Smart Scoping with Community Engagement and Base Level Engineering

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Agenda

- Introduction
- Base Level Engineering (BLE)
- R10 Discovery & Project Planning (Scoping)
- Example - Middle Columbia-Hood Watershed
- Conclusion
Base Level Engineering (BLE)

Provide low cost model backed data for:

- Discovery Discussions
  - Identify future projects
  - Early look at flood risk
  - Initiate discussions in advance of FIRM
  - Unearth community data

- Best available data for floodplain management
  - Use where no SFHA or BFE available
  - Elevation Certificates, Floodproofing Certificates, LOMA and LOMR-F

- Floodplain Inventory Validation for Zone A
Base Level Engineering (BLE)

<< Less detailed and less accurate

More detailed and more accurate >>

*FOA is no longer used and has been replaced with LSAE*
## Base Level Engineering (BLE)

<table>
<thead>
<tr>
<th>Option</th>
<th>Cross section</th>
<th>Flow Paths</th>
<th>Manning’s “n”</th>
<th>Structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Min.)</td>
<td>Auto placed</td>
<td>Equal</td>
<td>Single Value</td>
<td>None</td>
</tr>
<tr>
<td>B (Good)</td>
<td>Auto w/ Adjustments</td>
<td>Auto</td>
<td>Land Cover</td>
<td>None (Prepared)</td>
</tr>
<tr>
<td>C (Better)</td>
<td>Review all</td>
<td>Adjusted</td>
<td>Land Cover</td>
<td>Assumed</td>
</tr>
<tr>
<td>D (Best)</td>
<td>Review all</td>
<td>Adjusted</td>
<td>Land Cover (Calibrate)</td>
<td>Measured</td>
</tr>
</tbody>
</table>
Discovery and Project Scoping

1. PRE-DISCOVERY
   - FEMA works with the State, community, and tribes to understand needs, resources, and capabilities to support the community in risk reduction and resilience efforts.
   - FEMA data and research does not support the need for a Regulatory Flood Map project. The final Discovery Report is updated to reflect this decision. In lieu of a Flood Map, State, local, and tribal officials may request technical assistance or risk and vulnerability assessments to support risk reduction.

2. DISCOVERY MEETING
   - FEMA and the State meet in-person with communities and tribes to gather information on their perspective about local hazards and their risk. This information is used to prioritize future mapping, risk assessment, and mitigation planning assistance.

Stakeholder Coordination

Discovery Meeting
Data Analysis
Post Meeting Coordination & Project Scope Development

Increase Risk. Resilience Together
Discovery and Project Scoping

Stakeholder Coordination

Discovery Meeting  Data Analysis  Post Meeting Coordination & Project Scope Development

Goal is to refine scope using community input
Project Scoping Issues

- Timing

LiDAR ➔ BLE ➔ Discovery
Project Scoping Issues

- Timing

- LiDAR → Discovery → BLE
Project Scoping Issues

- Timing

LiDAR → BLE → Discovery → BLE
LiDAR → Discovery → BLE
Discovery → LiDAR → BLE
Project Scoping Issues

- Community Engagement
  - Significant time lapse since Discovery
  - Communities don’t know where to start
  - Outdated mapping inhibits informed discussions
  - General request for “data” is rarely fruitful
Enhance the Process with BLE

Stakeholder Coordination

- Discovery Meeting
- Data Analysis
- Post Meeting Coordination & Project Scope Development

Include BLE

Better Community Engagement
What BLE Adds to the Conversation

△ Model backed floodplains
  ▪ Old vs New comparison
  ▪ More detail (based on LiDAR)
  ▪ Dynamic digital data
  ▪ Prompts Mitigation Discussions
What BLE Adds to the Conversation

▶ Other BLE enhancements
  ▪ Study priorities
  ▪ Bridge pinch points
  ▪ Levee significance
## Presenting BLE results to Communities

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
<th>Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard copy maps</td>
<td>Deliver a book of PDF or Printed maps</td>
<td>Moderate/Low</td>
</tr>
<tr>
<td>In-person meeting</td>
<td>Shorter meeting with all stakeholders together</td>
<td>Moderate/Low</td>
</tr>
<tr>
<td>Geo-platform</td>
<td>Share link to data housed on web</td>
<td>High</td>
</tr>
<tr>
<td>Web meeting</td>
<td>Multiple meetings targeted to stakeholders</td>
<td>High</td>
</tr>
</tbody>
</table>

**Personalized approach**
Impact on Community Engagement

▸ Captures their attention
  ▪ Preview SFHA and risk
  ▪ Empower FPA

▸ Enables feedback
  ▪ Identify issues & concerns
  ▪ Focus priorities

▸ Encourages contribution
  ▪ Collect or provide data

Community Buy-in
Example – Middle Columbia-Hood (MCH)

- **July 2015 - Discovery**
  - 3 Counties
  - 700 miles identified
  - LiDAR
    - Available
    - In process
    - Not available
MCH – Summer 2016 Meet in Person

› Share BLE results
  ▪ Presentation of approach
  ▪ Hard copy maps
  ▪ Verified interest

› Requested communities to:
  ▪ Review data
  ▪ Give feedback
  ▪ Identify priorities
  ▪ Share data
Feedback during the meeting

- Draft flooding is significantly impacts our airstrip?!?
MCH – Fall 2016 Post Meeting

• Waited for more feedback...we didn’t get much
  ▪ Review data
  ▪ Give feedback
  ▪ Identify priorities
  ▪ Share data
MCH – Summer 2017 Web Meetings

- Targeted meetings
- Provide on GeoPlatform
  - Old vs New floodplains
  - Recommended priorities
- During the meetings
  - Confirm/Changed priorities
  - Listen to concerns
  - Discuss specific data needs
  - Planned field visits
MCH – Post Web Meetings

- As-buils provided
- Fieldwork with county
FEMA GeoPlatform – Pre Meeting

Medium Priority
FEMA GeoPlatform – With Feedback

Middle Columbia Hood, Oregon - Flood Study Lifecycle

Overview
After meeting with local officials, prioritization of community streams for future floodplain mapping have been adjusted based on community feedback. Click on Bridge Site Visit Recommendations and Priority Streams within the map viewer for additional information.

Layer Breakdown
Additionally, the Risk MAP project team has identified bridges on high priority streams where collection of field measurements or as-builts are recommended. The identified bridges may have hydraulic significance in regards to future floodplain mapping.

Estimated floodplains are intended to provide an estimated potential floodplain boundary before future analyses and model refinements can be incorporated to better define the floodplain.

The effective Flood Hazard Areas are provided for comparison purposes. Effective Flood Hazard Areas provided by Oregon’s Department of Land Conservation and Development (DLCD) are for reference purposes only. For a copy of the effective Flood Insurance Study and Flood Insurance Rate Map, please navigate to msc.fema.gov.

Community Feedback: Bridge Site Visit Recommendations (2017)

Community Feedback: Priority Streams (2017)

- High
- Medium
- Low
- As is

Effective 1-Percent Floodplain

Estimated 1-Percent-Floodplain

High Priority
FEMA GeoPlatform – Updated Scope

Overview
FEMA will continue the next phases of this project delivering services for community engagement, survey, hydrology, hydraulics, and flood risk products that will ultimately be used to support PIRM development, risk communications, and mitigation actions. Click on Riverine Scope and Lake Scope within the map viewer for additional information.

Riverine Scope - FY18 (as of June 5, 2018)
- Approximate
- Detailed
- Leveraged (USACE)

Lake Scope - FY18 (as of June 5, 2018)
- Approximate

Refine Modeling
Summary

- BLE is a first cut floodplain that can inform many situations

- Unique issues in Region 10 give cause for added coordination during project planning (Post Discovery)

- Smart use of BLE in project planning
  - Helps the Region make informed decisions
  - Encourages community engagement
  - Ultimately yields a better product
  - Early discussions on contributing factors, areas of mitigation interest and project ideas