

City of Flagstaff/Coconino County Interim 2019 Update CCMJHMP

Table 5-9: Mitigation Strategy for Flagstaff					
Project Name Description	Hazard(s) Mitigated	Estimated Cost & Completion Date	Project Lead Agency	Potential Funding Source(s)	Progress/Status
HIGH PRIORITY					
Red Gap Ranch Study. A study is underway to evaluate the future pumping for Red Gap Ranch and potential impacts on regional stream depletion rates.	Drought and Wildfire	\$150,000 2020	City of Flagstaff Water Services Div.	USBR Grant	Southwest Ground Water, Inc completed this groundwater computer modeling study in 2015.
Flagstaff Well Field & Pipeline Evaluation. The City purchased Red Gap Ranch and has drilled 10 wells for the purpose of future water supply. The City is currently negotiating a Right of Water with ADOT along 1-40 and is performing the first phase of a feasibility study.	Drought and Wildfire	\$12M On-going	City of Flagstaff Water Services Div.	Utility Rates	JACOBS Engineering is completing their Pipeline Feasibility Study. The study should be completed by the end of 2019, pending USFS approvals.
Flagstaff Watershed Protection Project (FWPP). Involves City, State, Navajo Nation, County, and Federal (US Forest Service) lands centered within City, Dry Lake Hills (north of town) and Mormon Mtn/Lake Mary (south of town). Approved by 74% of City voters, resulting forest treatments designed to reduce impact of high severity wildfire and post-fire flooding that would impact much of town and the City's surface reservoir.	Wildfire, Post-Fire Flooding, and Climate Change	\$10M bond; Initial work – Dec 2024; on-going maintenance	Flagstaff Fire & Water Services Div.	Tax, Bond, Environmental Service Fee, and/or Utility rates	FWPP is 50% Complete. Work continues on Observatory Mesa and within Dry Lake Hills: Helicopter, Steep-slope equipment and hand-crew work underway. Initial operational planning session conducted for next phase of operation (Mormon Mtn/Lake Mary).
Upgrade existing conservation measures to provide for water during periods of drought. Flagstaff depends on surface reservoirs and groundwater for domestic water supply. Conservation efforts expand the capacity of this limited resource.	Drought	\$250,000 On-going	City of Flagstaff Water Services Div./ Conservation Manager	City of Flagstaff bonds, annual budget	The Flagstaff Watershed Protection Project is underway, reclaimed water is required for large area irrigation and lawn watering restrictions are in place. A water harvesting rebate program was started in July 2012. Water conservation outreach was presented to all students at the fourth-grade level.

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Enhance flood mitigation efforts through channelization and detention. Due to drainage patterns and topography many areas of the city are subject to periodic flooding during snow melts and monsoon periods.	Flood	\$5.4M 2025	City of Flagstaff Water Services Div./ Stormwater Manager	Stormwater Utility Rates, Road Repair and Street Safety bond initiative	The Clay Avenue Wash Basin flood mitigation dam was completed. The Linda Vista/Rainer Street and drainage project was completed. Additional major flood reduction projects at Lockett Road, Fanning Wash, and Zuni Drive have been completed. The Road Repair and Street Safety initiative (RRSS) will address many additional flood improvements over the next few years. The Stormwater CIP budget will continue indefinitely to construct smaller flood reduction projects.
Plan and conduct comprehensive inclusive Program to address all phases of wildland fire. (Includes educating the local and regional community - including tourists - about the potential for and consequences of catastrophic wildfire, and actions necessary to mitigate the risk/threat). Goal is to proactively address causal factors – within and adjacent to community - and post-fire impacts to community. Unwanted, severe wildfire is the #1 fire threat to Flagstaff and northern AZ.	Wildfire and Post-Fire Impacts	\$1.3M city on-going	Flagstaff Fire (Wildland Fire Management Division)	General fund, grants	Prevention & Preparedness (<i>Firewise Neighborhood and Fire-Adapted-Community programs, Annual Restrictions & Closure Plan, Annual Wildfire Preparedness Day, Flagstaff Wildland-Urban Interface Fire Code, general outreach efforts and events</i>), Hazard Mitigation (<i>selective thinning, debris disposal, prescribed fire, hazard trees</i>), Response, and Recovery efforts – both internal city stand-alone work as well as collaborative efforts with our partners (Ex: Four Forest Restoration Initiative, Ponderosa Fire Advisory Council, Greater Flagstaff Forests Partnership, others).

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Provide equipment and human resources sufficient to handle comprehensive road, air, and railway hazmat and mass casualty incidents. Nearly 120 trains travel through the Flagstaff boundaries each day. I-40 and I-17 generate truck traffic that carry hazardous materials through the city each day.	HazMat Transportati on Accidents	\$250,000 On-going	Fire Dept /Training Chief	General taxation, S.A.R.A. titled funds	Flagstaff FD continues to train, equip, and respond to transportation and fixed site emergencies throughout Northern Arizona.
The Rio De Flag Project is a major flood control initiative designed to remove 1500 structures from the flood plain. The downtown area is prone to flooding and this effort will reduce the flood threat and enable further economic development in this area.	Flood	\$30M 2020	City of Flagstaff Community Development Div./ Capital Improvements Rio De Flag Project Mgr.	Federal grants	The design phase is ongoing with coordination from the Army Corps of Engineers, but funding has not been secured yet.
Install generators for water wells vulnerable to losing power during wildfires. More than 60% of the water supply is pumped from underground wells. Many of these well fields are subject to wildfire threats that disrupt power.	Wildfire	\$2.5M On-going	City of Flagstaff Water Services Div.	Operating capital	The generator project for the Tuthill well is out to bid. A mobile unit is available for deployment to be used at the Shop well. The Woody Mountain well and Lake Mary well will be next to upgrade with back- up generators.
MEDIUM PRIORITY					

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Flagstaff Stormwater Public Outreach: Public awareness program on topic of flooding and dam risks.	Dam Failure, Flooding	N/A On-going	City of Flagstaff Water Services Div./ Stormwater Manager	Stormwater Utility Rates	On-going. The Stormwater Section expanded its outreach program in 2017 using digital media. Concerned citizens and emergency responders are listed on Stormwater's growing emergency rain gauge and stream gauge ALERT network.
Code Red Community Notification / Early Notification	Severe Wind, Winter Storm	\$8,000/year On-going	Coconino Co EM	Exchange of Service Agreement	Mark Christian to update On-going
Building Code Adoption. Maintain current building standards for seismic protection.	Earthquake	Staff On-going, as appropriate	City of Flagstaff Community Development Div.	General Fund, User Fees	All Building & Fire Codes to be updated to the 2018 version in summer of 2019. Latest building standards for seismic protection to be adopted. Public Outreach completed and 1 st read of June 4, 2019. On-going
Building Code Adoption. Maintain building standards for snow loading.	Winter Storm	Staff On-going, as appropriate	City of Flagstaff Community Development Div.	General Fund, User Fees	All Building & Fire Codes to be updated to the 2018 version in summer of 2019. Latest building standards for snow loading to be adopted. Public Outreach completed and 1 st read on June 4, 2019. On-going

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Building Code Adoption. Maintain building standards for wind shear.	Severe Wind	Staff On-going, as appropriate	City of Flagstaff Community Development Div.	General Fund, User Fees	All Building & Fire Codes to be updated to the 2018 version in summer of 2019. Latest building standards for wind shear to be adopted. Public Outreach completed and 1 st read on June 4, 2019. On-going
Fire Prevention Inspection. Perform building inspections to prevent exceeding appropriate snow loading limits.	Winter Storm	Staff Event driven inspections	Fire Department	General Fund	Ongoing.
Fire Prevention Patrols. Fire prevention patrols by Law Enforcement including fly-overs to discover illegal transient camps and illegal fires within the City limits.	Wildfire	\$10,000/yr On-going	Flagstaff Police Dept	Annual Budget	Ongoing
Pulliam Airport Security Screening. Armed police officers are present at airport screenings prior to boarding to ensure passenger safety.	HazMat, Transportati on Accidents	\$80,000/yr On-going	City of Flagstaff Public Works Div./ Airport	Transportation Safety Authority Grant	Continue to have local police officers at airport screenings funded in part by TSA
Clay Avenue Wash Detention (Dam) Basin Emergency Action Plan: A plan to address how to warn the public in the event of a pending dam failure or flooding.	Dam Failure, Earthquake, Flood,	In-kind 2016	City of Flagstaff Water Services Div./ Stormwater Manager	Stormwater Utility Rates	Emergency contacts were updated in 2018, and a rain gauge and stream gauge were installed at the dam to be included in the Stormwater Section's growing ALERT network. ALERT messages delivered via email and text message are set at

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	Winter Storm				heavy rainfall, and at varying thresholds of flow through the primary outlet and emergency spillways.
Construct & equip a multi-agency EOC to coordinate disasters. The area is subject to periodic disasters. On an annual basis the EOC is activated 2-3 times each year.	All	\$2M When funding becomes available	Fire Dept/ Fire Chief		The Gemini EOC (formerly known as the alternate EOC) is located 2201 North Gemini. It is the primary EOC.
Floodplain identification and mapping, including any local requests for map updates to provide the community with a regulatory tool to reduce the losses to property and people.	Flood	\$100,000 2016	City of Flagstaff Water Services Div./ Stormwater Manager	Stormwater Utility Rates	All Flood Insurance Rate Maps (FIRM) have been updated and converted to Digital Flood Insurance Rate Maps (D-FIRM), to help enforce flood plain regulations. We completed the Northeast Area Master Drainage Study, a master plan to conceptually identify and mitigate major flooding in northeast Flagstaff.