

# PUBLIC SECURITY THROUGH FOREST RESTORATION INVESTMENT: INSTITUTIONAL DESIGN CONSIDERATIONS FOR PUBLICLY FUNDED PWS PROJECTS

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Flagstaff Watershed Protection Project

## Introduction

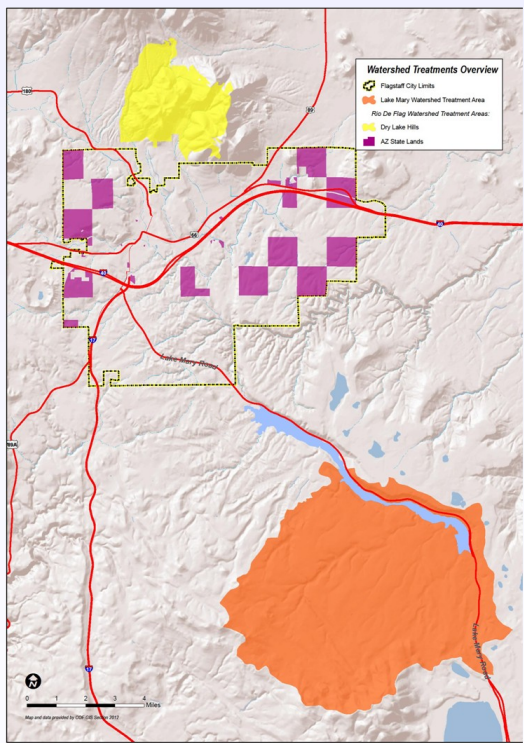
In June 2010, the Schultz Fire burned a total of 15,051 acres of Coconino National Forest bordering the City of Flagstaff. The burn was followed by the 4th wettest monsoon season on record in Flagstaff, resulting in debris flows, severe erosion, and substantial flooding in residential areas. Cost for suppression and mitigation has cost taxpayers roughly \$58.6 million.

The Rio de Flag and Lake Mary Watersheds have been identified as Priority Watersheds for fuels treatment. Extensive severe flooding has been projected to impact Flagstaff in the event of a catastrophic wildfire in the Dry Lake Hills. Furthermore, sediment and carbon influx due to wildfire in the Lake Mary Watershed could render approximately 50% of the City of Flagstaff’s drinking water unusable<sup>1</sup>.

## Background

84% of voters who approved of FWPP believe that USFS/City of Flagstaff partnership is a needed model for accomplishing forest restoration, and 70% of voters believe the Forest Service will be accountable to the City for work accomplished with bond monies under this partnership. Therefore, better understanding this new partnership model can help illustrate and identify new opportunities for PWS systems. The US Forest Service has traditionally been responsible for ecosystem restoration on forested federal lands, but insufficient funding for necessary and demanding fuels reduction efforts impedes progress in reaching treatment goals<sup>2</sup>. Payment for Watershed Services (PWS) programs may incentivize watershed improvement<sup>3</sup>, and these programs have begun to gain traction as an institutional mechanism for financing ecosystem management activities.

In November 2012, Flagstaff residents passed Bond 405 (now the Flagstaff Watershed Protection Project, or FWPP), a \$10 million dollar municipal bond remunerated through property taxes, with an overwhelming 73% majority. Since the success of Bond 405, an institutional arrangement has been evolving between the US Forest Service and the City of Flagstaff that outlines each agency’s role in FWPP.



Map courtesy of Flagstaff Watershed Protection Project



Photo: Courtesy of Friends of the Rio de Flag

**References**  
<sup>1</sup>City of Flagstaff, 2012; <sup>2</sup>Wunder, 2005; <sup>3</sup>Wu et al, 2011; <sup>4</sup>Ostrom 1994

**Acknowledgments**  
Dr. Fred Solop, Emily Schnurr, Paul Summerfelt, Stephanie Smith, Anne Mottek Lucas

## Purpose

The purpose of this case study is to document and describe governance structures that have resulted since the passage of Bond 405. Additionally, we plan to relate public opinion and awareness of risk to policy implications for communities considering watershed protection.

## Questions

- What is the governance structure of the Flagstaff Watershed Protection Project (FWPP), including rules and responsibilities?
- What differentiates this PWS system from traditional collaborative restoration planning, and how does it alter project effectiveness?

## Preliminary Findings

Memorandum of Understanding {MOU}

City	USFS	Shared
<ul style="list-style-type: none"> <li>Support priority watershed projects</li> <li>Participate in review of MOU with USFS</li> <li>Participate in planning, evaluation, and public outreach meetings with the USFS</li> </ul>	<ul style="list-style-type: none"> <li>Oversee and administer all work conducted on NFS lands</li> <li>Identify 4FRI work to be accelerated by City funds.</li> <li>Provide implementation resources if possible</li> </ul>	<ul style="list-style-type: none"> <li>Design future projects</li> <li>Support creation of assessments for treatment effectiveness</li> <li>Develop media campaign</li> <li>Leverage additional funding and support</li> <li>Monitoring efforts</li> </ul>



MOU- Cooperating Agency Status

City	USFS	Shared
<ul style="list-style-type: none"> <li>Participates in NEPA process</li> <li>Provides special expertise</li> <li>Recognizes USFS as sole authority</li> <li>Public outreach</li> </ul>	<ul style="list-style-type: none"> <li>Retains sole and ultimate decision-making authority</li> <li>Responsible for all environmental documents, allows City input</li> </ul>	<ul style="list-style-type: none"> <li>Cooperation</li> <li>Communication</li> <li>Scientific analysis</li> <li>Conflict resolution</li> <li>Coordination</li> <li>Financial obligation</li> <li>Monitoring efforts</li> </ul>



Supplemental Project Agreement- Pilot Project

City	USFS	Shared
<ul style="list-style-type: none"> <li>All funding to award implementation contracts</li> <li>Solicit and award contracts</li> <li>Procurement Officer</li> </ul>	<ul style="list-style-type: none"> <li>Provide silvicultural prescriptions for pilot</li> <li>Provide personnel and vehicles for tree marking and slash burning</li> </ul>	<ul style="list-style-type: none"> <li>Provide Project Manager/liason to be on-site during treatment</li> <li>Work collaboratively on evaluation report</li> </ul>

Fig. 2: Delegated agency responsibilities as outlined by Memorandum of Understanding, Cooperating Agency Agreement, and Supplemental Project Agreement.

Shared and individual responsibilities of each agency have been outlined in a series of formal agreements, whereby each agency’s role is delineated (Fig.2). The City of Flagstaff incurs financial obligation for treatment implementation (\$10m Bond), while the US Forest Service provides NEPA, planning, personnel, and other resources (Fig.3). However, these roles will continue to evolve throughout NEPA, implementation, and monitoring.



Fig. 3: Further breakdown of agency responsibilities within the FWPP partnership.

## Discussion

- Patterns of co-responsibility within the FWPP partnership that have emerged include shared resources, public outreach, and NEPA planning.
- A collaborative agency partnership PWS project that incorporates a financial mechanism from an election-approved bond is unique to FWPP.
- FWPP contains several characteristics of strong PWS schemes<sup>4</sup>, such as buyer awareness of resource benefit and prospective low transaction costs, but partnership system has potential to exclude other stakeholders.

## Next Steps

- The efficacy, effectiveness, and accountability of the project will be analyzed using in-depth interviews, surveys, and literature review.
- Further research should be conducted in order to assess the key traits of traditional and collaborative fuels management planning and finance systems versus those contained within the FWPP partnership model.



Photo: Courtesy of wildlandfire.com

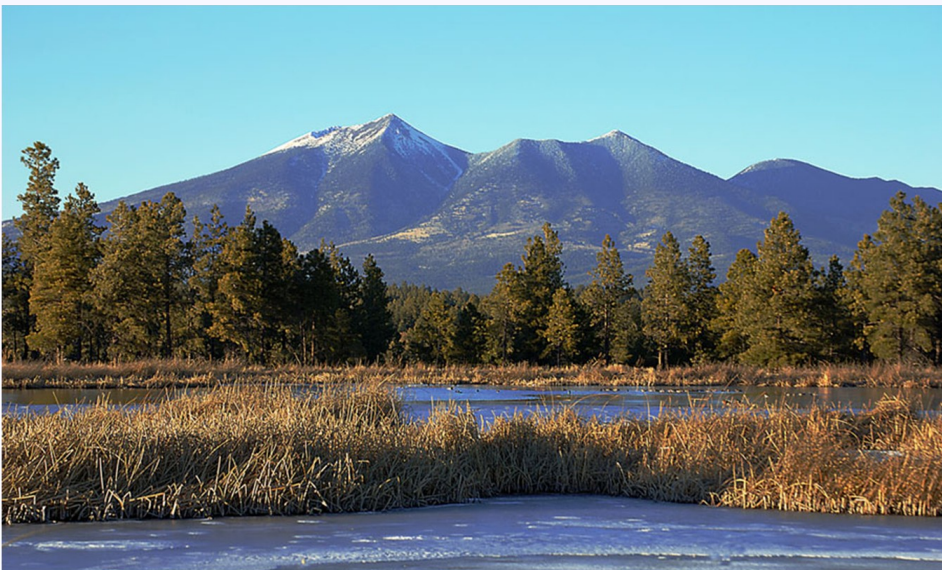


Photo: Courtesy of flagazrental.com