

STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

1313 Sherman Street, Room 721
Denver, Colorado 80203
Phone: (303) 866-3441
Fax: (303) 866-4474
www.cwcb.state.co.us



TO: Colorado Water Conservation Board Members

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

DATE: March 7, 2013

SUBJECT: **Consent Agenda Item 2**
March 19-20, 2013 Board Meeting
Watershed & Flood Protection Section – Floodplain Designation

John W. Hickenlooper
Governor

Mike King
DNR Executive Director

Jennifer L. Gimbel
CWCB Director

Background

Consent Agenda Item 2 includes one new floodplain study that is proposed for CWCB action. Staff is requesting Board designation and approval for this item. 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 is in compliance with the requirements of the CWCB's "Rules and Regulations for Regulatory Floodplains in Colorado," 2 CCR 408-1. A further discussion of legislative authority and responsibilities delegated to the CWCB, is provided in the attached document. 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.

Staff Recommendation

Staff recommends that the Board: 1) designate and approve the 100-year detailed and approximate floodplain information contained in said study and 2) authorize staff to prepare floodplain resolutions to be signed by the Director reflecting the official designation and approval actions. This action is recommended in order to meet statutory requirements.

Attachment - Supporting Information

Consent Agenda Item 2 – Floodplain Designation March 2013

Summary

Consent Agenda Item 2 includes one floodplain study with accompanying maps that is proposed for CWCB action. Staff is requesting Board designation and approval for this item. A brief summary of the study is presented below.

CWCB staff performs technical reviews of floodplain information to assure the Board that the information is in compliance 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 13-644

Affected communities: City of Aurora, Arapahoe County

Name of study to be formally acted on: “Flood Hazard Area Delineation, Sand Creek (Colfax to Yale)”, by Matrix Design Group, October 2012

Studied streams: This report includes detailed 100-year floodplain information for the Sand Creek watershed from Yale Avenue to Colfax Avenue. This includes specific reaches of Sand Creek, Murphy Creek, and Coal Creek. The studied streams are in the South Platte River watershed.

Technical Issues: This report was authorized by the Urban Drainage & Flood Control District (UDFCD) under joint sponsorship with the Southeast Metro Stormwater Authority (representing Arapahoe County), and the City of Aurora. The purpose of this report is to update detailed flood hazard data for a portion of the Sand Creek watershed, with downstream limits at Colfax Avenue and upstream limits at Yale Avenue. The total study area includes approximately 13.68 square miles of drainage area, a small portion of the 187 square mile Sand Creek watershed. Although the newly mapped area only represents the 13.68 square mile area referenced above, the tributary watershed evaluated in the hydrologic model for this study drains a much larger area of 104.33 square miles. The drainage basins that contribute flow to the studied reaches include Murphy Creek, Coal Creek, Senac Creek, and Sand Creek. The total studied reach is 11.1 miles in length, including individual reach lengths of 3.1 miles for Sand Creek, 6.6 miles of Coal Creek, and 1.4 miles of Murphy Creek. Hydrologic analyses were performed using UDFCD’s Colorado Urban Hydrograph Procedure (CUHP, v. 1.3.3) and the EPA’s Stormwater Management Model (SWMM, v. 5.0.022). Hydraulic analyses were carried out using the U.S. Army Corps of Engineers River Analysis System (HEC-RAS v. 4.1.0) based on steady flow conditions. Floodways were computed assuming 0.5’ rise criteria, which is consistent with new state regulations.

Community response: UDFCD transmitted a letter to the CWCB dated January 8, 2013 requesting CWCB designation and approval of the subject report. No request letters were received from the other affected local governments, but conversations with their staff and with UDFCD indicate their desire for designation.

Staff findings: CWCB staff has determined that the subject 100-year detailed floodplain information for the studied stream reaches is 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, 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 13-644: Staff recommends that the Board: 1) designate and approve the 100-year detailed floodplain information contained in said report for Sand Creek, Murphy Creek, and Coal Creek within the City of Aurora and Arapahoe County, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to

UDFCD, the City of Aurora, Arapahoe County, and FEMA. This action is recommended in order to meet statutory requirements.

STAFF RECOMMENDATION SUMMARY

Requested action for Floodplain Resolution 13-644: Staff recommends that the Board: 1) designate and approve the 100-year detailed floodplain information contained in said report for Sad Creek, Murphy Creek, and Coal Creek within the City of Aurora and Arapahoe County, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to UDFCD, the City of Aurora, Arapahoe County, and FEMA. This action is recommended in order to meet statutory requirements.