

MEETING MINUTES

<i>Project Name:</i>	Morgan Countywide Risk Mapping Assessment and Planning (Risk MAP)
<i>Meeting:</i>	Morgan County Phase 1 / Discovery Meeting
<i>Date & Time:</i>	April 21, 2022 from 1:00 PM - 3:00 PM
<i>Place:</i>	Assembly Room (Morgan County Administration Building) 231 Ensign St, Fort Morgan, CO 80701 Remote via Zoom

1. Welcome & Introductions

- Ms. Terri Fead and Ms. Marta Blanco Castaño welcomed everyone to the meeting and facilitated introductions. Then provided background information and set the objective for the meeting. The table below lists the attendees, whether virtual or in person, at the Discovery meeting.

Entity	Name	Title/Role	Phone	Email	Participation
City of Brush	David Basil	Building Inspector and Floodplain Administrator	970.847.8031	dbasil@brushcolo.com	In Person
Morgan County	Cheryl Brindisi	Planning Technician		cbrindisi@co.morgan.co.us	In Person
	Nicole Hay	Planning and Zoning Director and FPA	970.542.3526	nhay@co.morgan.co.us	In Person
	Roger Doll	Director of Emergency Management	970.867.8506	rdoll@co.morgan.co.us	In Person
	Steve Vosburg	Emergency Operations Center		svosburg@co.morgan.co.us	In Person
Town of Wiggins	Tom Acre	Town Manager and Floodplain Administrator	970.483.6161	tacre@wigginsco.com	Remote
CWCB	Terri Fead	Floodplain Mapping Coordinator	303.866.3441 x3230	Terri.fead@state.co.us	In Person
	Marta Blanco Castaño	Flood Mapping Program Assistant	303.866.3441 x3225 or 719.464.1199	Marta.blancocastano@state.co.us	In Person
FEMA	Chris Gaynes	Mapping Lead for CO - Civil Engineer	202.480.1265	christine.gaynes@fema.dhs.gov	Remote
Michael Baker (Consultant)	Geoff Uhlemann	Project Manager	720.653.5928	Geoff.uhlemann@mbakerintl.com	Remote
	Matt McGlone	Project Manager	970.485.0144	Matthew.McGlone@mbakerintl.com	Remote
FEMA CERC (Ogilvy)	Vince Hancock	Communications Specialist		vince.hancock@ogilvy.com	Remote
Entellus, Inc. (external)	Andrew Hagglund	Engineer		??	Remote

2. Program Goals & NFIP Background

- Terri discussed the high level program goals of the project: to get updated risk information across Morgan County and Communities because flooding is a serious risk and can change over time. Growth and development require updated risk information, as this helps inform building practices to promote resiliency. The information also can be leveraged and provide a basis for potential emergency management actions and mitigation projects.
- The project team wants to identify where it can help communities implement projects to reduce flood risk with the ultimate goal of keeping people, property, and infrastructure safe from flooding.
- Marta described the National Flood Insurance Program (NFIP) and explained the four ‘legs’ of the stool: Flood Hazard Mapping, Flood Insurance, Floodplain Management, and Mitigation Grants.
 - A voluntary program based on a mutual agreement between the Federal government and the local community
 - Engineers determine flood risk & develop maps
 - Participation makes Federally backed flood insurance available to all residents and enables flood mitigation/disaster assistance eligibility
 - The flood insurance program is overseen by FEMA, managed by the community, and enforced by lenders

3. Risk Mapping, Assessment and Planning (Risk MAP) Process & Objective

- Marta gave an overview of the Risk MAP project lifecycle.
 - Risk MAP projects are tailored to meet the needs of the communities, and address a community's specific needs and interests. This framework is centered on the aspects of mapping, assessing risk/communicating risk, and planning for safer communities by integrating generated information into planning and other development mechanisms.



- Marta described the Phase 1 project objectives for Morgan County that included: Initiation of a flood study update, automated, watershed-level Base Level Engineering (BLE), identifying hazards posed and potential mitigation actions and providing outreach and training support to communities.
- The anticipated project schedule through the Risk MAP lifecycle is estimated below:
 - Discovery – Spring 2022
 - Data Development – Mid 2022 – Late 2023
 - Preliminary Maps & Appeals – Early 2024 – Late 2024
 - Adoption – Mid 2025
 - Effective Flood Insurance Rate Maps (FIRMs) – Mid-Late 2025

4. Roles and Responsibilities

- Marta explained the roles and responsibilities on this project for Community Officials, State (CWCB), Federal Emergency Management Agency (FEMA), Private Stakeholders and Contractor (Michael Baker International).
 - Community – Administering the NFIP by communicating risk, managing construction and enforcing floodplain management regulations.
 - State (CWCB) – Working with communities on providing outreach assistance and responding to community requests during the Risk Mapping, Assessment, and Planning (Risk MAP) lifecycle.
 - FEMA – Providing funding for studies and administering the NFIP.
 - Private or Other Stakeholders – Working with the community officials and project team to provide/update project information.
 - Contractors – Generating updated flood risk information and working with Community Officials, State, FEMA, Private Stakeholders to update project information.

5. General 2-Dimensional (2D) Base Level Engineering (BLE) Overview

- Mr. Geoff Uhlemann started by reviewing the current mapping status:
 - Most recent Flood Insurance Study (FIS) went effective on 5/18/2021 and restudied 51 miles of detailed (Zone AE) South Platte River through Morgan County
 - In 2012 part of Beaver Creek was studied, and it's also Zone AE
 - Effective approximate/base level (i.e. Zone A) mapping includes ~460 miles that were mapped or studied back in 1979 and all the way through 2018.

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He then explained the additional fluvial hazard zone (FHZ) concerns and how rivers are dynamic so flood and related erosion risk can be present anywhere where a river has existed or could exist in the future (fluvial areas). For more information on FHZ hazards please visit this link: <https://www.coloradofhz.com/>

- Geoff gave a high-level overview of the 2D BLE methodology:
 - Building Terrain & Digital Elevation Models (DEM) – 2018 LiDAR used in Morgan County
 - Developing Domains from topographic features, natural divides, & hydrologic information
 - Creating a hydraulic mesh and incorporating refinements at features that affect surface water flow
 - Applying predictive and historic rainfall events and calibrating/validating models to other sources
 - Simulating predictive scenarios (10, 4, 2, 1, 1+, and 0.2% annual chance events) and mapping results.
 These storm event scenarios are translated into annual recurrence intervals below:

Recurrence interval, years	Annual exceedance probability, percent
10	10%
25	4%
50	2%
100	1%
500	0.2%

- Geoff explained the association of watershed characteristics, including Manning's N (channel roughness/friction coefficient) values and infiltration parameters based on land use and soils.
- Geoff provided additional details on model refinements by showing an example of a typical terrain modification for a culvert.
- Geoff provided map images showing the project domains (A, B, C, D, F, G) within Morgan County. He explained the use of watersheds/Hydrologic Unit Codes (HUCs) in determining/delineating these model domains. Note that these domains convey/route flow based on watershed features that often extended outside of Morgan County. Domain E falls outside of Morgan County and is hence omitted from the maps shown during the presentation

6. Morgan County BLE Study Overview

- Mr. Matt McGlone described the specific 2D BLE mapping scope for this Phase 1 / Discovery project for Morgan County. This scope included countywide 2D modeling for any drainage area greater than 1 square mile. He explained the use of the results to create Zone A-ready products, as well as identifying other potential regulatory reaches with input from the communities.
- Matt described the benefits of using the BLE results including improved delineations based on the 2018 Light Detection and Ranging (LiDAR) data, improved technology/methodology, countywide coverage, six recurrence intervals being produced, and additional data from models such as depth and velocity grids.
- Matt provided an example of BLE results compared to effective mapping and explained that the BLE results will be: enforced in effective Zone A reaches; are optional in unmapped reaches; but cannot supersede detailed Zone AE reaches, as those detailed reaches will need to be restudied with the same or higher level of detail.
- Matt gave an overview of the BLE Summary Report and the Discovery Map Packet that will be provided to the communities. He explained that the BLE Summary Report includes more detailed, technical information on 2D BLE Methodology where the Discovery Map Packet includes information and figures geared towards community use.

7. Community Options & Future Mapping

- Matt described the community options for using the BLE results that include several levels:
 - Level 1 – Use as Best Available Information (BAI) to make planning and development decisions. Data available within 6 months. It will not be carried forward as a regulatory product.
 - Level 2 – Use BLE results for Zone A studies. This may include replacing current effective Zone A or adding new Zone A in areas. Community could locally adopt now. FIRMs estimated to be effective in 2025.

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- Level 3 - Using BLE results to determine areas where detailed studies (Zone AE) are needed. FIRMs estimated to be effective in 2025.

8. Expectations & Next Steps

- Marta gave an overview of the roles and expectations for the next steps on this project. CWCB/Michael Baker will be providing the BLE results and reports as well as submitting to FEMA for review. The communities will review BLE results and consider what to adopt as new Zone A vs BAI.
- Marta also outlined future items including CWCB/Michael Baker planning a Phase 2 project kickoff meeting. For the upcoming Phase 2 project, communities will communicate project information to community officials and to the public as needed.
- Marta described the approximate timeline for completing Phase 1 and initiating Phase 2 that included:
 - Discovery Meeting – today (4/21/22)
 - Community and FEMA Review – May 2022 (Community has 45 days to review)
 - Phase 2 Kickoff – May/June 2022
 - Finalize Phase 1 – June/July 2022
 - Field Survey – Summer/Fall 2022
 - Review Phase 2 Results – Mid-Late 2023
- Marta explained the need for communities to sign the Draft Data Agreement Form in order to receive the draft data results and acknowledge that the data is subject to change. This agreement can be signed here: <https://forms.gle/tRfLxJzMSGiiYdCx5>.

9. Discussion / BLE On-Screen Review

- Hillrose – Not present at meeting. Community does not participate in NFIP.
 - Matt/Geoff provided an overview of the BLE results. This included going over depth grids from the models.
 - Hillrose / Schneider area gets ponding and shallow flooding.
- Log Lane Village – Not present at meeting. Community does not participate in NFIP.
- - Matt/Geoff provided an overview of the BLE results.
- Fort Morgan – Not present at meeting.
 - Matt/Geoff provided an overview of the BLE results, that reflect a lot of urban flooding.
 - By reviewing depth grids from the models, they showed how the extents of the urban flooding was dependent on the depth of flooding.
 - Old power plant may have a high water marks (HWM) identified, from when Rainbow Bridge overtopped in the past.
 - Issues with culverts clogging from hail storms/slushy conditions and crops floating downstream were reported north of Fort Morgan.
- Wiggins
 - Matt/Geoff provided an overview of the BLE results.
 - Two levee systems currently shown with Seclusion on the effective mapping.
 - 1988 construction and 1989 LOMR completed to update Base Flood Elevations, etc.
 - Tom Acre provided update that the U.S. Army Corps of Engineers (USACE) recently inspected levees. He also explained that recent LiDAR was collected for a portion of the Town using a drone.
 - **ACTION ITEM: Michael Baker and CWCB to follow up with a separate meeting invitation to discuss subsequent modeling/mapping of levees for this project. Ensure we involve the Town Engineer, County would also like to be included.**
 - **ACTION ITEM: Town to provide CWCB and Baker team with new LiDAR/topographic information so we have the latest and greatest on file.**
- Brush
 - Matt/Geoff provided an overview of the BLE results. This included going over depth grids from the models.

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- Mr. David Basil indicated he is new to his role, but has gathered that floodplain permitting is a burden on the residents (amounting to ~\$1,500 per property owner). Voiced his understanding that flooding in 1935 was exacerbated by clogging of a bridge opening with hay during harvest season.
- David indicated that homeowners and developers are unhappy with the development restrictions and floodplain requirements on the eastern side of the city. No-rise certificates are a nuisance, frustrating, and are expensive for residents.
- **ACTION ITEM:** FEMA is looking into whether the residential properties can get credit for wet- or dry-proofing as flood mitigation measures.
- **ACTION ITEM:** During our conversation, we briefly discussed the no-rise certifications and associated costs when building or altering structures in the eastern portion of Brush. Potential FEMA funding was mentioned to cover those costs and the City of Brush would like a follow up to check if there was any new information on that front. CWCB to check with FEMA or others.
- Morgan County Unincorporated Areas
 - Weldona area was discussed and an unaccredited levee was identified west of the community. It was explained that the 1965 flood event caused significant flooding in this area, and even killed all the fish in the lake above the Riverside Ditch (Jackson Reservoir), taking out much of Weldona near/along Cottonwood Draw. The levee was not documented in the National Levee Database (NLD) maintained by the USACE. A past mitigation grant (due to flooding) may have funded this levee construction.
 - Question: are there any plans by the State of Colorado to build a reservoir in Morgan County? To divert water from the South Platte (or other water storage locally / in northeast CO).
 - Answer: the CWCB Flood Mapping Program is not involved with, or aware of, any of plans for these types of projects, but would check and provide the communities a contact. After inquiries by CWCB staff, it was determined that communities are welcome to reach out to Russ Sands, the CWCB Water Supply Planning Section Chief, at russ.sands@state.co.us.
 - **ACTION ITEM:** Baker/CWCB to look into this levee and determine if we have all documentation from the County or need to request anything from the USACE or others, to ensure we properly study and map this levee in Phase 2 of the project.

These notes are an interpretation of discussions held. They intend to capture primary takeaways from the meeting, but not to thoroughly document everything discussed.