plan Work Session**

#### DESIRED OUTCOME:

The Friends of the Rio are seeking input from the City Council on how the city would like to proceed with:

- Participation in the Watershed Alliance for the Rio de Flag (WARF)
- Execution of a Master Participating Agreement for the WARF patterned on other existing City agreements
- Cooperation on Projects of Interest to the City with appropriate levels of approval

#### EXECUTIVE SUMMARY:

Watershed Alliance for the Rio De Flag was formed in 2018 as a watershed stakeholder group, chaired by the Friends of the Rio to advance a watershed plan under the U.S. Bureau of Reclamation's WaterSMART: Cooperative Watershed Management Program. The program provides a framework to create a legacy of conservation stewardship and restore trust with local communities, by providing funding to grassroots, local watershed groups, and encouraging diverse stakeholders to develop collaborative solutions that address their water management needs. The City of Flagstaff signed a letter of support for the grant which was awarded and City staff from Community Development and Water Services have been engaged as subject-matter experts in support of the project. As the Friends of the Rio and the Watershed Alliance are moving to the next phase of watershed planning, they are seeking to finalize the watershed plan and formalize the relationships around future implementation. Presenters for this item are Kelly Burke and Rick Miller of the Friends of the Rio.

#### INFORMATION:

The Rio runs through Flagstaff from Leroux Springs on the Northwest corner of town to Picture Canyon on the east side, along the way it passes the Museum of Northern Arizona, City Hall, through the Southside neighborhood, Willow Bend Environmental Education Center, and several city parks. The Rio can be seen as the backbone of the Flagstaff Urban Trail System and provides a background for a lot of recreation and peaceful contemplation in a number of neighborhoods. In order to plan and coordinate activities to make The Rio de Flag even more of an asset to our city than it already is. Friends of the Rio de Flag applied for a U.S. Bureau of Reclamation's WaterSMART: Cooperative Watershed Management Program grant. The grant was awarded in 2018 to accomplish two goals, to develop first a watershed stakeholders' group, and second, draft a plan for the Rio de Flag watershed. The process began by



identifying stakeholders with interests tied to the Rio Watershed. Then, the project team interviewed the stakeholders to identify problems, opportunities, and interests we have in common. They also began gathering information on the history, ecology, hydrology, and public use of the Rio de Flag. The next major step was holding a series of six public meetings using experts from the stakeholders as speakers, to inform the public about the Rio and to gather information from the public about Rio and public interests and thoughts about the Rio. All this became input to the watershed plan. The team has now completed a draft plan and is in the process of forming the watershed stakeholder group. City staff has cooperated with the planning effort so far, and Friends of the Rio would very much like the City of Flagstaff to agree to participate formally in the ongoing watershed stakeholders' group. Future efforts of the stakeholders will be focused on maintaining and improving the Rio and its watershed including public recreation, education about the Rio, and maintaining and improving watershed ecology and restoration. The WARF is hoping to seek funding through grants to accomplish the goals and projects identified in the plan, including a WaterSMART Phase 2 from the Bureau of Reclamation which would help fund the implementation of the plan. For this reason, the Friends of the Rio are asking the city to enter into a Master Participating Agreement for the WARF patterned on other existing City agreements, so that if the organizations are able to get funding for projects, which are of interest to the city, we would be able to cooperate in those projects.

---

**Attachments:**     DRAFT RIO DE FLAG WATERSHED PLAN  
                             Powerpoint

~~~DRAFT~~~

## RIO DE FLAG WATERSHED PLAN

### *Community Watershed Planning from the San Francisco Peaks to San Francisco Wash*

*March 31, 2022*



*Prepared by:*

Friends of the Rio de Flag

*with grassroots grant program funding from:*

U.S. Bureau of Reclamation, WaterSMART

*(Sustain and Manage America's Resources for Tomorrow)*

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## EXECUTIVE SUMMARY

The Rio de Flag originates as springs, seeps, and runoff on the slopes of the San Francisco Peaks above the city of Flagstaff, in northern Arizona. The mountain and the watercourse are intertwined in the long and vibrant history of this remarkably geographically diverse and arid region—in the stories of its peoples; in its formation by ‘earth fire’ and ice; in its immense cultural significance as a modern and ancient crossroads; and in the renowned advances in scientific and planetary understanding derived here, applied worldwide, and even extended out to our own solar system.

The purpose of the Rio de Flag Watershed Plan is to provide a guiding and living document for prioritizing and implementing stewardship/management, outreach, restoration, preservation, and conservation activities on the Rio de Flag. The document should provide insight into the values provided by the Rio and its watershed, the factors affecting those resources and the priorities placed on those resources by the community at large. The document also provides a vision for the Rio de Flag and the watershed that identifies key goals and objectives, goals may differ by reach of the Rio, depending on community needs and the potential of each reach to attain the goals. In the process of developing the plan 116 projects were suggested by the public and stakeholders. Seventeen of those suggestions are prioritized as a starting place for conservation and improvements in the watershed.

This plan and the development of the Watershed Alliance for the Rio de Flag was accomplished through a grant awarded to FoRio under the U.S. Bureau of Reclamation's WaterSMART: Cooperative Watershed Management Program.

---

## ACKNOWLEDGMENTS

This watershed plan for the Rio de Flag reflects the great insight, hard work, and dedication of stewards, advocates, professionals, adventurers, admirers, and

community and indigenous leaders, who care about the Rio de Flag—its ecological and cultural history, its peoples, lands and waters. Together, they hold a vision for the watershed’s healthy future.

Friends of the Rio de Flag (FoRio) and members of the Watershed Alliance for the Rio de Flag (WARF) wish to acknowledge those who so generously and energetically contributed their time, effort, and ideas to make this collaborative restoration plan possible.

We also extend our deep concern and care for our extended northern Arizona family, especially the Hopi and Diné who have endured great difficulty and irreparable loss during the global SarsCOV2 pandemic that has overshadowed this watershed planning process.

We thank:

- ❖ Hopi Tribe: Max Taylor and James Duffield (retired)
- ❖ Southwest Decision Resources: Carrie Eberly, Andi Rogers, and Lisa Clark
- ❖ City of Flagstaff: Ed Schenk, Sara Dechter, Sharon Masek Lopez
- ❖ Coconino County: John Carr, Amanda Acheson,
- ❖ Coconino National Forest: Laura Jo West, Josh Peck
- ❖ Friends of the Rio de Flag Board Members
- ❖ Northern Arizona University: Abe Springer, Thomas Whitham, Denielle Perry
- ❖ Southside Community Association: Deborah Harris
- ❖ Arizona Trail Association: Matt Nelson, Julie Polovitch
- ❖ Springs Stewardship Institute: Larry Stevens
- ❖ Wild Arizona: Kelly Burke, Larry Stevens
- ❖ Malcolm Alter,
- ❖ Willow Bend Environmental Center

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## INTRODUCTION

### The Rio de Flag and How We Got Here

The Rio de Flag originates as springs, seeps, and runoff on the slopes of the San Francisco Peaks above the city of Flagstaff, in northern Arizona. The mountain and the watercourse are intertwined in the long and vibrant history of this remarkably geographically diverse and arid region—in the stories of its peoples; in its formation by ‘earth fire’ and ice; in its immense cultural significance as a modern and ancient crossroads; and in the renowned advances in ecological and planetary understanding derived here. Northern Arizonans of today find themselves anchored in the stunning

beauty of the Peaks, which literally bring down the rain and snow necessary to sustain life in this watershed.

Over 70,000 Flagstaff area residents now rely on the watershed of the Rio de Flag (Fig. 1), as a source of drinking water, for outdoor recreation and connecting to nature, and for a wide array of livelihoods. The Rio de Flag stream corridor hosts valuable riparian habitats fed by periodic runoff flows, natural springs, and city-produced effluent. The Rio also provides other vital services to the community in its capacity to process and absorb floods and stormwater. It is an important open space corridor for City residents, connecting communities and offering aesthetic and recreational enjoyment, making historical links to ancestral indigenous cultures, and providing habitat, cover, and movement corridors for wildlife.

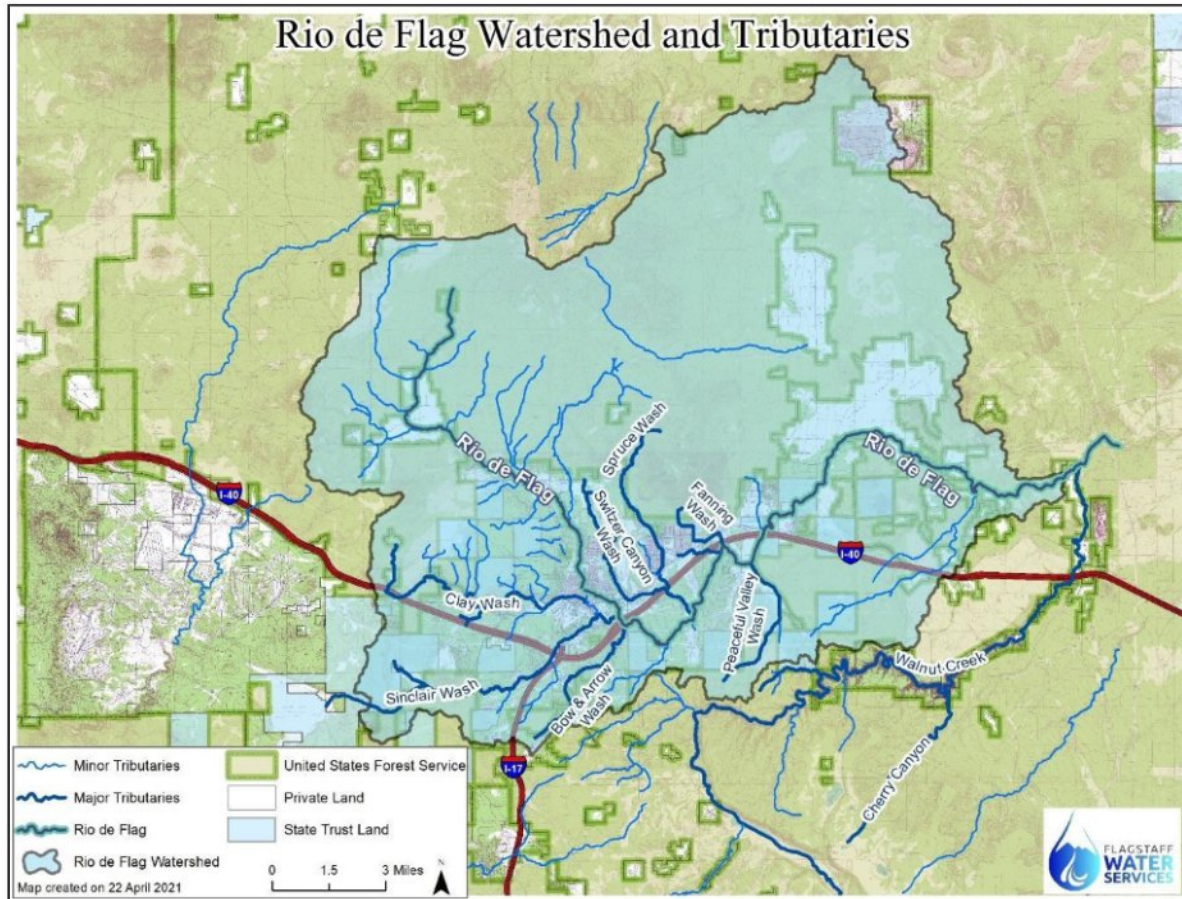


Figure 1. Watershed map of the Rio de Flag and major tributaries. (from Schenk et al. 2021).

## **Why does the Rio de Flag need a plan?**

Interest in the Rio de Flag has increased in the last couple of decades due to the population growth in the watershed, a dramatic expansion of recreation, and increasing and inequitable impacts of flooding. Urban development has resulted in water supply concerns, stream channelization, erosion, and degradation of riparian ecosystems, which in turn increase flood risk and cause water quality concerns. Deeply controversial projects have arisen, such as the large-scale Rio de Flag Flood Control Project and the commoditization of city reclaimed water for snowmaking.

This watershed plan provides a means for coordinating practical, proven, and innovative solutions. Watershed planning for the Rio de Flag also needs to address many specific challenges: lack of awareness among the public, the effects of invasive species on aquatic and riparian ecosystems, trash and water pollution, inconsistent land ownership, regulatory disconnects between surface water and groundwater, and needs for community building, sustainable economies, and education. Likewise, maintaining trails and wildlife movement corridors, restoring and enhancing natural systems, and supporting environmental justice and education, aesthetics, access to open space, and sustainability are forward-looking aspects of watershed planning.

Over the last several decades, cities such as Albuquerque, Durango, Farmington, Santa Fe, and San Antonio have realized the enormous public benefits provided by their rivers. These cities have invested money in purchasing land and easements, trail systems, in-stream flows rights, and beautification – all of which have led to quality of life improvements for citizens, property value increases, and significant growth in tourist revenues. The Rio de Flag has the potential to be a similar amenity and centerpiece for the City of Flagstaff and surrounding communities.

## **Bureau of Reclamation WaterSMART Program and the Rio**

The U.S. Bureau of Reclamation's WaterSMART: Cooperative Watershed Management Program provides a framework to create a legacy of conservation stewardship and restore trust with local communities, by providing funding to grassroots, local watershed groups, and encouraging diverse stakeholders to develop collaborative solutions that address their water management needs.

Flagstaff-based nonprofit Friends of the Rio de Flag (FoRio) recognized the need for watershed planning, in part as other planning processes, and the pressing climate and social issues in the Rio de Flag's headwaters and along its channel and tributaries, have produced numerous important projects and studies, by multiple entities and agencies. The WaterSMART program presented a compelling opportunity to begin.

## A vision for the Rio de Flag Plan

The Watershed Alliance for the Rio de Flag (WARF) watershed stakeholder group formed as a result of the 2018 WaterSMART grant to FoRio, for advancing watershed planning.

The intent for the watershed plan, as recognized by the WARF is to be a living document, to adaptively guide policies/management plans, to increase coordination of projects and studies across jurisdictions, and to increase awareness and engagement in watershed stewardship, preservation, restoration and education in our communities. To ensure a comprehensive approach to planning that would include all of the communities, neighborhoods, and people of the watershed, the watershed was divided into subwatersheds defined by reaches along the main channel of the Rio de Flag (see *Stream Reach Descriptions* below). The reaches reflect variability along the length of Rio de Flag drainage in terms of channel type, land use and ownership, and challenges and opportunities for watershed projects and protections.

The plan provides a vision for the Rio de Flag and the watershed through attaining the following six goals developed by the WARF:

- *Goal 1: Increase integrated cultural, scientific, and historical understanding of the Rio de Flag watershed*
- *Goal 2: Protect and enhance Rio de Flag watershed health to deliver ecosystem services to future generations*
- *Goal 3: Benefit human communities of the Rio de Flag watershed*
- *Goal 4: Benefit native ecological communities of the Rio de Flag watershed*
- *Goal 5: Increase public awareness and engagement to strengthen the community's connection to the Rio de Flag watershed*
- *Goal 6: Create a sustainable funding stream for the Rio de Flag watershed*

This watershed plan first summarizes the plan's foundation within existing plans and studies, provides available background information, and presents the expert, stakeholder, and public input gathered during the watershed planning outreach process. This information collectively informs implementing the WARF vision through a series of 141 conceptual projects.

## PLAN SETTING: COMPILATION OF EXISTING PLANS AND STUDIES

Numerous plans and studies fall within the hydro-geography of the Rio de Flag watershed. This section highlights four key plans that directly relate to watershed plan implementation objectives in the near future. See Appendix 2 for the full suite of plans



and studies that provide a larger framework for watershed protection and restoration and may also create opportunities for synergistic integration during WARF Plan implementation.

## **Coconino County Comprehensive Plan**

The Coconino County Comprehensive Plan (CCCP) was adopted in 2015 and provides a broad plan for development, growth, recreation, and environmental stewardship at the county level. The CCCP intersects with the WARF because large portions of the Rio de Flag watershed fall within the county and are affected by this county-wide plan. Future development, parks, open space, and environmental initiatives set by the CCCP will have impacts on implementation of the WARF Plan and on the health of the Rio de Flag watershed in general. Future iterations of the CCCP can incorporate objectives and projects identified in the WARF Plan into county planning and policies. Key overlapping areas of concern include Baderville/Fort Valley development, Doney Park development, Fort Tuthill management, and general forest and watershed stewardship. The CCCP can be found online at:

<https://www.coconino.az.gov/1111/Comprehensive-Plan>



## **Flagstaff Regional Plan 2030**

The Flagstaff Regional Plan is a rolling thirty-year plan that is updated every 5 to 10 years. The plan is similar in scope to the Coconino County Comprehensive Plan in that it provides broad guidance for development, recreational opportunities, open space, and environmental stewardship.

The Regional Plan can help guide WARF activities but is also an opportunity for WARF input into future versions of the plan through public comment as well as direct conversations with the Planning Division. Portions of the Regional Plan are insightful for strategizing WARF projects. For example, the JW Powell road extension is already broadly planned for southeastern Flagstaff. By analyzing the general goals of the road extension, the WARF can produce potential open space projects or initiatives and also engage city planners regarding the best ways to preserve or enhance riparian corridors. The Regional Plan is administered by the City of Flagstaff. More information about the current plan (ratified in 2014 for 2030 goals) can be found online here:

<https://www.flagstaff.az.gov/2936/Flagstaff-Regional-Plan-2030>



## Water Conservation Strategic Plan

The Water Conservation Strategic Plan (WCSP) is administered by the Flagstaff Water Services Division and was adopted by City Council in late 2020. This plan provides strategies for reducing water consumption, reusing water, and monitoring future water development. The WCSP is important for the WARF Plan, because it provides one of the only written plans in the watershed for reducing water consumption and it addresses the water reuse. The WCSP can be found online here: [https://www.flagstaff.az.gov/DocumentCenter/View/65417/City-of-Flagstaff-Water-Conservation-Strategic-Plan\\_2020\\_FINAL?bidId=](https://www.flagstaff.az.gov/DocumentCenter/View/65417/City-of-Flagstaff-Water-Conservation-Strategic-Plan_2020_FINAL?bidId=)



## Flagstaff Trails Initiative

The Flagstaff Trails Initiative (FTI) is a regional plan created in 2019 by the US Forest Service, Coconino County, City of Flagstaff, and local advocacy groups. The plan is administered by a separate non-profit group with the same name as the plan (FTI). The purpose of the FTI is to provide broad and specific planning for future recreational trails in the Flagstaff area that cross jurisdictional boundaries. The FTI share with the WARF a desire for greater community benefits and amenities, recreational opportunities, and sustainable stewardship of the land. Many of the trails that exist or are planned under FTI are along streams and washes of the Rio de Flag watershed. Collaboration between the FTI and WARF could provide synergistic benefits for specific projects as well as future planning and fund raising. More information can be found online at: <http://flagstafftrailsinitiative.org/>



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## BACKGROUND

### History, cultural ties, and human use within the watershed

Despite the scarcity and limited extent of surface water, the streams, wetlands, and springs of the Rio de Flag watershed have been immensely important in the human history of northern Arizona. Indigenous peoples and their ancestors have been continuously bound to the watershed's unique hydrology. Its climate and location influenced the explorations of Europeans that were followed by early natural science expeditions, by trading, ranching and logging operations, and by the siting of the community that eventually became Flagstaff.

The Rio de Flag has had several modern names. The earliest European name was recorded by Amiel Whipple in 1853 where the "Rio San Francisco" was described as a

small stream flowing south from the Peaks into a great valley (Cline 1976). Early (1890 through 1910) Sanborn Fire Insurance Maps simply labeled the Rio “dry creek.” Early newspapers, such as the Coconino Sun, called it “River de Flagstaff”, which eventually metamorphosed into the contemporary use of ‘Rio de Flag’.

The many tributaries of the Rio de Flag remained largely unnamed by modern occupants until the nation-wide development of the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA). After the National Flood Insurance Act of 1968, many tributaries were named for regulatory reasons. The adopted stream names were usually based on nearby streets (e.g. Clay Avenue Wash, Spruce Avenue Wash). Exceptions include Sinclair Wash, Peaceful Valley Wash, Switzer Canyon, and Schultz Creek. All these tributaries were large enough to have been named prior to floodplain regulations.

## **Native peoples**

Nomadic hunter-gathers seasonally occupied the Rio de Flag watershed during the Archaic period (9,000 to 2,400 years before present) (Roberts 2008). The earliest known year-round inhabitants of the Rio de Flag watershed were the Sinagua peoples who occupied nearby Walnut Canyon between 600 and 1400 A.D. Remnants of this time include the cliff dwellings at Walnut Canyon as well as pictographs and petroglyphs within the Rio de Flag watershed, most notably at Picture Canyon (Figure 2) and at several undisclosed sites throughout the watershed. Potsherds found in the Fort Valley area indicate that the Sinagua used the Rio de Flag and associated headwater springs at least seasonally and possibly over a long period (Hailey 2020). More recently, from 1100 to 1250 A.D. the area around Wupatki National Monument, just north of the RDF watershed, was inhabited by Kayenta Ancestral Puebloans, the Sinagua, and the Cohonina (Babbitt and DeGraff, 2009). Inhabitants of the Wupatki area made use of the fertile soils generated by the eruption of Sunset Crater (burnt timbers from cultural features were carbon dated for volcanology studies), and they may have abandoned the area following soil nutrient depletion.



*Figure 2. Petroglyphs along the Rio de Flag in Picture Canyon Natural and Cultural Preserve. (Photo credit - Friends of the Rio de Flag).*

The San Francisco Peaks have been and continue to be central to cultural identity of at least 12 Native American tribes, whose traditional ceremonies and observations related to the Peaks still occur today. The current lands of the Diné and Hopi are the closest in proximity to the Rio de Flag watershed. The two tribes also have significant numbers of members residing within the Rio de Flag watershed, whose presence creates a link with the landscape, the waters, and watershed values, reaching back to the tribes' origins and forward into the future. The Hopi Tribe highly values native plants in the watershed in the context of ethnobotany and regularly collects plants here for traditional cultural practices.

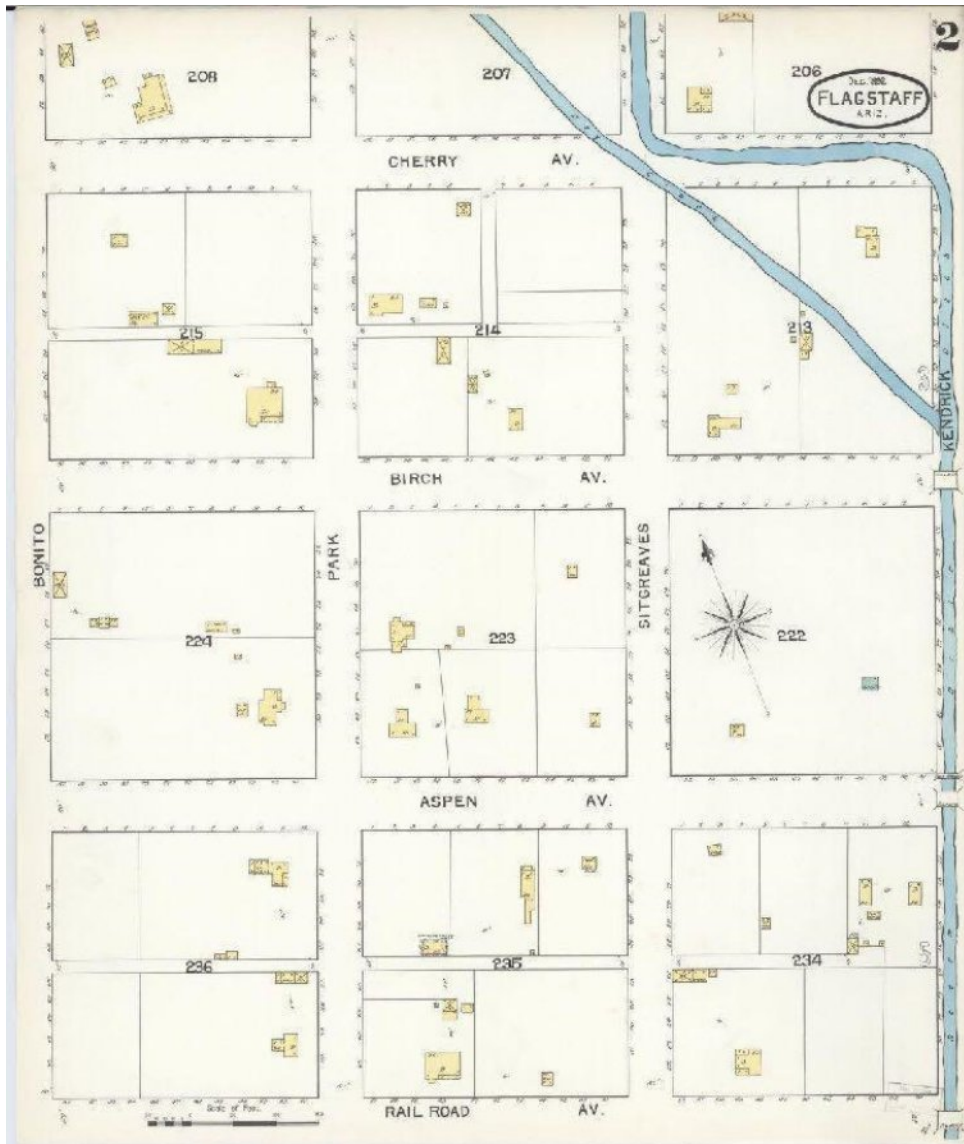
## **European settlement**

Permanent settlement in the Rio de Flag watershed only began in the 1880s when a small community developed around Antelope Spring (Old Town Spring) near the base of what is now called Observatory Mesa. The 'sky island' of ponderosa pine forests provided timber and water that could not be found for hundreds of miles in either direction along the rail route. Consequently, Flagstaff became a focal point for railroad workers, supplies, and trade with the local Indigenous communities.

The first train arrived in the Flagstaff area in 1882. At that time the community consisted of two stores, two hotels, three restaurants, and over 20 saloons and dance halls (Hailey 2020). By 1883, most of the development moved to the more open and flat area that is today's downtown Flagstaff. This move was made permanent when a large fire destroyed most of Old Town.

Ironically, the flat space of today's downtown was created as a natural outwash plain from the steeper slopes of the Peaks, Dry Lake Hills, and Observatory Mesa. The town was literally being built on a floodplain.





*Figure 3. An example of the Rio de Flag and an associated drainage ditch in the middle of the road, Flagstaff 1892. Sanborn Fire Insurance Map 1892.*

Nevertheless, when a natural climate shift after 1900 brought much wetter weather to Flagstaff, early residents realized all too soon, the Rio de Flag was a stream to be taken seriously (Figs. 4, 5).



*Figure 4. The Rio de Flag in the heart of Flagstaff, 1900. Image from Northern Arizona University, Cline Library Digital Collections NAU.PH.91.21.7.*



*Figure 5. A view west along Aspen St. during the 1903 flood. Image from Northern Arizona University, Cline Library Special Collectoins: NAU PH 72.*

Sanborn Fire Insurance Maps from 1890 and 1892 show the Rio de Flag flowing through the northern part of Flagstaff's Southside neighborhood. The 1892 and 1901

Sanborn maps show the creek running south across the railroad tracks, then southeast from Phoenix Avenue to Leroux Street, then east for six blocks between Cottage and Brannen going toward the railroad yard (Fig. 6).

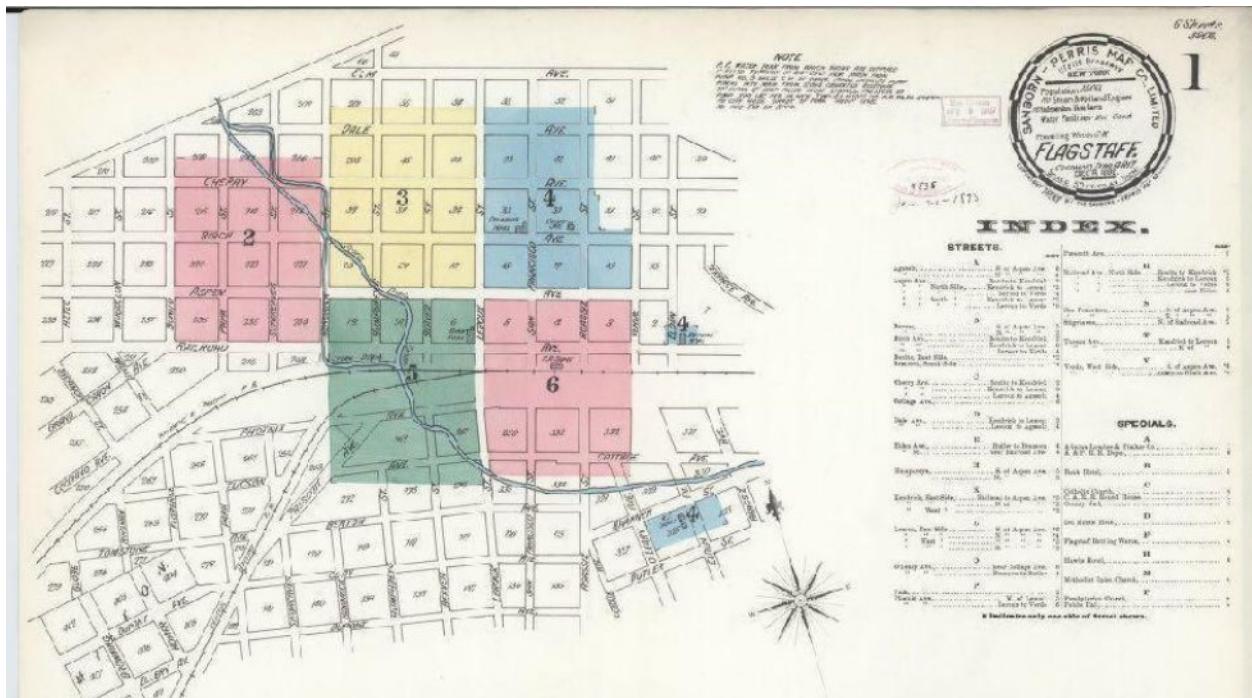


Figure 6. A map of the Rio de Flag and Flagstaff in 1892. (Sanborn Fire Insurance Map 1892). Note the original alignment of the Rio through the Southside neighborhood as well as the diversions north of the tracks.

Scant historical accounts describe relocation of the Rio de Flag channel for varying reasons and in various ways sometime after 1901. They are consistent in saying that the stream was moved into a new hand dug channel running through the southside. Since the channel was relocated, the Southside has experienced many flooding events. However, the Sanborn maps indicate that, while re-alignment of the Rio through the middle and south part of Southside did exacerbate flooding in the Southside, a portion of the neighborhood would have historically been in a floodplain regardless of channel realignment.

The current and ongoing Rio de Flag Flood Control Project will reduce long standing flooding issues for both the downtown and Southside communities.

## Water development within the watershed

Most of the early water development in the watershed occurred to support the establishment of Flagstaff.

The largest early project was an inter-basin water transfer, the movement of water from the Inner Basin high on the San Francisco Peaks to the Rio de Flag watershed to provide drinking water to Flagstaff. In the Inner Basin, Jack Smith Spring was the first spring developed for water consumption. In 1898, Mayor Julius Abineau commissioned a crew to build a 6-inch water pipeline from the Inner Basin to Flagstaff (City of Flagstaff Water Services internal files). Improvements and expansion of the pipeline continued through the early 1900s.

From 1903 to 1905, T.A. Riordan developed the dam that created Lake Mary. This reservoir sits within the Walnut Creek drainage. Like the Rio de Flag, Walnut Creek is a tributary to San Francisco Wash that eventually flows into Canyon Diablo. The Lake Mary reservoir originally supplied water to a lumber mill, but later the water was piped into the Rio de Flag watershed to provide a second reliable source of drinking water to Flagstaff.

As of 2018, 5% of the City's water comes from Inner Basin springs, 22% comes from Lake Mary, and 73% comes from groundwater wells. Much of this water is transferred from outside of the Rio de Flag watershed, used as municipal water, treated as wastewater, and released as reclaimed water into the Rio de Flag. The first beneficial use of reclaimed water in the watershed occurred in 1966 when the City ran a line from Wildcat Reclamation Plant to the Continental Golf Course. The reclaimed system expanded slowly after that, providing water to irrigate turf at other golf courses, school ball fields, and the NAU campus, and for snowmaking at the Arizona Snowbowl ski area. The reclaimed water system has since kept up with increasing demand in the past 15 years, as water conservation efforts moved landscaping and parks away from potable water.

When Flagstaff was originally developed around the Atlantic and Pacific Railroad, one of the first products provided to the railroad from the region was timber. The first lumber mill of record was the Ayer Mill created in 1881 near modern-day Lake Mary to provide railroad ties to the new trans-continental railroad (Denis Riordan purchased the mill in 1887 and renamed it the Arizona Lumber and Timber Company (Cline Library 2021). The two largest rail lines were the Arizona Mineral Belt and Central Arizona Railroads, neither of which exists today but their legacies live on in the many forest roads that follow the old rail alignments. Logging and milling operations in and around the watershed were highly active from the creation of the Arizona Lumber and Timber Company through the early 1950s, with greatest timber activity occurring early in the century. The last active lumber mill in Flagstaff closed in 1993.



## Watershed setting

The Rio de Flag watershed is generally situated on the southern portion of the San Francisco Peaks (Mount Humphreys, Agassiz, and Fremont). The Rio de Flag is a sub-watershed of the Little Colorado River watershed, which in turn is part of the greater Colorado River watershed. The Rio de Flag watershed abuts the Verde River watershed to the west and the Colorado River watershed to the north. For the purposes of this plan, the focus is on the watershed of the Rio de Flag and its tributaries from their headwaters to the Rio de Flag's confluence with San Francisco Wash (Figure 7).

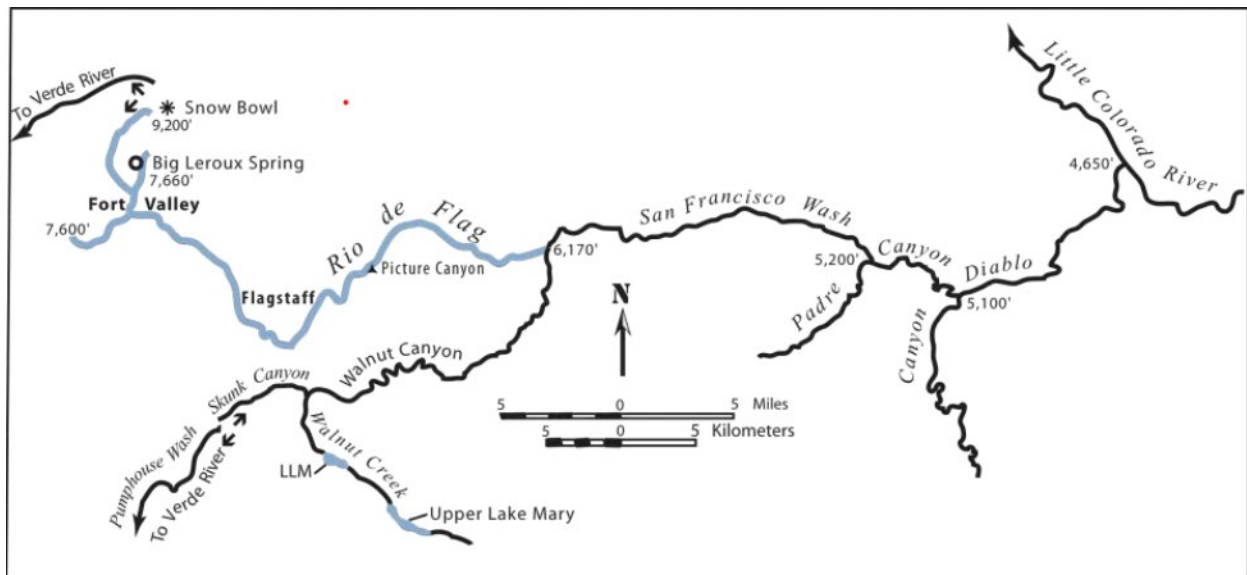


Figure 7. Sketch map showing the Rio de Flag (blue) and associated streams and washes draining to the Little Colorado River. Adapted from Holm (2019).

The Rio de Flag headwaters are dominated by the San Francisco Peaks, Dry Lake Hills, and Mount Elden, a complex of volcanoes, lava domes, and related features within the region's extensive San Francisco Volcanic Field. Volcanic activity began here in the early Pleistocene, about 2.6 million years ago. The most recent eruption formed Sunset Crater only 930 years ago and notably was recorded in the oral traditions of indigenous peoples (Waring 2018). The volcanic flows make up a considerable portion of the watershed and also create a dramatic elevation gradient from the highest point in Arizona at 12,633 feet, down to 6,170 feet at the confluence with the San Francisco Wash (Holm 2019). This gradient not only plays a key role in the biogeography of the watershed (the distribution of plant life), but it also figures in the very history of our scientific understanding of life zones, biomes, and ecosystems. The average precipitation in the Rio de Flag watershed is 22.4 inches (Leao and Tecle 2005). However, the majority of this rain and snow evaporates and infiltrates into the cinders or karst limestone. Very little surface water, less than 5% of precipitation, flows on the natural landscape.



## Ecosystems and ecology

Most of the Rio de Flag watershed falls within the largest contiguous ponderosa pine forest in the world, an ecosystem that stretches across 2 million acres in Arizona and New Mexico. This ecosystem is unique for having a very low rainfall-runoff ratio due to climate, soils, vegetation, and geology. This low rainfall-runoff ratio is part of the reason there are few perennial surface water features despite a relatively high average annual precipitation.

The Rio de Flag watershed encompasses ecosystems that include alpine tundra, spruce-fir forest, ponderosa pine forest, and pinyon-juniper woodlands. Relatively rare habitats found within the watershed include caves, old growth forests, springs, wet meadows, and escarpments.

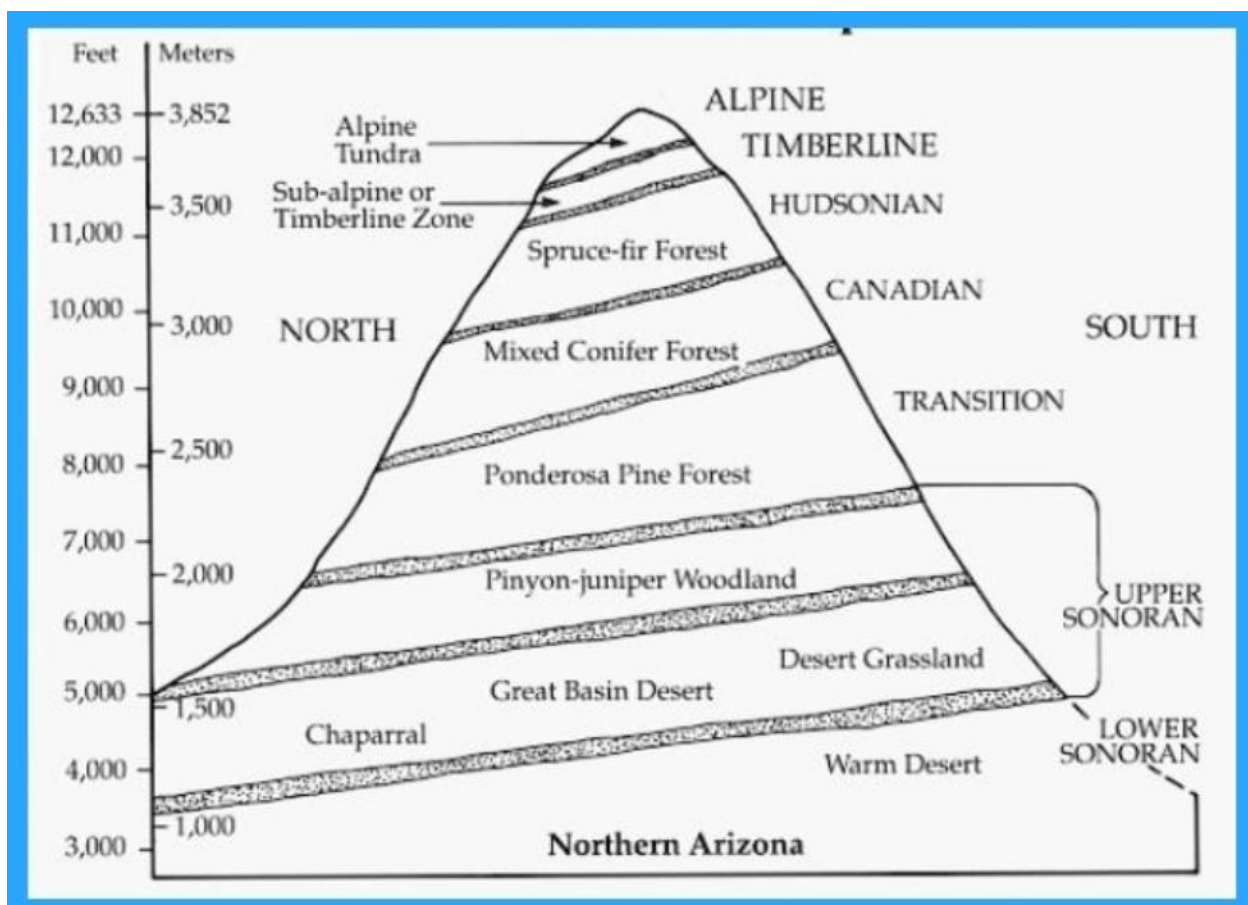


Figure 8. Merriam's life zones in the San Francisco Peaks area. Modified from Merriam (1890).

## **Hydrogeology (Groundwater)**

The hydrogeology of the Flagstaff area and the Rio de Flag is dominated by the igneous rocks of the San Francisco Peaks, related lava flows and cinder fields, debris flows, and alluvial fans, and the sedimentary karstic Kaibab Formation, which underlie the area. Moenkopi Formation is exposed to a limited extent, primarily around the margins of McMillan Mesa. Karst is defined as rock layers that are readily dissolved by weak acids, such as rainwater, and exhibit features such as dissolution cavities and enlarged fractures. The Kaibab Formation (a.k.a. Kaibab Limestone) is mostly made up of highly fractured and weathered limestone. Both the igneous and karst formations have high water infiltration rates, which is one of the reasons that the Rio de Flag is mostly ephemeral or intermittent at best (Hill et al. 2018).

Groundwater flow does not necessarily follow the same pathways as the surface water flow, due to geologic structural controls such as faults, fractures, and the orientation of rock layers. While the Rio de Flag is part of the Little Colorado River surface drainage, once water sinks into the subsurface it may flow toward the Verde River. The groundwater flow path depends on where water infiltrates within the surface watershed. For example, the upper Sinclair Wash sub watershed overlies the groundwater divide between the Verde River and Little Colorado River groundwater basins, so that water that infiltrates here may flow in groundwater to the Verde Valley.

## **Surface Water**

Surface water resources are strikingly limited along the Rio de Flag and throughout the watershed due to the conditions described earlier. Perennial waters include springs and spring brooks. Reclaimed wastewater effluent discharged from two wastewater treatment plants supports aquatic and riparian habitats along the Rio de Flag in Picture Canyon (maintained through an agreement of the City of Flagstaff with the Arizona Game and Fish Department), the Rio de Flag near Interstate 40, and the Frances Short Pond near downtown Flagstaff. Natural flows occur during most spring seasons as snowmelt allow ephemeral and intermittent channels to flow throughout the watershed. Summer monsoonal storms also produce brief runoff events.

Surface water resources are monitored using streamflow gauges and precipitation gauges operated by the City of Flagstaff, Coconino County, and Northern Arizona University. These gauges replaced US Geological Survey gages that were operated between 1969 and 1980 (Hill et al. 1988).

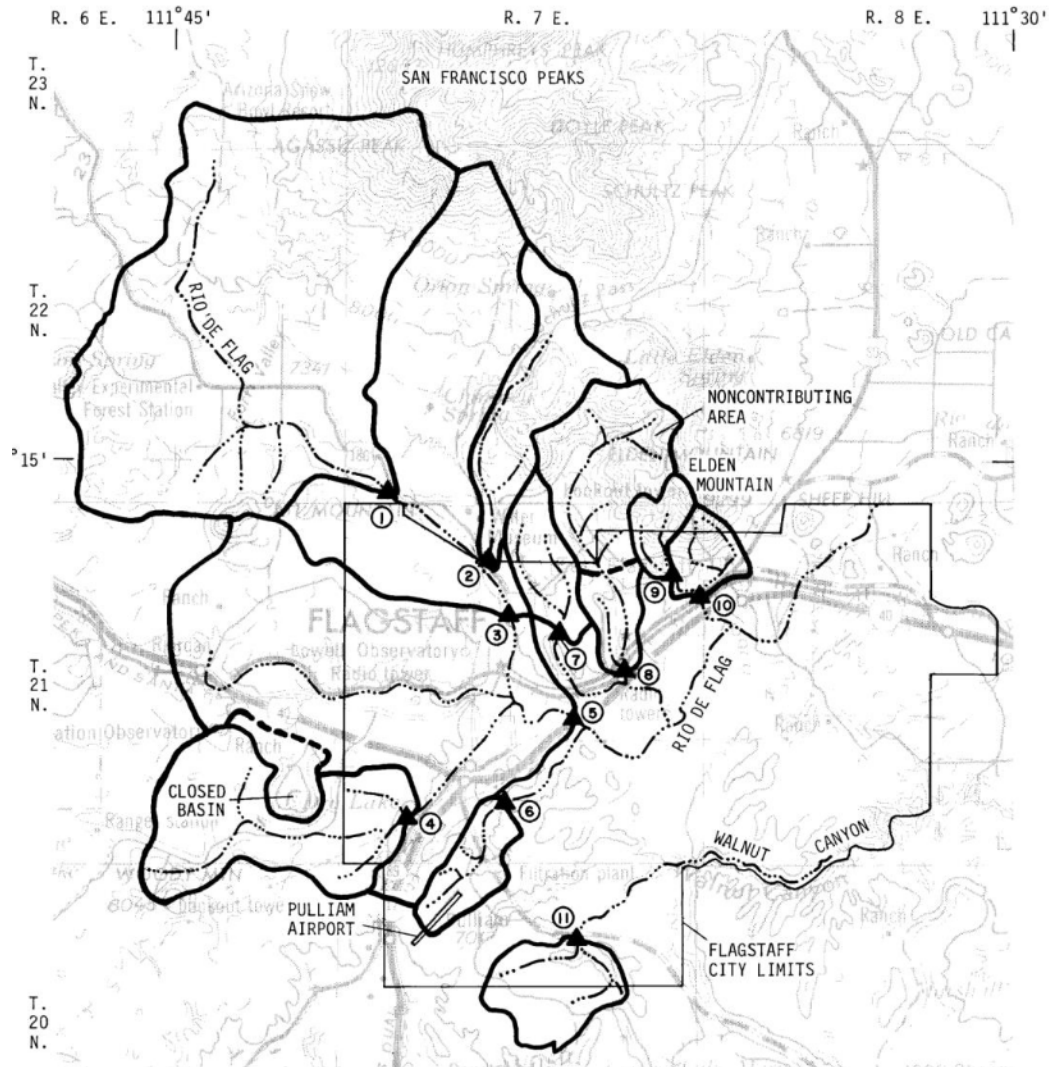


Figure 9. Map of historical streamflow gauges within the Rio de Flag watershed, 1969 -1980 (Hill et al. 1988).

1. Rio de Flag at Hidden Hollow Road near Flagstaff
2. Shultz Canyon at Flagstaff
3. Rio de Flag at Flagstaff
4. Sinclair Wash at Flagstaff
5. Rio de Flag at Interstate 40 at Flagstaff
6. Bow and Arrow Wash at Flagstaff
7. Switzer Canyon at Flagstaff
8. Switzer Canyon tributary at Flagstaff (a.k.a. Spruce Wash)
9. Lockett-Fanning diversion at Flagstaff
10. Harenberg Wash at Flagstaff
11. Fay Canyon near Flagstaff

A preliminary update to the surface water gauge network was completed in 2021 by the City of Flagstaff. The data report, based on 2008 to 2019 data, indicates that FEMA Flood Insurance Study (FIS)-predicated flows are twice to several times higher than actual flows (FEMA 2010; Schenk et al. 2021). Continued stream monitoring will be required to see if this trend continues during wet years.

## Floods

For the Rio de Flag watershed urban areas are primarily in Fort Valley, City of Flagstaff, and Doney Park. Frequently flooded areas are identified, prioritized, and mitigated by the city and county for their respective jurisdictions (Figure 15).

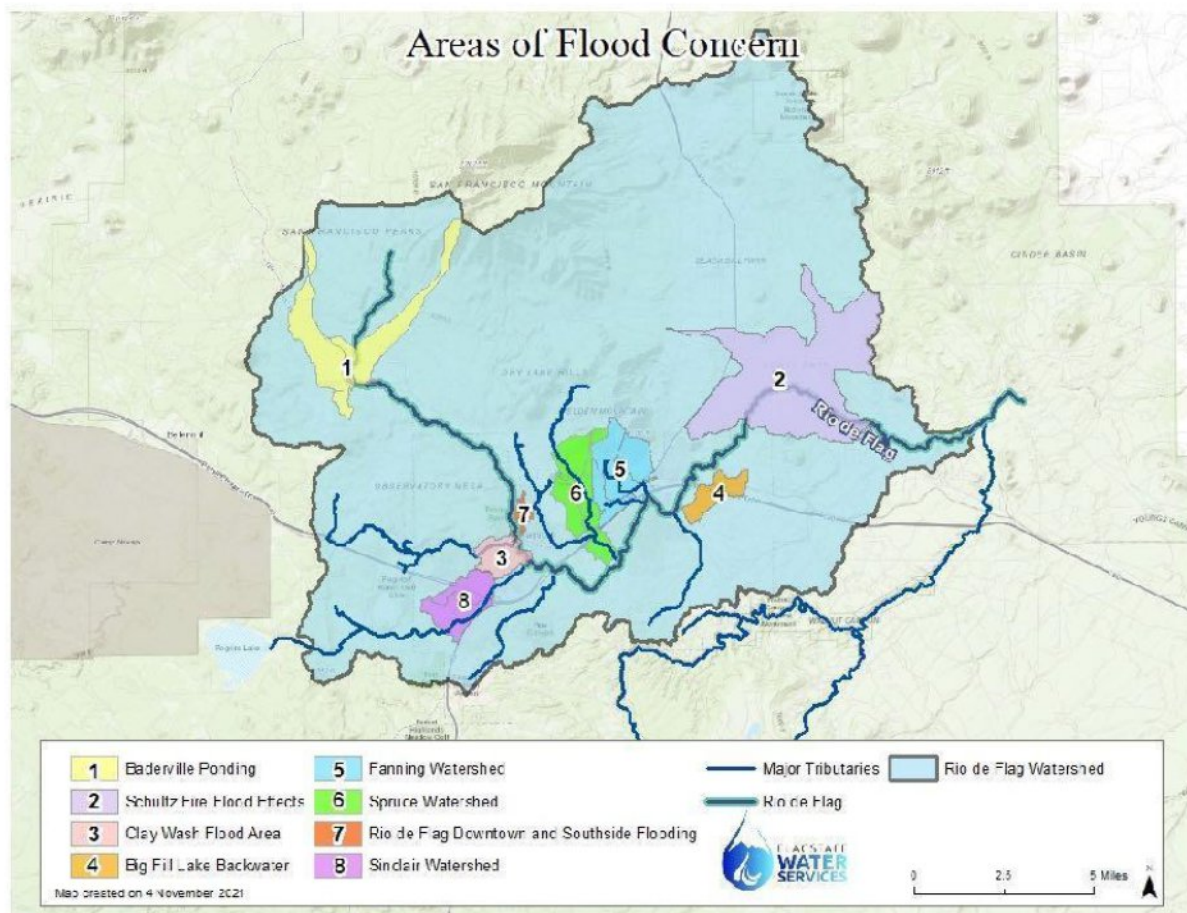


Figure 10. Areas of flood concern within the Rio de Flag watershed.

Post-wildfire flooding is a concern in the watershed, primarily in the Spruce Wash drainage downstream of the 2019 Museum Fire (Figures 16 and 17). The nearby 2010 Schultz Fire scar also contributes to flood threats in the periphery of the Rio de Flag watershed (in the northeast non-contributing portion of the watershed). Also, during



extreme rainfall events in summer 2021, runoff from the historic 1977 Radio Fire scar on Mount Elden initiated flooding in the Fanning Wash sub watershed. Flood information is collated and assessed by the city and county; examples of historic floods are listed in the FEMA FIS report for Coconino County.



*Figure 11. Flooding in the Sunnyside neighborhood from July 2021 monsoon storms on Museum Fire burn scar. (photo credit: Ed Schenk)*



*Figure 12. Post flood cleanup on Cedar Avenue in Flagstaff following a July 2021 monsoon storm on the Museum Fire burn area (Spruce Wash drainage; photo credit Ed Schenk).*



Flood mitigation strategies vary by watershed and by neighborhood. The city maintains a list of mitigation projects identified through the Northeast Area Master Drainage Study (NAMDS) (J.E. Fuller 2008) and a separate but related capital improvements projects prioritization. The County also maintains a prioritized capital improvements list as well as a set of pre-fire treatment areas. This WARF Plan does not include detailed explanations of flood mitigation projects since they vary with time and would likely be out-of-date by the time the plan is adopted. The goal of all flood mitigation is to reduce flood hazards for the community while preserving natural stream function and/or amenities.

The largest flood control project in the region is the joint project of Flagstaff and Corps of Engineers called the Rio de Flag Flood Control project. This project intends to reduce or eliminate flood damage to downtown and the Southside neighborhood by realigning and moving below ground major portions of the Rio de Flag channel.

<https://www.flagstaff.az.gov/4189/Rio-De-Flag-Flood-Control-Project>. This project has been in development for more than twenty years and could have major impacts to downtown and the Southside through flood control and economic effects.

## **Stream Channels and Riparian Ecology**

The Rio de Flag is an ephemeral stream, meaning that it flows only during parts of the year. While ephemeral streams have historically been ignored by science and society, they have recently been found to host high biodiversity and great recreation potential (Goodrich et al. 2018). Perennial, or continuously flowing, reaches of the Rio de Flag are artificially maintained using reclaimed water discharge from the City of Flagstaff's two wastewater treatment plants. These reaches include the "Rio Wetlands" near Interstate I-40 and Picture Canyon at the eastern edge of the city. The city also maintains Frances Short Pond near downtown Flagstaff using reclaimed water.

The riparian ecology of the Rio de Flag is based on species that are adapted to ephemeral or intermittent water sources. Tree species include box elder, arroyo and coyote willow, aspen, and planted cultivars of cottonwood and sycamore. Wetland herbaceous species exist at perennial springs, such as Coyote Spring, as well as perennial reaches of stream channel. Animal species are typically mobile because of the lack of consistent water. Fish are stocked at Frances Short Pond and aquatic macroinvertebrates can be found in perennial springs. Several of the proposed projects in this plan intend to renovate or restore riparian vegetation.

The Rio de Flag and its tributaries have moderately to well defined channels, depending on the underlying geology. In terms of stream classification, they are mostly classified as Rosgen VIII, a moderately confined valley with fine soils and a distinct floodplain (Natural Channel Design 2020). Headwater channels tend to be Rosgen Type II, more

confined, steeper, and lacking floodplains (Rosgen 1996). Stream restoration projects in the watershed have used a combination of Rosgen natural channel design stream restoration practices (Rosgen 1997) and quasi-traditional channel stabilization methods loosely based on Native American traditions (Zeedyk and Clothier 2014). Examples of both types include the cross-vein weirs and check dams below the Schultz Fire and Museum Fire, “Zuni Bowl” channel stabilization in the Rio de Flag in the Cheshire neighborhood, and one-rock check dams in the Rio de Flag, Sinclair Wash, and Bow and Arrow Wash.

Many of the local streams do not show recent history of violent flooding, except within urban areas, and are defined by gravel beds and grassy slopes (Natural Channel Design, 2020). Stream incision, the act of channels down-cutting and abandoning their former floodplains and riparian areas, is thankfully relatively rare in the Rio de Flag watershed except where there has been extreme disturbance. While there are flash floods on the Rio, they are rarer than in desert environments. The water holding capacity of forest detritus, duff, and soils helps reduce violent flooding, so long as soils are not saturated and the precipitation rate does not exceed in soil infiltration rate.

Soil classification is still poor for most of Arizona, relying on low resolution National Resources Conservation Service (NRCS) soil atlases. The soil types that have been mapped are either generally very poor at infiltrating water (high clay contents from the weathering of the basalts and cinders) or are extremely good at infiltrating water (cinders, sands, gravels). There is a lack of well-defined loamy soil except in flat outwashes such as Freidlein Prairie, Baderville, and the Sunnyside neighborhood.

## **Natural Floodplain Function**

Floodplains in the Rio de Flag watershed can absorb flood waters, improve water quality through natural filtering and flood attenuation, and support active and healthy riparian areas (Figure 19). Floodplains, however, can only provide these beneficial functions if they are conserved as natural open space and if hydro-connectivity with the channel is maintained. The City and the County both promote healthy natural floodplain function as part of their FEMA floodplain administrator duties. The City of Flagstaff maintains a rural floodplain designation for certain stretches of floodplain that have been determined to be intact and valuable for natural floodplain function. This designation limits development to protect the floodplain ecological function.

Alluvial fan floodplains that can be found at the base of the Peaks, Mount Elden, and Dry Lake Hills are especially valuable, because they can infiltrate large amounts of water. These areas are protected following wildland fires to enable the maximum amount of water infiltration upstream of post-fire flood flows reaching urban areas. For both the Schultz and Museum Fires, protective measures have included rock cross-vein

weirs, channel rock and log dams, and channel bed stabilization. More information about natural benefits of floodplains can be obtained from the City of Flagstaff Stormwater Section or the Coconino County Flood Control District or Community Development Section.



*Figure 13. A functioning natural floodplain in July 2021 near the confluence of Spruce Wash and the Rio de Flag (Photo credit Ed Schenk).*

## **Climate Responses and Projections**

Rapid, human-activity-driven climate change is already here, and we are not only seeing the impacts in terms of more prolonged drought, flashier floods, and increased temperature, but witnessing these changes accelerating ahead of many modeled predictions. Regionally, the first ever declaration of a water shortage for the Colorado River basin reflects this effect. Local strategies to respond to and become more resilient to climate change are being implemented only recently. These strategies include the Flagstaff Climate Action and Adaptation Plan (City of Flagstaff 2018), the Flagstaff Watershed Protection Plan (a forest thinning plan), and addressing climate change and

forest vulnerability in the Coconino County Flood Control District's and Emergency Management Division's strategies and planning.

Climate has always been dynamic in the Rio de Flag watershed, with alternating dry and wet periods and cold and hot cycles throughout geologic history (Waring 2018). Most recently in the Holocene (11,700 years ago to present), the Southwest has heated up and stranded cool temperature tree species in "sky islands", high elevation stands surrounded by low elevation deserts. The Rio de Flag watershed is in one of these sky islands, with tree assemblages that resemble forests of the southern Rocky Mountains (Betancourt 2004).

## **Forest Ecosystems and Fire**

Fire has been central to the natural history of forests of the Rio de Flag watershed. Studies show that, prior to the 20<sup>th</sup> Century, the ponderosa pine forests that cover most of the watershed experienced a fire frequency of once every 2 to 15 years as mostly low intensity fires (Cocke et al. 2005; Margolis et al. 2011). The forests began changing in the 1900s as sheep herders, cattle ranchers, and Flagstaff area residents began to suppress wildfires

More recently, the Forest Service, City of Flagstaff, and Coconino County have attempted to restore the forest stand density to reduce the risk of catastrophic wildfires (Figure 20). The Radio Fire, Schultz Fire, and to an extent the Museum Fire, were all high-severity wildfires in the Rio de Flag watershed that have had profound effects on the wildland-urban interface. Efforts to return the forest to earlier conditions include prescribed fire and mechanical thinning.



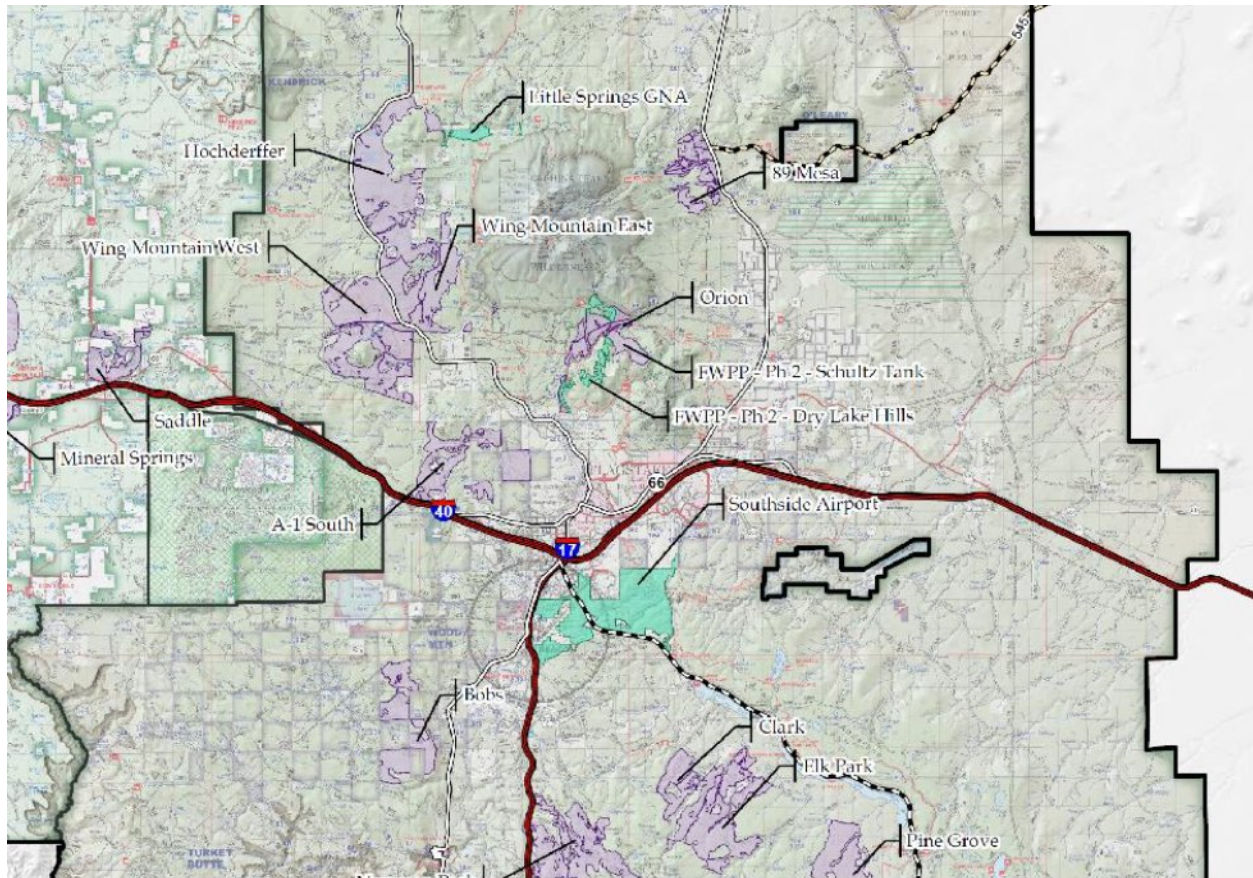


Figure 14. Current (purple) and planned (turquoise) 4FRI mechanical treatments in the Rio de Flag watershed vicinity. Map is from May 2021 and provided by the US Forest Service.

## Beneficial plants vs. weeds – How they affect flood plain and watershed health and function

City of Flagstaff commissioned a biologist to develop a list of floodplain plant species found at 12 sites along the Rio de Flag and major tributaries (See <https://sites.google.com/site/watershedalliancefortherio/home>). Further research may be conducted on selected species identified in the floodplain species assessment and a more detailed plan may be developed with input and assistance from subject-matter experts. The plan would identify actions the community can pursue to support conservation and recovery of those species.

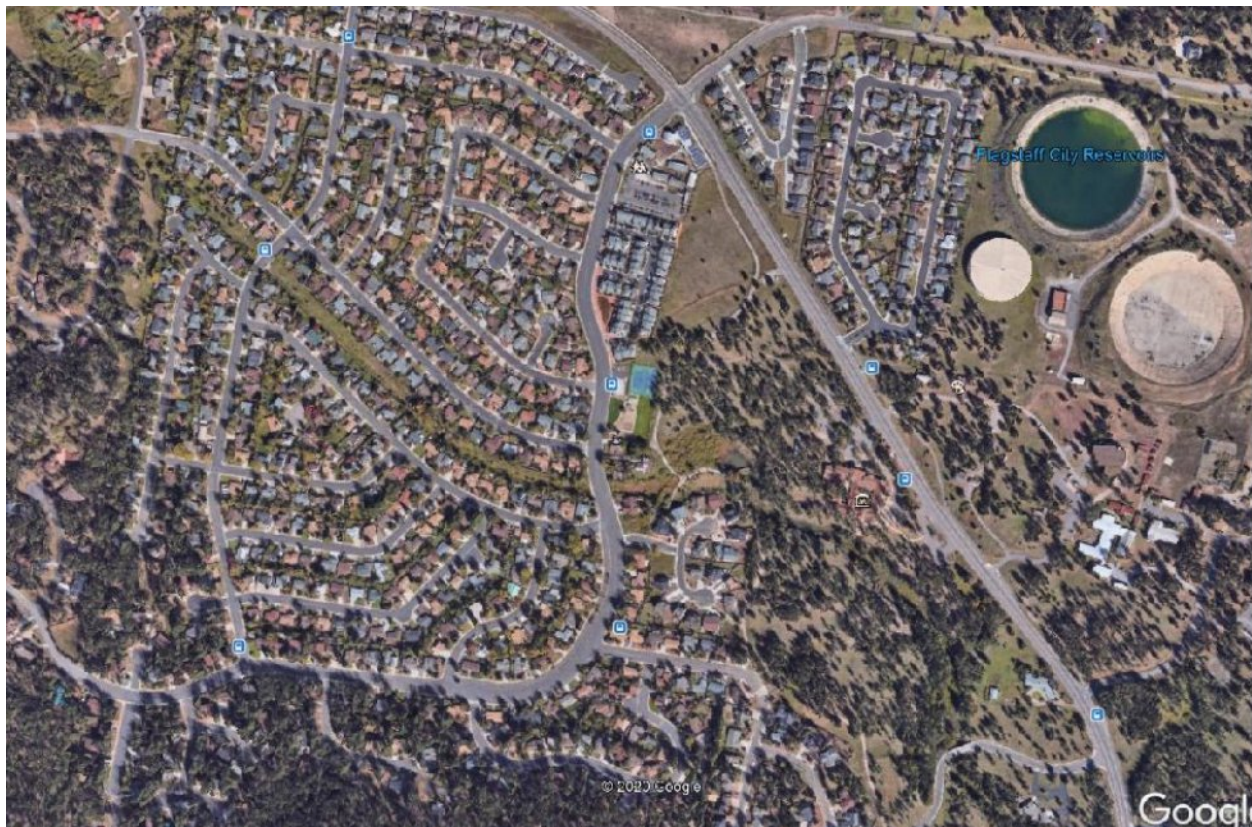
Unlike beneficial plants that provide habitat, invasive weeds have become a large problem in the watershed and will likely continue to be so, due to human disturbance and transportation. The San Francisco Peaks Weed Management group is a non-profit volunteer organization that tracks and manages weeds in the watershed and Flagstaff area. The group advocates for a consistent weed strategy at the city, county, and federal level, which is needed in the Flagstaff area, and conducts weed control projects.

Weeds can be tracked using the City of Flagstaff Water Services' weed app (<https://arcg.is/14CS1e>). This app was created to help city and county managers track



and remove weeds, primarily in the floodplains and channels of the Rio de Flag and its tributaries. Noxious, or quick spreading, weeds include musk thistle, diffuse knapweed, yellow starthistle, spotted knapweed, bull thistle, poison hemlock, common teasel, scotch thistle, and Mediterranean sage. Siberian elm is also widespread and is the only tree species that could be considered noxious in the Rio de Flag watershed.

Currently weeds are managed on an ad hoc basis among the City, County, and Forest Service. Actions occur as funding is available and political pressure is exerted. A more unified approach and consistent funding sources are needed to maintain the watershed's biodiversity and healthy ecosystems.



*Figure 23. The Rio de Flag (green strip) in Cheshire neighborhood in 2020 (Google Earth).*

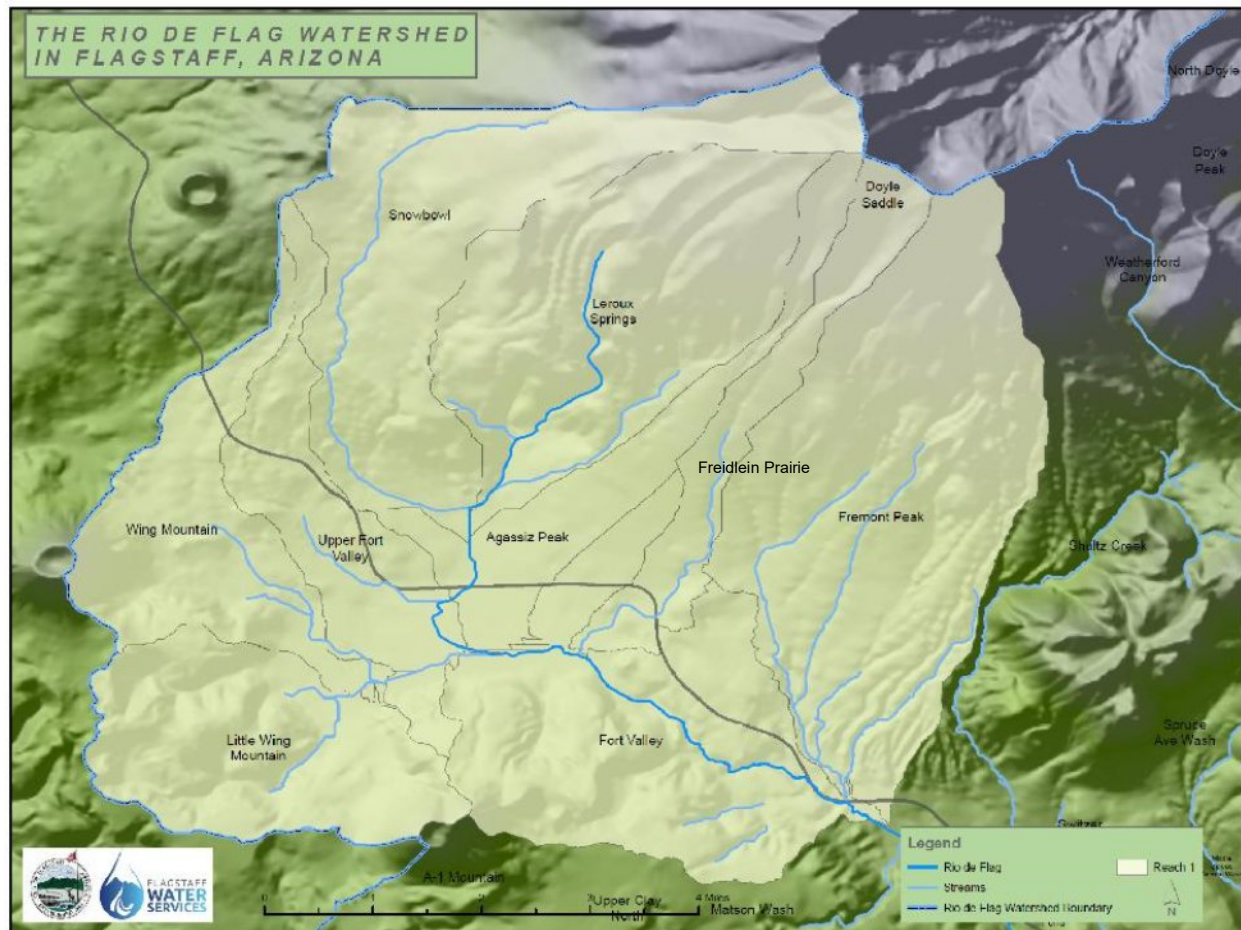
## **STREAM REACH DESCRIPTIONS**

The Rio de Flag watershed has been divided into sub-watersheds with boundaries defined by seven stream reaches along the main Rio de Flag channel. Each reach is based on unique factors that warrant discussion for planning and management. Reaches are numbered from upstream to downstream with the headwaters reach

labeled as Reach 1 and the reach ending at San Francisco Wash on the east side of Flagstaff as Reach 7.

A wealth of background information for each reach could be more fully explored in neighborhood-specific plans and specific restoration plans and designs. This section introduces each reach, but these overviews are expanded upon in later sections of the plan. The later sections include restoration opportunities within each reach and map overlays showing locations for public participation comments and survey results.

## Reach 1 – RDF headwaters to Cheshire neighborhood



*Figure 24. Map of Rio de Flag Reach 1 - Headwaters to Cheshire neighborhood, including subwatersheds*

**Notable features:** Leroux, Viet, and Chimney Springs, the Fort Valley and Freidlein Prairie meadows, and the flanks of the San Francisco Peaks and Wing Mountain.

**Threats:** Severe wildland fires due to heavy forest loading, development of Fort Valley meadow, drought impacts on forest structure, recreational use of forest resources.

**Relevant streamflow gauges:** Rio de Flag at Hidden Hollow, operated by the USGS between 1970 and 1982 and by NAU between 2011 and the present.

**Major tributaries:** Unnamed tributaries off of the Fort Valley trails flowing into the Cheshire meadow, Peak View Street Wash, and unnamed tributaries off of Wing Mountain.

**Summary:** Reach 1 is the headwater reach for the watershed and consists of the Rio de Flag and tributaries in the Fort Valley area down to the Flagstaff city limits at Cheshire. The majority of development lines Highway 180 and is of relatively low density. Perennial water sources include notable springs and vernal wetlands within the Fort Valley meadow. Besides sites for residential homes, other land uses include recreational hiking, biking, and equestrian activities. Portions of this reach have recently undergone forest thinning actions through the Flagstaff Watershed Protection Plan and by the US Forest Service and The Nature Conservancy. Most of the channels in this reach are ephemeral, flowing only after precipitation or during snowmelt. Following forest thinning some intermittent streamflow has been observed downstream of treatments. Channels tend to be small and not very well developed (i.e. no sand bars, cut banks, or well developed terraces), likely due to steep topography and decades of forest overgrowth intercepting rain before runoff.

**Geology, vegetation, land use:** The surficial geology of this reach is entirely igneous with andesite, basalt, dacite, and cinders related to eruptions in the San Francisco Peaks, Wing Mountain, and A-1 Mountain. Alluvium is present in depressions such as the Fort Valley meadow and the Cheshire meadow/neighborhood. Vegetation is primarily ponderosa pine forest in lowlands transitioning to mixed conifer, aspen, and alpine tundra as the watershed increases in elevation. Land use is dominated by National Forest land though privately owned areas are largely developed (Fort Valley, Forest Heights, and Cheshire neighborhoods).



## Reach 2 –Rio de Flag from Cheshire to Frances Short Pond

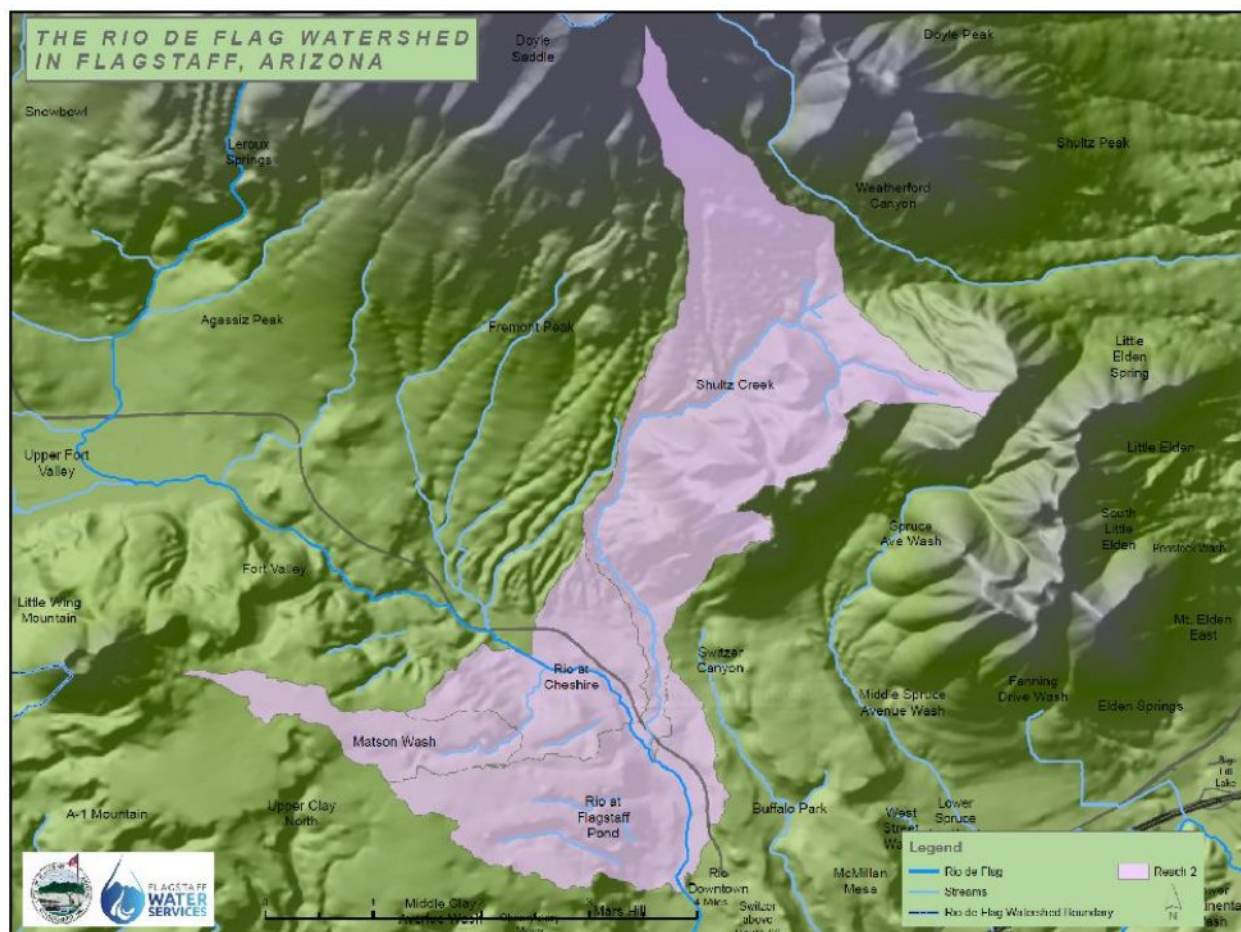


Figure 25. Map of Rio de Flag Reach2 - From Cheshire to Francis Short Pond, including subwatersheds.

**Notable features:** Schultz Pass, western Dry Lake Hills, Cheshire Pond, Frances Short Pond, water tanks and springs on Observatory Mesa and on south slope of Peaks (Orion, Coyote, Homestead, and other springs).

**Threats:** Invasive weeds, perched aquifer drawdown in Cheshire and Coconino Estates neighborhoods, recreational use of Schultz Pass, threat of severe wildfires, and continued development on Observatory Mesa in private in-holdings.

**Relevant streamflow gauges:** Rio de Flag at Peak View Street, operated by the city between 2008 and the present. Schultz Creek at Highway 180 operated by NAU between 2011 and the present and by the City of Flagstaff between 2017 and the present.

**Major tributaries:** Schultz Creek, Matson Wash

**Summary:** Reach 2 includes the Cheshire and Coconino Estates neighborhoods, upper Thorpe Park, portions of Observatory Mesa, the Dry Lake Hills, and the southern slopes of the San Francisco Peaks. The Rio mainstem is highly modified by channelization, damming, and dredging. The majority of the mainstem is urbanized while tributaries are protected by National Forest, city of Flagstaff open space, and the Museum of Northern Arizona undeveloped lands. Like Reach 1 most of this reach is ephemeral. The Rio de Flag near Cheshire Pond does flow at a small trickle throughout the year, likely a remnant of the San Francisco Spring that was noted near Cheshire Dam. The Cheshire Dam creates a perennial wetland before the scenic basalt narrows that bisect the Museum of Northern Arizona campus. Flow in the mainstem Rio de Flag can occur for several months following large snow events, especially in the Cheshire neighborhood which benefits from recent forest thinning immediately upstream. Channel development in the tributaries is still poor due to lack of sustained runoff. The mainstem has a well-developed and geomorphically complex channel except in areas where it has been straightened or modified.

**Geology, vegetation, land use:** The surficial geology of this reach is entirely igneous with andesite, basalt, dacite, and cinders related to eruptions in the San Francisco Peaks, Wing Mountain, A-1 Mountain, and the Dry Lake Hills upheaval. Alluvium is present in the geologic valley of the Rio de Flag and in meadows. Vegetation is primarily ponderosa pine forest in undeveloped areas. Land use is dominated by National Forest land in the Schultz Creek area but is largely urbanized in the lowlands.



## Reach 3 – Frances Short Pond to Sinclair Wash, Including Clay Wash



Figure 26. Map of Rio de Flag Reach 3 - Francis Short Pond to Sinclair Wash. Includes Clay Avenue Wash and sub watersheds.

**Notable features:** Tunnel and Old Town Springs, A-1 Mountain and Observatory Mesa tanks and trails, Clay Wash Dam, downtown and Southside Flagstaff, and the north campus of Northern Arizona University.

**Threats:** Continued development, recreational use of Observatory Mesa, urban flooding, invasive weeds, and illegal off-road use.

**Relevant stream gauges:** Clay Wash at the dam, South Fork of Clay Wash at Kaibab Lane, Little Rio at Lone Tree, downtown Rio de Flag NAU crest gauges. Various times of operation, all operating presently.

**Major tributaries:** Clay Wash

**Summary:** The mainstem in this reach is intermittent, fed by Frances Short Pond and urban runoff. The channel is highly altered by urbanization as it passes through

downtown Flagstaff and the Southside neighborhood. Although the Rio de Flag mainstem is short in this reach, it is one of the most controversial reaches in the watershed and has a high level of activism. Both neighborhoods lie in a natural depression that leads to flooding. The Rio de Flag Flood Control Project, a multi-million-dollar cooperative endeavor of the City of Flagstaff and U.S. Army Corps of Engineers, intends to relieve flooding pressure in downtown and the adjacent residential neighborhood by placing a large flood-conveyance tunnel under most of the mainstem stream in this reach segment. A newly created surface channel will serve as an amenity between Frances Short Pond and City Hall. From just south of Route 66, the Rio de Flag will be diverted away from the Southside and toward its original channel. When this change is completed, the Rio will flow eastward parallel to the railroad tracks and then south, and it will enter the present-day course near Interstate 40. Altogether, these channel changes relieve flooding in the Southside neighborhood.

Clay Wash is the only significant tributary in Reach 3. It has history of flooding at Milton Avenue, Butler Ave, and Mikes Pike. As part of the Rio de Flag Flood Control Project, the underground conveyance of Clay Wash will be moved from beneath Butler Ave to beneath Mike's Pike. This will allow tributary water to flow into the new alignment of the Rio de Flag and will also help relieve flooding in the Southside neighborhood. Clay Wash does not have a complex geomorphic channel upstream of the city. The urban section of Clay Wash is like the Rio de Flag, heavily modified for urban stormwater management, incised, and frequently flowing after rain events.

**Geology, vegetation, land use:** Geology in this reach is a combination of volcanic (igneous) rocks, deep alluvium in flat areas, and rare outcropping of Kaibab Formation sedimentary rock. Vegetation is highly dependent on urban landscaping but is ponderosa pine forest-dominated in the undeveloped areas, especially on Observatory Mesa and A-1 Mountain. Invasive weeds are prevalent, especially in Clay Wash where Scotch thistle can form dense monocultures. Land use is either undeveloped/recreation on national forest land and in the city Open Space program or heavily urbanized (medium- and high-density housing and commercial development) for most private land holdings.

## Reach 4: Rio de Flag in the Southside neighborhood to I-40

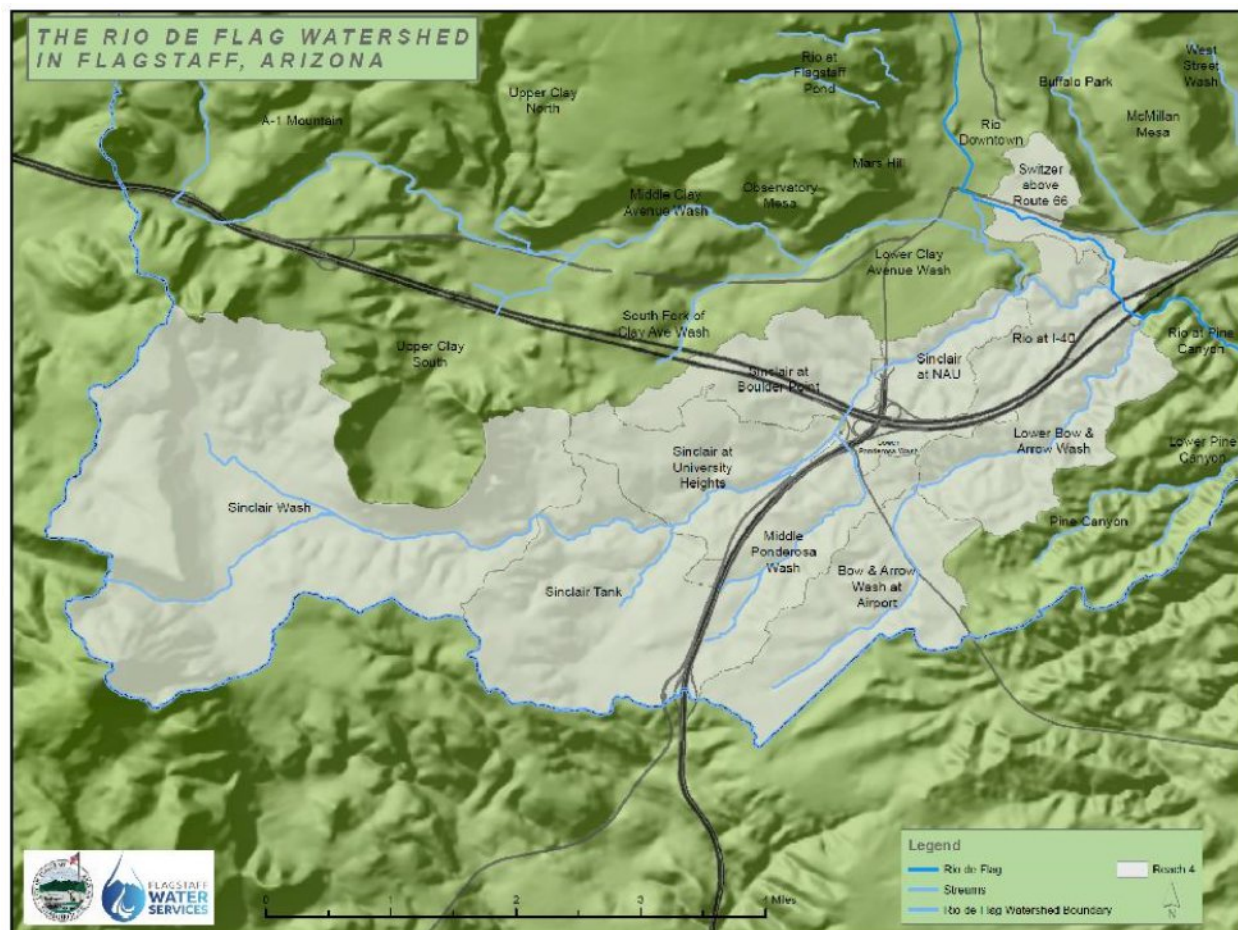


Figure 27. Map of Rio de Flag Reach 4 - Rio de Flag in Sunnyside neighborhood to I-40, including sub watersheds.

**Notable features:** I-40 Wetlands and Sinclair Wash canyon near Lone Tree Road.

**Threats:** Continued development, recreational use in Sinclair Wash headwaters, urban flooding, invasive weeds, severe wildfires.

**Relevant streamflow gauges:** Bow and Arrow Wash at the airport, Bow and Arrow Wash at Coconino Community College, Sinclair Wash at University Heights, Rio de Flag at Butler Tunnel. Bow and Arrow Wash gauge at the airport has operated since 2008, the Sinclair Wash and Rio de Flag two gauges are new as of 2019. An old USGS gauge operated near the Sinclair Wash gauge but the location is not exactly the same, since the channel has been greatly modified.

**Major tributaries:** Sinclair Wash, Bow and Arrow Wash, Ponderosa Wash

**Summary:** The Rio de Flag mainstem is short in this reach, like Reach 3. The mainstem is comprised mostly of the Southside neighborhood and a section of canyon

that leads to I-40. The Southside neighborhood lies in a natural depression that leads to flooding. The Rio de Flag Flood Control Project intends to relieve this flooding (see description above for Reach 3). Streamflow from the Rio de Flag and Clay Wash will be diverted away from the Southside neighborhood when the project is complete. Sinclair Wash, Bow and Arrow Wash, and Ponderosa Washes are the significant tributaries in this reach. Sinclair Wash has historically been more responsive to rain events, as shown by the well-developed valleys and canyons associated with the water course. Bow and Arrow Wash has urban sections with historical flooding prior to stormwater improvements as well as a relatively long natural canyon before meeting the Rio de Flag downstream of I-40. Ponderosa Wash is mostly urban but does include a small FUTS greenway from near the airport to Ponderosa Trails Park. Reach 4 is largely ephemeral except for the I-40 wetlands that demarcate the end of the reach. The I-40 wetlands are perennial due to discharge of reclaimed wastewater effluent from City of Flagstaff's Rio de Flag Water Reclamation Plant.

**Geology, vegetation, land use:** Reach 4, unlike the upstream reaches, has significant outcroppings of Kaibab Formation sedimentary rock (mostly cherty or silty limestone). Sinclair Wash canyon downstream of Lone Tree Drive and Bow and Arrow Wash canyon also downstream of Lone Tree are good examples of canyons with extensive outcroppings of Kaibab Formation rock. The headwaters section of Sinclair Wash is mostly igneous transitioning to sedimentary rock shortly after entering the city. Vegetation within the reach is dependent on land use. In urban settings the watershed is dominated by landscaping, though vestigial stands of ponderosa pine forest remain. The undeveloped sections of the watershed are largely ponderosa pine forest. Land use is like Reach 3. National forest, county park, Arizona State Land Trust areas are undeveloped, while city parcels and most private holdings are developed for urban commercial and residential use. This sub watershed includes the intersection of I-40 and I-17, commercial properties along Woodlands and Beulah Boulevards, NAU's south campus, and Pulliam Airport.



## Reach 5: Rio de Flag from I-40 to Foxglenn Park

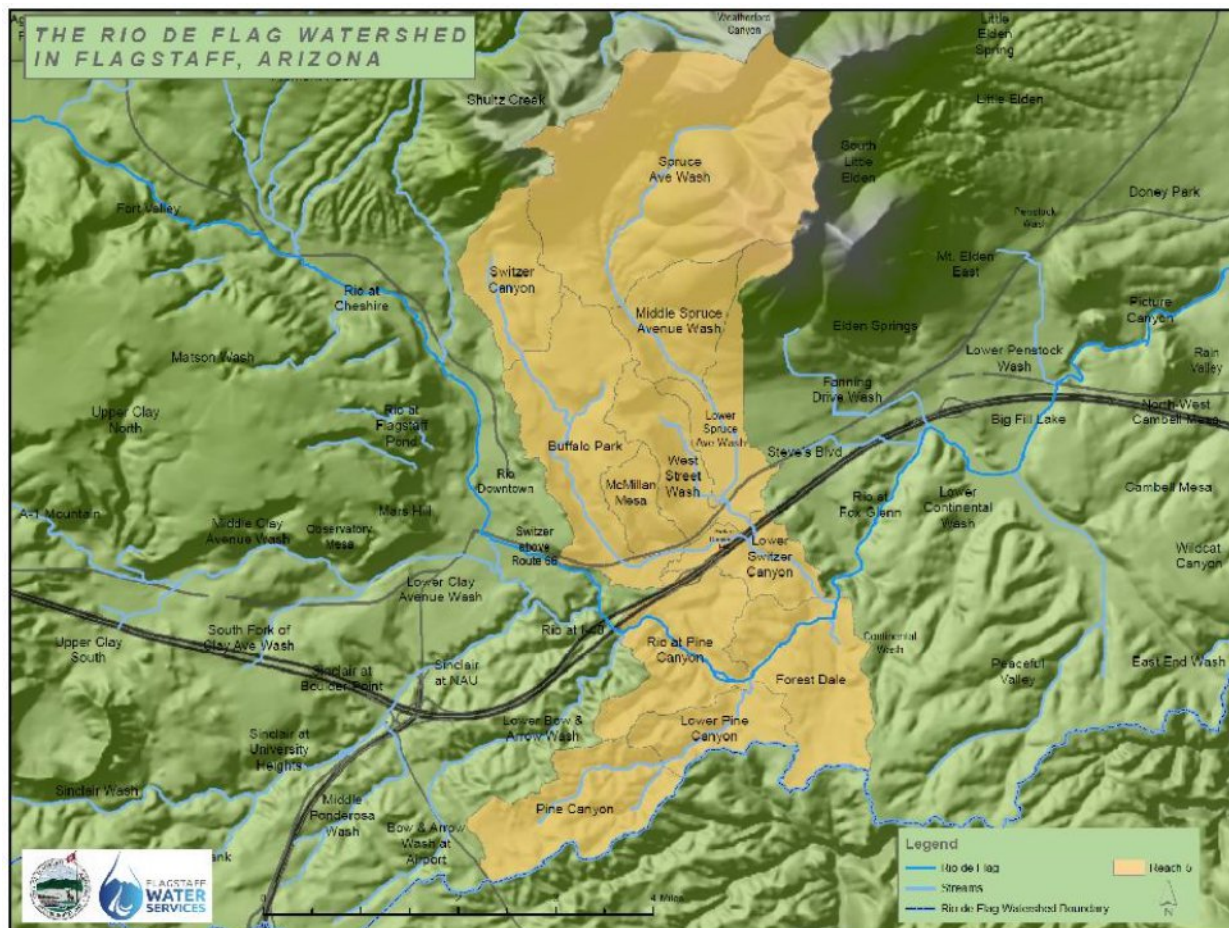


Figure 28. Map of Rio de Flag Reach 5 - From I 40 to Foxglenn Park including sub watersheds.

**Notable features:** I-40 wetlands, Switzer Canyon, and Buffalo Park.

**Threats:** Intense development pressure along the mainstem, invasive weeds, post-fire flooding, urban flooding due to development, localized off-road use in undeveloped reaches of the mainstem.

**Relevant stream gauges:** Rio de Flag at Foxglenn Park, Switzer Canyon at Oak Street, Spruce Wash at Linda Vista. All gauges are currently operational. The Rio de Flag at Foxglenn Park gauge extends back nearly a decade. The rest of the gauges are new as of 2019.

**Major tributaries:** Spruce Wash, West Wash, Switzer Canyon Wash, Pine Canyon

**Summary:** At the time of this writing this reach is unique in that the mainstem is perennial due to reclaimed water inputs from the Rio Wastewater Treatment Plant and is also an undeveloped reach that is bracketed upstream and downstream by urbanization. This mainstem reach, however, is slated for future development and will



likely look much different within a decade of this plan's completion. Relevant large tributaries are all urbanized in part or in total. Spruce Wash is notable as being affected by the 2019 Museum Fire. Post-fire flooding is still a serious concern for the Elden Estates, Grandview, and Sunnyside neighborhoods. Because of imminent development, perennial water, and post-fire impacts, this reach is especially important for planning to ensure a healthy multi-use riparian area.

**Geology, vegetation, land use:** The geology and vegetation of this reach varies from mixed conifer and igneous basalt/dacite at the top of Dry Lake Hills to herbaceous meadows and Kaibab Formation sedimentary rocks in the Rio de Flag lowlands near Foxglenn. Land use is mixed like most of the reaches described in this plan. Unlike other reaches, this area is slated for intensive development in the next decade. Invasive plants are prevalent in this reach, especially along the mainstem and the lower portions of the tributaries. Diffuse knapweed, Scotch thistle, poison hemlock, and teasel are found in abundance.

## Reach 6: Rio de Flag from Foxglenn to Route 66 near Flagstaff Mall

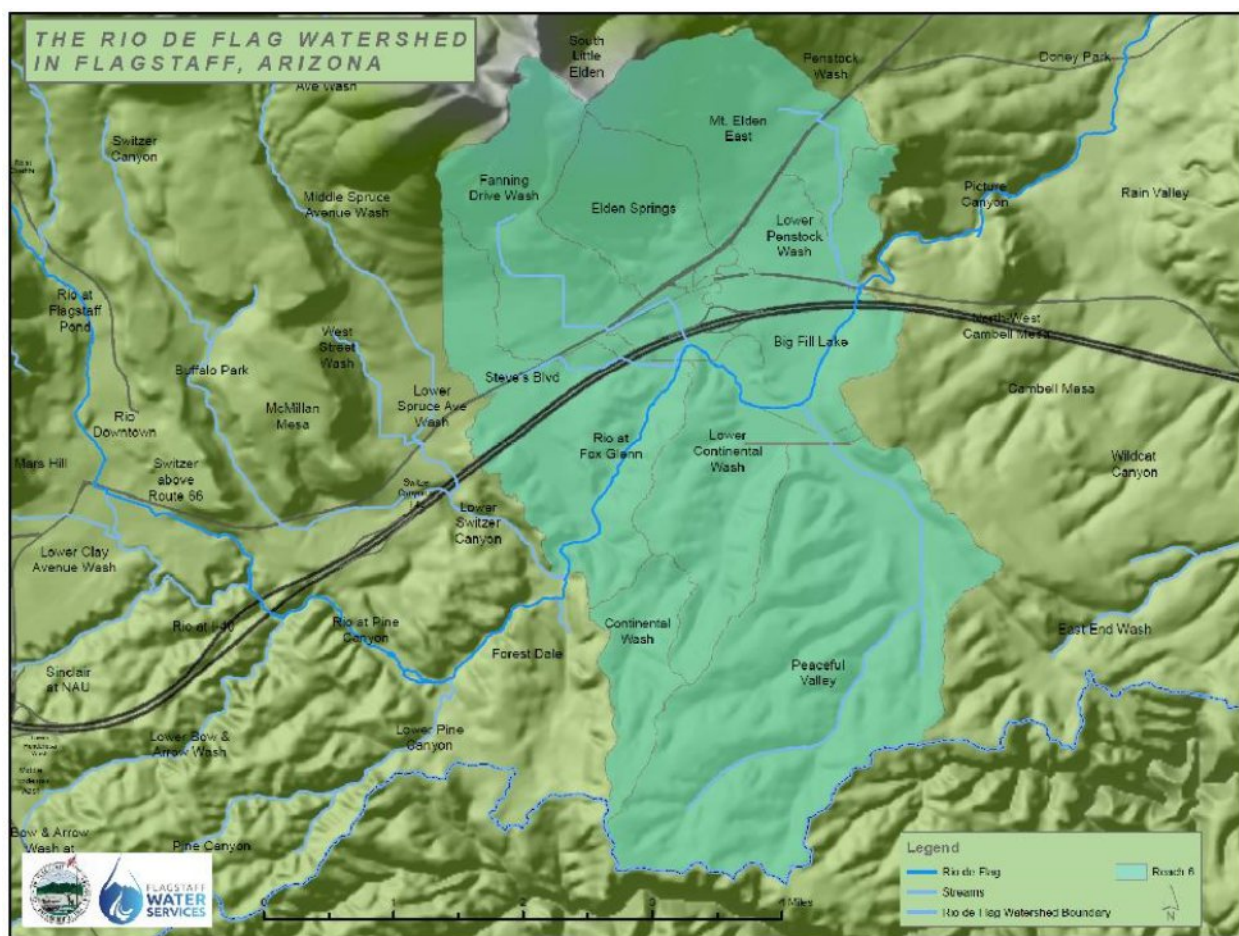


Figure 29. Map of Rio de Flag Reach 6 - From Foxglenn Park to Route 66 near Flagstaff Mall, including sub watersheds.

**Notable features:** Lake Elaine, Elden Springs, Bottomless Pits, Peaceful Valley

**Threats:** Invasive weeds, trash, urban flooding, wildfire, recreational use

**Relevant stream gauges:** Rio de Flag near Flagstaff Mall, Penstock Wash at Dodge Avenue, Fanning Wash at Linda Vista. All gauges are currently operational but are either new or have significant time gaps in their operation (Fanning Wash at Linda Vista).

**Major tributaries:** Fanning Wash (historically Lockett Diversion), Steve's Wash, Peaceful Valley Wash, Penstock Wash

**Summary:** The Rio de Flag mainstem is mostly in private property in this reach, however there are significant public lands in the tributaries. Some of the highest biodiversity in northern Arizona is found within this reach on the southern flank of Mount

Elden. Reach 6 includes a large section of eastern Flagstaff and extends north-to-south from the top of Mount Elden to near the rim of Walnut Canyon, encompassing a dramatic change in landscape, scenery, and land use. Most of this reach is ephemeral with infrequent flows except after precipitation events.

**Geology, vegetation, land use:** Reach 6 has considerably more sedimentary outcroppings than upstream reaches, with igneous basalt and dacite portions along Mount Elden. The karst nature of the Kaibab Formation is in display at the “Bottomless Pits”, a dissolution sinkhole feature near Continental Country Club. Vegetation changes drastically from the peak of Mount Elden to the lowlands near Country Club to the Walnut Canyon rim. The southern flank of Mount Elden contains numerous endemic species due to its unique dry and windy microclimatic habitat. Invasive weeds are prevalent in the low drainages, especially the Rio de Flag mainstem, a contradiction to the biodiversity in the natural parts of the reach. Land use includes the eastern neighborhoods of Flagstaff as well as Forest Service, State Land Trust, and recreational opportunities along Mount Elden and Peaceful Valley.

## Reach 7: Rio de Flag from Route 66 near Flagstaff Mall to the confluence of San Francisco Wash

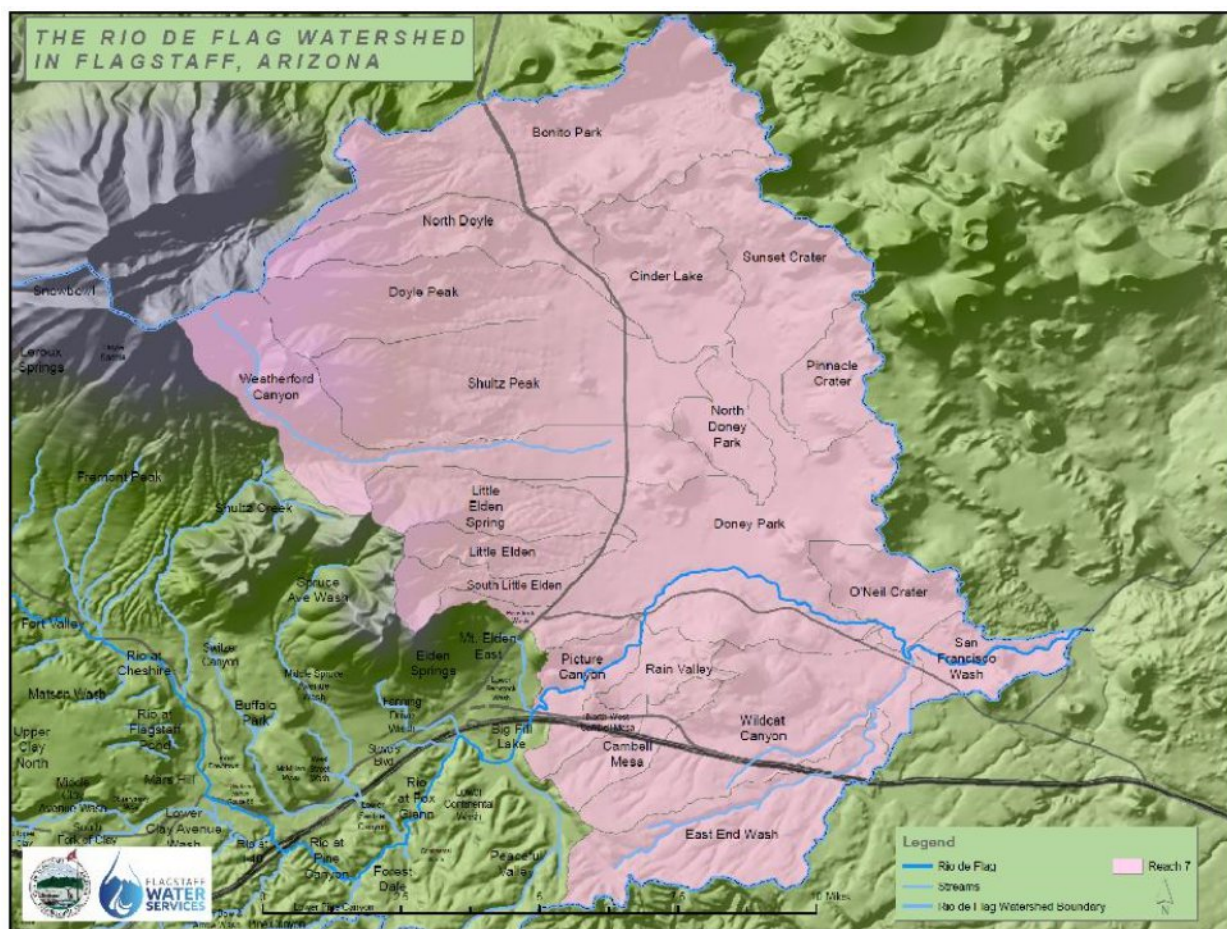


Figure 30. Map of Rio de Flag Reach 7 - From Rt. 66 near mall to the confluence of San Francisco Wash, including sub watersheds

**Notable features:** Picture Canyon, O'Neil Crater, Sunset Crater and cinder hills

**Threats:** Continued development, especially in Rain Valley and Doney Park, post-fire flooding from the Schultz Fire, invasive weeds

**Relevant stream gauges:** Rio de Flag near Flagstaff Mall, operational as a rain gauge for a decade and as a stream flow gauge starting in 2020.

**Major tributaries:** None, this reach is highly permeable with no significant tributary surface water inputs to the Rio de Flag.

**Summary:** This downstream-most reach of the Rio de Flag is unlike any of the other reaches. The watershed is characterized by a much warmer, drier climate with hobby farms, large residential lots, and little surface runoff due to the climate, vegetation, soils, and geology. The Rio de Flag is a contradiction in this reach as it is perennial due to



sustained outflows from the Wildcat Wastewater Reclamation Plant. The flows tend to remain perennial for a couple miles beyond the plant before soaking into the soil. The Rio de Flag ends as an ephemeral wash at its confluence with Wildcat Canyon Wash (a.k.a. San Francisco Wash). There are small discrepancies among map sources regarding mouth of the Rio de Flag. Some maps show the mouth of the Rio de Flag at its confluence with Walnut Creek (Figure 34). Either interpretation provides a similar watershed size, since the two confluences are within 4 miles of each other. San Francisco Wash continues downstream, eventually becoming Canyon Diablo before connecting with the Little Colorado River. Most of the channel downstream of the Rio de Flag is ephemeral, much like the Rio de Flag.

**Geology, vegetation, land use:** The geology of Reach 7 is predominantly cinders in the northern section and sedimentary rock in the southern section. Both types of surficial geology are extremely permeable with little surface water runoff. Vegetation is predominantly pinyon-juniper woodland except in high elevation areas or basalt outcrops. These slightly wetter areas maintain ponderosa pine forests. Land use is mostly dispersed residential lots and small hobby farms though considerable sections of national forest land exist within the reach.

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## **PUBLIC INPUT PROCESS FOR THE RIO DE FLAG WATERSHED PLAN**

### **Stakeholder identification and interviews**

Stakeholder and public engagement for developing this watershed plan began with identifying experts and community leaders interested in watershed planning for the Rio de Flag. A core working team was formed as a first step which consisted of representatives from Friends of the Rio de Flag, City of Flagstaff, Coconino County, Coconino National Forest, and The Hopi Tribe, and facilitators from Southwest Decision Resources. This core team reflected all the entities with direct land stewardship authority in the watershed. Unfortunately, the Covid-19 pandemic severely impeded outreach to the heavily impacted Navajo Nation, and ultimately it truncated participation by The Hopi Tribe also.

In 2018, Friends of the Rio de Flag conducted a public survey to determine where public interest was centered in and about the watershed, and the City of Flagstaff conducted a poll concerning the Flagstaff Urban Trail System (FUTS), much of which follows the Rio de Flag. Themes, project ideas, and lessons gleaned from those survey responses were integrated into the stakeholder approach for this watershed plan and helped to prepare for stakeholder interviews. The stakeholder interviews addressed processes

and tried to identify key issues/opportunities. The responses provided a wealth of information about issues and needs related to water quality, quantity, restoration, planning, implementation, and evaluation to adaptively move forward. Fortuitously, many of the interviewees agreed to join the expanded watershed group to help guide the public process and construct the watershed plan.

## **Stakeholder and public workshops**

A series of stakeholder workshops and public workshops were central to the watershed planning process. These workshops were designed to both better inform participants about the watershed and associated issues and to solicit input on experiences, problems, solutions, and opportunities. Because of the Covid-19 pandemic, public engagement pivoted from a planned series of in-person public meetings to a series of webinars/workshops that employed digital tools including Zoom® meetings and Mentimeter® interactive surveys.

### **Public workshops**

Between November 2020 and February 2021, we conducted 6 virtual bi-weekly public workshops tied to the 6 watershed plan goals, in place of geographically based in-person meetings (see Appendix 5 for details). Each webinar featured multiple expert presenters who addressed watershed plan goal topics. Southwest Decision Resources facilitated the webinars. Paradoxically, providing the public workshops in a virtual space, which was necessary for safe social distancing during the pandemic, made it easier for people to join. The public workshops successfully brought together voices from across the watershed. The Zoom events were all well-attended by community members with a range of backgrounds and interests, as well as locations in the watershed where they reside.

#### *Table 15. Explore the Watershed: Speaker Series (public meetings)*

November 10, 2020 - Hosted by: Friends of the Rio de Flag

### **Understanding Our Changing Watershed**

Speakers: Max Taylor (Hopi Tribe), Laura Jo West (Coconino National Forest), Tom Whitham (Northern Arizona University), Larry Stevens (Museum of Northern Arizona), Travis Woolley (The Nature Conservancy), Sara Dechter (City of Flagstaff), and Matt Nelson (Arizona Trail Association)

December 2, 2020 - Co-hosted by: City of Flagstaff Sustainability Program

### **Let's Get on Down to the Rio de Flag - Community Awareness, Celebration, and Engagement**

Speakers: Maggie Twomey (City of Flagstaff), Art Babbott (Coconino County), and Moran Henn (Willow Bend Environmental Education Center)

December 16, 2020 - Co-hosted by: Wild Arizona

### **Nature Elevated: Benefitting Native Ecosystems of the Rio de Flag Watershed**

Speakers: Larry Stevens (Wild Arizona), Tom Whitham (Northern Arizona University), Hannah Griscom (Arizona Game and Fish Department), Max Taylor (Hopi Tribe), Paul Beier (Friends of the Rio de Flag)

January 6, 2021 - Co-hosted by: NAU School of Earth and Sustainability

### **Sustaining and Healing Our Watershed**

Speakers: Abe Springer (Northern Arizona University), Allen Haden (Natural Channel Designs), Denielle Perry (Northern Arizona University/Friends of the Rio de Flag)

January 20, 2021 - Co-hosted by: Southside Community Association

### **Rio for the People**

Speakers: Deborah Harris (Southside Community Association), Martin Ince (City of Flagstaff), Matt Muchna (Northern Arizona University)

February 3, 2020 - Co-hosted by: Arizona Hydrological Society

### **Implementation and Beyond...Creating Stewardship**

Speakers: Ed Schenk (City of Flagstaff), Josh Peck (Coconino National Forest), Nicole Antonopoulos (City of Flagstaff)

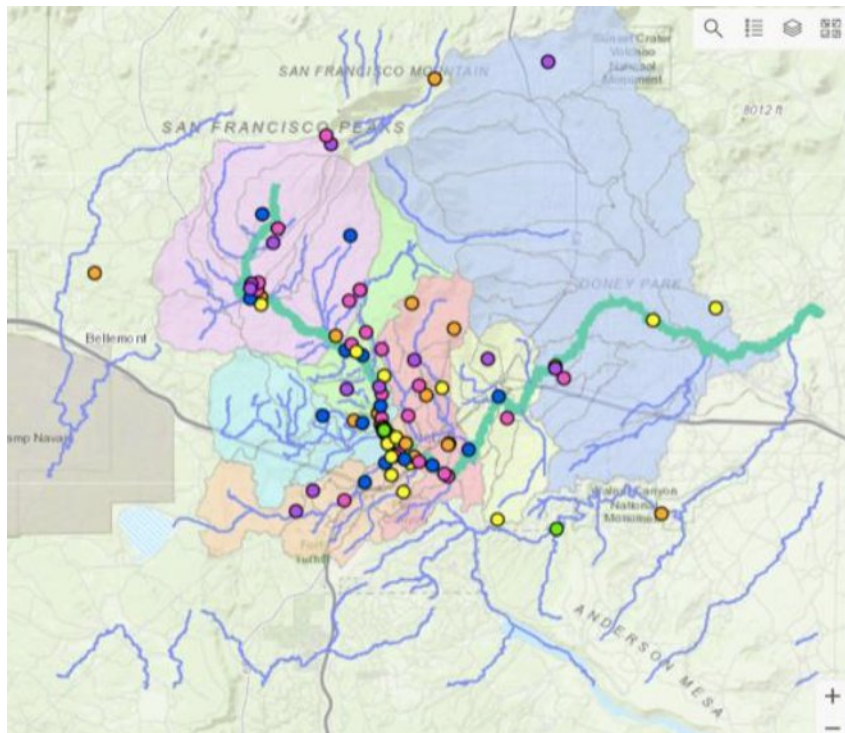
Attendance at the public meetings ranged from 25 to 45 people not counting presenters or staff. The presentations at these meetings and results of the public input from these meetings served in large part as the basis for this plan. Summary notes, PowerPoint presentations, and Zoom recordings for each session are posted online on the WARF website here: <https://sites.google.com/site/watershedalliancefortherio/public-meetings/presentations-and-notes>

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## RECOMMENDATIONS & CONCEPTUAL PROJECTS

### Overview

The WARF collected project recommendations and conceptual projects from the public through the virtual workshops and associated outreach, as well as from the WARF and presenters themselves. The projects were grouped by five themes (tied to goals; see Table 1.) and prioritized using a scoring matrix. The results follow below with an overview map (Fig. 37), reach summaries, recommendations/projects by goal, and priority conceptual project tables. The most numerous site-specific project suggestions were for trash pickup and weed control projects, these were lumped for prioritization but all the site-specific locations were retained and can be accessed when we are planning specific efforts. While not all of the 116 projects are included in our priorities for the immediate future, any or all of them could be implemented over time.



*Figure 3116. Summary map of 116 site specific potential projects throughout Rio de Flag Watershed suggested by the public and stakeholders. Dots are color-coded according to theme (See pie chart at bottom left. magenta = Sustain and Restore, purple = Research, orange = Awareness, blue = Rehabilitate, yellow = Community Enhancement, green = Other).*



Table 1. **Themes and associated goals generated through public involvement for Rio de Flag Watershed Restoration Plan.**

### **Research**

**Goal 1:** Increase integrated cultural, scientific, and historical understanding of the Rio de Flag watershed.

### **Sustain and Restore**

**Goal 2:** Protect and enhance Rio de Flag watershed health to deliver ecosystem services to future generations.

### **Community Enhancement**

**Goal 3:** Benefit human communities of the Rio de Flag watershed.

### **Rehabilitation**

**Goal 4:** Benefit native ecological communities of the Rio de Flag watershed.

### **Awareness**

**Goal 5:** Increase public awareness and engagement to strengthen the community's connection to the Rio de Flag watershed.

### **Scoring criteria**

#### Urgency/Timeliness

How critical/central is the project to the goal. How time-sensitive is the project—opportunities, threats. Is the project required before other projects can be completed? Is the project timely for the circumstances (crystalizing moment)?

#### Feasibility

How feasible is this project? is it contentious or broadly supported? Are necessary components in place? Has this project been determined as potentially successful (metrics of success)? Do we know what success looks like for this project?

#### Social Salience

Marketability, potential to generate more public support and engagement for the Rio watershed efforts, addressing community values and needs?

#### Cost

Is the cost reasonable and budgeted? Does a funding source (line item, grant, etc.) exist? Evaluate cost:benefit

#### Scale

a) temporal b) spatial (average the two scores)

What is the scale of the project? Is this a project that can be completed quickly and with readily available funding? Is this a project that has potential large scale benefit, broadly effective?

#### Relationship to other goals

How many other goals does it leverage?

#### Partner Priority

Is this project a high priority for one or more of the WARF partner agencies/organizations?

### **Suggested project results by reach and theme:**

**Reach 1** had a total of 20 unique proposals. The proposed projects were centered around Forest Service management and Baderville/Fort Valley community management. *Sustain and restore* was the most targeted goal with several suggestions to protect or restore headwater springs, meadows, and wetlands. *Increase awareness* and *research* on these values were also consistent themes within this reach.

**Reach 2** had 12 unique proposed projects. While there was a good spread of themes/goals represented the majority of the projects focused on enhancing or preserving existing riparian or local park amenities (6 of the 12 projects). These amenities range from Frances Short Pond to the Cheshire wetlands.

**Reach 3** had 15 unique projects proposed with the most projects being in *community enhancement*. Nearly all the projects were focused on improving access and programs along the Rio de Flag.

**Reach 4** had 18 unique projects listed with the greatest share in themes of *sustain and restore* and *community enhancement*. Nine (9) of the 18 projects are directly attributed to Sinclair Wash, a major tributary to the Rio de Flag. The other nine projects are mixed between increased research and more community amenities along the Rio de Flag.

**Reach 5** has 14 unique projects, the majority are *sustain and restore* related although there is a strong component of *increase awareness*. Nearly all of the *sustain and restore* projects are located on tributaries, mostly Switzer Canyon and Spruce Wash. The *increase awareness* category comprises projects on the mainstem Rio de Flag.

**Reach 6** is a smaller reach and not surprisingly has the least number of proposed projects among the reaches. The stream reach includes 4 projects that range from Mount Elden to the mainstem.

**Reach 7** has seven projects identified. Three (3) of the seven projects were directly related to reclaimed water flows from the Wildcat Reclamation Plant, emphasizing the importance of this perennial water source, and in one project, the water quality of that source.

### **Watershed-wide Suggested Projects**

The interactive map surveys resulted in another 25 projects entered that were watershed-wide or general in content and could not be placed on a map. These projects

were relatively equally spread among the themes/goals. Most projects were general in scope, as would be expected with watershed-wide concerns. Examples of these projects include; research into water rights and water quality, improving stream maintenance programs, consistent branding of community amenity locations, development of ecological refugia, and the development of more trails and community access.

## **Recommendations and Projects by Goal**

The WARF reviewed the recommendations and conceptual projects compiled across the watershed and identified 58, of the 116 entries, as being among the top 10 priorities of any one or more of the WARF partners. In the discussion below, these partner priority projects/recommendations are summarized under the watershed goals and objectives they address. Additional descriptions of reach-specific project concepts are included at the end of each summary.

- *Goal 1: Increase integrated cultural, scientific, and historical understanding of the Rio de Flag watershed*
- *Goal 2: Protect and enhance Rio de Flag watershed health to deliver ecosystem services to future generations*
- *Goal 3: Benefit human communities of the Rio de Flag watershed*
- *Goal 4: Benefit native ecological communities of the Rio de Flag watershed*
- *Goal 5: Increase public awareness and engagement to strengthen the community's connection to the Rio de Flag watershed*
- *Goal 6: Create a sustainable funding stream for the Rio de Flag watershed*

### **Goal 1. Increase integrated cultural, scientific, and historical understanding**

Projects submitted under this goal were broad in scope, with several related to research and science and several others directed toward public outreach and trail/access education. Existing educational and outreach locations along the Rio de Flag corridor are mentioned infrequently, and the majority of projects listed were situated in new diverse locations such as Mount Elden, McMillan Mesa, and the Soliere floodplain.

Frances Short Pond, Picture Canyon Natural and Cultural Preserve, and Sinclair Wash at Willow Bend are three conventional sites along the Rio de Flag currently utilized for their immense educational opportunities. Many schools, businesses, and neighborhoods are located along the banks of the Rio and its tributaries and would benefit from enhanced educational opportunities at these sites.

Education should focus on place-based learning, service learning, and citizen science through:

- Site enhancement (signage, hands on installations, wildlife viewing platforms, etc.);
- Educational programs that incorporate site visits (targeted at K-12, residents, and visitors);
- Online educational resources (lesson plans, maps, audio guides, etc.);
- Ongoing service learning and citizen science programs that inspire a deeper understanding of the watershed while simultaneously giving residents and visitors a chance to give back to their river (invasive weed pulls, trash cleanups, Adopt-the-Rio de Flag Stewardship program, ADEQ's Arizona Water Watch data collection, Master Watershed Stewardship program, etc.).
- Improved trail access with integrated signage and community activities (e.g. trail run days, Rio talks, etc).

Informal scientific research has occurred throughout the Rio de Flag for decades. Formalized research sites for conducting research on the Rio could strengthen our understanding of the various aspects of the watershed.

#### **Scientific Research Recommendations:**

1. Identify secure funding source to support science and education that could include Fish and Wildlife Service grants, Arizona Water Protection Fund, WaterSMART, EPA STAR, and other funding sources. Identify areas of public ownership that could be used for outdoor classrooms and research sites, and make this information available to schools . Each reach should be evaluated for educational opportunities including proximity to schools and sites of exceptional educational value (Frances Short Pond, Willow Bend, etc.).
2. Create a system for tracking research endeavors.
3. Create an online network for communicating research and identifying potential partnerships for research projects.

#### **Watershed-wide studies and outreach**

Objective 1.1 Compile studies, highlight gaps, and provide strategies and funding opportunities

- Establish an Earth Observatory
- Create an interdisciplinary program at NAU for Rio de Flag watershed studies and learning
- Build online repository for data/studies/references
- Compile the human history of change in the watershed
- Other research projects could involve ground water recharge which the city has expressed an interest in,
- local springs and seeps, which the Museum of Northern Arizona has already begun, local plant communities and archeology along the Rio which has been ongoing since the Colton's first worked at Picture Canyon.

#### **Reach specific projects to increase watershed understanding**



Reach 1 - Elevational vegetation transects to relate predicted vegetation community shifts to fire response.

Reach 6 - Examine base level controls and erosion, cycles of downcutting and aggradation related to Little Colorado River system.

## **Goal 2. Watershed health**

This goal received 19 individual projects under rehabilitation (maintenance/flood mitigation) and 21 individual projects under sustaining and restoring the watershed. Nine (9) of the rehabilitation projects are directly tied to urban hydrology and channel restoration, the rest of the rehabilitation projects are a mix of wetlands preservation, invasive plant management, reclaimed water management, and pond preservation.

Eight of the “sustain and restore” projects were related to springs and wetlands, making up the largest proportion of the projects. The other 13 projects were spread between invasive weed work, channel maintenance/flood mitigation, rare plant preservation, and illegal trail/use management. Goal 2 received 40 projects out of the 116, indicating a high amount of interest in watershed health, either in terms of preservation or restoration.

Groundwater recharge can help to refill our aquifers and can be accomplished either by natural seepage through the ground or by pumping water back into the ground. Either way groundwater recharge can provide future water for our use. The City of Flagstaff has discussed creating a groundwater recharge program. Some issues need resolution before groundwater recharge becomes a reality. One issue has to do with the presence of chemicals in reclaimed water. Not enough is known about the persistence of endocrine disrupting chemicals and partially oxidized radical in the water and their health effects.

## **Recommendations**

1. Promote forest health and watershed integrity, protect water quality, mitigate for extreme climate events.
  - Forest restoration
  - Post-Wildfire response
  - Water quality (pollution) mitigation
2. Restore, rehabilitate, and sustain effective hydrologic and geomorphic function.
  - Protect natural channel and floodplain geometry.
  - Rehabilitate damaged channel and floodplain areas.
  - Mitigate urban stormwater impacts.
3. Maintain past watershed work and recently completed projects

- Provide long term maintenance for ecological restoration and channel improvement programs.
4. Restore climate change impacts to soils, vegetation, rainfall-runoff, migration, and precipitation patterns--craft and test management strategies.
    - Restoring watershed ecosystems
  5. Increase watershed protection through special designations
    - Rural and/or Administrative Floodplain designations within the City of Flagstaff
    - Create and maintain study areas on Forest Service lands
    - Create and maintain parks and reserves within County parcels
  6. Create comprehensive plan for forest, stream, springs, and riparian management and restoration access.
    - This WARF plan is striving to begin fulfilling this need.
  7. Continue efforts to monitor chemicals in reclaimed water and knowledge of the impact of these chemicals. Apply best available science to determine the chemical compounds in reclaimed wastewater, the physiological effects of exposure to different concentrations, and the effects of chronic low concentration exposure to reclaimed water to both environmental and human health.

### **Goal 3. Benefit human communities**

This goal aims for improving access to the watershed amenities, improving and creating amenities, and promoting recreation. This goal received 15 individual project proposals via the stakeholder survey. Thirteen (13) of the 15 projects involved walking, hiking, or biking. The majority of projects involved active recreational opportunities though there were mention of interpretative signage and themed events. Additional fishing opportunities was only mentioned one time. Frances Short Pond being the only fishing site along the Rio de Flag.

#### **Recommendations**

Support any stakeholder group that actively promotes compatible, diverse, and informed recreation and public use of stream corridors within the watershed.

Improve and enhance recreational connectivity along the Rio de Flag and between the Rio and surrounding open space and neighborhoods.

- Support FUTS and Open Space: connectivity, access, commutability
- Promote providing benches, shade rain shelters

Re-create and/or maintain a full array of natural surroundings (e.g., wetlands, open or moving water, observable wildlife, forests),

Remove trash to promote community health and well-being.

Address roots of community health problems along the Rio including homelessness, weeds and waste/sewage.

- *Goal 1: Increase integrated cultural, scientific, and historical understanding of the Rio de Flag watershed*
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## **Recreation, trails, and public use**

Objective: Provide residents and visitors opportunities for recreation with an emphasis on passive recreation such as hiking, biking, cross country skiing, enjoying nature etc. enhancing our quality of life and sense of community.

Description: The Rio de Flag has been called the backbone of the Flagstaff's Urban Trails System and Open Space Programs. Along the way the Rio offers abundant opportunities for walking, hiking, biking, cross country skiing, snowshoeing, enjoying nature, exercising, and seeking peace and quiet.

The existence of this interconnected system means that residents can recreate or exercise close to home and go as little or as far as their ambition takes them. Our intent is to reinforce the connectivity and attractiveness of the Rio and its tributaries thereby enhancing our quality of life and sense of community while providing recreation for residents and visitors. The system of trails often allows visitors to exercise or enjoy their leisure often near their lodgings. Trails are also used by some residents to commute from work school or shopping by bike, foot, or even skis.

The FUTS is connected to Coconino National Forest Service trails, Coconino County trails (at Fort Tuthill) and the Arizona Trail in theory linking residents to surrounding landscape and all of Arizona. A few unique areas along the Rio de Flag and its tributaries offer special recreational opportunities such as the chance to fish at Frances Short Pond or to bird watch along more natural sections of the Rio. At least seven city parks (Cheshire Park, Thorpe Park, Wheeler Park, Colton Park, Coconino Park, Sawmill Park, Fox Glenn Park) are enhanced by the Rio de Flag running through them providing unique opportunities for play or contemplation.

Much of Flagstaff's Open Space including the Picture Canyon Natural and Cultural Preserve is also found along the Rio. An opportunity exists developing more Green Belt segments along the Rio to provide for a more extended experience that is less urban and more natural.

Examples of areas which can function as green belt segments are from Coconino Park to Beale Road south to Thorpe Park, from Lone Tree Road southeast to Interstate 40, and from US 89A across NAU campus to Lone Tree Road.

## **Recommendations**

1. Build on to the existing FUTS trail to create a connected trail system along the length of the Rio de Flag and its major tributaries connecting with surrounding public lands, trails and parks and open space.
1. In channel restoration, use an open, stepped channel design where possible practical in order to provide for multiple uses (including flood control, recreation, scenic views, educational uses, riparian habitat, etc.)
2. Where opportunities exist develop Open Space or Green Belt segments along the Rio de Flag and its tributaries. Enhance these areas to provide a better recreational experience. Include new areas as Flagstaff grows to allow new connections to developing areas and to maintain connections to surrounding public lands. Create connectivity using the FUTS along the Rio where possible and along any new development along the Rio or its tributaries.
3. Emphasize passive recreation (walking, hiking, running, biking, cross country skiing, snowshoeing, enjoying nature, bird watching, seeking peace and quiet) along the drainages.
4. Use the Rio de Flag as a backbone for FUTS and Flagstaff Open Space system.
5. Develop parking informational signs, access, rest areas as needed to support recreational uses.
6. At major hubs where group use is common and trails converge consider providing parking, drinking water and toilets. Example of potential hubs are Fort Tuthill, Picture Canyon, and the Schultz "Y".

## **Goal 4. Benefit native ecological communities**

This goal is focused on improving native ecology, biodiversity, and ecosystem function within the watershed.

Objective 6.1: Manage the Rio de Flag to maintain, recover, and maintain or increase diversity of native ecological communities and to reduce or eliminate non-native species.

One of the most exciting potential scientific research projects is development of a genetic repository for riparian plants. The idea was presented by Dr Tom Whitham at one of the seminars leading up to this plan. The idea amounts to growing cultivars of woody plants from a number of sites in the region along the Rio De Flag in order to facilitate research into their adaptability to climate change and various growth traits. Dr. Whitham has begun this type of work with cottonwoods and willows and has shown

cultivars vary widely in their adaption to growing sites and insect communities. Plants from this genetic repository could then be used to restore sites through the region. A natural site for this work is the Sinclair Wash as it crosses the NAU campus.

### **Perennial stream segments**

Objective 6.2: Maintain sections of the Rio de Flag that have ephemeral and perennial water flow, and enhance flows where appropriate, to support a variety of native ecological communities.

Maintain perennial or near perennial flows for short segments in the Rio de Flag below springs and reclaimed water outlets to provide riparian habitat, scenic beauty and increased diversity of native vegetation and wildlife and, groundwater recharge.

Description: Most of the flow both in duration and in volume in the Rio de Flag has probably always been and will be ephemeral. However, some segments are perennial or close to perennial either naturally (i. e. below Leroux Springs) or artificially as reclaimed water below discharge points. These segments offer a special opportunity for diverse native vegetation, wildlife and scenic beauty. They also may offer some of the best sites for a riparian genetic repository for cottonwoods as has been proposed by Dr. Tom Whitham.

Native riparian plants have a range of tolerances for drying, some requiring true permanent water and others being very tolerant of drying. By providing a range of conditions, we can increase the diversity of plants and animals along the Rio de Flag. Research has demonstrated that plant diversity provides for greater ecosystem resiliency and services. Also by maintaining a few short segments of perennial flows the scenic beauty can be enhanced and the ability of residents and visitors to find peaceful and tranquil setting is enhanced. Perennial flows also can allow increased natural groundwater recharge to take place thereby benefiting our water table.

The Leroux Springs complex is the original source of the Rio de Flag. This complex of springs is named for Antoine Leroux who guided government and private parties of explorers and often stopped at this spring. The Rio de Flag is a perennial stream for a short distance downstream of Leroux Springs, and downstream of two city water treatment plants, but most of the stream reaches along the Rio de Flag are best characterized as ephemeral. Other small springs and seeps, such as at Cheshire Park, and old Town Springs, are also perennial and contribute flow to the Rio de Flag as it progresses downstream.

The City produces reclaimed water and discharges these waters at selected locations. These discharge points include Frances Short Pond, the I-40 wetlands below the Rio de Flag WTP, and above Picture Canyon from the Wildcat WTP. The City has minimum obligations to discharge at all three locations, but flows generally do not extend very far downstream, with the exception of the Wildcat Plant. The I-40 wetlands and Picture



Canyon have become very popular sites for recreation in part due to the presence of water and the resulting vegetation and wildlife.

**Recommendations:**

1. Dedicate at least 5% of reclaimed water to instream flow in the Rio de Flag or its tributaries (natural seepage from this flow may be credited to groundwater recharge).
2. Use instream flows for natural groundwater recharge choosing release points for multiple benefits including suitability for groundwater recharge, as well as enhancing recreation, restoration, education, and scenic beauty.
3. Evaluate impacts of existing discharge points including Frances Short Pond, the I-40 wetlands (Rio de Flag WTP) and the main discharge at Picture Canyon from the Wildcat WTP as part of evaluation of new discharge points.
4. Maintain and enhance where practical surface flow from springs and downstream from springs. Maintain, restore and enhance native riparian in these areas.

**Goal 5. Public awareness and engagement**

Strengthen collaboration and communication, and identify shared interests to build bridges between diverse stakeholders through the watershed planning process and plan implementation.

Provide economic, education (e.g. outdoor classroom, youth programs), and volunteer opportunities and create incentives for businesses in the community to take actions to benefit the watershed.

- Existing opportunities to enhance: Frances Short Pond, Picture Canyon Natural and Cultural Preserve, and Sinclair Wash at Willow Bend
- Opportunities: recreation, green tourism, restoration and creative projects and events

Cooperate with other NGOs and governmental organizations in providing educational materials and opportunities concerning the watershed

Develop and implement signage for both the watershed and the channel.

Identify opportunities for community events, celebrations, and the arts centered around the Rio de Flag watershed

**Goal 6. Sustainable funding stream**

This goal, understandably, received very few proposed projects by the stakeholder group. The goal is intended less as a project specific goal and more as an overarching interest in finding consistent funding for watershed themed programs. The WARF and other stakeholders can jointly or separately seek funding for projects within the watershed. The 141 projects suggested during development of this plan do not

constrain future efforts. In addition to project funding there is a need for ongoing monitoring, administration, enhancement and maintenance. The WARF intends to seek both project funding from grants and funding on going needs

## Priority conceptual projects:

As part of the process of developing this plan the WARF undertook prioritizing the projects suggested by the public and stakeholders. The intent is not to eliminate any suggestion but rather to provide a starting place for work. The WARF also intends to add new project suggestions to our list as time goes on. The following are the scoring criteria we used to reach this initial priority ranking.

### Scoring criteria

#### Urgency/Timeliness

How critical/central is the project to the goal. How time-sensitive is the project—opportunities, threats. Is the project required before other projects can be completed? Is the project timely for the circumstances (crystalizing moment)?

#### Feasibility

How feasible is this project? is it contentious or broadly supported? Are necessary components in place? Has this project been determined as potentially successful? Do we know what success looks like for this project?

#### Social Salience

Marketability, potential to generate more public support and engagement for the Rio watershed efforts, addressing community values and needs?

#### Cost

Is the cost reasonable and budgeted? Does a funding source (line item, grant, etc.) exist?

#### Scale

a) temporal b) spatial (average of two scores was used)

What is the scale of the project? Is this a project that can be completed quickly and with readily available funding? Is this a project that has potential large-scale benefit, broadly effective?

#### Relationship to other goals

How many other goals does it leverage?

#### Partner Priority

Is this project a high priority for one or more of the WARF partner agencies/organizations?

## Table 2. Initial Priority Projects derived from public meetings and WARF review.

| Project Name | Description |
|--------------|-------------|
|--------------|-------------|

|                                                          |                                                                                                                                                                                                                                           |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Museum Fire Restoration                                  | Restoration and rehabilitation in Museum Fire scar and areas that haven't been thinned                                                                                                                                                    |
| Trash and Weed Removal Watershed Plan and Implementation | Create a watershed scale invasive plant and trash removal plan and funding mechanism for treatments                                                                                                                                       |
| Use of reclaimed water for riparian restoration          | Use of reclaimed water for amenity value on stream reaches that have high diversity of native plants and wildlife and that run along highly-used FUTS trails.                                                                             |
| Sinclair Wash connectivity/restoration                   | Sinclair Wash: improve channel function, prepare for more flows with increasing development, riparian restoration with cottonwoods and willows; Restore channel-floodplain connectivity in Sinclair Wash, address erosion and downcutting |
| Channel Maintenance Program for the watershed            | Well funded open channel program: Trash, weeds, channel morphology, bank erosion                                                                                                                                                          |

|                                                             |                                                                                            |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Increase Awareness of Springs, Wetlands and Alluvial Plains | Increase awareness and protection of upper-watershed springs, wetlands and alluvial plains |
| State of the Watershed panel                                | State of the Watershed panel discussions between scientists and public                     |
| Annual Rio De Flag Festival                                 | An Annual Rio de Flag Art Walk and Festival                                                |

|                       |                                                                            |
|-----------------------|----------------------------------------------------------------------------|
| Water Rights Research | Research water rights for any waters needed for RDF watershed restoration. |
|-----------------------|----------------------------------------------------------------------------|

|                                                  |                                                                                                                                |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Plan for Aesthetic and Riparian Values Along RDF | Create a plan for improving aesthetic and riparian values in tandem with the RDF flood control project along its entire extent |
| Springs Studies                                  | Increase springs studies within the watershed (e.g. LeRoux)                                                                    |

|                                              |                                                                                                                                                                                                           |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water Advisory Board                         | Create a Water Advisory Board with the political powers in the watershed to oversee implementation, provide financial oversight, respond to emergency situations, etc.                                    |
| General Rio de Flag connectivity/restoration | Improve channel function, prepare for more flows with increasing development, riparian restoration with cottonwoods and willows; Restore channel-floodplain connectivity, address erosion and downcutting |

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## PLAN IMPLEMENTATION

Implementation of this watershed plan will be coordinated and undertaken by the WARF collaboratively and adaptively. Other groups may join the Alliance at any time by a vote of the membership. We would especially like to recruit member organizations who are stakeholders with links to the watershed through stewardship, history or common interest. Since the effort to form the WARF coincided with the Covid pandemic our efforts to recruit organizations have been less successful than we wished. The Hopi Tribe and Navajo Nation were especially hit hard by Covid and have only been able to have minimal participation so far.

The WARF is a forum and working group for information sharing, education and outreach, planning and policy reform and for encouraging investment in collaborative

watershed preservation and restoration/stewardship projects. The WARF intends to harness the collective knowledge and networks of community members working on watershed land and waters preservation, water and flood security, ecosystem preservation, watershed function, and climate change adaptation and mitigation. Through these efforts, the WARF seeks to ensure continuing the many important environmental and public health benefits of green and open space conservation. This plan will act as a guiding document for the WARF. While our initial efforts will focus on the original priority list of projects, the projects which came out of the planning process remain of interest and new projects can be added to that list over time.

The WARF may amend, add to and delete from the Rio de Flag Watershed Plan as becomes appropriate over time. The WARF may partner with other organizations to accomplish its objectives and complete projects. The Friends of the Rio have agreed to Act as a fiscal sponsor of the WARF. The sponsoring organization can be changed by mutual agreement of the WARF and the current sponsoring organization.

The activities of the WARF can include

- Quarterly meetings to address progress on projects.
- Monitoring of the Rio and metrics of success,
- Assessment of outcomes,
- Providing opportunities to subjects to address:
  - Climate change
  - Fire and fire security
  - Precipitation and water security
  - Temperature
  - Clean water
  - Biodiversity
  - Urban-wildlife interfacing
  - Funding
  - Political changes
  - Corps project
  - Future growth



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A landscape photograph showing a field of tall, dry grass in the foreground. In the background, a concrete bridge spans across a valley, surrounded by a dense forest of green trees under a clear sky. A semi-transparent blue box is overlaid on the center of the image, containing the title text.

# **Rio de Flag Watershed Planning**



A landscape photograph showing a field of tall, dry, yellowish-brown grass in the foreground. In the middle ground, there is a dense area of green and yellow grass. In the background, a concrete bridge with multiple spans crosses a valley. The bridge is supported by several pillars. Behind the bridge, there is a line of green trees under a clear sky.

The Rio de Flag Watershed Planning Project  
resulted from a Bureau of Reclamation  
WaterSMART Grant awarded to the Friends of  
the Rio de Flag





This WaterSMART Grant has two primary objectives:

1. Creating a Watershed Stakeholders Group (i.e. the W.A.R.F.)
  2. Developing a Watershed Plan
- The W.A.R.F. is comprised of stakeholders from Northern Arizona University, Hopi Tribe, City of Flagstaff, Coconino County, Coconino National Forest, Friends of the Rio de Flag, Wild Arizona, and private citizens with interest and expertise.

# Sketch map of the Rio de Flag Watershed



**San Francisco Peaks**  
With the highest point in Arizona at 12,633 feet, the Peaks' melting snow and heavy summer rains give the Rio de Flag periodic flows. Drive up the Snowbowl Road and ride the lift for a birds-eye view.

## Picture Canyon Natural and Archaeological Preserve

Trails lead to a narrow canyon with a waterfall and petroglyphs evocative of its thousand years of human settlement. Park near the end of El Paso Gas Pipeline Road off of Old Route 66 behind the Flagstaff Mall.

## Logan's Crossing

This stretch of the Rio de Flag is Flagstaff's premier birdwatching site, a wetland on Forest Service land that is a Watchable Wildlife site and Arizona Bird Sanctuary. Follow Townsend-Winona Road east for 4 1/2 miles and turn left on an unmarked forest service road.

## Leroux Springs

Named for scout Antoine Leroux, Big and Little Leroux Springs are the headwaters of the Rio de Flag. Turn right on Snowbowl Road from Route 180 and park where the road turns sharply right after 1 mile.

## Cheshire Wetland

A riparian restoration project of the Rio de Flag Greenbelt Restoration Plan. Turn left on Fremont Blvd. and park in the playground parking lot about a 1/4 mile on the left.

## Frances Short Pond

The abundance of birds at this pond stocked with fish has earned it the designation of a Watchable Wildlife site. Park near the intersection of Thorpe Road and Bonito Street.

## Willow Bend Env. Education Center and I-40 Wetlands

A path from the Willow Bend Environmental Education Center joins the FUTS trail through Sinclair Wash—a major tributary of the Rio de Flag—to the I-40 wetlands. Park in the Willow Bend parking lot on Sawmill Pkwy.

## Foxglenn Park

The Rio de Flag cuts through this large family-friendly city park. Park where Foxglenn Ave. intersects with Butler Ave.

Detailed directions at [friendsoftheriodeflag.org/visit](http://friendsoftheriodeflag.org/visit)

We began with a series of interviews with stakeholders in the watershed and then expanded to:

**Explore the Watershed: Speaker Series (public meetings)**

Video Recordings Available on WARF homepage [watershedalliancefortherio.net](https://watershedalliancefortherio.net)

November 10, 2020 - Hosted by: Friends of the Rio de Flag

**Understanding Our Changing Watershed**

December 2, 2020 - Co-hosted by: City of Flagstaff Sustainability Program

**Let's Get on Down to the Rio de Flag - Community Awareness, Celebration, and Engagement**

December 16, 2020 - Co-hosted by: Wild Arizona

**Nature Elevated: Benefitting Native Ecosystems of the Rio de Flag Watershed**

January 6, 2021 - Co-hosted by: NAU School of Earth and Sustainability

**Sustaining and Healing Our Watershed**

January 20, 2021 - Co-hosted by: Southside Community Association

**Rio for the People**

February 3, 2021 - Co-hosted by: Arizona Hydrological Society

**Implementation and Beyond...Creating Stewardship**

**Goal 1: Increase integrated cultural, scientific, and historical understanding of the Rio de Flag watershed.**

**Goal 2: Protect and enhance Rio de Flag watershed health to deliver ecosystem services to future generations.**

**Goal 3: Benefit human communities of the Rio de Flag watershed.**

**Goal 4: Benefit native ecological communities of the Rio de Flag watershed.**

**Goal 5: Increase public awareness and engagement to strengthen the community's connection to the Rio de Flag watershed.**

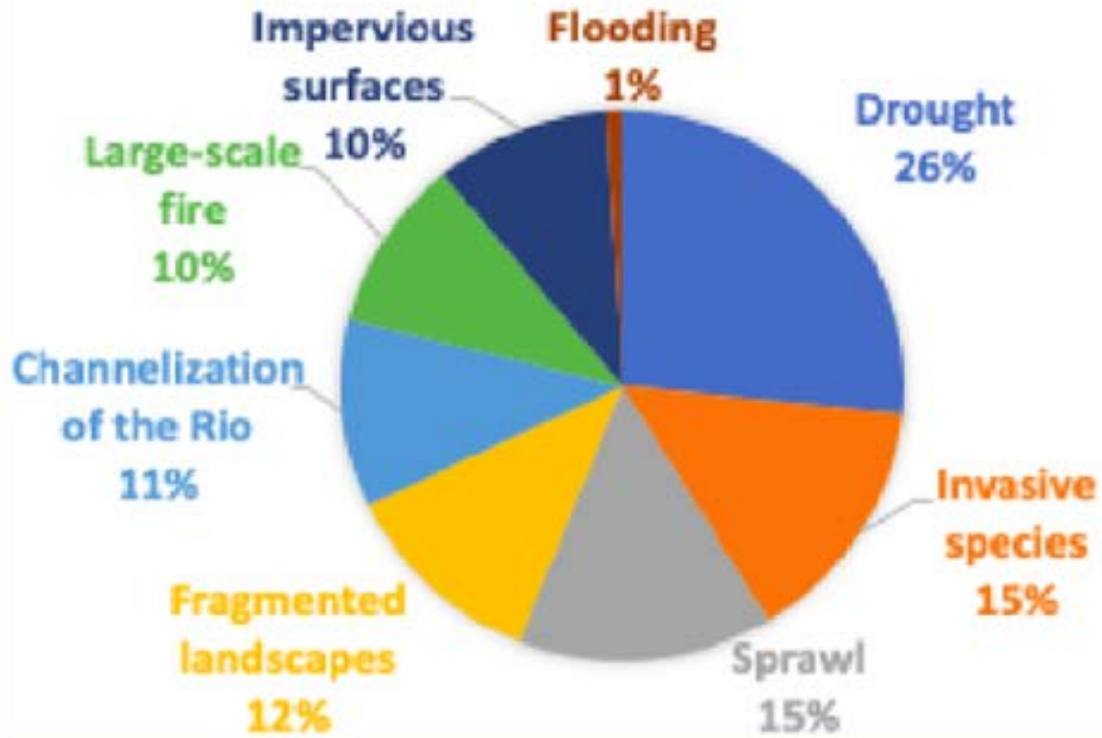
**Goal 6: Create a sustainable funding stream for the Rio de Flag watershed**







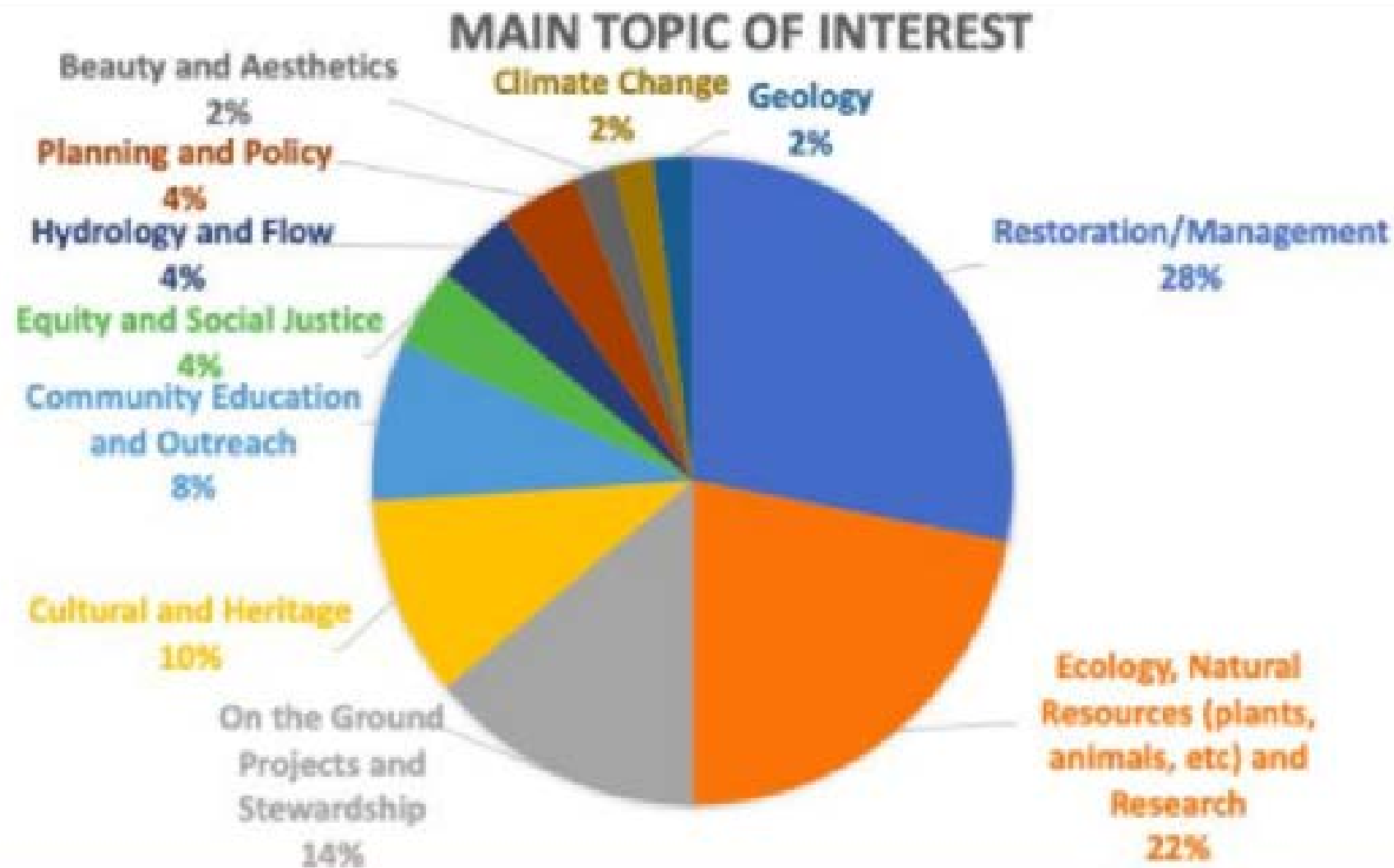
## BIGGEST THREATS TO ECOSYSTEMS



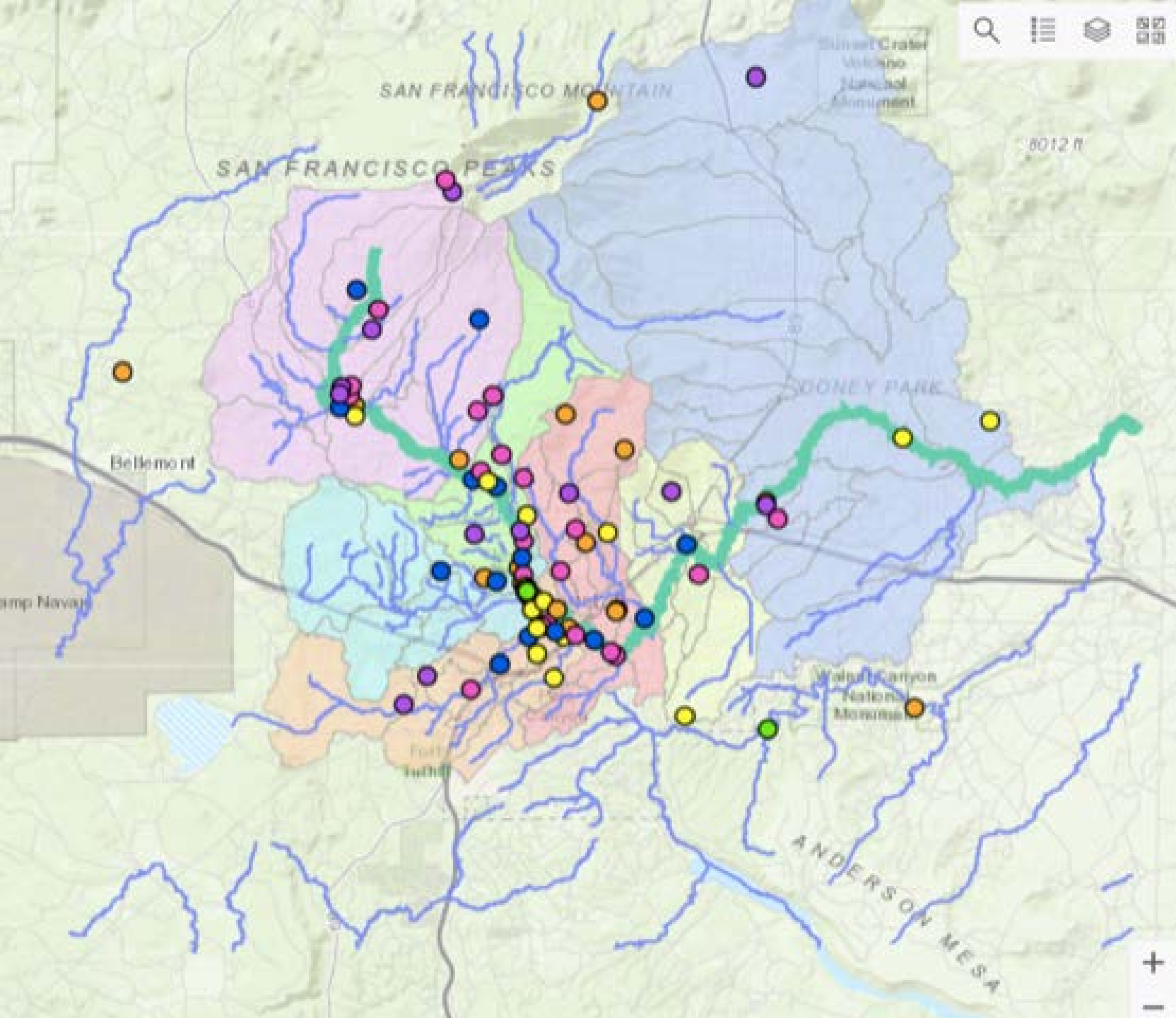
Above: Participants were asked the question *“what types of development or environmental changes do you feel are threatening these ecosystems?”*

Additional response – Domestic cats hunting wild birds

Participants in the forums were asked a variety of questions – Their responses became part of the basis for the Watershed Plan – Here are few examples...



Above: Participants were asked what their main topics of interest were in the watershed.



116 SITE SPECIFIC  
PROJECTS  
SUGGESTED BY  
PARTICIPANTS IN  
OUR SIX PUBLIC  
MEETINGS.

OF THESE, 25  
PROJECTS WERE  
WATERSHED-WIDE.

| Priority Project                                                | Description                                                                                                                                                                                                                               |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Museum Fire Restoration</b>                                  | Restoration and rehabilitation in Museum Fire scar and areas that haven't been thinned                                                                                                                                                    |
| <b>Trash and Weed Removal Watershed Plan and Implementation</b> | Create a watershed scale invasive plant and trash removal plan and funding mechanism for treatments                                                                                                                                       |
| <b>Use of reclaimed water for riparian restoration</b>          | Use of reclaimed water for amenity value on stream reaches that have high diversity of native plants and wildlife and that run along highly-used FUTS trails.                                                                             |
| <b>Sinclair Wash connectivity/restoration</b>                   | Sinclair Wash: improve channel function, prepare for more flows with increasing development, riparian restoration with cottonwoods and willows; Restore channel-floodplain connectivity in Sinclair Wash, address erosion and downcutting |
| <b>Channel Maintenance Program for the watershed</b>            | Well funded open channel program: Trash, weeds, channel morphology, bank erosion                                                                                                                                                          |



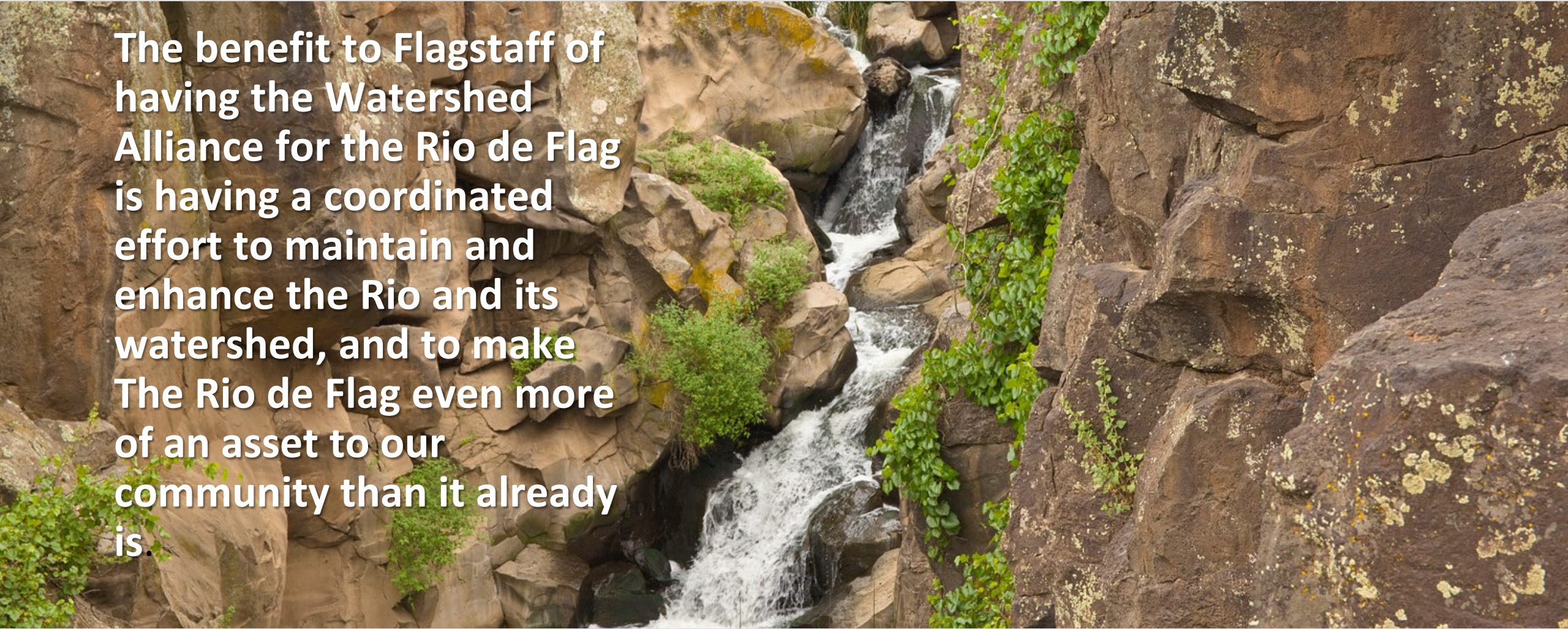
| PROJECT NAME                                                       | DESCRIPTION                                                                                                                                                                                               |
|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Water Rights Research</b>                                       | Research water rights for any waters needed for RDF watershed restoration.                                                                                                                                |
| <b>Plan for Aesthetic and Riparian Values Along RDF</b>            | Create and implement a plan for improving aesthetic and riparian values in tandem with the RDF flood control project along its entire extent, particularly in the Southside neighborhood                  |
| <b>Springs Studies</b>                                             | Increase springs studies within the watershed (e.g. LeRoux)                                                                                                                                               |
| <b>Springs Restoration in RDF watershed</b>                        | Restore and protect the headwater springs.                                                                                                                                                                |
| <b>Riparian Protection</b>                                         | Protect RDF riparian areas through new easements, green spaces, acquisition                                                                                                                               |
| <b>Meadows</b>                                                     | Preserve and restore meadows                                                                                                                                                                              |
| <b>Increase Awareness of Springs, Wetlands amd Alluvial Plains</b> | Increase awareness and protection of upper-watershed springs, wetlands and alluvial plains                                                                                                                |
| <b>State of the Watershed panel</b>                                | State of the Watershed panel discussions between scientists and public                                                                                                                                    |
| <b>Annual Rio De Flag Festival</b>                                 | An Annual Rio de Flag Art Walk and Festival                                                                                                                                                               |
| <b>Water Advisory Board</b>                                        | Create a Water Advisory Board with the political powers in the watershed to oversee implementation, provide financial oversight, respond to emergency situations, etc.                                    |
| <b>General Rio de Flag connectivity/restoration</b>                | Improve channel function, prepare for more flows with increasing development, riparian restoration with cottonwoods and willows; Restore channel-floodplain connectivity, address erosion and downcutting |





# Benefits of a Watershed Alliance

The benefit to Flagstaff of having the Watershed Alliance for the Rio de Flag is having a coordinated effort to maintain and enhance the Rio and its watershed, and to make The Rio de Flag even more of an asset to our community than it already is.









## **What we are asking of the City:**

- Participation in the WARF, including some help in making the WARF work
- A Master Participating Agreement for the WARF patterned on other existing City agreements
- Cooperation on Projects of Interest to the City with appropriate levels of approval



## **CITY OF FLAGSTAFF STAFF SUMMARY REPORT**

**To:** The Honorable Mayor and Council  
**From:** Sarah Langley, Management Analyst  
**Date:** 04/19/2022  
**Meeting Date:** 04/26/2022



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### **TITLE:**

**Flood Projects Updates**

### **DESIRED OUTCOME:**

For information only

### **EXECUTIVE SUMMARY:**

Staff will provide the Council and the public with an update on flood mitigation efforts in the Museum Flood Area, including updates on financial planning and grant submissions, capital mitigation projects, preparations for the 2022 monsoon and response operations.

### **INFORMATION:**

Council has heard previous Museum Flood updates on November 23, 2021, December 28, 2021, February 1, 2022, February 22, 2022 and March 29, 2022.

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**Attachments:** [Presentation](#)



# Flood Mitigation Updates

April 26, 2022







# Agenda



- Highlights and updates
  - Financial planning and grant submissions
  - Capital mitigation projects
  - Preparation for 2022 monsoon season
  - Response Operations – Emergency Operations Center (EOC) and Incident Management Team (IMT)





# Museum Flood Financial Focus Group

- Focus on finance, planning and related processes
- Established in mid-April, meeting weekly
- Discussion of funding sources for flood preparation, short term mitigations, emergency response needs and flood mitigation capital projects.





# DFFM Funded Resources

- Approved Request
  - 1-Combo vac truck
  - 1-Mini excavator & trailer
  - 1- CAT 950GC loader w/forklift attachment
  - 2- Digital trailer mounted signboards
  - 4- Digital portable message boards
  - 2-Digital vehicle mounted signboards
  - Traffic barricades and cones





# FEMA grants update

- Two FEMA Building Resilient Infrastructure and Communities (BRIC) grant proposals were submitted over the winter.
  - Linda Vista culvert upsizing
  - South Mount Elden mitigations
- Two FEMA Hazard Mitigation Grant Program (HMGP) grant proposals are being submitted this week.
  - Cedar Ave culvert upsizing
  - Spruce Wash channel improvements between Cedar and Arroyo Seco





# Cedar to Dortha Channel and Inlet



- **Project Scope:** Channel improvements for capacity and stability, Dortha Avenue undercrossing reconstruction for increased capacity
- **Construction Estimate:** \$2,600,000
- **Schedule:** Completion of critical infrastructure prior to monsoons 2022.
- **Current activities:**
  - Construction began March 21
  - Utility relocations ongoing
  - Concrete box construction to start week of May 2
  - Property acquisition ongoing





# Killip School Regional Detention Basins



- Work is advancing nicely, good weather, clear direction and project coordination is paying off.
- Final weir design, outlets and finish grade are complete and have been delivered to FUSD and the contractor.
- Contractor is on-site working towards final grade and slope stabilization.
- Finish work scope and proportionate cost share discussions are continuing for total costs.







# Killip Inlet at Ponderosa Park



- Engineering team is working on the conveyance infrastructure needed north of the Killip Detention Basins.
- Concept design is being developed
- Next logical construction project to follow Killip Detention Basin delivery. Funding guidance and timing is still being received.





# Ponderosa Park barriers

- Stormwater working with Parks and Ponderosa Head Start on moving barriers to allow for Head Start playground re-opening and for interim inlet condition for Killip Regional Detention Basins.
- Coordination with contactors is underway to install any emergency measures using the "Killip" unused barrier.





# Upstream work



- Long-term sediment reduction and erosion control is critical in post-wildfire areas.
- Projects focus on stabilizing alluvial fans, promoting erosion control, reducing downstream sediment and improving channel capacity to convey floodwater out of neighborhoods.

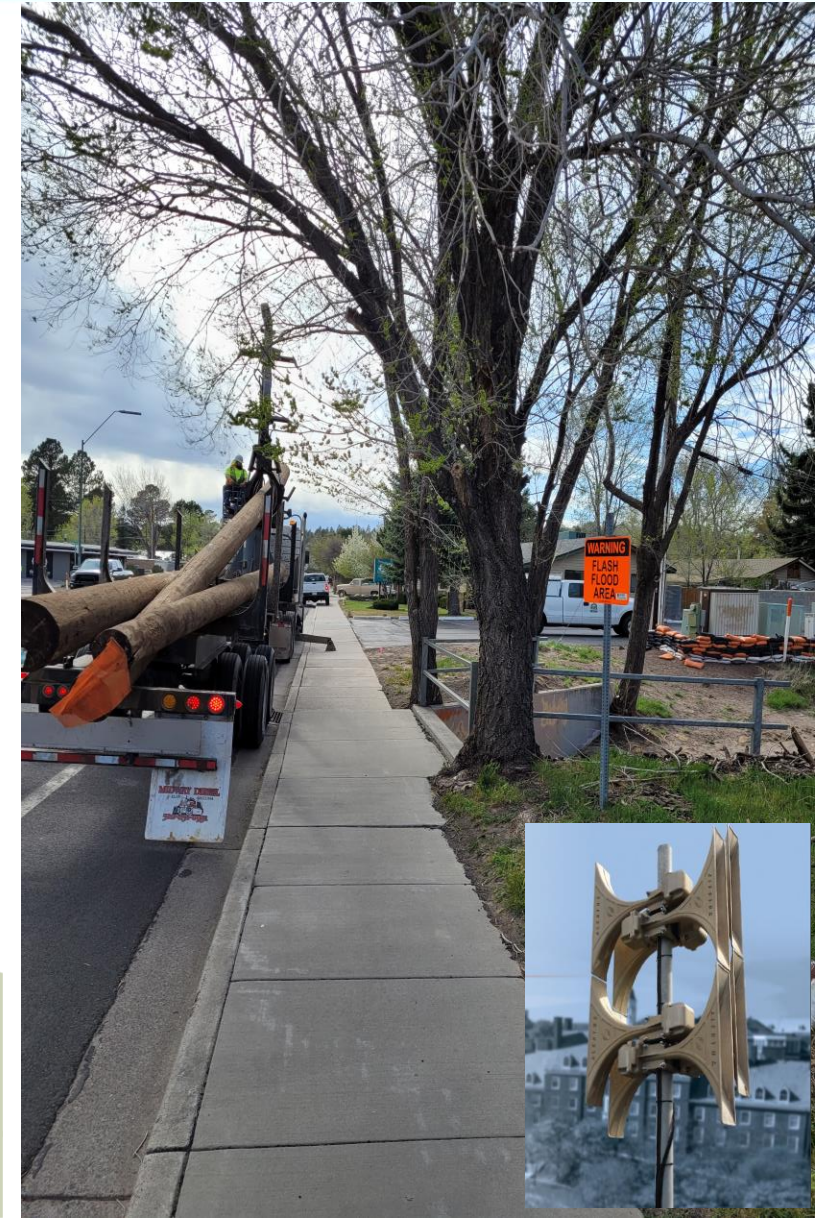




# Siren system



- All siren poles delivered 4/19 to each location for staging
  - All siren infrastructure has been delivered
- County EM coordinating siren integration into County Emergency Notification System.
- Vendor is working through the permitting process with the city for install.
- City and County working on community messaging on sirens and future testing







# Spring 2022 sandbag refresh



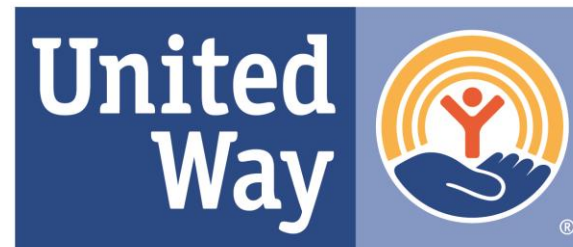
- Sandbags community deployment project kickoff in May
- City staff met for operational coordination/planning on 4/20.
- City and FCD are meeting weekly to build out the joint strategic operations plan for 2022.





# Volunteer/ Service Coordination

- United Way of Northern Arizona (UWNA)
  - Sandbag refresh volunteer days
- Continual requests for conservation teams at local and state level
- County submitted a request to the Department of Fire and Forestry Management (DFFM) for State fire crew support.



United Way  
of Northern Arizona







# Emergency Operations Response

- Staffing, coordination and training for:
  - Joint City/County Emergency Operations Center – City staffing is being identified and training is being planned. Backfill and staffing availability will be essential if an EOC is mobilized.
  - Incident Management Team - Essential group supported by the EOC. Strong in operations and is visible in the community during an event or in preparation.
  - Working on Command and General staff refresher training.



# Communications

## Outputs

- Feasibility study e-newsletter

## In production

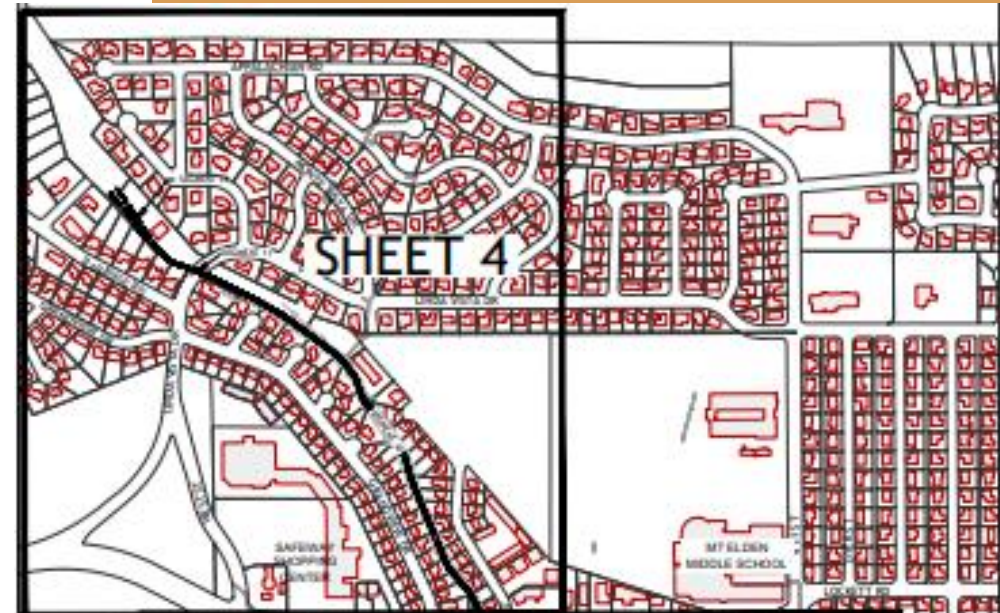
- Sandbag refresh communications
- Siren System communications

## Beta PR

- Website creation – over 1600 page visits
- Mailer sent to 954 addresses
- Three e-newsletters – each sent to 485 residents

### SPRUCE WASH TECHNICAL FEASIBILITY STUDY OVERVIEW

A technical engineering feasibility study was conducted for flood mitigation improvements needed in areas impacted by flooding from the 2019 Museum Fire burn scar. The first task of the Technical Feasibility Study was to identify the size, type and location of drainage infrastructure that could be installed to maximize the capacity of Spruce Wash from its crossing at Linda Vista to Route 66. Currently, there are sections of Spruce Wash that are open channel (in the Grandview and North Sunnyside Areas) and other sections where a single underground large diameter pipe exists (in the Arroyo Seco and South Sunnyside areas). The existing stormwater infrastructure is undersized for unprecedented post-wildfire stormwater flows, which are ten to one hundred times greater than historical conditions. It is important to note that the Technical Feasibility Study analyzed only the technical feasibility of potential infrastructure improvements. Other elements of feasibility, such as financial feasibility, have not yet been evaluated.





# Council Discussion



## **CITY OF FLAGSTAFF**

### **STAFF SUMMARY REPORT**

**To:** The Honorable Mayor and Council  
**From:** Shannon Anderson, Senior Deputy City Manager  
**Date:** 04/20/2022  
**Meeting Date:** 04/26/2022



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#### **TITLE:**

**Discuss potential bond projects for the November 2022 election**

#### **DESIRED OUTCOME:**

Direction from City Council on any bond projects that need to be removed from further consideration.

#### **EXECUTIVE SUMMARY:**

The Citizen Bond Committee has been considering the three potential bond measure categories supported by the City Council in April of 2021. Some bond projects have been removed from the list because alternate funding has been received. City staff will review the bond projects removed from the list and determine, with City Council direction, if any other bond projects need to be removed from further consideration.

#### **INFORMATION:**

The City Council discussed the potential of including general obligation bonds in the November 2022 election during the Council Budget Retreat in April 2021. The majority of City Council supported infrastructure (public safety, stormwater, and wastewater), Housing, and Climate Action for potential bond measure categories. City Council provided direction to the City Manager to create a Citizen Bond Committee to further consider these three bond measure categories and to come back to City Council with a recommendation.

The Citizen Bond Committee was created in December 2021. The committee members have heard presentations on all of the projects associated with Infrastructure, Housing, and Climate Action. They have received input from the Flagstaff residents about what is important to them. The committee members will now begin to work towards the creation of the Council recommendation. The goal of this conversation is to ensure the committee members have any updates to the list of potential bond projects as they begin their deliberations.

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**Attachments:**     Bond Project List

| Potential Bond Measure Category     | Projects                                                                                                     |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Public Safety Infrastructure</b> | Replace two 20-year-old fire engine and water tankers used to fight wildfires.                               |
|                                     | <del>Replace handheld and vehicle radios, which are no longer supported by the manufacturer.</del>           |
|                                     | <del>Replace and upgrade 911 towers to maintain operations between the Dispatch Center and City staff.</del> |
|                                     | Replace 20-year-old pumper <del>and ladder fire engine.</del>                                                |
|                                     | Construct new storage bays for fire units.                                                                   |

| Potential Bond Measure Category                 | Projects                                                                                                                                                                                                                                        |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Stormwater and Wastewater Infrastructure</b> | Increase capacity of flood waters within Spruce Wash to mitigate future flood events.                                                                                                                                                           |
|                                                 | Update Wildcat Hill Treatment Plant with equipment to increase capacity and maintain public health and regulatory compliance.                                                                                                                   |
|                                                 | Implement three energy efficiency projects: convert byproduct gases into energy to provide heat and electricity at the plant; purchase a backup generator to address low-flow power outages; and purchase varied speed blowers to match demand. |
|                                                 | Update receiving station infrastructure at both wastewater treatment plants (Wildcat Hill and Rio de Flag) to prevent equipment damage.                                                                                                         |
|                                                 | Update Wildcat Hill Treatment Plant with new electrical distribution system and other equipment upgrades.                                                                                                                                       |

| Potential Bond Measure Category                      | Projects                                                                                                                                                        |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Energy Efficient Buildings and Transportation</b> | Build safe and accessible bike and pedestrian infrastructure: sidewalks, crossings, bikeways, tunnels.                                                          |
|                                                      | Incentivize property owners who build small highly efficient homes on their properties that offer affordable rents.                                             |
|                                                      | Expand home energy efficiency rebates and provide low-cost loans for energy efficiency upgrades.                                                                |
|                                                      | Develop solar and battery back-up power microgrids for emergency response facilities and community-based hubs to serve as clean-air refuges during emergencies. |
|                                                      | Build large-scale renewable energy and/or purchase clean energy offsets for 100% of municipal electricity use.                                                  |
|                                                      | Conduct energy efficient upgrades to City of Flagstaff facilities.                                                                                              |
|                                                      | Full home retrofits to increase energy efficiency, lower costs, and increase air safety.                                                                        |
|                                                      | Develop a workforce for weatherization and energy efficiency.                                                                                                   |
|                                                      | Provide rebates for highly efficient, clean wood stoves (replacement and new).                                                                                  |
|                                                      | Provide high efficiency particulate air (HEPA) filtration systems for individuals vulnerable to smoke.                                                          |
|                                                      | Develop bike share program.                                                                                                                                     |
|                                                      | Develop electric car share program at City Housing sites.                                                                                                       |

| Potential Bond Measure Category | Projects                                                                                                                                  |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Housing</b>                  | Redevelop City owned housing to create affordable rental opportunities.                                                                   |
|                                 | Use self-sustaining loan fund to partner with private developers and repurpose existing buildings into affordable rental opportunities.   |
|                                 | Partner with local service providers to support and expand existing housing assistance programs; and create new programs where necessary. |
|                                 | Use self-sustaining loan fund to incentivize the private sector to incorporate affordable rental housing into new developments.           |
|                                 | Expand homebuyer down payment assistance loan program.                                                                                    |
|                                 | Expand eviction prevention and homeless diversion programs.                                                                               |
|                                 | Create affordable homeownership opportunities through land development / acquisition assistance.                                          |
|                                 | Address health and safety home repair needs in owner occupied homes.                                                                      |