



Flagstaff Watershed Protection Project



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FLAGSTAFF WATERSHED PROTECTION PROJECT NEWS AND ACCOMPLISHMENTS

(2020-2022)

The next FWPP update will include information on Pipeline wildfire impacts and treatment effectiveness.

FWPP BACKGROUND

In November 2012, City of Flagstaff voters overwhelmingly approved (74%) the \$10 million-dollar Flagstaff Watershed Protection Project (FWPP). This forest treatment effort, involving city, state, and federal lands, is designed to reduce the risk of severe wildfire and subsequent post-fire flooding in the Rio de Flag (Dry Lake Hills) and Upper Lake Mary (Mormon Mountain) watersheds.

Since the passage of the bond, FWPP's on-the-ground implementation has focused on fuel reduction thinning contracts and multiple management objectives across the Upper Rio de Flag and Upper Lake Mary watersheds. Projects included thinning and prescribed fire treatments on City Open Space, ground-based logging on the lower slopes in the Dry Lake Hills; helicopter and steep slope equipment logging in the upper slopes of the Dry Lake Hills; and ground-based logging in and around the lower slopes of Mormon Mountain. This report highlights news and significant accomplishments from 2019 to 2022.

ON-THE-GROUND IMPLEMENTATION – COMPLETED, CURRENT AND EXPECTED

COMPLETED

To date over 11,000 acres have been thinned in the FWPP footprint through partnerships with the Coconino National Forest Flagstaff Ranger District, Greater Flagstaff Forests Partnership, National Forest Foundation, Arizona Department of Forestry and Fire Management, Arizona

Conservation Corps, the American Conservation Experience, and many private industry contractors.

MIDWAY COST SHARE

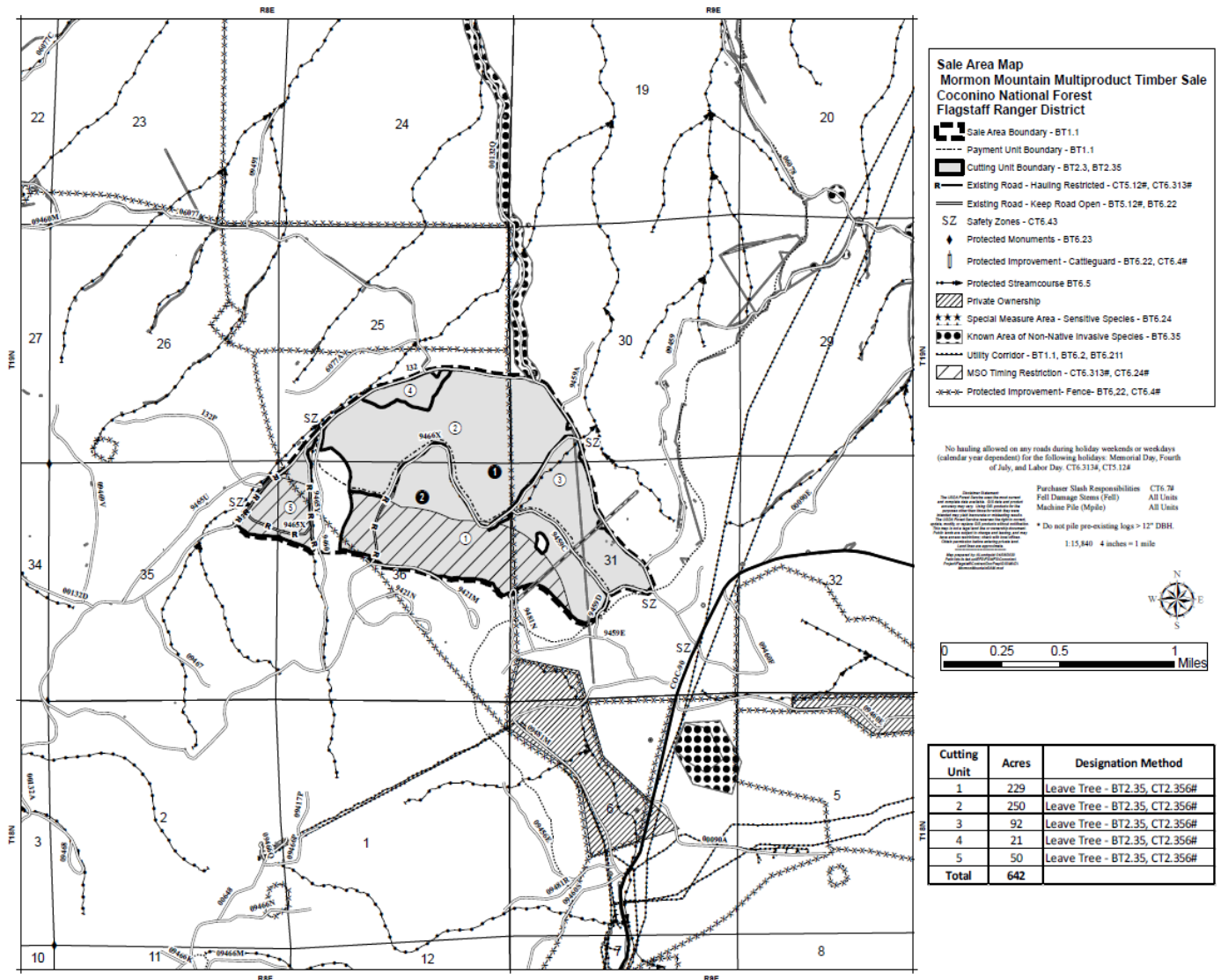
In September 2019, FWPP entered a “Challenge Cost Share Agreement” with the U.S. Forest Service (USFS). Within the “FWPP, Midway Project” agreement, the USFS and the City developed and prioritized projects in the Dry Lake Hills/Mount Elden portion of the FWPP footprint. Following FWPP thinning activities, the workplan under this agreement focused on relocating slash piles and log decks, firewood processing, road maintenance, and forest system trail maintenance and repair (includes erosion control). This agreement provided approximately \$775,000 contribution by the USFS and included a 20% match contribution (~\$194,000) from the City.

A significant part of the Midway Agreement was a firewood processing contract with the Forestry Division of the Alamo Navajo School Board. Carl Livingston, Alamo Navajo Forest Resource Specialist and his crew worked from December 2020 through May 2021 to process a large log deck into firewood. The logs came from the FWPP steep slope treatment units across the Dry Lake Hills area. Approximately 2500-3000 cords of wood were processed and distributed at no cost. Multiple groups organized their own distribution efforts and added significant capacity to the program. Chiz for Chii, Neon Bear Cubs, Redfeather Development Group, Navajo & Hopi Families COVID-19 Relief Fund, and the National Forest Foundation all stepped up to support distributing the firewood to vulnerable populations in Flagstaff and tribal areas. This project helped support the development of the very successful [Wood for Life program](#).

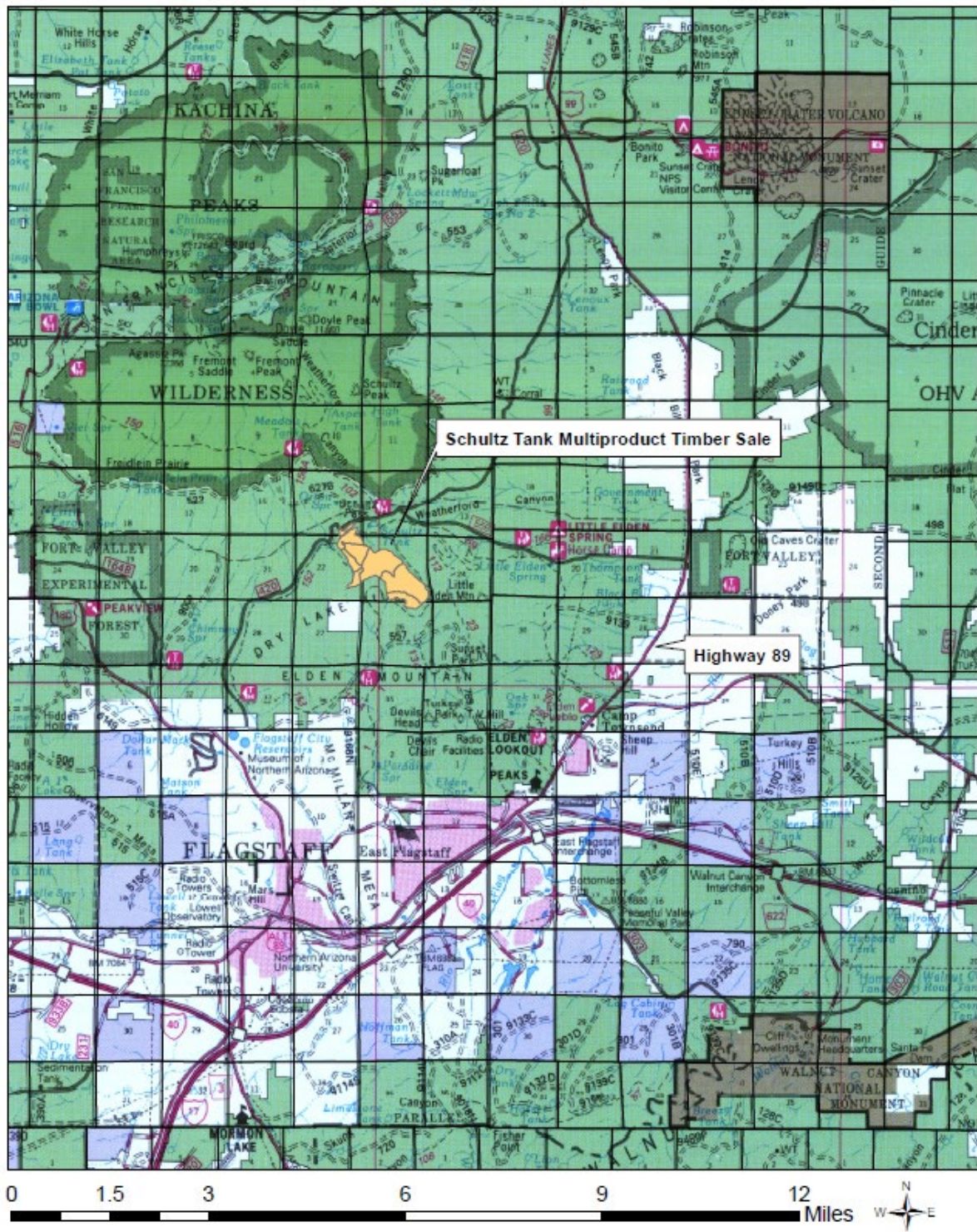
CURRENT FWPP THINNING PROJECTS

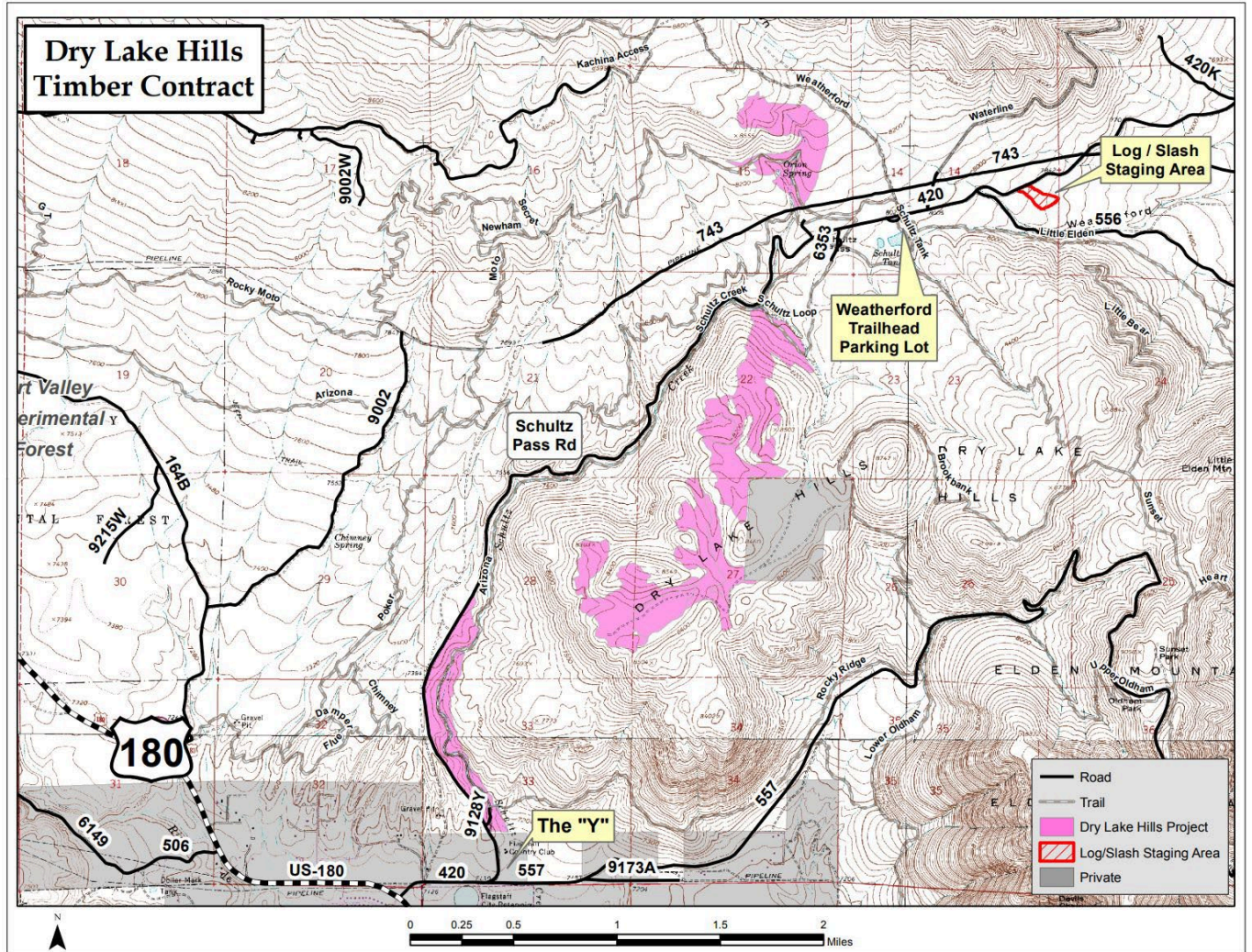
1. The 642 acre Mormon Mountain Timber Sale was awarded to Suarez Forestry, and Arizona based forest thinning contractor, in 2021. To date 60 acres have been treated.
2. The 466 acres Schultz Tank Timber Sale was awarded to Dale Lee and Sons in 2021, another Arizona based forest thinning contractor. The project is nearly complete with 350 acres treated.
3. The Dry Lake Hills Service Contract was awarded to Markit Forestry, a Colorado based firm, in 2021. About 174 of the 474 total acres have been completed. Access to the remaining acres in the Dry Lake Hills/Schultz Pass area is currently on hold. Unfortunately, the haul route for both projects, Forest Road 420, has been significantly impacted by the Pipeline Fire. Although most of the remaining acres were not directly impacted by the fire, future implementation timelines are yet to be determined.

Mormon Mountain Timber Sales Map:



Schultz Tank Multiproduct Timber Sale Vicinity Map





Schultz Pass Firewood Project:



EXPECTED

Throughout the Upper Rio de Flag and Lake Mary watersheds, another 40,000 acres of ecological thinning are currently in various stages of preparation by the Flagstaff Ranger. Two new areas under review within FWPP are the Leroux Project and the Fort Valley Experimental Forest (FVEF). Treatment plans are being developed in partnership with the Flagstaff Ranger District, US Fish and Wildlife Service, Coconino County, and the National Forest Foundation. The Leroux Project is located north of Ft. Valley, in-between Hart Prairie Road and Snowbowl Road. The Leroux Project and the FVEF buffer large areas of private land in the Upper Rio de Flag watershed.

MONITORING

MEXICAN SPOTTED OWL MONITORING (2019-2021)

Since 2015, the Coconino National Forest and U.S. Fish and Wildlife Service (USFWS) have been monitoring Mexican spotted owls (MSO) as part of FWPP. FWPP is unique in that both agencies collaborated in conducting forest treatments with the understanding that treatment activities had the potential to affect nine of the owl's protected activity centers (PACs); however, USFWS research (2012) has shown possible wildfires in the area are potentially more destructive to the owls than conducting forest treatments that mitigate these wildfiresⁱ. This also provided an excellent opportunity to monitor the owls and assess the effect of conducting forest treatments in and near the PACs. Fifteen PACs within nine treatments and six reference areas have been followed in the Dry Lake Hills and Mormon Mountain areas. Results of the last three years (2019-2021) are presented hereⁱⁱ.

In 2019, Dry Lake Hills Phase II began with helicopter and steep slope logging activities. Prior to the 2019 Museum Fire, most helicopter logging was complete and approximately half on the steep slopes. Treatments were implemented in one of the PACs during breeding season. Of the eight PACs monitored in Dry Lake Hills, owls were detected in all PACs, and they discovered that owls in three of the PACs produced two fledglings each. Since thinning has not occurred on Mormon Mountain, formal monitoring was not conducted that year; however, informal monitoring of eight PACs revealed that six were occupied and two produced young.

By 2020, Phase II logging in Dry Lake Hills was completed, and hand thinning, piling, and relocating slash to a staging area occurred along Schultz Pass Road. Implementation had not yet occurred on Mormon Mountain. In Dry Lake Hills, all eight PACs were occupied and three contained fledglings. In formally monitoring eight PACs on Mormon Mountain that year, five were occupied with two producing young.

In Winter 2021 and into the beginning of MSO breeding season, removal of logging slash to a staging area continued along Schultz Pass Road in Dry Lake Hills. Forest treatments had not begun in the Mormon Mountain project area. Of the seven PACs monitored in the Dry Lake Hills that year, six PACs were occupied, and one PAC produced young. On Mormon Mountain, of the eight PACS formally monitored, five were occupied with three producing fledglings.

[2019 Report](#)

[2020 Report](#)

[2021 Report](#)

INNOVATIVE FINANCING AND PISCES AWARD

ARIZONA WATER INFRASTRUCTURE FINANCE AUTHORITY

In February 2020, The City of Flagstaff refinanced the balance of the FWPP bond with Arizona Water Infrastructure Finance Authority funding (AZ WIFA), an alternative to the traditional funding mechanism that was used to initially fund the bond. The Clean Water State Revolving Fund (SRF) loan issued to the City comprised \$1 million in forgivable principle, and when combined with interest savings, resulted in a total of \$1.4 million in savings for Flagstaff residents who pay property taxes.

[FWPP & AZWIFA News Release](#)

EPA PERFORMANCE AND INNOVATION IN THE SRF CREATING ENVIRONMENTAL SUCCESS AWARD (PISCES)

Considering the benefit to Flagstaff residents through utilizing the AZ WIFA, in February 2022, FWPP was recognized by the Environmental Protection Agency (EPA) as a prime example of a successful and innovative water infrastructure project within the Clean Water and Drinking Water SRF programs. EPA's "Performance and Innovation in the SRF Creating Environmental Success" (PISCES) award recognized FWPP for exemplary leadership in innovative financing, partnerships, problem solving, and for improving upon water quality and public health measures. "EPA is proud of our longstanding partnership with Arizona to support stronger water infrastructure into the future," said EPA Pacific Southwest Regional Administrator, Martha Guzman. "Today we celebrate the results of EPA's investment, including innovations that contribute to clean water for communities like...Flagstaff."

FWPP RECEIVES OVER 22 MILLION IN FEDERAL FUNDING

FOUR FOREST RESTORATION STRATEGY

Within the “Four Forest Restoration (4FRI) Strategy” (2021), the USFS identified FWPP as a High Priority Partnership Project. This designation recognized that immediate implementation of treatments within the FWPP project area is needed to address safety issues that are threatening communities within the Rio de Flag/Dry Lake Hills and Mormon Mountain/Lake Mary watersheds. The USFS committed an additional \$11.6 million towards FWPP as part of the High Priority Partner Project designation.

READINESS AND ENVIRONMENTAL PROTECTION INITIATIVE GRANT

Through the Department of Defense (DoD) Readiness and Environmental Protection Initiative, known as the “REPI Challenge Grant,” FWPP will receive approximately \$7.6 million in partner match over the next several fiscal years. Partner contributions include DoD (\$1 million) USFS Coconino National Forest (\$6.4 million), Coconino County (\$250,000), and the National Forest Foundation (\$320,000). Partners will also contribute approximately \$360,000 through in-kind services.

The funding will be used to conduct tree thinning (mechanical and hand) and prescribed fire in the Mormon Mountain, Upper Lake Mary, and Anderson Mesa footprints. This project is integral to the “4FRI Strategy” and is prioritized to reduce the risk of severe wildfire impacts and related smoke effects to the Naval Precision Optical Interferometer (a highly specialized telescope), Naval Observatory, nearby communities, and multiple values at risk throughout Coconino County. The funding will also be used to conduct remote sensing monitoring of fire risk pre- and post-treatment.

OTHER FUNDING ON THE HORIZON FOR THE GREATER FLAGSTAFF REGION

Future funding appropriations and commitments that will serve the Greater Flagstaff Region are described below:

1. Federal contributions toward FWPP include a \$3.5 million community project award for the City of Flagstaff from the FY2022 Federal Omnibus Appropriations bill.
2. The Arizona Department of Forestry and Fire Management has nearly \$9 million in funding commitments for the Greater Flagstaff Area.

WATER RESOURCE AND INFRASTRUCTURE PROTECTION (WRIP) FEE

While the initial bond financed forest treatments in the Dry Lake Hills and Lake Mary Watershed, the City of Flagstaff understood that they needed to extend funding for treatments outside of the FWPP footprint and into the future. Hence, the Water Resource and Infrastructure Protection (WRIP) fee was initiated to City of Flagstaff water services customers in August 2020. This provides ongoing funding, beyond the initial bond investment, toward continuing forest treatments that are designed to reduce risk of uncharacteristically severe wildfire, flooding, and the subsequent destruction and degradation of critical water services infrastructure, water supply and water quality. Being that Flagstaff's water supply is entirely attained from local surface water and wells, this is a critical and proactive investment in the future of Flagstaff's water supply.

The WRIP fee is based on users' consumption. For example, water users will pay 52 cents per 1,000 gallons, and the funding will be used for the City's Wildland Fire Management Program to implement these forest treatments. The fee's structure will maintain monthly water costs for average water users, while large volume users' cost will be higher. For more information, see the "Water Resources and Infrastructure Protection through Wildland Fire Management Financial Plan and Fee Analysis" report [here](#).

SPECIAL PROGRAMS

TREX

During fall 2021, The Flagstaff Fire Department hosted Arizona's first Prescribed Fire Training Exchange (TREX). The TREX involved both structural and wildland firefighters in conducting prescribed fires within Flagstaff's wildland urban interface ("WUI"). Over the course of two weeks, The Flagstaff TREX crew applied prescribed fire on 328 acres at the City of Flagstaff's Observatory Mesa Natural Area, 553 acres at the Coconino National Forest's Wild Bill Project, and another 93 acres was prepped for a future burn at Rogers Lake County Natural Area. Firefighters also spent time learning about local fire ecology, cultural burning, public perceptions, and the Ready, Set, Go program. Participants also attended several field tours, which included FWPP and 4FRI projects, field testing a Firewise and structural triage assessment application, and witnessed first-hand past fuel treatments, conducted by the Coconino National Forest, that reduced losses to the highly valued Oak Creek Canyon during the 2014 Slide Fire.

[TREX Field Notes Report](#)

HEPA FILTERS

Flagstaff is located within a fire adapted ecosystem, and ponderosa pine forests require prescribed fire to remain healthy, sustainable, and decrease the risk of uncharacteristically, severe wildfires; however, along with prescribed fire, comes smoke, but the amount, when compared to out-of-control wildfires, is much less noticeable and harmful. In response to smoke effects from prescribed fires or wildfires, the City of Flagstaff 's Fire Department (FFD) and Sustainability Division provided 96 free HEPA air purifiers to smoke sensitive households in 2021. This program was funded by the Fire Adapted Communities Learning Network, the National League of Cities, and a local private foundation.

Being that this was a novel program, FFD conducted a survey with HEPA filter program participants. Of the 96 participants asked to complete the survey, 24 responded, which represents a 25% response rate. Some highlights from the survey include:

- Three quarters (75%) stated that they “strongly agreed” the application process was straight forward, and the pick-up time scheduling and location was appropriate.
- Almost two-thirds (63%) “strongly agreed” that it was easy to communicate with the program coordinator.
- Over half (54%) “strongly agreed” that they have noticed a significant improvement in air quality inside their homes.
- Less than half (46%) “strongly agreed,” 30% “agreed,” and 21% were “neutral” to whether they believed the air purifier reduced the number of breathing related doctor/hospital visits in their household.
- The majority (63%) said that they use the air purifier “every day,” while one quarter (25%) said that they use it only when there is a “prescribed fire or wildfire,” and three respondents (13%) said that they used it “once per week.”
- When asked if they have replaced the filters since they received them, the majority (92%) stated, “I have never replaced the HEPA filter in my air purifier.”
- One respondent indicated in an open-ended comment, “I am so grateful to have the air purifier, particularly during time of heavy smoke due to wildfires! Made a world of difference to my health and well-being.”

ⁱ USDA, Forest Service, Coconino National Forest, Flagstaff Ranger District. 2019-2021. “Flagstaff Watershed Protection Project Mexican Spotted Owl, *Strix occidentalis lucida* Monitoring Report.”

ⁱⁱ USDI, Fish and Wildlife Service. 2012. “[Recovery plan for the Mexican spotted owl \(*Strix occidentalis lucida*\)](#), First Revision.” Albuquerque, NM. 413 pp.