

## Legislation Text

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**File #:** Resolution 46-2019, **Version:** 1

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Agenda Date: 09/17/2019

**Subject:**

Resolution 46-2019: Approving an Intergovernmental Agreement with Mile High Flood District to study Jackass Gulch and update the drainage master plan and floodplain delineation

Prepared by: Carolyn Roan, Water Resource Manager
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**PURPOSE:**

Staff requests approval of an Intergovernmental Agreement (IGA) with Mile High Flood District to study the hydrology and floodplain of Jackass Gulch in consideration of new rainfall data and development that has occurred in the basin since the original study in 1990. The hydrology will be studied in conjunction with the floodplain and necessary drainage improvements to address erosion and flooding concerns.

**PRESENTATIONS:**

**Staff Presenter(s):** None

**Additional Presenter(s):** None

**SUMMARY:**

Jackass Gulch was studied in 1990, as part of the Urban Drainage and Flood Control District (now called Mile High Flood District) Flood Hazard Area Delineation of Lower Dad Clark Gulch and DFA 0068, and later Outfall Systems Planning study of the same name in 1991.

Jackass Gulch is actively eroding, and in some places has created hazardous conditions with tall collapsing stream banks exceeding 10 feet in height. While largely on private property, this drainage channel parallels the public Mineral Avenue Trail. The sediment lost due to this erosion has been depositing in the South Platte River, threatening fish habitat. A channel stabilization project on one reach of the gulch was completed in 2018.

In addition, the current floodplain delineation shows significant flood risk to the Mineral Avenue and Santa Fe Drive intersection, which has seen a substantial increase in traffic. There is future development proposed at the southwest corner of the intersection.

Since the original studies, residential development has encroached into the drainage basin. These development activities have affected the land available to implement the 1990 flood mitigation recommendations. Hydrology changes in the basin since 1990 include installation of the storm sewer force main from the Peninsula development as part of an agreement with the City of Englewood for impacts to McLellan Reservoir, storm sewer outfalls bypassing the Highline Canal in accordance with Denver Water policy, and drainage basin transfer with storm sewer system design in the Southbridge subdivision. These hydrology changes have resulted in a higher volume of stormwater flowing through Jackass Gulch than originally planned, thus

accelerating the erosion and potential flood risk. There has also been an update to rainfall data used in hydrology studies.

A more detailed study of this drainage basin is necessary to best plan future improvements along the gulch, analyze risk to adjacent residential properties, and address potential flooding concerns in the Mineral-Santa Fe intersection.

### **PRIOR ACTIONS OR DISCUSSIONS:**

This master plan and floodplain update has not previously been discussed by city council.

### **ANALYSIS:**

#### Staff Analysis

Staff has noted recent acceleration of erosion in the Jackass Gulch channel. One stabilization project was designed and constructed in 2018 to address erosion and migration of the channel into backyards and residential structures along Jamison Way. However, severe erosion exists upstream of this location. This is creating a loss of private property in addition to safety hazards adjacent to the Mineral Avenue trail. A new study would assist in properly designing future detention ponds and stream stabilization, and better assess flood risk to residences.

Stormwater flows are currently intercepted into a storm sewer to the east of the railroad on the north side of Mineral Avenue. The 1990 model of this basin indicates flows that exceed the storm sewer capacity would flow over the retaining walls into Mineral Avenue and pond in the intersection of Santa Fe Drive up to approximately 7' deep. Another study of this basin is necessary to determine whether this risk is accurate, and how best to design improvements to limit public risk.

#### Fiscal Impacts

The cost for a new study is shared with Mile High Flood District as follows:

2019 City of Littleton:	\$50,000 (master plan 50%)
2019 Mile High Flood District:	\$100,000 (master plan 50% and floodplain 100%)

#### Alternatives

If not approved, future design of improvements will be based upon the 1990 study which may have inaccurate hydrology that would lead to either over-designing infrastructure (greater cost), or under-designing infrastructure (increase risk to public).

### **STAFF RECOMMENDATION:**

Staff recommends city council approve Resolution 46-2019.

### **PROPOSED MOTION:**

I move to approve the resolution approving an IGA with Mile High Flood District to study Jackass Gulch and update the drainage master plan and floodplain delineation.