



WASTEWATER AND STORMWATER

Wastewater Creation and Capacity

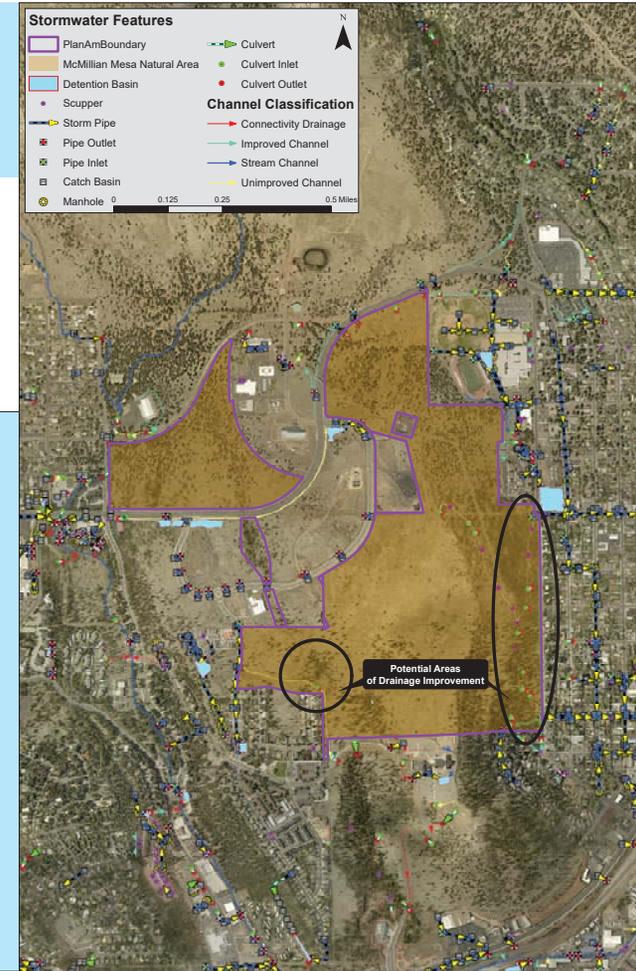
Development on McMullan Mesa was anticipated to contribute 606,000 GPD (gallons per day). Based on current land use and the proposed Natural Area, the area is anticipated to contribute approximately 604,000 GPD. All wastewater flow goes into the 15-inch sewerline in Switzer Canyon, consistent with the original Specific Plan for McMullan Mesa. There is no expected change in wastewater creation or capacity based on the proposed Natural Area.

Stormwater Capacity

There is no specific drainage conveyance structure that was sized for McMullan Mesa development that would have its capacity directly affected by the proposed Natural Area's changes in development. Therefore, there are no expected changes to any downstream stormwater facilities based on the proposed McMullan Mesa Natural Area.

Potential Stormwater Infrastructure

There are opportunities within the Natural Area to generally improve stormwater quality or reduce downstream effects. The general area north of Hemlock Way has been identified for a potential detention basin in past plans. This location has some existing stormwater infrastructure and has historically experienced flooding issues. Another specific area that could benefit from future stormwater infrastructure improvements is along the proposed Natural Area's eastern border, against Isabel St. The slopes against Isabel St are soft and sediment frequently ends up in the street or in nearby resident's yards during heavy rain events. Geologists are currently evaluating the mesa, among other areas throughout the City, for locations that have high water flows beneath the surface. This evaluation will also tell them specific areas that work well for water recharge. Coordinating drainage features with these strategic locations would be beneficial. These features can be designed to look natural. The City's Stormwater Division would like to reserve the right to make future stormwater infrastructure improvements for detention, treatment and recharge in the proposed Natural Area.



Sewerline Access

The majority of sewer mains exist within existing road rights-of-ways. The southern half of the existing development north of the Natural Area containing the Northern Arizona Center for Entrepreneurship and Technology, and some of the USGS facilities is currently served by a pressure sewer that connects to a gravity sewer toward the north end of this existing development. There is a desire from the City of Flagstaff Water Services department to eliminate all pressure sewers. There is therefore a plan to serve this area with a gravity sewer by connecting the developed area to the sewer main within Forest Ave. This connection would cross a portion of the Natural Area. This gravity sewer will not interfere with the functionality of the Natural Area once in place but the City of Flagstaff will need to have access to it as it passes through the Natural Area.



Existing drainage features north of Hemlock Way



Existing drainage infrastructure from Isabel St

Stormwater Maintenance

There are numerous FUTS throughout the Natural Area. The City's Stormwater Division needs approximately 30 feet around each trail for maintenance of the drainage and engineered features, and an allowance for the possibility of creating new stormwater related infrastructure that would help their functionality. Aside from FUTS, all other existing drainage features will need regular maintenance, even if little additional investment occurs.



Existing drainage infrastructure along a FUTS