COLORADO
Colorado Water Conservation Board
Department of Natural Resources

MEETING MINUTES

Project Name:	Colorado Water Conservation Board (CWCB) Base Level Engineering (BLE) – Risk MAP Phase 1
Meeting:	Prowers County BLE Review Meeting
Date & Time:	January 19, 2021 from 10:00-11:00 AM
Place:	https://mbakermeet.webex.com/mbakermeet/j.php?MTID=m0ffe19e9f71536508c557ebf37856cad By Phone: 202-860-2110; Meeting number (access code): 179 195 6204; Password: 1234;

1. **Welcome & Introductions**

Meeting intro- Geoff gave a brief intro/purpose for the call. He then shared his agenda with the table of contacts for the Prowers Project/this meeting. He then went through the table and asked everyone to introduce themselves in the order they were listed on the table. He also asked to confirm whether the role captured in the table is correct.
Geoff introduced Chris Ide and Josh Hill from WOOD, as they had just recently joined the call. Other introductions were handled at the prior levee review meeting. He then gave an overview of the meeting agenda.

Entity	Attending?	Name	Role
Prowers County	Yes	Michelle Hiigel	Land Use Administrator
	Yes	Staffon Warn	Emergency Management Director
Granada	Yes	Jackie Malone	Town Clerk
	No	Natalie Musick	Resident/Store Manager
Holly	Yes	Dan Tefertiller	President of Holly Flood Control
	No	Megan Jara	Town Clerk
	No (interested?)	Michael Tanner	Town Administrator
Lamar	Yes	Mike Machone	GIS
	Yes	Steve Kil	City Administrator
	No	Craig Brooks	Chief Building Official
	No	Martin Montoya	Water Dpt
	Yes	Pat Mason	Public Works (update)
Wiley	Yes	Debbie Watson	Town Clerk
CWCB	Yes	Marta Blanco Castaño	Flood Mapping Program Assistant
	Yes	Terri Fead	Floodplain Manager
	No	Kevin Houck	Chief of Watershed & Flood Protection
FEMA	No	Matthew Buddie	Floodplain Mgmt and Insurance Specialist
	Yes	Chris Gaynes	Mapping Lead for CO - Civil Engineer
	Yes	Jamie Prochno	2D/Levee Lead - Senior Civil Engineer
Wood	Yes	Josh Hill	Project Engineer
	Yes	Chris Ide	Senior Project Manager
Baker	Yes	Ryan Carroll	Levee Specialist
	Yes	Kevin Doyle	Water Department Manager
	Yes	Geoff Uhlemann	Program Manager

2. **Program Background and Roles & Responsibilities**

Terri Fead discussed the NFIP in general, and community responsibilities for regulating development, etc. She gave an overview of Community officials., state, FEMA, and Michael Baker roles and responsibilities, as-follows:

- Community Officials- Manage local; program, participate in NFIP/study partnerships
- State (CWCB)- Oversee flood risk analysis, support community in process, outreach
- FEMA- grant funding, project oversight and technical support
- Michael Baker- contractor the CWCB; technical support and studies

3. **Prowers County Efforts & Objectives**

All components (Wood study, Phase 1, Phase 2, Levee) are working towards a Countywide Phase 3 Regulatory Update:

- *Arkansas River Hydrologic & Hydraulic Update* (complete)
  1D riverine, portions of detailed with floodway and reaches of base level/approximate study (approved by FEMA)
- *Phase 1 - Countywide BLE* (in progress)
  2D rain on mesh. Drainage and ponding deeper than one foot or >0.25 acre AND greater than 1 foot.
- *Prowers Levee analysis* (in progress)
  assessment of current conditions and necessary actions to pursue certification of the levee and FEMA accreditation or consider LAMP
- *Phase 2 – Data Development: additional detailed reaches* (starting soon)
  already funded with aim to kick off in April 2021. Includes up to 14 miles of AE/detailed study. Already picked Wildhorse, Wolf, and Willow Creeks due to revised hydrology and prior levee seclusion. Will discuss adding other priority areas as budget allows.
- *Phase 3 – Regulatory Update* (likely effective ~2023)
  Countywide FIRM update including Ark, Phase 2, select Phase 1 BLE. Impacts insurance and regulation/development.

4. **Arkansas Study Overview & Methodology**

1D riverine (Steady state): develop terrain, place XSs, collect survey (detailed), gauged hydrology, hydraulics, FPM
Wood and CWCB had an April 2019 Kickoff for this project. Wood updated Hydrology for the entire Arkansas basin, and analyzed stream gage data using Bulletin 17C methodology. New flows were produced throughout the watershed, and seamless mapping. Prowers county piece was selected to be combined with this Countywide effort. Hydraulics approved October 2020. Floodplain Mapping approval due next month. 2016 LIDAR for Arkansas River, supplemented with field surveys, bridges, culverts, etc.

5. **BLE Study Overview & Methodology**

Automated and approximate identification of flood risk
2D rain-on-mesh (unsteady): terrain, rainfall hydrology, mesh refinements, calibration, modeling, mapping

Improved delineations- LIDAR vs. 10/30M DEM. Geoff provided a comparison between the current effective floodplains and the updated BLE floodplains in the same area. Similar drainage patterns, width changes. Capturing better resolution in underlying terrain as well as comprehensive coverage- new floodplains in areas that were previously unmapped. Complete CW coverage, using 6 WSEL profiles.

Rain-on-mesh approach- Build terrain and DEMs/explanation of model refinement, etc. Create mesh. Then move on with the assessment.
Results- BL. HUC12 processing. Described difference in results between effective (1D) and BLE (2D) rain on mesh. Applying rainfall to a watershed, water is everywhere based on where it flows within the watershed.

6. **Community Options**

Geoff explained BLE use in Zone A areas vs. Zone AE areas. You can use BLE results to obtain BFE in Zone A areas, but not in Zone AE areas. Options to consider for BLE:

a) Best Available (Level 1)
b) Move to regulatory (Level 2)
c) New detailed (Level 3)

Use of BLE:

- Facilitate discussions for additional study and identifying mitigation actions
- Select reaches to be mapped as regulatory vs. best available information (BAI)
- Longer-term update of Flood Insurance Rate Maps (FIRMs)

7. **Community Actions**

There is work involved! It's a community-driven program. We will support, produce data, etc. this is part of your community's participation in the NFIP. So, it should be a partnership.
Review data, identify mitigation actions, identify training needs
Inform reaches for detailed study, concur with scope & approach
Consider outreach strategy

- Review Ark and BLE data. Request study areas and study level. ID mitigation actions. Request additional training.
- Phase 2 Kickoff. Approve scope/approach. Sign study memorandum. Local press/outreach, including timing- when should this occur? Consider when to include info on website

8. **Next Steps**

BLE meeting today. Community review of BLE results for 30 days. Finalize and submit to FEMA for review…anywhere from 1-3 months of review and revisions. Start Phase 2 April/May so we can perform field survey this summer. Completion later this year/early next year.
Geoff solicited feedback on what format each community would like to receive the BLE data in. ESRI shapefiles, KMZ for Google earth viewing, or ColoradoHazardmapping.com viewer. The answers were:

- Prowers- Michelle confirmed ESRI shapefiles
- Holly- confirmed ESRI shapefiles
- Granada- whatever is easiest- not much experience with ArcMap, Google Earth, etc. Geoff offered to produce PDF maps. Geoff offered to meet virtually and share the data on-screen with Jackie. Marta also offered to demo a KMZ in Google Earth.
- Lamar- ESRI shapefiles are good.

Should be sent over within a week or so. Asking communities to sign an agreement that information is draft, subject to change, and should not be used for development purposes.

Lamar (Steve)- asked if there is also a 30-day timeframe for review of BLE data. Geoff will specify this in the delivery of the data, but it is not a rigid date.

Geoff will send via FTP or file transfer. 300MB for the entire county.

9. **Floodplain Review by Community**

Wiley- Mostly shallow flooding. Ditch does not have adequate conveyance to carry the 100-year; also, there are some undersized crossings. Also, water is shown even outside of major drainages due to the rain-on-grid modeling approach.

Holly- draft is not complete, since Phase 2 study is not combined here. There is some flooding associated with the interior of the levee- interior localized ponding from rainfall within the town. These would still exist even with a certified/accredited levee.

Granada- Wolf Creek is to be studied during Phase 2.

Lamar- Willow creek to be studied in Phase 2. Steve Kil asked what the difference is between the BLE results map and the work that Ryan has done. Geoff explained that this map is showing BLE results but does NOT show any results along Willow Creek that incorporate the status of the levee. Ryan's efforts focused on 65.10 criteria that could potentially impact the way the levee is modeled in the Phase 2 study.

10. **Discussion / Meeting Adjourn – Thanks for Participating!**

Staffon shared that there was a major flood event at the box culvert under 196 for the Wiley drainage that backed up and caused significant flooding to homes N of 196. Geoff said that would be helpful to obtain documentation

One last thing to think about- consider what you can do about flood hazards/flood risk. Staffon' s example. Use this data to identify ideas for risk reduction.

Geoff- will provide recordings, notes, and products to all communities as follow-up. Including soft deadlines, expectations, etc.