



**COLORADO**  
**Colorado Water Conservation Board**  
Department of Natural Resources

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**TO:** Colorado Water Conservation Board Members

**FROM:** Kevin Houck, P.E. CFM  
Watershed & Flood Protection Section

**DATE:** January 11, 2023

**AGENDA ITEM:** Consent Agenda Item 2. January 23-24, 2023 Board Meeting - Floodplain Designations

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**Background:** Consent Agenda Item 2 includes two new floodplain studies that is proposed for CWCB action. Staff is requesting Board designation and approval for these items. A brief summary of the studies is presented in the attached document.

CWCB staff performs technical reviews of floodplain information to assure the Board that the information complies with the requirements of the CWCB’s “Rules and Regulations for Regulatory Floodplains in Colorado,” 2 CCR 408-1. The attached document provides a further discussion of legislative authority and responsibilities delegated to the CWCB. The CWCB’s designation and approvals greatly assist local communities in meeting the statutory requirements of the State and the regulatory requirements of the National Flood Insurance Program.

Additional supporting information for these items is attached.

Requested action for Floodplain Resolution 23-733: Staff recommends that the Board: 1) designate and approve the 100-year and 500-year detailed floodplain and floodway information contained in said report for Second Creek, Third Creek, Highway 85 Split, E470 Culvert Split, Potomac Split, and Fulton Split; and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, Adams County, the City of Commerce City, the City of Brighton, and FEMA. This action is recommended in order to meet statutory requirements.

Requested action for Floodplain Resolution 23-734: Staff recommends that the Board: 1) designate and approve the 100-year and 500-year detailed floodplain and floodway information contained in said report for Goldsmith Gulch, Goldsmith Gulch West Tributary, Southmoor Tributary, Monaco Overflow, Monaco at Iliff Overflow, and Hampden Overflow and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, the City and County of Denver, the City of Greenwood Village, Arapahoe County, the City of Centennial, the Southeast Metro Stormwater Authority, and FEMA. This action is recommended in order to meet statutory requirements.

## **Attachment - Supporting Information**

### ***Consent Agenda Item 2 - Floodplain Designations***

***January 2023***

#### **Summary**

Consent Agenda Item 2 includes two floodplain studies/maps that are proposed for CWCB action. Staff is requesting Board designation and approval for these items. A brief summary of the studies is presented below.

CWCB staff performs technical reviews of floodplain information to assure the Board that the information complies with the requirements of the CWCB's "Rules and Regulations for Regulatory Floodplains in Colorado," 2 CCR 408-1. Furthermore, Sections 31-23-301 and 30-28-111, Colorado Revised Statutes, state that legislative bodies of local jurisdictions may provide zoning regulations for land uses on or along any storm or floodwater runoff channel or basin only after designation and approval by the CWCB. In addition, Section 37-60-106(1)(c), Colorado Revised Statutes, directs the CWCB to designate and approve storm or floodwater runoff channels or basins and to make such designations available to legislative bodies of local jurisdictions.

The CWCB's designation and approvals greatly assist local communities in meeting the statutory requirements of the State and the regulatory requirements of the National Flood Insurance Program. Floodplain information is broadly categorized as detailed or approximate using the following definitions. Detailed floodplain information means floodplain information prepared using topographic base maps, hydrologic analyses, and hydraulic calculations to arrive at precise water surface profiles and floodplain delineations suitable for making land use decisions under statutorily authorized zoning powers. Approximate floodplain information means floodplain information prepared using a significantly reduced level of detail to arrive at floodplain (hazard delineation) without water surface profiles.

CWCB staff performs technical reviews on the following types of reports and maps for approval and designation by the Board:

"Flood Insurance Study" (FIS), which is produced by the Federal Emergency Management Agency (FEMA) and used for floodplain management, regulation, and insurance purposes.

"Flood Insurance Rate Map" (FIRM), which is produced by FEMA and used for floodplain management, regulation, and insurance purposes. A FIRM may be published with or without an associated hydrologic and hydraulic report.

"Flood Hazard Boundary Map" (FHBM), which was produced by the Federal Insurance Administration and are used for floodplain management, regulation, and insurance purposes. An FHBM usually depicts approximate floodplain boundaries only, and does not have an accompanying report. Note: For all FHBM designations, the CWCB staff will perform (in-house or by contract with a consultant) hydrologic analyses.

“Floodplain Information Report”, which is produced by local governments, state and federal agencies, special districts, or the private sector, and are used for floodplain management purposes and sometimes adopted by FEMA for use in Flood Insurance Rate Map revisions.

Various hydrology studies and related floodplain studies (community-wide or site specific) that depict 100-year floodplain information that is useful for floodplain management purposes.

“Floodplain Information” is a generic term used to describe any of the above types of reports and/or maps in the CWCB’s “rules and regulations...”

“Floodplain Resolution” is a formal document prepared by CWCB staff describing the Floodplain Information that is to be designated and approved by the Board.

## Summary of Designation Actions

**Floodplain resolution number: FPR #23-733**

**Affected communities:** Adams County, City of Commerce City, City of Brighton

**Name of study to be formally acted on:** “Flood Hazard Area Delineation, Second Creek (Lower) and Third Creek (Lower)”, by RESPEC Consulting & Services, dated October 2022.

**Studied streams:** This report includes detailed 100-year and 500-year hydrologic and hydraulic information for lower reaches of Second Creek and Third Creek, and four modeled split locations - Highway 85 Split, E470 Culvert Split, Potomac Split, and Fulton Split. The studied streams are in the South Platte River watershed.

**Technical Issues:** This report was authorized by the Mile High Flood District (MHFD) under joint sponsorship with the Adams County, the City of Commerce City, and the City of Brighton. The purpose of this report is to provide updated hydrologic and hydraulic information for Second Creek downstream of Denver International Airport and Third Creek downstream from E. 132<sup>nd</sup> Ave. The study originated with only Second Creek being studied, but was modified to add Third Creek as well because the floodplains comingle between the Fulton Ditch and US85, resulting in the need to study the lower portions of both creeks together rather than as individual reaches that do not affect one another. The total watersheds, including that upstream of the study areas, drain areas of 28.6 square miles and 30.8 square miles, for Second and Third Creek, respectively.

Hydrologic analyses were carried out using Colorado Urban Hydrograph Procedure 2005 (CUHP v. 2.0.0) and the Environmental Protection Agency Stormwater Management Model (EPA SWMM v. 5.1.010). Hydraulic analyses were carried out using the U.S. Army Corps of Engineers River Analysis System (HEC-RAS v. 5.0.7) based on steady flow conditions. Floodways were computed assuming 0.5’ rise criteria, which is consistent with both state and local jurisdiction regulations. 500-year floodplains were modeled either with one-dimensional (1D) or two-dimensional (2D) analyses. For areas near the South Platte River where the floodplains of the two streams join, a 2D analysis was also created to supplement the 1D model and was used to inform the 1D model results.

**Community Response:** MHFD transmitted a letter to the CWCB dated December 19, 2022, requesting CWCB designation and approval of the subject report. No request letters were received from the other affected local governments. Conversations with staff from the partner jurisdictions indicate their desire for designation of this study.

**Staff Findings:** CWCB staff has determined that the subject 100-year and 500-year detailed floodplain and floodway information for the studied stream reaches is in conformance with the CWCB’s rules and regulations for floodplain designation and approval. The CWCB staff has relied on the technical competence of RESPEC Consulting & Services, who produced the study,



but also performed an independent technical review of the report. CWCB staff therefore endorses this study as containing the most current floodplain mapping available and urges the affected communities to adopt said study for land use regulation purposes pursuant to statutory authority.

**Requested action for Floodplain Resolution 23-733:** Staff recommends that the Board: 1) designate and approve the 100-year and 500-year detailed floodplain and floodway information contained in said report for Second Creek, Third Creek, Highway 85 Split, E470 Culvert Split, Potomac Split, and Fulton Split; and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, Adams County, the City of Commerce City, the City of Brighton, and FEMA. This action is recommended in order to meet statutory requirements.

**Floodplain resolution number: FPR #23-734**

**Affected communities:** City and County of Denver, City of Greenwood Village, City of Centennial, Arapahoe County

**Name of study to be formally acted on:** “Flood Hazard Area Delineation, Goldsmith Gulch”, by Matrix Design Group, Inc., dated October 2022.

**Studied streams:** This report includes detailed 100-year and 500-year hydrologic and hydraulic information for Goldsmith Gulch and its primary tributaries - Goldsmith Gulch West Tributary and Southmoor Tributary, along with three spill locations - Monaco Overflow, Monaco at Iliff Overflow, and Hampden Overflow. The studied streams are in the South Platte River watershed.

**Technical Issues:** This report was authorized by the Mile High Flood District (MHFD) under joint sponsorship with the City and County of Denver, the City of Greenwood Village and the Southeast Metro Stormwater Authority (SEMSWA), which acts on behalf of the City of Centennial and Arapahoe County. The purpose of this report is to provide updated hydrologic and hydraulic information for an 7.6 mile reach of Goldsmith Gulch, a 1.2 mile reach along the Goldsmith Gulch West Tributary, and a 0.8 mile reach along the Southmoor Tributary. The total watershed drains an area of 7.74 square miles.

Hydrologic analyses were carried out using Colorado Urban Hydrograph Procedure 2005 (CUHP v. 2.0.0) and the Environmental Protection Agency Stormwater Management Model (EPA SWMM v. 5.1.012). Hydraulic analyses were carried out using the U.S. Army Corps of Engineers River Analysis System (HEC-RAS v. 5.0.5) based on steady flow conditions. Floodways were computed assuming 0.5’ rise criteria, which is consistent with both state and local jurisdiction regulations. During a major storm event, Goldsmith Gulch will spill in three locations - Monaco Overflow, Monaco at Iliff Overflow, and Hampden Overflow, which were modeled and mapped as separate reaches.



**Community Response:** MHFD transmitted a letter to the CWCB dated December 19, 2022, requesting CWCB designation and approval of the subject report. No request letters were received from the other affected local governments. Conversations with staff from the partner jurisdictions indicate their desire for designation of this study.

**Staff Findings:** CWCB staff has determined that the subject 100-year and 500-year detailed floodplain and floodway information for the studied stream reaches is in conformance with the CWCB's rules and regulations for floodplain designation and approval. The CWCB staff has relied on the technical competence of Matrix Design Group, Inc., who produced the study, but also performed an independent technical review of the report. CWCB staff therefore endorses this study as containing the most current floodplain mapping available and urges the affected communities to adopt said study for land use regulation purposes pursuant to statutory authority.

**Requested action for Floodplain Resolution 23-734:** Staff recommends that the Board: 1) designate and approve the 100-year and 500-year detailed floodplain and floodway information contained in said report for Goldsmith Gulch, Goldsmith Gulch West Tributary, Southmoor Tributary, Monaco Overflow, Monaco at Iliff Overflow, and Hampden Overflow and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, the City and County of Denver, the City of Greenwood Village, Arapahoe County, the City of Centennial, the Southeast Metro Stormwater Authority, and FEMA. This action is recommended in order to meet statutory requirements.

