



**COLORADO**

**Colorado Water  
Conservation Board**

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**TO:** Colorado Water Conservation Board Members

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

**DATE:** June 30, 2015

**AGENDA ITEM:** Consent Agenda Item 3, Floodplain Designations

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**Background:** Consent Agenda Item 3 includes four new floodplain studies that are 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 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 these items is attached.

**Requested Action for Floodplain Resolution 15-657:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for St. Vrain Creek and Left Hand Creek, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, Weld County and the City of Longmont, and to FEMA. This action is recommended in order to meet statutory requirements.

**Requested Action for Floodplain Resolution 15-658:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for the Big Thompson River, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Larimer County, the City of Loveland, the Town of Johnstown, the Town of Milliken, and Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

**Requested Action for Floodplain Resolution 15-659:** Staff recommends that the Board: 1)



designate and approve the 100-year hydrologic information contained in said report for Boulder Creek, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, the City of Boulder, and Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

**Requested Action for Floodplain Resolution 15-660:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for the Little Thompson River, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Larimer County, Boulder County, Town of Berthoud, Town of Milliken, Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.



## Attachment - Supporting Information

### Consent Agenda Item 3 - Floodplain Designation July 2015

#### Summary

Consent Agenda Item 3 includes 4 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 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 15-657

**Affected communities:** Boulder County, City of Longmont, Weld County

**Name of study to be formally acted on:** “Lower St. Vrain Watershed, Phase 2 Hydrologic Evaluation”, by Jacobs, dated July 2015

**Studied streams:** This report includes 100-year hydrologic information for St. Vrain Creek, and Left Hand 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. Because the regulatory flood hydrology for many of the flood impacted areas is over thirty years old, and because large-scale floodplain mapping changes are desired and anticipated, it was determined by staff that this was an appropriate time to restudy regulatory flood hydrology at a watershed level for the flood-affected watersheds. This study, developed in partnership with the Colorado Department of Transportation in support of the road corridor recovery, is the second of two phases of study for the St. Vrain Creek watershed. This Phase II report analyzes the hydrology of the St. Vrain Creek watershed from the confluence of North St. Vrain Creek and South St. Vrain Creek to the confluence with the South Platte River along with the hydrology of Left Hand Creek from US36 to the confluence with St. Vrain Creek. This study represents only a restudy of the hydrology for the watershed, although it will be an input into forthcoming floodplain map revisions for the watershed. It is staff’s intent for the hydrologic results of mainstem of St. Vrain Creek and Left Hand Creek to be used in future floodplain mapping and community regulation. Results for smaller tributaries should not be used for mapping and regulation; they were included in this analysis only as far as their contribution to the receiving waters.

**Community Response:** No formal requests for designation were received. However, the affected local governments have been included in meetings, and they have expressed support for the report and designation.

**Staff Findings:** CWCB staff has determined that the subject 100-year hydrologic information for the studied stream reaches is in conformance with the CWCB’s rules and regulations for floodplain designation and approval. CWCB staff therefore endorses this study as containing the most current hydrologic available and encourages the affected communities to consider adopting said study for land use regulation purposes pursuant to statutory authority. This information only updates flood hydrology; it does not formally change any effective floodplain mapping. It is left to the discretion of the communities to determine if



hydrologic information from this study represents better available information for the larger tributaries within the watershed.

**Requested Action for Floodplain Resolution 15-657:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for St. Vrain Creek and Left Hand Creek, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, Weld County and the City of Longmont, and to FEMA. This action is recommended in order to meet statutory requirements.

**Floodplain resolution number:** FPR 15-658

**Affected communities:** Larimer County, City of Loveland, Town of Johnstown, Town of Milliken, Weld County

**Name of study to be formally acted on:** “Lower Big Thompson Watershed, Phase 2 Hydrologic Evaluation”, by Jacobs, dated July 2015

**Studied streams:** This report includes 100-year hydrologic information for the Big Thompson River. The studied stream is 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. Because the regulatory flood hydrology for many of the flood impacted areas is over thirty years old, and because large-scale floodplain mapping changes are desired and anticipated, it was determined by staff that this was an appropriate time to restudy regulatory flood hydrology at a watershed level for the flood-affected watersheds. This study, developed in partnership with the Colorado Department of Transportation in support of the road corridor recovery, is the second of two phases of study for the Big Thompson watershed. This Phase II report analyzes the hydrology of the Big Thompson watershed from the confluence with Buckhorn Creek to the confluence with the South Platte River. This study represents only a restudy of the hydrology for the watershed, although it will be an input into forthcoming floodplain map revisions for the watershed. It is staff’s intent for the hydrologic results of mainstem of the Big Thompson River to be used in future floodplain mapping and community regulation. Results for smaller tributaries should not be used for mapping and regulation; they were included in this analysis only as far as their contribution to the receiving waters.

**Community Response:** No formal requests for designation were received. However, the affected local governments have been included in meetings, and they have expressed support for the report and designation.

**Staff Findings:** CWCB staff has determined that the subject 100-year hydrologic information for the studied stream reaches is in conformance with the CWCB’s rules and regulations for floodplain designation and approval. CWCB staff therefore endorses this study as containing the most current hydrologic available and encourages the affected communities to consider adopting said study for land use regulation purposes pursuant to statutory authority. This information only updates flood hydrology; it does not formally change any effective floodplain mapping. It is left to the discretion of the communities to determine if



hydrologic information from this study represents better available information for the larger tributaries within the watershed.

**Requested Action for Floodplain Resolution 15-658:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for the Big Thompson River, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Larimer County, the City of Loveland, the Town of Johnstown, the Town of Milliken, and Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

**Floodplain resolution number:** FPR 15-659

**Affected communities:** Boulder County, City of Boulder, Weld County

**Name of study to be formally acted on:** “Boulder Creek Hydrologic Analysis, Phase 2: Boulder Creek Above St. Vrain Creek”, by CH2MHill, dated June 2015

**Studied streams:** This report includes 100-year hydrologic information for Boulder Creek. The studied stream is 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. Because the regulatory flood hydrology for many of the flood impacted areas is over thirty years old, and because large-scale floodplain mapping changes are desired and anticipated, it was determined by staff that this was an appropriate time to restudy regulatory flood hydrology at a watershed level for the flood-affected watersheds. This study, developed in partnership with the Colorado Department of Transportation in support of the road corridor recovery, is the second of two phases of study for the Boulder Creek watershed. This Phase II report analyzes the hydrology of the Boulder Creek watershed from the canyon mouth to the confluence with St. Vrain Creek. This study represents only a restudy of the hydrology for the watershed, although it is anticipated to be an input for certain reaches into forthcoming floodplain map revisions for the watershed. It is staff’s intent to provide discretion to local communities as to whether the hydrologic results of Boulder Creek are appropriate for mapping and regulation or whether existing studies should be used. Results for smaller tributaries should not be used for mapping and regulation; they were included in this analysis only as far as their contribution to the receiving waters.

**Community Response:** No formal requests for designation were received. However, the affected local governments have been included in meetings. The affected communities are supportive of designation of this study. However, there has been inconsistent agreement on whether the study is appropriate for regulation, which is the reason for providing discretion to local communities in regard to their use in regulation.

**Staff Findings:** CWCB staff has determined that the subject 100-year hydrologic information for the studied stream reaches is in conformance with the CWCB’s rules and regulations for floodplain designation and approval. CWCB staff therefore endorses this study as containing the most current hydrologic available and encourages the affected communities to consider adopting said study for land use regulation purposes pursuant to statutory authority. This information only updates flood hydrology; it does not formally change any effective floodplain mapping. It is left to the discretion of the communities to determine if





hydrologic information from this study represents better available information for the subject streams.

**Requested Action for Floodplain Resolution 15-659:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for Boulder Creek, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, the City of Boulder, and Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

**Floodplain resolution number:** FPR 15-660

**Affected communities:** Larimer County, Boulder County, Town of Berthoud, Town of Milliken, Weld County

**Name of study to be formally acted on:** “Little Thompson River Hydrologic Analysis, Phase 2: Little Thompson River Above Big Thompson River”, by CH2MHill, dated June 2015

**Studied streams:** This report includes 100-year hydrologic information for the Little Thompson River. The studied stream is 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. Because the regulatory flood hydrology for many of the flood impacted areas is over thirty years old, and because large-scale floodplain mapping changes are desired and anticipated, it was determined by staff that this was an appropriate time to restudy regulatory flood hydrology at a watershed level for the flood-affected watersheds. This study, developed in partnership with the Colorado Department of Transportation in support of the road corridor recovery, is the second of two phases of study for the Little Thompson watershed. This Phase II report analyses the hydrology of the Little Thompson watershed from the US Highway 36 crossing to the confluence with the Big Thompson River. This study represents only a restudy of the hydrology for the watershed, although it will be an input into forthcoming floodplain map revisions for the watershed. It is staff’s intent for the hydrologic results of the mainstem of the Little Thompson River to be used in future floodplain mapping and community regulation. Results for smaller tributaries should not be used for mapping and regulation; they were included in this analysis only as far as their contribution to the receiving waters.

**Community Response:** No formal requests for designation were received. However, the affected local governments have been included in meetings, and they have expressed support for the report and designation.

**Staff Findings:** CWCB staff has determined that the subject 100-year hydrologic information for the studied stream reaches is in conformance with the CWCB’s rules and regulations for floodplain designation and approval. CWCB staff therefore endorses this study as containing the most current hydrologic available and encourages the affected communities to consider adopting said study for land use regulation purposes pursuant to statutory authority. This information only updates flood hydrology; it does not formally change any effective floodplain mapping.

**Requested Action for Floodplain Resolution 15-660:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for the Little Thompson River, and 2) authorize staff to prepare a floodplain resolution to be signed



by the Director and transmitted to Larimer County, Boulder County, Town of Berthoud, Town of Milliken, Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

#### STAFF RECOMMENDATION SUMMARY

**Requested Action for Floodplain Resolution 15-657:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for St. Vrain Creek and Left Hand Creek, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, Weld County and the City of Longmont, and to FEMA. This action is recommended in order to meet statutory requirements.

**Requested Action for Floodplain Resolution 15-658:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for the Big Thompson River, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Larimer County, the City of Loveland, the Town of Johnstown, the Town of Milliken, and Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

**Requested Action for Floodplain Resolution 15-659:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for Boulder Creek, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Boulder County, the City of Boulder, and Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

**Requested Action for Floodplain Resolution 15-660:** Staff recommends that the Board: 1) designate and approve the 100-year hydrologic information contained in said report for the Little Thompson River, and 2) authorize staff to prepare a floodplain resolution to be signed by the Director and transmitted to Larimer County, Boulder County, Town of Berthoud, Town of Milliken, Weld County, and to FEMA. This action is recommended in order to meet statutory requirements.

