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 9, 2020

AGENDA ITEM: Agenda Item 25. January 27-28, 2020 Board Meeting – Potential Effects of Climate Change on Rainfall-Induced Floods – Next Steps

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Background:

There is increasingly wide recognition that infrastructure design for a changing climate must account for the changing intensity of precipitation. To do this, engineering designs require simple methods to translate future rainfall to runoff volume in order to appropriately size pipes, culverts and other water conveyance structures. Intensity duration frequency (IDF) curves are widely used for this purpose because these curves provide a simple means of calculating the probability of exceeding a given rainfall rate for a specified amount of time. Climate change impacts can affect these IDF curves because the atmosphere can hold more water, allowing for higher intensities for short- and medium-duration flood inducing events.

A presentation was given to the CWCB Board at the November 2019 meeting summarizing the results of a pilot project that was conducted to analyze the potential effects of climate change on rainfall-induced floods. The Board indicated its interest in this work and requested that staff return to the January 2020 meeting with ideas for next steps to carry this work forward.

Staff, consisting of Kevin Houck and Megan Holcomb, along with Bill McCormick of DWR Dam Safety, met to discuss a path forward for this work. It was agreed that this path would be a three-pronged approach – developing statewide baseline IDF curves using the most up-to-date rainfall data available, a thorough analysis of how climate change will impact these curves, and the development of a public portal for extreme rainfall to allow the public access to the final results.

Staff is currently moving forward with the first of these three efforts.

CWCB staff will present to the Board on plans for how forthcoming work will continue to move this study forward.

Staff recommendation:
This is an informational item and no board action is requested at this time.