



**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:** August 28, 2022

**AGENDA ITEM:** Consent Agenda Item 4. September 20-21, 2022 Board Meeting - Floodplain Designations

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**Background:** Consent Agenda Item 4 includes 3 new floodplain studies that are proposed for CWCB action. Staff is requesting Board designation and approval for these items. A brief summary of the study 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 this item is attached.

**Requested action for Floodplain Resolution 21-729:** Staff recommends that the Board: 1) designate and approve the 100-year and 500-year detailed and 100-year approximate floodplain information contained in said report within Jefferson County and its incorporated municipalities, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, Jefferson County, City of Arvada, Town of Bow Mar, City of Edgewater, City of Golden, Town of Lakeside, City of Lakewood, Town of Morrison, City of Wheat Ridge, Town of Mountain View, City of Westminster, and FEMA. This action is recommended in order to meet statutory requirements.

**Requested action for Floodplain Resolution 22-730:** 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 Little Raven Creek, Joplin Tributary, South Arapahoe Tributary, Chenango Tributary, and Kragelund Tributary and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, City of Greenwood Village, City of Aurora, City of Centennial, Town of Foxfield, Arapahoe County, the Southeast Metro Stormwater Authority, and FEMA. This action is recommended in order to meet statutory requirements.

**Requested action for Floodplain Resolution 22-731:** 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 Weaver Creek, Willow Spill, Belleview Spill, Spill 2, and 285 Overflow and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, Jefferson County, City of Lakewood, and FEMA. This action is recommended in order to meet statutory requirements.

## **Attachment - Supporting Information**

### ***Consent Agenda Item 4 - Floodplain Designations***

***September 2022***

#### **Summary**

Consent Agenda Item 4 includes 3 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 Designation #22-729**

**Affected communities:** Jefferson County, City of Arvada, Town of Bow Mar, City of Edgewater, City of Golden, Town of Lakeside, City of Lakewood, Town of Morrison, City of Wheat Ridge, Town of Mountain View, City of Westminster.

**Name of study to be formally acted on:** “Flood Insurance Study, Jefferson County, Colorado and Incorporated Areas” dated August 2, 2022 by the Federal Emergency Management Agency.

**Studied streams:** This report includes detailed 100-year and 500-year floodplain information for the Airport Creek, Apex Gulch, Arapahoe Gulch, Ashland Drainageway, Barbara Gulch, Barbara Gulch Spill Flow, Bear Creek, Bear Creek - Kittredge to Evergreen, Bear Creek - Lakewood, Bear Creek Tributary No. 1, Bear Creek Tributary No. 2, Bear Creek Tributary No. 3, Bear Creek Tributary No. 5, Bear Creek Tributary No. 6, Bear Creek Tributary No. 7, Beaver Creek, Bergen Creek, Big Dry Creek, Buffalo Creek, City Park Channel, Clear Creek, Clear Creek - Overflows, Coal Creek, Cold Spring Gulch, Coon Creek, Coon Creek - North Branch, Countryside Creek, Cressmans Gulch, Cub Creek, Cub Creek (200 scale), Deadman Gulch, Deer Creek, Dry Gulch, Dutch Creek, Dutch Creek Tributary, Elk Creek, First Avenue Tributary, Gray Street Tributary, Jackson Gulch, Kenneys Run, Kenneys Run - East Fork Tributary 1, Kerr Gulch, Lakewood Gulch, Lena Gulch, Lena Gulch Tributary, Lena Gulch - Upstream and Overflows, Leyden Creek, Leyden Creek - Upstream, Lilley Gulch, Little Cub Creek, Little Dry Creek, Little Dry Creek - Tributary B, Massey Draw, Massey Draw Tributary, Massey Draw - Split Flows, McIntyre Gulch, Middle Branch Hylands Creek, Middle Cotton Creek, Mount Vernon Creek, Myers Gulch, Nissen Reservoir Channel, North Branch Hylands Creek, North Branch Lilley Gulch, North Branch Walnut Creek, North City Park Creek, North Cotton Creek, North Fork South Platte River, North Fork of West Fork Kenneys Run Tributary 1, North Sanderson Gulch, North Sanderson Gulch Split, North Turkey Creek, Parmalee Gulch, Pierce Street Tributary, Pierce Street Tributary Reach 3, Pine Gulch, Quail Creek, Quail Creek Split Flow, Ralston Creek, Ranch Creek, Rooney Gulch, Rooney Gulch - Spillway, Sand Draw, Sanderson Gulch, Sawmill Gulch, SJCD 6100, SJCD 6200, SJCD 6200 - North Tributary, SJCD 6200 - Tributary 1, Sloan’s Lake Basin Drainageway, South Branch Hylands Creek, South Branch Ranch Creek, South Cotton Creek, South Platte River, Swede Gulch, Switzers Gulch, Tanglewood Creek, Troublesome Creek, Tucker Gulch, Turkey Creek, Van Bibber Creek (400 scale), Van Bibber Creek Tributary, Van Bibber Creek Left Overbank Splitflow, Walnut Creek, Weaver Creek, Weir Gulch Tributary, West Fork Kenneys Run, West Fork Kenneys Run Tributary 1, West Fork Kenneys Run Tributary 2, Wilmot Creek, Wilmot Creek Tributary.

In includes approximate 100-year floodplain information for Apex Gulch, Bates Lake Area, Bear Creek, Bear Creek - Lakewood, Beaver Brook, Beaver Creek, Big Dry Creek, Blue Creek, Brush Creek, Buffalo Creek, Casto Creek, Clear Creek, Coal Creek, Dutch Creek, Elk Creek, First Street Tributary, Giant Gulch, Guy Gulch, Jackson Gulch Tributary, Kennedy Gulch, Ketner Creek, Lans Gulch, Last Resort Creek, Leyden Creek, Little Dry Creek, Little Dry Creek Tributary B, Little Dry Creek Tributary C, Massey Draw, Mount Vernon Canyon, Myers Gulch,



North Fork Deer Creek, North Fork South Platte River, North Turkey Creek, Pine Gulch, Ralston Creek, Rock Creek, Shaw Heights Tributary, Sloan's Lake Area, Soda Creek, South Fork Deer Creek, South Platte River, South Turkey Creek, Tucker Gulch, Van Bibber Creek, Walnut Creek, West Resort Creek, Woman Creek.

The subject reaches are in the South Platte watershed.

**Technical Issues:** The study includes all major waterways within Jefferson County and its incorporated communities. This restudy incorporates a number of new studied stream reaches and numerous revisions of existing studied stream reaches throughout the County. A number of Letters of Map Revisions were also incorporated.

**Community response:** The action to designate this Flood Insurance Study was initiated by CWCB staff. This study was prepared by FEMA in cooperation with Jefferson County and its incorporated municipalities. One key element of the map update program is community involvement throughout the process. Prior to establishing the new study, a final coordination meeting was held on December 11, 2020 in which all affected communities were invited. The results of the countywide project, including the Zone A level hydrologic and hydraulic analyses, were presented and reviewed at the final Community Coordination (CCO) meeting attended by representatives of FEMA. The study was fully accepted and endorsed by all agencies present at this meeting.

**Staff findings:** The subject Flood Insurance Study revises and therefore supersedes previous versions of the County's regulatory floodplain information. CWCB staff has determined that the subject floodplain information for Jefferson County and its incorporated municipalities is in conformance with the CWCB's rules and regulations for floodplain designation and approval.

**Requested action for Floodplain Resolution 21-729:** Staff recommends that the Board: 1) designate and approve the 100-year and 500-year detailed and 100-year approximate floodplain information contained in said report within Jefferson County and its incorporated municipalities, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, Jefferson County, City of Arvada, Town of Bow Mar, City of Edgewater, City of Golden, Town of Lakeside, City of Lakewood, Town of Morrison, City of Wheat Ridge, Town of Mountain View, City of Westminster, and FEMA. This action is recommended in order to meet statutory requirements.



**Floodplain resolution number: FPR Designation #22-730**

**Affected communities:** City of Greenwood Village, City of Aurora, City of Centennial, Town of Foxfield, Arapahoe County

**Name of study to be formally acted on:** “Flood Hazard Area Delineation, Cherry Creek Minor Tributaries in Arapahoe County”, by Dewberry, dated October 2021.

**Studied streams:** This report includes detailed 100-year and 500-year hydrologic and hydraulic information for Little Raven Creek, Joplin Tributary, South Arapahoe Tributary, Chenango Tributary, and Kragelund Tributary. 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 Arapahoe County, City of Aurora, and the Southeast Metro Stormwater Authority (SEMSWA). The purpose of this report is to provide updated hydrologic and hydraulic information for several of the minor tributaries to Cherry Creek in Arapahoe County. Six other tributaries that were either comprised of little or no open channel or were excluded from the project sponsors had hydrologic study results but were not included in the floodplain delineation and are not included within this designation request. The total watershed drains an area of 6.7 square miles, of which 4.8 square miles drains the five tributaries within this designation.

Hydrologic analyses were prepared using the Colorado Urban Hydrograph Procedure (CUHP 2016, v2.0.0) and EPA SWMM (v5.1). 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.

**Community Response:** MHFD transmitted a letter to the CWCB dated June 30, 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 Dewberry, 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 22-730:** 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 Little Raven Creek, Joplin Tributary, South Arapahoe Tributary, Chenango Tributary, and Kragelund Tributary and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, City of Greenwood Village, City of Aurora, City of Centennial, Town of Foxfield, Arapahoe County, the Southeast Metro Stormwater Authority, and FEMA. This action is recommended in order to meet statutory requirements.

**Floodplain resolution number: FPR #22-731**

**Affected communities:** Jefferson County, City of Lakewood

**Name of study to be formally acted on:** “Flood Hazard Area Delineation, Weaver Creek”, by Olsson, dated November 2021.

**Studied streams:** This report includes detailed 100-year and 500-year hydrologic and hydraulic information for Weaver Creek, and four modeled spill locations - Willow Spill, Belleview Spill, Spill 2, and 285 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 Jefferson County and the City of Lakewood. The purpose of this report is to provide updated hydrologic and hydraulic information for the Weaver Creek watershed and its spill locations. The total watershed drains an area of 7.2 square miles.

Hydrologic analyses were prepared using the Colorado Urban Hydrograph Procedure (CUHP 2005, v1.5.2b) and EPA SWMM (v5.1.010). 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. During a major storm event, Weaver Creek will spill in four locations, which were modeled and mapped as separate reaches, along with four additional spill locations into streets which were not modeled.

**Community Response:** MHFD transmitted a letter to the CWCB dated June 30, 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 Olsson, 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 22-731:** 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 Weaver Creek, Willow Spill, Belleview Spill, Spill 2, and 285 Overflow and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Mile High Flood District, Jefferson County, City of Lakewood, and FEMA. This action is recommended in order to meet statutory requirements.

