



MEMORANDUM

MEETING TYPE: Board of County Commissioners

MEETING DATE: 11/21/23

ITEM NAME: Floodway Mapping Analysis

SUBMITTED BY: Sky Tallman

SUMMARY: Colorado Water Conservation Board (CWCB) is working on updating our floodplain maps along the Cucharas River through Cuchara Village. To proceed with the study, CWCB needs guidance from the County on two questions.

1. Does the County want to use a 1-D or 2-D regulatory model?
2. Does the County want to use AE zones with or without a floodway?

RECOMMENDATION:

1. Use a 2-D informed 1-D model.
This will make it easier for small-scale projects to do a more straightforward engineering study to demonstrate no impact on development within the floodplain. Informing the 1-D model with 2-D analysis provides developers with additional information that can help them design projects.
2. Use Zone AE without floodway.
AE zone without floodway is more appropriate for low-density, rural areas. This allows for development in Zone AE to cause a 0.5-ft rise, rather than a 0.00-ft rise using the floodway. Demonstrating a 0.00-ft rise is complicated from an engineering perspective and difficult to prove. A 0.5-ft rise might cause a significant impact in congested, urban areas, but is appropriate in areas such as Cucharas.

BACKGROUND:

2-D models provide a higher degree of detail and often result in a wider floodplain in which development is restricted, but they also make engineering studies showing no rise more complicated. 1-D models are based on traditional cross-section methods, which make no-rise analyses more straightforward.

In comparing the use of floodways in the AE zone, the following chart summarizes the two options:

Zone AE with Floodway	Zone AE <u>without</u> Floodway
<p>Development can occur in the flood fringe without an engineering study to determine impact on BFE.</p> <p>Hydraulic analysis only required for development within the floodway. This would include any type of development or modifications to existing structures/infrastructure; bridges, culvert crossings, modification of buildings within the floodway, land development, public infrastructure, mining, dredging, filling, grading, paving, excavation, drilling, storage of equipment or materials, etc.</p> <p>Development in floodway must show evidence of “no rise” (which means a 0.00-foot increase in the BFE). Makes regulating development more black-and-white. If a “no-rise” cannot be achieved, the developer must go through the Letter of Map Change (LOMC) process (LOMRs and CLOMRs).</p> <p>Zero tolerance for causing a rise in the BFE. This can be a challenge to demonstrate, and for small-scale developments, could be cost-prohibitive.</p>	<p>In Lieu of a floodway, with FEMA approval, communities may manage impacts of development using various flood zones and non-regulatory models.</p> <p>Development in floodplain must be managed on a case-by-case basis.</p> <p>Use zone AO or AH (shallow flooding) in overbank areas, combined with AE zones.</p> <p>Need FEMA approval for using a combination of shallow flooding with other zone designations.</p> <p>Engineering study required in special flood hazard zone, depending on flood zone. In Zone AE without floodway, a study would have to determine whether a 0.5-ft rise is breached.</p> <p>Requires tracking of cumulative impacts of development over time. Requires capacity to monitor and calculate changes to floodplain. The 0.5-ft rise requirement refers to the cumulative impact. Once that limit is reached, no additional development could occur in the floodplain unless a “no-rise” can be achieved, or the LOMC process is used.</p>

Regardless of which map type is used, Development in the flood fringe or shallow flooding zones could be put through FEMA process to require a LOMR or CLOMR.

Costs of CLOMR: \$6500 (paid by developer to FEMA) – process can take up to 9 months.

Generally, floodways tend to be a more popular model in urban areas, while floodplains tend to be more popular in rural areas. In rural areas, because development is more spread out, there are often fewer properties impacted by development or the increase of 0.5 ft increase in the BFE allowed in the floodplain.

BOARD ACTION TAKEN:

APPROVED

DENIED

OTHER

SIGNATURE OF THE CHAIR: _____

NOTES: