FEMA Meet & Greet
Texas Floodplain Management Association
Spring Workshop
April 27, 2017

The Vision for Our Communities
FEMA’s Mission

…to support our citizens and first responders to ensure that as a nation we work together to build, sustain and improve our capability to prepare for, protect against, respond to, recover from and mitigate all hazards.

FEMA’s Mitigation Division

Floodplain Management & Insurance Branch
- Supporting local community enforcement and floodplain management activities
- Flood insurance questions

Risk Analysis Branch
- Preparing flood risk engineering and assessments to support local community development decisions
- Supporting locally identified mitigation projects

Hazard Mitigation Assistance
- Hazard Mitigation Grant Program
- Flood Mitigation Assistance
- Pre-Disaster Mitigation Grants

Selecting & Initiating Flood Risk Projects

Investment & Discovery Phases

Larry Voice, CFM, Senior Engineer
Risk Analysis Branch
The Challenge…

Coastal Levee Watershed Products

PM & CERC + NVUE Validation + LIDAR Purchase + Training & Education

Project Selection & Planning

Region 6 Investment Plan
- Fed by State Business Plans
- Coordination with CTPs to identify areas for Federal investment support
- Scheduled reviewed and maintained by Project Phase
- Multi-Year Plan in preparation – Quarterly refinement based on partner input
- Phase 0 – Region (PTS) currently processes and releases ALL preliminary FIRMs

CTP Annual State Business Plan
- Includes additional statewide information to prepare prioritization by phase
- Phase 0 – Investment Need - LIDAR and Base Level Engineering
- Phase 1 – Discovery Prioritization
- Phase 2 – Engineering Refinement & Product creation areas

Local Community Needs
- Coordination with communities and locals wherever possible
- Floodplain Management Associations meet 1-2 times per year
- FEMA/State coordinate opportunities to collect local data for CTP/Regional Plan

Flood Risk Project Phases

0 Investment
- High Resolution Ground Elevation
- Base Level Engineering
- Watershed Assessments

1 Discovery
- Watershed Discovery
- Local Levee Partnership Team

2 Risk Identification & Assessment
- Hydrology & Hydraulic Modeling
- Flood Risk Datasets

3 Regulatory Product Update
- Flood Mapping & Preliminary
- Preliminary & Effective
High Resolution Ground Elevation Data

- Models are only as good as the data they are built with.
- Cross-sections are collected against ground elevation data.
- Red depicts current data collection accuracy.
- White dots are survey grade ground info.

Base Level Engineering – Guadalupe River Basin

<table>
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<tr>
<th>Inventory</th>
<th>Mileage</th>
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<tbody>
<tr>
<td>Current (CNMS)</td>
<td>5,010</td>
</tr>
<tr>
<td>New (BLE)</td>
<td>1,621</td>
</tr>
<tr>
<td>Total</td>
<td>6,631</td>
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Watershed Hydrology Assessments

- Interagency Flood Risk Management (InFRM) team working together to determine:
  - Review of various hydrologic approaches:
    - Statistical hydrology - regression equations
    - Meteorological information - NWS TP40, NOAA Atlas 14, TxDOT circa 95
    - Rainfall-runoff modeling - system & period of record simulations
    - Stochastic techniques
  - How much water is expected?

- Results of Watershed Hydrology Assessment:
  - Suggested flood volumes for 2-yr, 5-yr, 10-yr, 25-yr, 50-yr, 100-yr, 250-yr, 500-yr events
  - Built for existing conditions
  - Future conditions possible with land use planning info
  - Review of wet/dry period of record and flow impacts
Discovery

- Meeting of communities and FEMA to review existing and available technical data to determine future project needs and support requirements
- Project may consist of engineering analysis, flood risk assessment, flood risk product development, local training or technical assistance.

Investment & Discovery Phases

- Community inquiries may include:
  - Availability (or NEED) of LiDAR or high quality ground elevation data
  - Indicate areas where flood risk may have changed
  - Determine future and current growth areas within a community (30 yr)
  - How Base Level Engineering may be used as local planning data for development review purposes
- Local data availability of interest:
  - As-built dams, bridge and culvert plans
  - Local flood studies and Master Drainage Plans
  - Operational information for dams and reservoirs
  - Stage/Storage information for dams and reservoirs
  - Bathymetric data (large streams and reservoirs)

Continuing Flood Risk Projects

Risk Identification & Assessment Phase

Alan Johnson, PE, Engineer
Risk Analysis Branch

FEMA
Risk Identification & Assessment Phase

- **Hydrology**
  - Volume of water?
  - When will storm water or runoff make it to the stream?

- **Hydraulics**
  - Will the stream in question be able to convey all storm water or runoff that arrives?

- **Floodplain Mapping**
  - What areas of a community will be inundated based on engineering analysis?

Data Preparation & Deliverables

**OUTPUTS**

- Water Surface Elevation Grids
- Flood Depth Grids
- Flood Risk Assessment (Hazus)
- Changes Since Last FIRM
- Annual Percent Chance Grids
- 30 Year Percent Grids
- Velocity Grids
- Freeboard Grids

Practical Uses for Flood Risk Products
Practical Uses for Flood Risk Products

- Public outreach and communication
- Updating the local mitigation plan
- Taking mitigation action
- Community planning
- Response and recovery

The REAL power comes from combining with local data – parcels, buildings, and critical facilities!

Risk Identification & Assessment Phase

- Community inquiries may include:
  - Are there technical community staff members that may be able to participate in monthly meetings with FEMA and its contractors?
  - Is any community technical data available for use and inclusion?
  - What datasets may be of use and assistance to my community?
  - How can this data be used to update our Local Hazard Mitigation Plan?
  - Provide input for areas not consistent with recent flood events.
  - How are Levee systems certified? Accredited?
  - What are the possible approaches to review the current flood risk in the vicinity of a non-accredited levee system?
  - Coordinate with FEMA Project Monitor throughout the flood study effort, provide input and information.

Delivering Flood Risk Project Results

The Flood Risk Review Meeting

Jennifer Knecht, CFM, Risk Analyst
Risk Analysis Branch
Work Maps

Community Data Sharing

- Flood Risk Review allows a chance for FEMA and communities to review Flood Study Results
- Community comments are welcome for 30 days following the Flood Risk Review
- Community technical data welcome for incorporation
- Discussions welcomed ahead of Formal Appeal Period

Preliminary Maps
Interactive Flood Information Portal
http://maps.riskmap6.com/

- Detailed Property Reports
- Preliminary FIRM
- Effective FIRM
- Change Layer
- Seclusion Boundary

Map Service Center
https://msc.fema.gov

Search All Products
- Select State
- Select County
- Select Community

Preliminary FIRM
- FIRM Panels
- FIS Reports
- FIRM Database

Flood Risk Review Meeting

- Community inquiries may include:
  - How can I get this information out to residents in my community?
  - Any areas modeled that would benefit from additional data?
  - Review work maps and provide community data and input on the draft results within the 30-day period
  - Use interactive maps and Changes Since Last FIRM layer to review areas of change
  - Let FEMA know if more time is necessary and/or if community has concerns with work maps or preliminary FIRM
  - Validate flood study results during work maps, resolve provide technical data as necessary to investigate flood risk further
  - Indicate areas appear different to historic flood events
Community Map Adoption
Consultation Coordination Officer (CCO) Meeting
Dale Hoff, CFM, Program Specialist
Floodplain Management & Insurance Branch

Consultation Coordination Officer (CCO) Meeting

• New/Updated FIRM release requires community adoption of these maps and a review/update of the current Flood Damage Prevention ordinance.
• CCO Meeting allows communities and FEMA to review the local responsibilities and statutory requirements related to map adoption and ordinance update

Local Ordinances

The local community has the RESPONSIBILITY and AUTHORITY to enforce its local provisions

✓ Proper permitting
✓ Inspections
✓ Certifications
Ordinance Update

- Ordinance Level

Consider Higher Standards

- Communities may adopt additional and more restrictive practices than outlined in the model ordinances.
- Communities may reach out to State or FEMA staff for draft language to include in ordinance updates.
- Within the State of Texas a number of higher standards have been adopted, to include:
  - Study required in/around Zone A areas to establish BFE
  - Elevation Certificates required prior to framing permits
  - Freeboard above the Base Flood Elevation
  - Open Space Planning
  - Full build out conditions hydrology assessed
  - Fill placed in floodplain requires mitigation

Consider Higher Standards

Scenario #1

44 CFR 60.3(c)(10) requires study to demonstrate no more than 1 foot rise in BFE
- Zone AE, no Floodway designated
- Must consider previous, current & anticipated development collectively

Situation: A structure is built at grade and just outside the SFHA. Other development is allowed in the SFHA which elevates the BFE 1 foot.

Impact: The base flood would now place 1 foot of water in the structure and the SFHA should be remapped due to its expansion
Consider Higher Standards

Scenario #2

44 CFR 60.3(d)(3) directs that an engineering study be done to demonstrate that the effects of the planned development in a floodway will not result in ANY rise in BFE – “No Impact”

There is no requirement for a study for development in the floodway fringe based on minimum standards

Situation: One side of the floodway fringe is completely filled to accommodate new development

Impact: What effects might we expect in the SFHA?
Scenario #3

Situation: One community permits the development of a 200 acre subdivision outside the SFHA.

The only drainage requirement is to account for stormwater drainage within the subdivision to ensure that the structures inside the subdivision are not susceptible to flooding.

Impact: When major rainfall events occur, stormwater originating in the subdivision flow faster and in larger quantities down to the watercourses of the SFHA. The water surface levels of the SFHA are elevated. Properties downstream that are not located in the SFHA according to the current map, begin to flood frequently.

Community Map Adoption

Community inquiries may include:

- Create a plan for upcoming 6 month compliance period (map adoption & ordinance update)
- Include review/update of local ordinance
- Review possible higher standards for inclusion (understand local resource requirements to adopt/enforce)
- Review and adopt updated FIRMs
- Review local files against Summary of Map Action list
- How and when do I inform the public of the pending FIRM updates?
- Can FEMA support a local meeting with decision makers?
- Are there tools available to assist local staff in risk communication?

Post Preliminary Process

Community coordination through Effective Issuance

Charla Marchuk, CFM, Program Specialist
Floodplain Management & Insurance Branch

FEMA
When does the Appeal Period Open?

After Preliminary Issuance and CCO Meeting:

- Letter sent to Community Elected Official
- Federal Register Proposed Notice Printing
- Local Newspaper Printing twice within 10 days
- 90 day appeal period initiates

Comment versus Appeal

Comment
- Objection to base map feature/addition, update to FIS report material or other non-appealable change
- Road locations, road names, corporate limits, etc.

Appeal
- Formal written objection to the addition/modification of a preliminary Base Flood Elevation/Flood Depth, Special Flood Hazard Boundary, Zone Designation or Regulatory floodway boundary.
- Appellants asked to demonstrate a different/more appropriate methodology, provide alternative analysis or data for use in updated FIRM.

All appeals/comments should be reviewed by community prior to submittal to FEMA

Community Responsibilities

- Review of Preliminary FIRM/FIS, use interactive map viewers
- Provide appeals/comments to FEMA for review within 90 day period
- Compilation/review of all appeals/comments received. Submittal of appeal/comment suggests community support of appeal/comment
- Availability for review of appeal resolution outcomes
- Coordinate with local decision makers for map adoption and ordinance updates
- Update of local community ordinance and submittal to State/FEMA for review.
Summary of Map Actions - SOMA

- The SOMA provides a comprehensive list of previously issued Letters of Map Change (LOMC) for a community
- Assists community officials and property owners in determining the status of these LOMCs as a result of revisions to the FIRM.
- Local Communities should review their SOMA carefully
  - FEMA (or its contractors) may reach out to determine if a community has older case files/documentation
  - Preliminary SOMA – review now
  - Final SOMA – prior to Effective Issuance
  - Contact FEMA with concerns

Risk Communications Guidebook

Online access to tools, templates to communicate risk with residents and business owners:
- Post-Preliminary Toolkit
  - Press Releases
  - Web Content
  - Talking Points
  - Social Media messages
- Community Outreach Strategy Template
- Communication Technical Assistance
  Available to Local Community Officials


Letter of Final Determination

Federal Register Final Notice Printed + Letter sent to Community Elected Official 6 month compliance period initiates

- Sets effective issuance date for community FIRMs/FIS
- Notifies each affected flood prone community participating in the National Flood Insurance Program (NFIP)
- Indicates communities must adopt a compliant floodplain management ordinance by the map effective date to remain participants in good standing in the NFIP
Post Preliminary Processing

Community questions during this phase may include:

- When will I receive the maps for local adoption?
- Should I wait for my maps to adopt the ordinance?
- How can I find out the status of the map processing, when will I know the Letter of Final Determination date?
- Should I be hosting a local open house for the public to understand how these changes may affect their home/business?
- Can FEMA support a locally hosted open house?

Effective and Beyond

Local use and enforcement of the floodplain ordinance

Gilbert Giron, Program Specialist
Floodplain Management & Insurance Branch

Community Responsibilities

- Enforcement of Floodplain Damage Prevention Ordinance
  - Meeting the NFIP minimum requirements &
  - Adding any additional locally adopted higher standards

- Permitting and Legal Jurisdiction
  - FEMA’s definition of “development” may vary from your understanding
  - Site inspections

- Final Construction Elevation Certificates
  for structures in Special Flood Hazard Areas

- Inform FEMA of development activity through the Letter of Map Change process
Definition of “Development”

Floodplain Management Purposes

**Development** means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

44 CFR 59.1

Map Maintenance

- **Letter of Map Amendment**
  - Site specific flood risk determination
  - Individuals can submit
  - Requires Elevation Certificate
  - A Base Flood Elevation is required

- **Letter of Map Revision**
  - NFIP Requirement (65.3): Submit within 6 months of construction completion
  - Individual, developer or community can submit
  - Technical data required to update floodplains, floodways and profiles
  - Submittal requires community signature

- **Letter of Map Revision based on Fill**
  - Continued fill placement will modify the way a watercourse flows and reacts
  - It is suggested that communities monitor the cumulative effect of multiple fill placements over time which could alter Base Flood Elevations
  - Community signature required

Community Assistance Visits & Calls

- Comprehensive assessment of a community’s enforcement and compliance with the adopted floodplain ordinance
  - Review of community permits and files
  - Tour of community’s Special Flood Hazard Area
  - Meeting with local officials/staff responsible for floodplain management
  - May occur every five years
  - May be triggered by a community experiencing major development

- Technical Assistance may be requested by communities at any time
Questions you may have

- Community inquiries may include:
  - Resolution of non-compliance, violations and findings
  - How to complete an Elevation Certificate
  - How to determine a Base Flood Elevation
  - Determining Substantial Damage
  - Adoption of more restrictive flood requirements at the local level
  - Higher standards
  - Freeboard requirements
  - Set-backs
  - Coastal construction in LiMWA
  - No rise requirements and submittals
  - Questions related to Letters of Map Amendment (LOMAs)
  - Questions related to Letters of Map Revision (LOMRs)
  - Conditional Letters of Map Revision (CLOMRs)
  - How to use newly effective data to update your Local Hazard Mitigation Plan

The Process Path