

Rio Hondo Watershed, NM

BASE LEVEL ENGINEERING FACT SHEET

PROJECT TEAM:

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BACKGROUND: The Rio Hondo sub-basin covers approximately 1,661 square miles. The 3 counties within the sub-basin have been in flood related federal disaster declarations 17 times and has been affected by 20 large wildfires between 2000 and 2013.

FEMA and the New Mexico CTP, the Earth Data Analysis Center (EDAC), initiated the Risk Map Discovery process in 2014. Following Lidar data collection in 2015, the Base Level Engineering Study was started in 2016.

Purpose

Base Level Engineering is a collaborative process that produces quality data that can be used to increase public awareness and lead to flood risk reduction.

Expand the national flood hazard data inventory and expedite flood data delivery to communities and create a framework for risk and scenario based analyses.

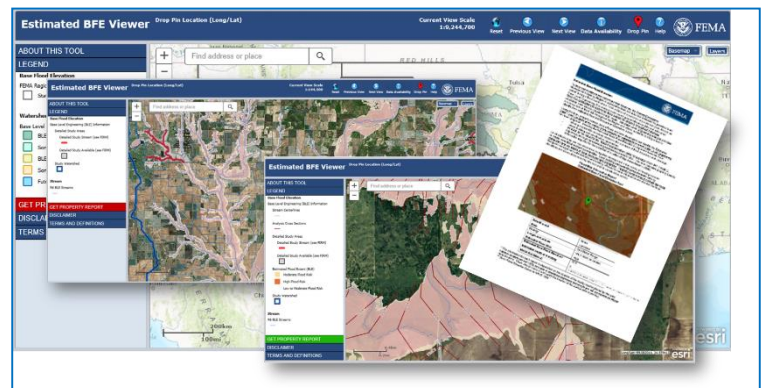
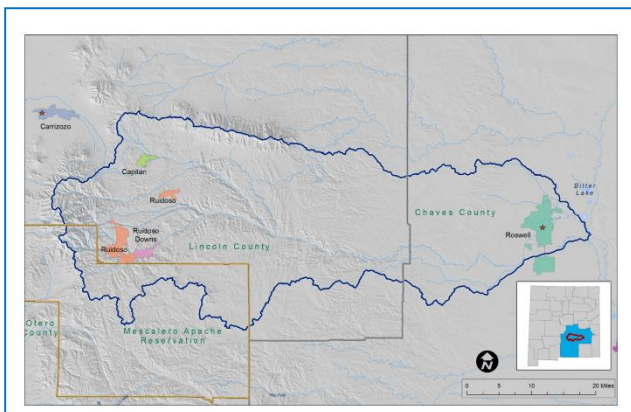
Minimum Data Purchase

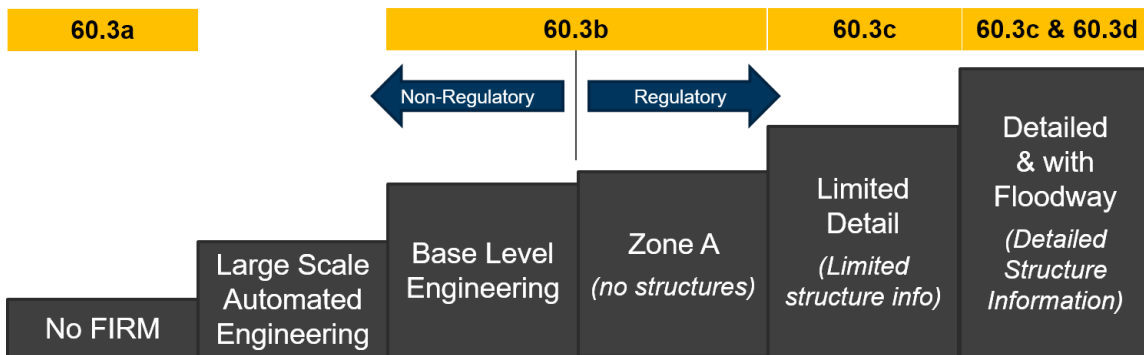
- Hydraulic Modeling (10%, 4%, 2%, 1%, 1%+ and 0.2%)
- 10%, 1% and 0.2% Floodplains
- 1% and 0.2% Water Surface Grids
- 1% and 0.2% Flood Depth Grids
- Hazus Level 2

Estimated BFE Viewer

- Uses BLE Analysis
- Designed as effective tool for community leaders and resident to make informed decisions
- http://apps.femadata.com/est_bfe

APPROACH: This approach creates data that may be used to assess stream inventory, prioritize watersheds or stream segments for further study, provides a sounding board and initiates a discussion with communities that revolves around risk information, risk identification and indication of flood risk abatement and mitigation strategies that may reduce current or future flood risk. Products can be used to communicate flood risk to residents and model how development may affect the manner in which water is conveyed through their community or be adopted by local communities with no FIRMs.





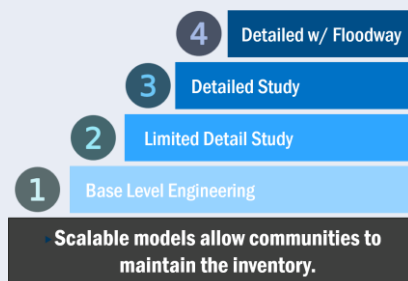
Highly automated modeling, no cross-section review. Used for CNMS Review ONLY

Difference between BLE & Zone A is minimal – Community “test-drive”

Top of Road and stream invert based on LiDAR, Culvert size, type grouping based on visual inspection

Detailed structure input based on as-built drawings or field survey. Floodways can be added to assist development regulation

Base Level Engineering



BLE Approach

- High resolution ground elevation data
- Regression equation based hydrology
- Highly automated hydraulic modeling
- Lessons learned in Map Modernization
- Cross-section location and orientation review
- Structure cross-sections included in modeling

BLE Creates

- Baseline models equivalent to Zone A floodplains
- Scalable Flood Hazard modeling that can be refined by community

BLE Refinement

- Dams & Reservoirs
- Culverts

Does BLE replace a FIRM? Base Level Engineering (BLE) information does NOT replace current Flood Insurance Rate Maps (FIRM). The BLE information can be adopted by local communities without any FIRMs and may be used in areas where no flood hazard information is shown on the FIRM. Where the BLE results are similar OR more conservative it may be used to provide Estimate Base Flood Elevations to residents. Where BLE is smaller than the current FIRM it should NOT be used to provide Estimated Base Flood Elevations. This data may be used for local planning purposes.

More details on BLE: <http://www.riskmap6.com/Resources.aspx>