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TO:Colorado Water Conservation Board MembersFROM:Kevin Houck, P.E. CFM
Watershed & Flood Protection SectionDATE:August 23, 2019AGENDA ITEM:Consent Agenda Item 3. September 18-19, 2019 Board
Meeting - Floodplain Designations

Background: Consent Agenda Item 3 includes 6 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 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.

Requested action for Floodplain Resolution 19-697: Staff recommends that the Board: 1) designate and approve the detailed 100-year and 500-year information and 100-year approximate floodplain information contained in said report within the City and County of Broomfield, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to the City and County of Broomfield, and FEMA. This action is recommended in order to meet statutory requirements.

Requested action for Floodplain Resolution 19-698: Staff recommends that the Board: 1) designate and approve the detailed 100-year and 500-year detailed floodplain information contained in said report within Boulder County, City of Lafayette, City of Louisville, Town of Superior, and town of Erie, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, City of Lafayette, City of Louisville, Town of Superior, and town of Erie, and FEMA. This action is recommended in order to meet statutory requirements.

Requested action for Floodplain Resolution FPR #19-699: 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 Pitkin County, City of Aspen, and Town of Snowmass Village, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and

transmitted to Pitkin County, City of Aspen, and Town of Snowmass Village, and FEMA. This action is recommended in order to meet statutory requirements.

Requested action for Floodplain Resolution 19-700: 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 Pueblo County, Town of Boone, City of Pueblo, and Town of Rye, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Pueblo County, Town of Boone, City of Pueblo, and FEMA. This action is recommended in order to meet statutory requirements.

Requested action for Floodplain Resolution 19-701: 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 Las Animas County, Town of Aguilar, Town of Branson, Town of Cokedale, Town of Kim, Town of Starkville, and City of Trinidad, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Las Animas County, Town of Aguilar, Town of Branson, Town of Cokedale, Town of Starkville, and City of Kim, Town of Starkville, and City of Trinidad, and PEMA. This action is recommended in order to meet statutory requirements.

Requested Action for Floodplain Resolution 19-702: Staff recommends that the Board: 1) designate and approve the 100-year and 500-year hydrologic information contained in said report for the Big Thompson River, Black Canyon Creek, Cedar Creek, Dark Gulch, Dickson Creek, Dry Gulch, Fall River, Fish Creek, Fox Creek, Long Gulch, Noel's Draw, North Fork Big Thompson River, Quillan Gulch, Tributary BT-1, Tributary BT-2, Tributary BT-3, and West Creek within the Town of Estes Park, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to the Town of Estes Park and FEMA. This action is recommended in order to meet statutory requirements.

Attachment - Supporting Information

Consent Agenda Item 3 - Floodplain Designations

September 2019

Summary

Consent Agenda Item 3 includes 6 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 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

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 theFloodplain Information that is to be designated and approved by the Board.

Summary of Designation Actions

Floodplain resolution number: FPR Designation #19-697

Affected communities: City and County of Broomfield

Name of study to be formally acted on: "Flood Insurance Study, City and County of Broomfield, Colorado" dated August 15, 2019 by the Federal Emergency Management Agency

Studied Streams: The report includes 100-year and 500-year detailed floodplain information for the following flooding sources: Airport Creek, Big Dry Creek, Brandywine Creek, City Park Channel, City Park Channel South Tributary, Gay Reservoir Channel, Gay Reservoir North Tributary, Nissen Reservoir Channel, North Branch Airport Creek, Rock Creek, West Lake Channel, West Lake Channel North Tributary. The following flooding sources were studied by approximate methods: Mustang Run, Preble Creek, South Fork Preble Creek, Sack Creek South. The subject streams are in the South Platte watershed.

Technical Issues: The study includes all major waterways within the City and County of Broomfield. This restudy incorporates a number of new studied stream reaches and numerous revisions of existing studied stream reaches throughout the City and County of Broomfield. 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 City and County of Broomfield. 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 May 8th, 2017. The results of the countywide project, including the Zone A level hydrologic and hydraulic analyses, were presented and reviewed at the two final Community Coordination (CCO) meetings attended by representatives of FEMA. All concerns raised during this meeting have been resolved. 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 City and County's regulatory floodplain information. CWCB staff has determined that the subject floodplain information for City and County of Broomfield is in conformance with the CWCB's rules and regulations for floodplain designation and approval.

Requested action for Floodplain Resolution 19-697: Staff recommends that the Board: 1) designate and approve the detailed 100-year and 500-year information and 100-year approximate information contained in said report within the City and County of Broomfield, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to the City and County of Broomfield, and FEMA. This action is recommended in order to meet statutory requirements.



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Affected communities: Boulder County, City of Lafayette, City of Louisville, Town of Superior, and Town of Erie

Name of study to be formally acted on: "Flood Insurance Study, Boulder County, Colorado and Incorporated Areas" dated August 15, 2019 & reprinted with corrections on August 26, 2019, by the Federal Emergency Management Agency.

Studied streams: The report includes 100-year and 500-year detailed floodplain information for the following flooding sources: see addendum 1 of this memo. The subject flooding sources are in the South Platte watershed.

Technical Issues: The study includes all major waterways within Boulder County and its incorporated communities. This restudy incorporates a number of new studied stream reaches and numerous revisions of existing studied stream reaches throughout communities within Boulder County listed above. 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 Boulder County and its affected 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 May 8, 2017 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 in the communities listed above. CWCB staff has determined that the subject floodplain information for Boulder County and its affected incorporated municipalities is in conformance with the CWCB's rules and regulations for floodplain designation and approval.

Requested action for Floodplain Resolution 19-698: Staff recommends that the Board: 1) designate and approve the detailed 100-year and 500-year information floodplain information contained in said report within Boulder County, City of Lafayette, City of Louisville, Town of Superior, and town of Erie, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, City of Lafayette, City of Louisville, Town of Superior, and town of Erie, and FEMA. This action is recommended in order to meet statutory requirements.



Floodplain resolution number: FPR #19-699

Affected communities: Pitkin County, City of Aspen, Town of Snowmass Village.

Name of study to be formally acted on: "Flood Insurance Study, Pitkin County, Colorado and Incorporated Areas, Volumes 1-3", dated August 15, 2019 & reprinted with corrections on August 26, 2019, by the Federal Emergency Management Agency.

Studied streams: The report includes 100-year and 500-year detailed and 100-year approximate floodplain information for the following flooding sources: Brush Creek, Castle Creek, Coal Creek, Crystal River, Emma Road Split, Hunter Creek, Maroon Creek, Roaring Fork River, and Snowmass Creek. The subject flooding sources are in the Colorado River watershed.

Technical Issues: The study includes all major waterways within Pitkin County and its incorporated communities. This restudy incorporates a number of new studied stream reaches and numerous revisions of existing studied stream reaches throughout communities within Pitkin County listed above. 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 Pitkin County and its affected 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 in which all affected communities were invited. The results of the countywide DFIRM Conversion project, including the Zone A level hydrologic and hydraulic analyses, were presented and reviewed at a 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 in the communities listed above. CWCB staff has determined that the subject floodplain information for Pitkin County and its affected incorporated municipalities is in conformance with the CWCB's rules and regulations for floodplain designation and approval.

Requested action for Floodplain Resolution FPR #19-699: 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 Pitkin County, City of Aspen, and Town of Snowmass Village, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Pitkin County, City of Aspen, and Town of Snowmass Village, and FEMA. This action is recommended in order to meet statutory requirements.



Affected communities: Pueblo County, Town of Boone, City of Pueblo, Town of Rye

Name of study to be formally acted on: "Flood Insurance Study, Pueblo County, Colorado and Incorporated Areas", dated August 15, 2019, by the Federal Emergency Management Agency.

Studied Streams: The report includes 100-year and 500-year detailed and 100-year approximate floodplain information for the following flooding sources: Arkansas River, Dry Creek, East Dry Creek, Fountain Creek, Goodnight Arroyo, Saint Charles River, Salt Creek, Sixmile Creek, Turkey Creek, University Park Tributary, Wildhorse Creek. The subject flooding sources are in the Arkansas River watershed.

Technical Issues: The study includes all major waterways within Pueblo 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 communities within Pueblo County listed above. 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 Pueblo County and its affected 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 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 in the communities listed above. CWCB staff has determined that the subject floodplain information for Pueblo County and its affected incorporated municipalities is in conformance with the CWCB's rules and regulations for floodplain designation and approval.

Requested action for Floodplain Resolution 19-700: 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 Pueblo County, Town of Boone, City of Pueblo, and Town of Rye, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Pueblo County, Town of Boone, City of Pueblo, and FEMA. This action is recommended in order to meet statutory requirements.



Affected communities: Las Animas County, Town of Aguilar, Town of Branson, Town of Cokedale, Town of Kim, Town of Starkdale, City of Trinidad

Name of study to be formally acted on: "Flood Insurance Study, Las Animas County, Colorado and Incorporated Areas" dated August 28, 2019, by the Federal Emergency Management Agency.

Studied Streams: The report includes 100-year and 500-year detailed and 100-year approximate floodplain information for the following flooding sources: Fishers Peak Arroyo, Pinon Canyon, Portland Avenue Canyon, Powell Arroyo, Prospect Canyon, Purgatoire River, Raton Creek, Reilly Canyon Arroyo, US 125 Flow Path. The subject flooding sources are in the Arkansas watershed.

Technical Issues: The study includes all major waterways within Las Animas County and its incorporated communities. This restudy incorporates a number of new studied stream reaches and numerous revisions of existing studied stream reaches within the communities within Las Animas County listed above. 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 Las Animas 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 June 1, 2017 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 in the communities listed above. CWCB staff has determined that the subject floodplain information for Las Animas County and its affected incorporated municipalities is in conformance with the CWCB's rules and regulations for floodplain designation and approval.

Requested action for Floodplain Resolution 19-701: 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 Las Animas County, Town of Aguilar, Town of Branson, Town of Cokedale, Town of Kim, Town of Starkville, and City of Trinidad, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Las Animas County, Town of Aguilar, Town of Branson, Town of Cokedale, Town of Aguilar, Town of Starkville, and City of Trinidad, and FEMA. This action is recommended in order to meet statutory requirements.



Affected communities: Town of Estes Park

Name of study to be formally acted on: "Colorado Hazard Mapping Program, Hydraulic Analysis - Volume 2, Technical Support Data Notebook for the Big Thompson Watershed (HUC-8 10190006)", by AECOM, dated March, 2018

Studied streams: This report includes 100-year and 500-year hydrologic information for the Big Thompson River, Black Canyon Creek, Cedar Creek, Dark Gulch, Dickson Creek, Dry Gulch, Fall River, Fish Creek, Fox Creek, Long Gulch, Noel's Draw, North Fork Big Thompson River, Quillan Gulch, Tributary BT-1, Tributary BT-2, Tributary BT-3, and West Creek. The studied streams are in the South Platte River watershed.

Technical Issues: Many of the rivers affected by the September 2013 flood experienced significant geomorphological change resulting in post-flood topographic conditions that varied greatly from those prior to the flood. Restudies involving a significant amount of work have already begun for many of the affected reaches due to the legislative directive associated with SB 15-245. Information for this watershed within the Colorado Hazard Mapping Program (CHAMP), one element of SB 245, has been completed to a draft phase, and public meetings have already been conducted in this community in partnership with local governments.

This remapping effort includes new hydrology developed by CDOT and others, new basemapping that reflects topographic conditions after the geomorphological changes experienced by many Front Range streams during the 2013 flood, and new hydraulic analyses. This effort has been financed by State money, but eventually, it is the intent to place this information on to updated FEMA Flood Insurance Rate Maps. However, this is expected to take many years, and the Town of Estes Park has indicated interest in regulating to this new data as best available information. The Town would like to use this information for regulatory purposes prior to it becoming effective on FEMA maps.

This designation request is only for reaches of the subject streams located in the Town of Estes Park. Many of these waterways extend into neighboring communities. However, because the information is still considered DRAFT at this point, and designation requests have not been received from other communities, only reaches within the Town of Estes Park are included here.

Community Response: This study was prepared by AECOM under contract with the Colorado Water Conservation Board. Numerous public meetings were held in partnership with Town of Estes Park staff.

CWCB staff received email communications requesting designation of the subject streams throughout August 2019 as part of a local ordinance update. The letter indicates that the Town Council will meet in September to consider adopting the subject reaches at the municipal level.



Staff Findings: CWCB staff has determined that the subject 100-year and 500-year hydrologic information for the studied stream reaches is in conformance with the CWCB's rules and regulations for floodplain designation and approval. The studied stream reaches were developed by AECOM under contract and supervision of CWCB staff.

CWCB staff therefore endorses this study as containing the most current and best hydrologic information available and urges the affected communities to adopt said study for land use regulation purposes pursuant to statutory authority. This designation does not require local adoption and use of this data, but it does make the said study available for local regulatory use if desired.

Requested Action for Floodplain Resolution 19-702: Staff recommends that the Board: 1) designate and approve the 100-year and 500-year hydrologic information contained in said report for the Big Thompson River, Black Canyon Creek, Cedar Creek, Dark Gulch, Dickson Creek, Dry Gulch, Fall River, Fish Creek, Fox Creek, Long Gulch, Noel's Draw, North Fork Big Thompson River, Quillan Gulch, Tributary BT-1, Tributary BT-2, Tributary BT-3, and West Creek within the Town of Estes Park, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to the Town of Estes Park and FEMA. This action is recommended in order to meet statutory requirements.



Addendum 1

55th Street Split Flow	Clover Basin Tributary
Arapahoe Avenue Spill Flow	Coal Creek
Balarat Creek	Dry Creek
Bear Canyon Creek	Dry Creek Ditch No. 2
Boulder Creek	Dry Creek No. 1
Boulder Creek- 13 th Street Split	Dry Creek No. 1 (Old Channel)
Boulder Creek- 14 th Street Split	Dry Creek No. 2
Boulder Creek- 15th St- Arapahoe Ave- Marine St Split	Dry Creek No. 2 Ditch Split Flow
Boulder Creek- 16th Street Split	Dry Creek No. 3
Boulder Creek- 17th Street Split	Elmers Twomile Creek
Boulder Creek- 18th Street Split	Fourmile Canyon Creek
Boulder Creek- 21st Street Split	Fourmile Canyon Left Bank Overflow
Boulder Creek- 22nd Street Split	Fourmile Creek
Boulder Creek- 38th Street Split	Goose Creek
Boulder Creek- 55th Street Split	Gregory Canyon Creek
Boulder Creek- 55th St Split (500-year)	Highway 93 Split Flow
Boulder Creek- Arapahoe Ave Split	James Creek
Boulder Creek- Arapahoe Ave East Split	Lefthand Creek
Boulder Creek- Arapahoe Ave West- 20th St Split	Lefthand Creek (North Overflow Channel)
Boulder Creek- Canyon Boulevard Split	Lefthand Creek (South Overflow Channel)
Boulder Creek- Canyon Blvd at 6th St Split	Little James Creek
Boulder Creek- Downstream RR to 55th St Split (500-year)	Little Thompson River
Boulder Creek- Downstream Valmont Split	Middle Boulder Creek
Boulder Creek- Flatiron Parkway Split	Middle St. Vrain Creek
Boulder Creek- Goss Street Split	North Beaver Creek
Boulder Creek- Grove Street Split	North Goose Creek
Boulder Creek- Harvest House Split	North St. Vrain Creek
Boulder Creek- Pearl Street Split	Prince Tributary, East Branch
Boulder Creek- Railroad Overtopping	Prince Tributary, West Branch
Boulder Creek- Railroad Overtopping (500-year)	Rock Creek
Boulder Creek- Railroad Split Flow	St. Vrain Creek
Boulder Creek- Skunk Creek Split	St. Vrain Creek Secondary Channel
Boulder Creek- Taft Drive Split	St. Vrain Creek (Vicinity of Lyons)
Boulder Creek- Valmont Split	Skunk Creek
Boulder Creek- Valmont Split North Split	South Boulder Creek
Boulder Creek- Valmont Split West Split	South St. Vrain Creek
Boulder Creek- Walnut St Split (500-year)	Spring Gulch
Boulder Slough	Steele Lakes Tributary
Boulder Slough- 22nd Street Split Flow	Twomile Canyon Creek
Boulder Slough- Goss Street Split Flow	West Valley Split Flow



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Water Project Loans & Grants • Water Modeling • Conservation & Drought Planning • Water Supply Planning

Bullhead Gulch	Wonderland Creek
Canyon Boulevard Overflow	



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