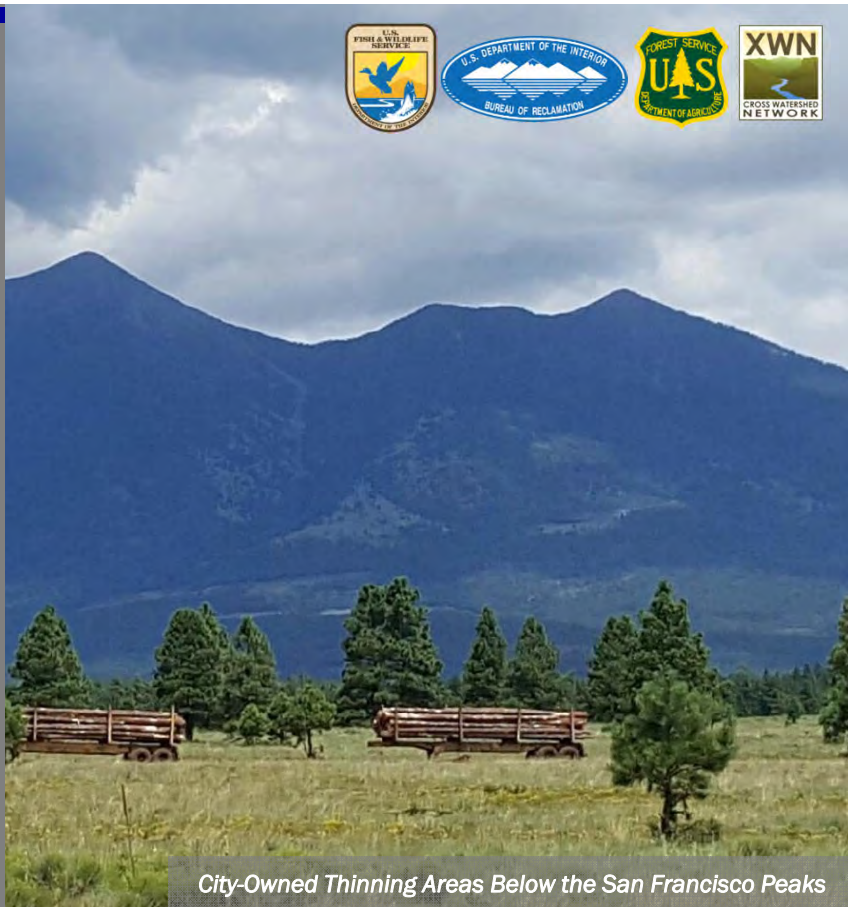
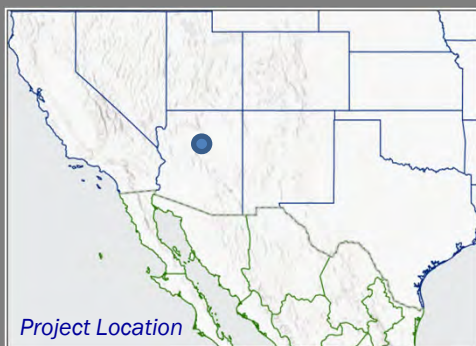


## FUNDING STRATEGIES

# Flagstaff Watershed Protection Project: A Federal-Municipal Partnership to Reduce Fire Severity and Post-Fire Flooding



In 2010, the Schultz Fire burned over 15,000 acres just north of Flagstaff, Arizona in the Coconino National Forest. Following the fire, heavy floods caused millions of dollars worth of property and infrastructure damage in neighborhoods just outside of Flagstaff. In 2012, 74% of Flagstaff residents approved a \$10 million bond, the Flagstaff Protection Project (FWPP), to support forest restoration work to reduce the risk of severe wildfire and post-fire flooding in the Dry Lake Hills (Rio de Flag) and Mormon Mountain (Lake Mary) watersheds.



City-Owned Thinning Areas Below the San Francisco Peaks

## KEY ISSUES ADDRESSED

Historically, frequent, low-intensity fires were common in ponderosa pine forests. These fires were fueled by needles, woody debris, and small tree saplings, resulting in a mosaic of open areas within the forests. In the early 20th century, the U.S. Forest Service (USFS) began managing many mountain ranges within the Intermountain West. Management included active suppression of wildfires to protect natural resources, human life, and infrastructure. The resulting dense fuel loads, coupled with increased human settlement, has made wildfire management increasingly difficult. Forest restoration treatments include tree thinning and/or prescribed fire, both of which are intended to reduce fuel loads and fire severity.

## PROJECT GOALS

- Reduce the risk of destructive wildfire and post-fire flooding through fuel-reduction treatments in two critical watersheds
- Enhance ecological conditions, protect watersheds, and provide social and economic benefits to the community

## INNOVATIVE FUNDING MODEL

The FWPP is the only known example in the country where forest restoration and treatment work on federal lands are being funded from municipal bonds.



Timber Ready to be Hauled from City-Owned Land

## PROJECT HIGHLIGHTS

**Public Awareness:** To keep the public informed, an online interactive map shows the types and locations of on-the-ground work in Dry Lake Hills. Map layers include completed, current, and future forest treatments, temporary trails and closures, and haul routes.

**Emerging Forestry Professionals:** In 2017, American Conservation Experience, a nonprofit, and FWPP collaborated on a grant to hire, train, and deploy a team of emerging forestry and conservation professionals to thin 110 acres in Dry Lake Hills.

**Research Opportunities:** Project areas provide research opportunities for college students from Northern Arizona University's School of Forestry. One project includes long-term tracking of biophysical data to help managers understand the effectiveness of treatments over time.

**Tribal Engagement:** Northern Arizona tribes were consulted as part of the planning process. Through conversations with the Navajo Nation, it was mutually decided to extend treatments into the Brookbank Meadow, a 140-acre inholding located within Dry Lake Hills.

### Collaborators

- American Conservation Experience
- Ecological Restoration Institute
- Greater Flagstaff Forests Partnership

### Funding Partners

- Coconino National Forest
- Arizona Department of Forestry and Fire Management
- City of Flagstaff

Case study support provided by US Fish and Wildlife Service, US Bureau of Reclamation, US Forest Service, and Cross Watershed Network. Updated February 2019.

Photos courtesy of Flagstaff Watershed Protection Project

## LESSONS LEARNED

Thinning and logging on steep, rocky terrain is expensive. Contractors may not want to be involved in disposing of or moving low-value, small-diameter round wood in the Southwest. It was important to be prepared to handle wood disposal separately from the thinning contract and to choose the right contract mechanism. All available USFS contracting mechanisms were carefully evaluated, and the selected method matched current local market capacities. Service contracts, timber sales, and Integrated Resource Service Contracts have all been used to maximize utilization of the Bond.

The development of strong partnerships with a broad range of organizations has led to increased leverage and added organizational capacity and outreach opportunities. Nonprofit and academic organizations have leveraged funding sources unavailable to federal, state, or local government agencies.

## NEXT STEPS

- Continue routine maintenance, such as prescribed fire and thinning, to sustain watershed and forest health
- Pursue external funding to support and expand maintenance and monitoring efforts
- Continue supporting community engagement and outreach, and student participation through the use of internships and monitoring projects

## PROJECT RESOURCES

For more information on this project, contact Matthew Millar: [Mmillar@flagstaffaz.gov](mailto:Mmillar@flagstaffaz.gov)

For additional project resources and case studies, visit the Collaborative Conservation and Adaptation Strategy Toolbox: [WWW.DESERTLCC.ORG/RESOURCE/CCAST](http://WWW.DESERTLCC.ORG/RESOURCE/CCAST)



Prescribed Fire and Pile Burning Operations