

MEMORANDUM OF UNDERSTANDING

Project Name:	Arkansas River Physical Map Revision – Chaffee County		
Regarding:	Community Partnership and Study Understanding	Date:	October 16, 2019
Community Contact (Name, Affiliation, Email)	Robin Mesaric-King, Town of Buena Vista, bvplanningtech@buenavista.co.gov ity Jon Roorda, Chaffee County, jroorda@chaffeecounty.org David Lady, City of Salida, David.lady@cityofsalida.com Mark Rocheleau, JVA, mrocheleau@jvajva.com		
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Project	Thuy Patton, CWCB Floodplain Mapping Coordinator: <u>thuy.patton@state.co.us</u> , 303.866.3441 x3230		
Contacts:	Chris Ide, Wood Project Manager: christopher.ide@woodplc.com, 303.742.5337		

This memo serves as an understanding with the community that:

- A physical map revision (PMR) along the Arkansas River will commence
- The community will partner with CWCB and FEMA
- The community agrees with the technical approach
- And community will provide the support items identified below

It also serves to document:

- Specifics of the study
- That the Colorado Water Conservation Board (CWCB) has coordinated and will continue to coordinate with the appropriate community contacts regarding the scope

The Project will take time to complete and will be incorporated into future countywide studies, so it is important to have a record of this coordination. It is also important to have written concurrence from the communities regarding the project approach understanding to partner, and breakout of required actions, which we are requesting in the form of a signature at the bottom of this memo.

Project Objective

The project involves the hydraulic restudy of the following sections of the Arkansas River:

Reach	Reach Description	Length (mi)	Model	Level of Study
Arkansas River	From the northern border of Chaffee County to 0.4 miles upstream of North F Street	47.8	HEC-RAS 1D	А
Arkansas River	From 0.4 miles upstream of North F Street to the confluence with South Arkansas River	1.8	HEC-RAS 1D	AE
Arkansas River	From the confluence with South Arkansas River to the southeastern border of Chaffee County	3.0	HEC-RAS 1D	А

The total scope of the project includes:

- 1.8 miles of Enhanced Flood Study (Zone AE with floodway)
- 50.8 miles of Base Flood Study (Zone A without floodway)



Additionally, the following streams were identified by the community during the Arkansas River Hydrology Update meeting for potential future projects:

Reach	Reach Description	Length (mi)	Model	Level of Study
Arkansas River	From 0.7 miles upstream of US 285 to the Denver and Rio Grande Western Railroad bridge south of Johnson Village	1.9	HEC-RAS 1D	AE
Arkansas River	From SH 291 to 0.4 miles upstream of North F Street	0.9	HEC-RAS 1D	AE
Arkansas River	From the confluence with South Arkansas River to County Road 102 near Salida WWTP	0.8	HEC-RAS 1D	AE
Unnamed Drainage 1	From Roys Road to the confluence with South Arkansas River. The drainage is located near the Paradise Acres development.	0.9	HEC-RAS 2D	А
Unnamed Drainage 2	From 0.25 miles upstream of Railroad Street to the confluence with the Arkansas River opposite North C Street. The drainage is located southeast of the Spiral Drive Summit Lookout.	0.3	HEC-RAS 2D	А
Unnamed Drainage 3	From Holman Avenue to the confluence with the Arkansas River near the intersection of West Sackett Avenue and G Street. The drainage flows through the Town of Salida along the Monarch Spur Trail.	1.1	HEC-RAS 1D	А
Unnamed Drainage 4	From County Road 177 to the confluence with the Arkansas River opposite North L Street. The drainage is located northwest of the Spiral Drive Summit Lookout.	0.4	HEC-RAS 2D	А

Currently only the Arkansas River reaches identified in the first table are scoped to be updated as part of this PMR, using the FEMA approved hydrology update. Results from the Arkansas River studies are intended to physically revise the floodplains shown on FEMA's Flood Insurance Rate Maps (FIRMs). These revisions could result in identification of increased floodplain widths. Any homes identified in this area that have federally backed mortgages would subsequently be required to pay flood insurance.

No countywide update is scoped or funded at this time, only revisions to the Arkansas River. However, results from this meeting could be used to inform a future revision to floodplains shown on FEMA's FIRMs. The figure below summarizes the high-level schedule for the PMR.





General Project Approach for Flood Risk Studies

The following methodology will be applied to this study, which is in accordance with FEMA's applicable Guidelines and Standards for Flood Hazard Mapping. The flood study tasks vary based on the level of study for the designated reaches shown to the right. The Project tasks include the following level of effort:

- Field Survey and Reconnaissance Information to be collected by field survey and reconnaissance teams includes:
 - Documenting the condition and types of hydraulic structures, such as bridges and culverts, and estimating associated parameters to include Manning's "n" floodplain roughness coefficients (Enhanced Level Only).
 - Surveying structure dimensions and adjacent cross sections (Enhanced Level only).
 - Surveying the channel and overbank areas along cross sections spaced approximately 2,000 to 3,000 feet apart where structure spacing allows.
- Topographic Data Task will include generating terrain models using topographic data which includes the following LiDAR datasets to date:
 - \circ Flown 2016 by Merrick. QL2 coverage: NVA RMSEz = 3.9 cm.
- Hydrology Restudied values for the 10%, 4%, 2%, 1%, 1% plus, and 0.2% annual chance peak discharges will be taken from the Arkansas River Hydrologic Evaluation from Leadville to the State Line, November 5, 2018.
- Hydraulics Task will include performing 1-dimensional (1D) HEC-RAS 5.0.7 (or newer) hydraulic analyses for all identified reaches.
- Flood Hazard Mapping Task will include producing spatial files and exhibits containing results of the analysis.

Community Responsibilities

Communities participating in the NFIP are typically required to provide flood risk updates as described in 44 CFR 65.3. The State and FEMA are offering support to identify revised flood risk by initiating this project. While providing this support, the State and FEMA ask that the community work as a partner and agree to lead the following tasks.

- Provide updates to community leaders. Make sure they understand this will result in identified floodplain changes for future phases of the study.
- Provide pertinent information to homeowners in the study area. Make sure they understand this will result in identified floodplain changes for future phases of the study.
- Sign this MOA.
- Provide any study that should be considered for the study before study is underway
- Identify any upcoming or ongoing CLOMRs/LOMRs in the study area
- Stay involved with study and review any info provided to provide concurrence with results
- Identify any contact/staff changes related to this project as they occur to avoid communication gaps
- New community contacts to review and re-submit this understanding
- Identify any needs to support outreach or project understanding

Stakeholder coordination is a significant portion of this effort. CWCB announced the project scope and objective to community stakeholders via a project kickoff meeting in Buena Vista, CO on July 12, 2019. The State will help craft messaging and outreach materials for communities as appropriate, when requested. Some materials that have already been created can be accessed on www.coloradohazardmapping.com.

Project information will be included on the project website at <u>http://www.coloradohazardmapping.com</u>. Other meetings and communication between the community and CWCB will include:

• Flood Risk Review meeting to discuss draft hydraulic results.

- Enhanced Level studies (mapped as Zone AE) include survey and field reconnaissance
 - Base Level (mapped as Zone A) will not incorporate some field reconnaissance or survey data for general channel geometry, and will rely exclusively on topographic data and aerial imagery for the remaining terrain and structure information.



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Request for Concurrence

Should you have any questions or comments regarding the stated scope of work, please contact Thuy Patton, *CWCB Floodplain Mapping Coordinator* (thuy.patton@state.co.us, 303.866.3441 x3230) or Chris Ide, *Wood Project Manager* (christopher.ide@woodplc.com), 303.742.5337. Otherwise please indicate your concurrence with the above approach and project understanding by returning a scanned signed copy of this Fact Sheet/Study Memo to Mrs. Patton or Mr. Ide.

Signing indicates concurrence with the general approach and partnership responsibilities, but does not imply acceptance of future results nor ownership for their development. It is preferred that two community representative sign, however it is at the community's discretion who should sign. We request that you contact us or provide concurrence within 30 calendar days (by November 16, 2019). We appreciate your timely response and look forward to working with you on this Project.

Printed Name	Floodplain Manager	Community Name
Signature	Date	
Printed Name	CEO or designee	Community Name
Signature	Date	