



2022 Progress Report: 2017 Update to Pre-Disaster Mitigation Plan

The City of Missoula participates in the Community Rating System (CRS) which rewards communities for exceeding minimum standards required for floodplain administration. In order to maintain our CRS rating, the City must complete the yearly CRS recertification process and a verification process every five years. Recertification and verification require the City report on various floodplain management related activities. The CRS recertification and verification cycles were completed August, 2022.

The CRS requires the City of Missoula to provide a progress report for the action items contained in our floodplain management plan. The floodplain management plan for the City of Missoula is the 2017 Update to Pre-Disaster Mitigation Plan. This is a City/County joint plan. The plan can be viewed on the City website here:

<https://ci.missoula.mt.us/2065/Floodplain-Resources>

This evaluation report was prepared by the Development Services division of the Community Planning, Development, and Innovation Department. Only objectives pertaining to the City and flood hazard mitigation were evaluated for this report. Staff of the Stormwater Management Program of Public Works & Mobility were contacted to provide updates on the status of project implementation for project 3.2.1. The Office of Emergency Management was contacted to provide updates on the implementation status for projects 3.5.1 and 3.6.3. Implementation status for projects 3.3.2 and 3.6.1 was determined by Development Services Staff.

Goal #3: Reduce Exposure to Flooding

Objective 3.2: Implement structural projects to reduce impacts from flooding.

- Project 3.2.1: Maintain and improve the existing stormwater infrastructure to mitigate impacts from flash flooding.
 - Planned Activities: Identify problem areas. Coordinate with right-of-way partners, Determine remedy. Obtain funding. Implement.
 - Schedule: Ongoing.
 - Progress: The Stormwater Management Program of the Public Works & Mobility Department was contacted to provide an update on the implementation of this objective. Public Works & Mobility has been able to respond to stormwater maintenance demands pro-actively by cleaning and replacing dry-wells. Over the past year, Public Works and Mobility has replaced 15 dry wells and cleaned 1,329 linear feet of pipe. The department cleaned 670 dry wells and 103 inlets, removing 464 cubic years of debris and allowing them function as designed. Additionally, Public Works & mobility changed “stormwater” to one word in order to align with the EPA’s definition.

Objective 3.3: Conduct mapping/analysis/planning projects to reduce impacts from flooding.

- Project 3.3.2: Evaluate and if appropriate, implement a telemetered river gauge on Rattlesnake Creek to notify community of possible flood surges.
 - Planned Activities: Consult with USGS and NWS for input on what type of gauging would be appropriate and best location. Obtain funding for necessary equipment. Install and train on operation
 - Schedule: Ongoing – Objective Met in 2017.
 - Progress: In consultation with USGS and NWS, a 3' x 3' Hoffman box housing a constant flow bubbler, Satlink, and battery was selected as a real-time streamflow gauge for Rattlesnake Creek. This gauge was selected to monitor flows for water availability and instream flow analyses. In addition, a Wire Weight gauge with Veeder counter was installed on the handrail of the City Drive footbridge which is used to obtain surface water elevations used to calibrate the stream gauge monitoring equipment. The gauge and equipment were installed in 2017.

Though not mentioned in this specific project, the City is currently in the draft mapping stage for updates to the Flood Insurance Rate Maps for the Clark Fork and Bitterroot rivers. Once new maps are adopted, the project will result in new flood risk data and maps which will be used to reduce impacts from flooding through our planning and permitting processes. Adoption of new maps is estimated to occur in 2025.

Objective 3.5: Upgrade emergency service capabilities to reduce impacts from flooding.

- Project 3.5.1: Conduct exercises on levee failure/breach.
 - Planned Activities: Coordinate with Disaster Planning Committee and put on training schedule.
 - Schedule: Short Term.
 - Progress: The Office of Emergency Management (OEM) was contacted to provide an update on the status of this objective. The planned activity has not been implemented due to constraints imposed by COVID. However, during the 2018 flood the Office of Emergency Management and other agencies met with the Army Corps of Engineers to look at several scenarios including a levee failure in the Orchard Homes area. Impacts of a levee failure in the Orchard Homes Area were analyzed to inform the Office of Emergency Management's response to such an event. While this was not captured as an official exercise, it met Objective 3.5.

Additionally, OEM worked with the National Weather Service and the ACE to conduct a flood inundation study (separate from the FIRM process) to determine impacts and depths of water inundation in areas prone to flooding. This information has assisted calibration of flood planning and

response. Finally, in May of 2022 Missoula County hosted the Seattle District Army Corps of Engineers (ACE) to conduct a flood fight exercise utilizing tools and equipment owned by the ACE that can be requested by a jurisdiction. The exercise consisted of filling super sacks for levee protection, using an automated sandbagging machine, and proper use of Hesko devices for flood water diversion.

Objective 3.6: Implement public outreach and education projects to reduce impacts from flooding.

- Project 3.6.1: Continue to educate the public on the National Flood Insurance Program.
 - Planned Activities: Info on NFIP will continue to be available at City & County Planning offices.
 - Schedule: Ongoing – Objective Met.
 - Progress: The City continues to educate the public on the National Flood Insurance Program. Information about the NFIP can be found on the City of Missoula Website. The public may inquire about the NFIP by phone or email. Development Services no longer allows walk-ins but the public may schedule appointments to receive additional information. City Hall has reopened for appointments only and placed flyers in the lobby relating to the NFIP, natural functions of the floodplain, and safe floodplain development. Copies of these pamphlets may also be requested by phone or email and are sent out digitally.

Additionally, the City Floodplain Administrator presented a Floodplain 101 presentation to City Council at a public meeting in May of 2022 which included information about the NFIP and mandatory flood insurance purchase requirement. With the ongoing remapping project of the Clark Fork and Bitterroot rivers, public outreach meetings for affected property owners are planned for fall 2022.

- Project 3.6.3: Participate in the National Weather Service's Flood Awareness Program.
 - Planned Activities: Maintain collaboration with NWS. Push out info via social media.
 - Schedule: Ongoing.
 - Progress: The Office of Emergency Management was contacted to provide an update on the status of this objective. The Office of Emergency Management continues to collaborate with the National Weather Service's Flood Awareness Program. Any time there is a flood advisory, watch, or warning the Office of Emergency Management initiates daily meetings with the National Weather Service's Flood Awareness Program. The

Office of Emergency Management shares public information and public safety messages across agencies. This process is on-going as risk presents. In the spring of 2022, Missoula County participated in a pilot project with the Missoula NWS office to look at different deterministic flood models to better inform public messaging. Analysis of this pilot project and new models is ongoing.