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Strategies for Data Sharing

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Operations Manager, Oakland, CA

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Best Strategies for Data Sharing

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Using *Best Strategies* to share data will help comply with new FEMA Guidance and benefit communities, stakeholders, and FEMA

Sharing Data Offers Opportunities for Local Stakeholders

Flood Hazard and Risk Data - Assets used by local stakeholders to:

- guide development,
- comprehensive planning,
- flood mitigation planning,
- Post disaster planning and recovery,
- locating critical facilities,
- manage the floodplain,
- increase risk awareness,
- drive mitigation action,
- inform emergency planning, such as evacuation routes, and
- reduce flooding and disaster costs, and rebuilding efforts.

Sharing Data Benefits FEMA

Flood Hazard and Risk Data – FEMA should leverage its draft data as a strategic decision-making asset to stakeholders to:

- increase transparency,
- participation, and
- engagement during the life of a flood risk project.

“NFIP flood maps are more accurate and will be better accepted and utilized by communities if the community and the state are heavily involved with the NFIP in producing the map.”

Source: *Recommendations for Managing Flood Risk in the Nation*; ASFPM, May 18, 2016

OpenFEMA delivers mission data to the public

The [OpenFEMA initiative](#) is FEMA's vision for open government that embraces the tenets of transparency, participation and collaboration to support citizens and first responders by increasing government accountability, innovation, and effectiveness.

Goals:

- Release high-value data sets
- Build a transparent and interactive connection with members of the public
- Provide information and data in more useful formats

Incentives toward developing a memo for FEMA

Delivering quality data to FEMA's stakeholders is of paramount importance to FEMA's credibility.

Without a framework to ensure draft flood hazard and risk data are shared in a controlled manner, FEMA's credibility is at risk.

However, openly sharing data must be balanced with the opportunity to increase transparency, participation, and collaboration

HEADLINE: Flash flooding shuts down Lansing roads, strands cars



HEADLINE: Baby squirrel influx has animal rescue asking for acorn donations



A group of baby squirrels are seen at the A.R.K. animal rescue. (courtesy photo/A.R.K. Association to Rescue Kritters)

Draft Data Sharing - Presentation Overview

Compass Memo to FEMA on Sharing Draft Data

Defining “Draft Data”

Data Sharing Practices (Non-Disaster and Disaster)

Best Strategies

Legislation

- Homeowner’s Flood Insurance Affordability Act of 2014
- Standards for Flood Risk Analysis and Mapping SID#620
- Standards for Flood Risk Analysis and Mapping SID#621

Sharing Draft or Best Available Flood Hazard and Risk Data

Memo for FEMA (December 2015)



Compass PDS IV
is led by AECOM and CDM Smith
3101 Wilson Boulevard, Suite 900
Arlington, VA 22202

Sharing Draft or Best Available Flood Hazard and Risk Data

1. Introduction

Delivering quality data to FEMA's stakeholders is of paramount importance to FEMA's credibility. Without a framework to ensure draft flood hazard and risk data are shared in a controlled manner, FEMA's credibility is at risk. However, openly sharing data must be balanced with the opportunity to increase transparency, participation, and collaboration—tenets of the OpenFEMA initiative.

FEMA's flood hazard and risk data are assets used by local stakeholders to guide development, manage the floodplain, increase risk awareness, drive mitigation action, and inform emergency planning and rebuilding efforts. Because of the value of this data, communities, stakeholders, Federal, Tribal, territory and State partners often request access to project data during the data development phase (i.e., draft data), prior to Preliminary Insurance—often before the data and/or analysis has been through internal quality reviews or quality reviews mandated by FEMA's standards. Although communities may have the opportunity to view the draft mapping during a stakeholder coordination meeting (e.g., flood risk review meeting), Preliminary Insurance is traditionally the first opportunity they have to review the underlying data that are compiled and created as part of the flood risk project.

There are many benefits to sharing data earlier in the study process, yet there is no current policy (standard, guidance, or best practice) or decision support tool to ensure such sharing is done in a manner that minimizes risk to FEMA. Currently, each FEMA Region handles requests for data prior to Preliminary Insurance differently, which presents challenges that FEMA should confront. However, sharing draft data earlier in the study process also presents an opportunity to foster stakeholder engagement, increase transparency, raise risk awareness, improve decision-making, and enhance the technical credibility of the Risk MAP program. Further, it can aid FEMA in complying with Section 30 (Mapping Section) of the Homeowner's Flood Insurance Affordability Act (HFIAA), as outlined in Section 4.

The purpose of this paper is to outline options FEMA should consider to better leverage its draft data as a strategic decision-making asset to stakeholders and to increase transparency, participation, and engagement during the life of a flood risk project.

2. Defining Draft Flood Hazard and Risk Data

Table 1 categorizes the data type, stakeholder delivery mechanisms, and phase of the project when data (all data compiled and created throughout the flood study process) is currently available to stakeholders.

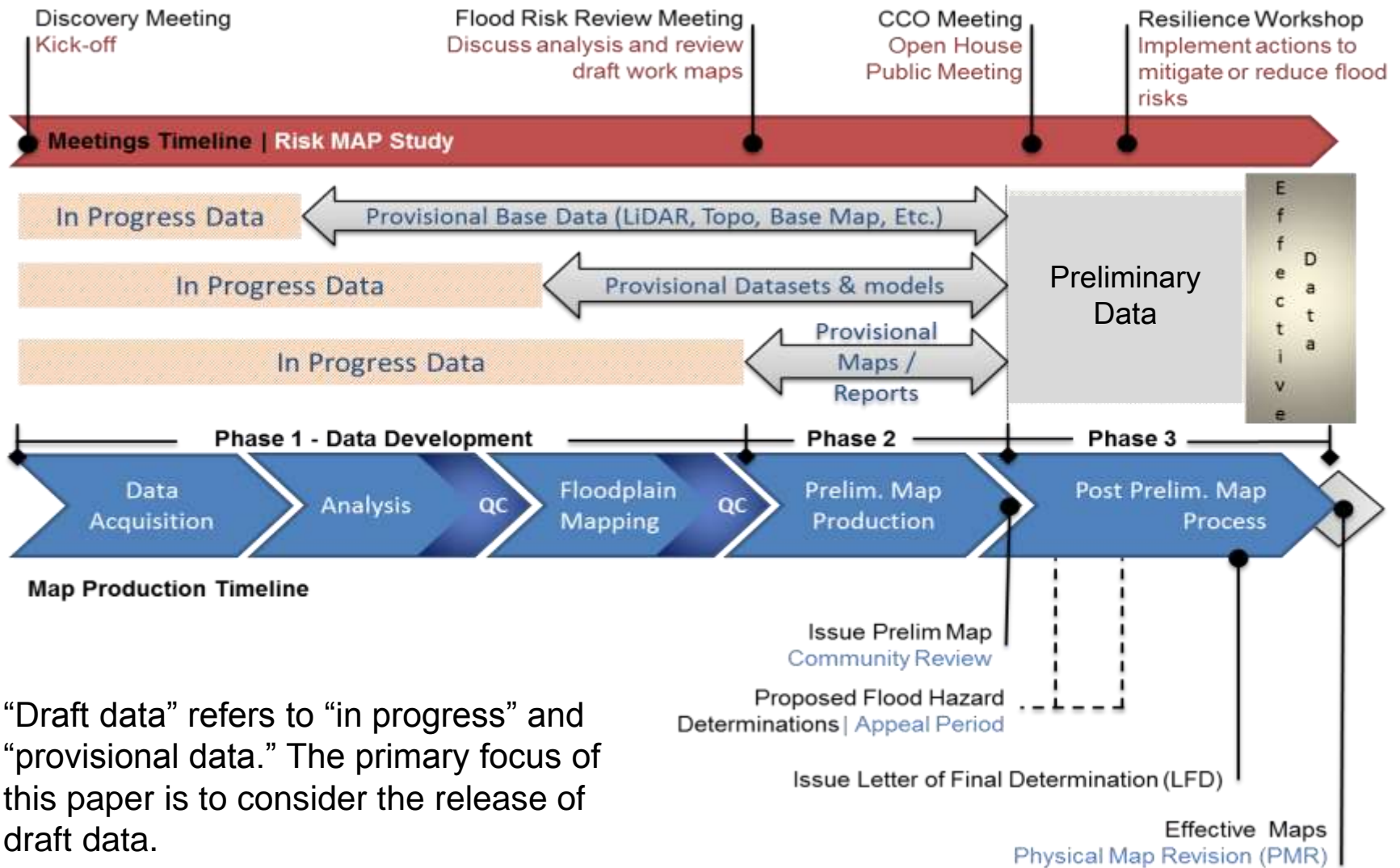
Page | 1

Why did we write a memo?

- no current policy (standard, guidance, or best practice) or decision support tool to ensure such sharing is done in a manner that minimizes risk to FEMA.
- each FEMA Region handles requests for draft data differently
- sharing draft data earlier in the study process presents opportunities:
 - foster stakeholder engagement,
 - increase transparency,
 - raise risk awareness,
 - improve decision-making, and
 - enhance the technical credibility of the Risk MAP program

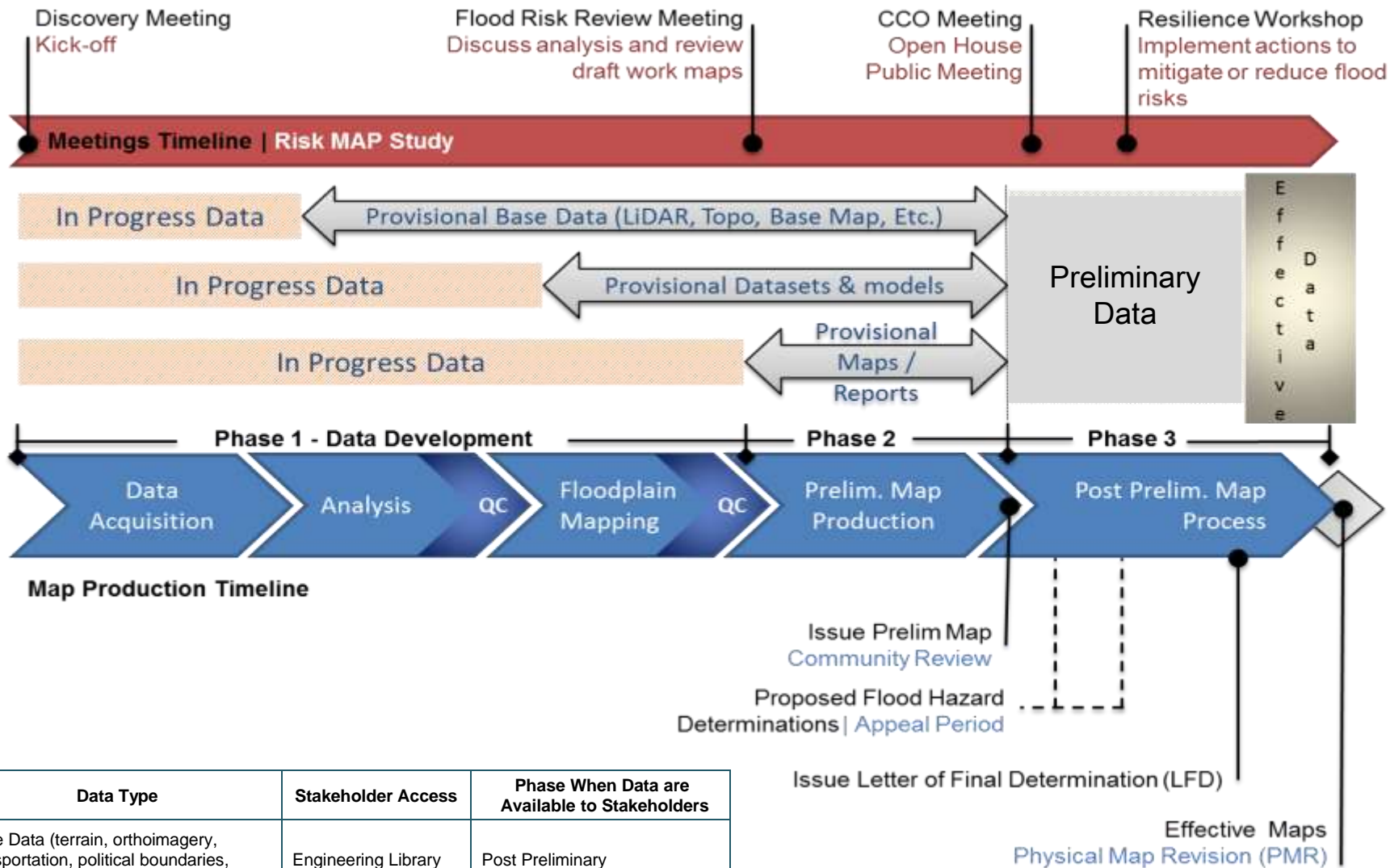
Memo focused on:

- Defining Draft Flood Hazard and Risk Data
- Benefits and Tradeoffs of Delivering Draft Data
- Relationship to HFIAA
- Regional Best Practices
- Options and Recommendations



“Draft data” refers to “in progress” and “provisional data.” The primary focus of this paper is to consider the release of draft data.

Typical Flood Map Project Timeline



Data Type	Stakeholder Access	Phase When Data are Available to Stakeholders
Base Data (terrain, orthoimagery, transportation, political boundaries, stream lines)	Engineering Library	Post Preliminary
Engineering Data (H&H)	Engineering Library	Post Preliminary
FIRM, FIS Report, and FIRM Database	Map Service Center, GeoPlatform, NFHL	Preliminary Map Production & Post Preliminary
Flood Risk Datasets	Map Service Center	Preliminary Map Production & Post Preliminary
Reporting & Study Information (TSDNs)	Engineering Library	Post Preliminary

Data Sharing Practices Examples from FEMA Regions

Disaster and Non-Disaster

Region III (Non-Disaster)



LOMR Support in the Brandywine-Christina Watershed

- Issue
 - Developer wanted to understand potential floodplain changes associated with their proposed development relative to the future FIRMs
- FEMA's Strategy
 - Release Data and noted that the data were still considered draft and were subject to change
- Outcomes
 - Promoted more responsible floodplain planning within the community



Region IV (Non-Disaster)



Coastal flood risk project on the west coast of Florida

- Issue
 - one community asked to be involved in all the internal Technical Review Meetings
- FEMA's Strategy
 - before each IDS is finalized, hold an “all hands” meeting with the community, providing an opportunity to review the draft data in a controlled, yet collaborative, manner
- Outcomes
 - achieve greater acceptance of the study and reduce the potential for appeals and comments

Region VIII (Non-Disaster)

Cass County, ND – Riverine Flood Study

- Issue
 - Complex modeling
- FEMA's Strategy
 - Shared results of the hydraulic analysis with communities and local engineering firms following the hydraulic analysis phase and the floodplain mapping phase
- Outcomes
 - Impressive amount of coordination between the communities, their consultants, and FEMA
 - Preliminary release was delayed to address concerns and to increase local support for the Preliminary products.
 - While the schedule was impacted, this early involvement by the project stakeholders increased acceptance of FEMA's study.

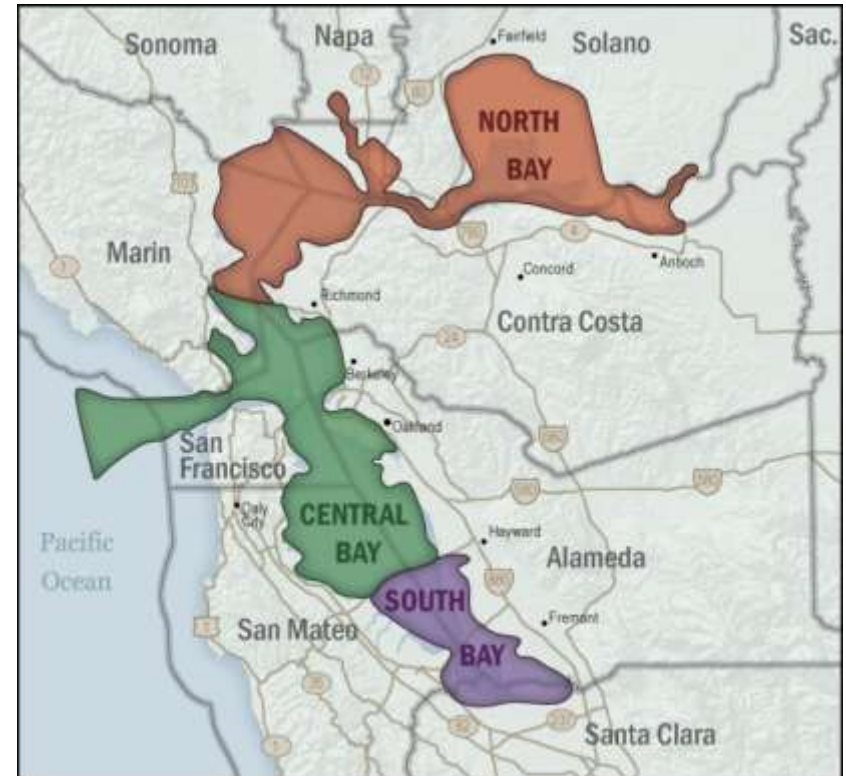


Region IX (Non-Disaster)



Re-study the coastal flood, wave hazard, and associated risks for all 9 counties along the San Francisco Bay

- Issue
 - draft floodplain mapping
- FEMA's Strategy
 - Share draft mapping via Geoportal
 - Provide an online comment tool
- Outcomes
 - increased acceptance of the FEMA products and alerted FEMA to potential areas where additional attention may be required
 - Reduced appeals



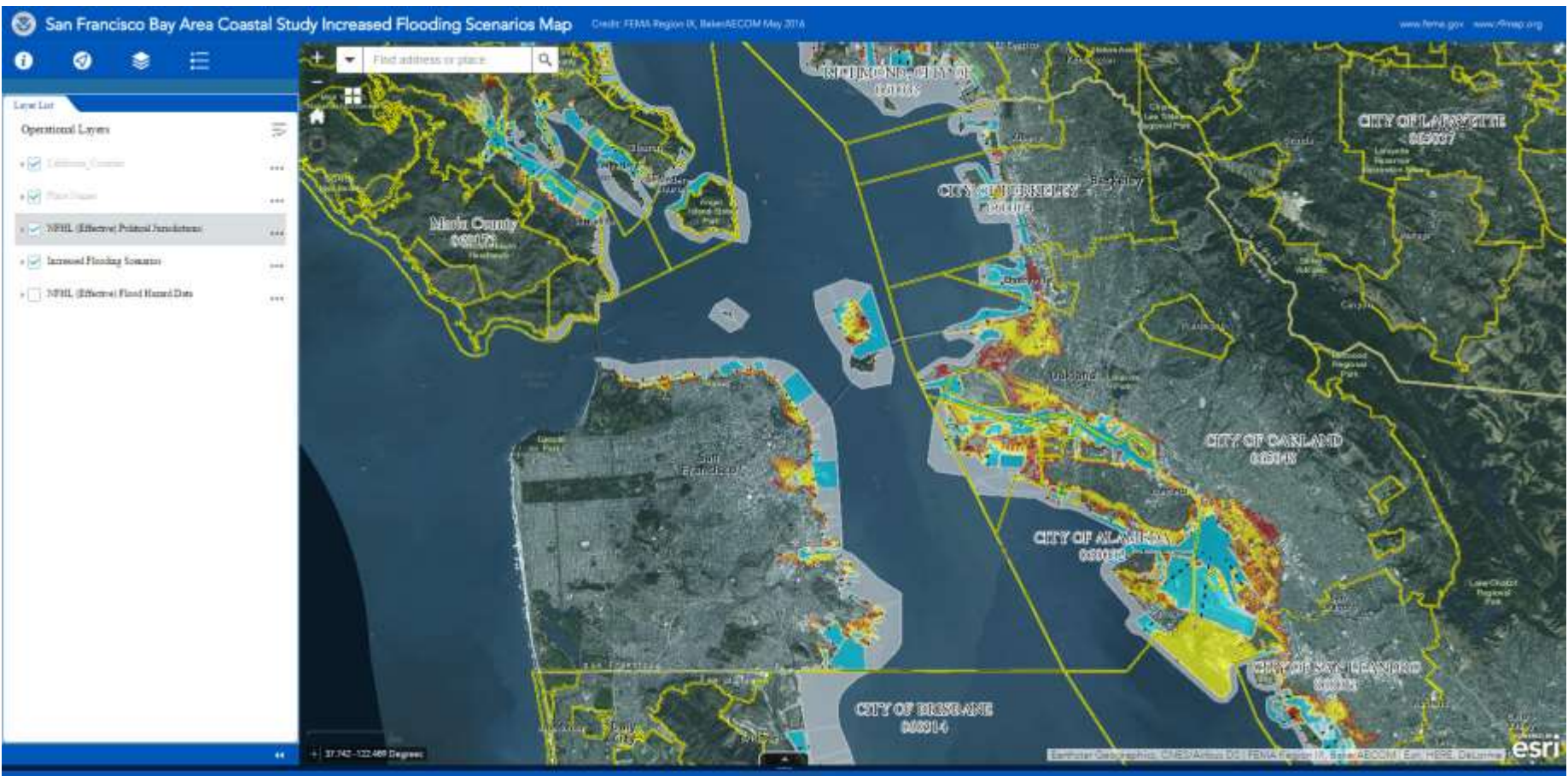
Region IX (Non-Disaster)



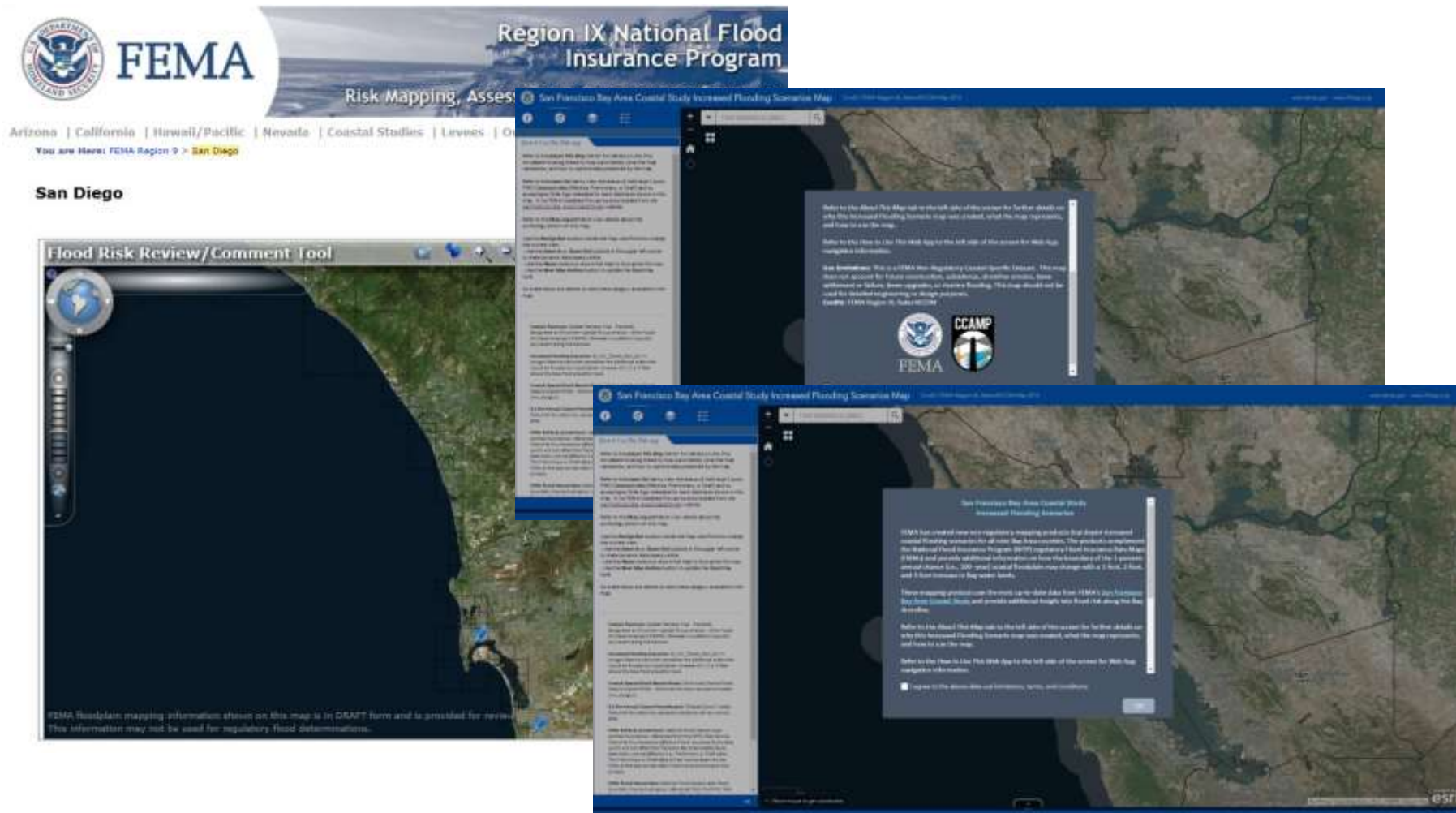
BakerAECOM

An Integrated Production Team

Example: Geoplatform Increased Flood Scenario



Flood Risk Review Tool



Region IV (Disaster)



FEMA



Support of Federal Partners during October 2015 flood event in South Carolina

– Issue

- EPA was trying to determine the flood zone for all their Superfund sites in the affected areas
- EPA asked FEMA for digital flood zone data for counties that were not in the NFHL

– FEMA's Strategy

- Direct EPA to Preliminary FIRM databases available through the MSC
- Requested work map files from the CTP contractor for a county that was scheduled for Preliminary issuance

– Outcomes

- Effective collaboration by sharing Best Available Data which included: draft Data

FEMA Map Information eXchange

The FEMA Map Information eXchange (FMIX) contact center supports the general public and other FEMA stakeholders with inquiries pertaining to the flood hazard mapping and floodplain management activities of the National Flood Insurance Program (NFIP). Map Specialists at the FMIX assist customers with locating and reading flood maps, applying for Letters of Map Change and obtaining and understanding Elevation Certificates. The FMIX also serves to connect stakeholders with a wide range of technical subject matter experts.

How to contact the FMIX?

Call (toll-free):

1-877-FEMA MAP (1-877-336-2627)

Email:

FEMAMapSpecialist@riskmapcds.com

Live Chat:

https://www.floodmaps.fema.gov/flm/fmx_main.html or
<https://msc.fema.gov>

Hours of Operation:

Monday – Friday, 8:00am - 6:30pm ET
After-hours self-service and voicemail support provided

Spanish-language support provided

Region VI (Disaster)



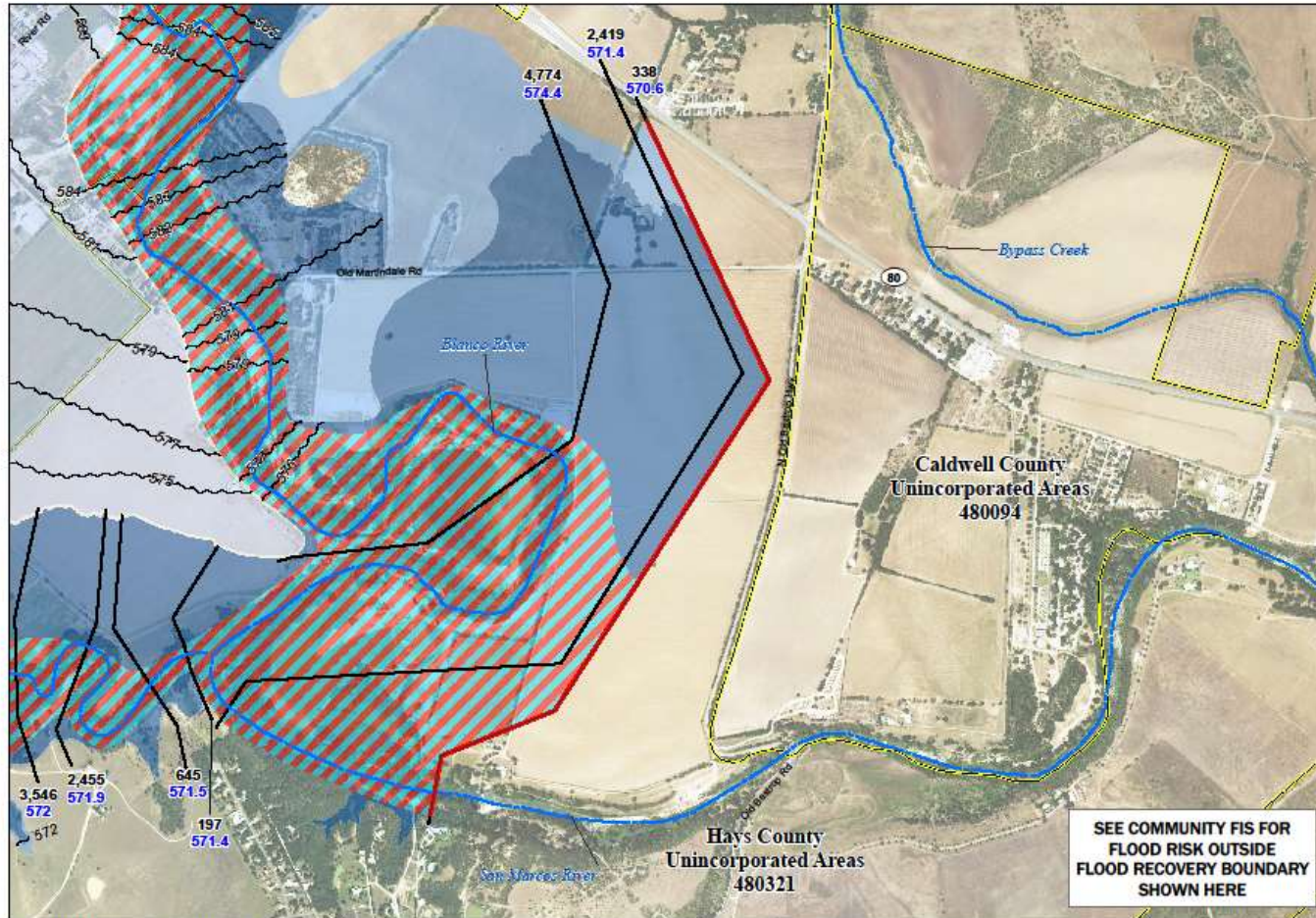
FEMA



Guadalupe Blanco River basin in Central Texas

- Issue
 - Severe flooding resulted in a disaster declaration for the area
- FEMA's Strategy
 - Release Advisory Base Flood Elevation (ABFE) Maps
 - Released Flood Risk Products
 - Developed customized “Notes to Users” on each of the map product
- Outcomes
 - Used by community officials to help guide rebuilding efforts
 - Opened a dialogue with communities about mapping updates and minimized the chances for an appeal

Region VI (Disaster) – ABFE Mapping



ADVISORY BASE FLOOD ELEVATIONS (ABFEs) BLANCO AND SAN MARCOS RIVERS (NEAR SAN MARCOS)

NOTES TO USERS

This map shows Advisory Base Flood Elevations (ABFEs) developed by FEMA, utilizing flood hazard information developed by Guadalupe Blanco River Authority (GBRA) in coordination with the Texas Water Development Board (TWDB) and the US Army Corps of Engineers (USACE).

The elevations shown on the ABFE maps are considered best available data until issuance of updated Flood Insurance Rate Maps. As part of the long term recovery effort, the ABFEs are a tool for Federal, State, and local officials, building officials, planning staff, builders and architects, insurance professionals, and property owners to make informed decisions during rebuilding and to mitigate against losses from future flood events, safeguard lives, and protect the private and public investments in rebuilding.

Local officials should use the accompanying Water Surface Elevation (WSEL) profiles to determine the 1% and 0.2% annual chance water surface elevations in between the cross-sections shown on the ABFE maps.

MAPS FOR ADVISORY PURPOSES ONLY – NOT FOR INSURANCE RATING PURPOSES. For insurance rating purposes refer to the effective Flood Insurance Rate Map (FIRM), available from your local floodplain administrator or the FEMA Map Service Center (<http://msc.fema.gov>).

Map Notes

Elevations measured in feet relative to the North American Vertical Datum of 1988 (NAVD88). Please assure all ground and structure information is converted to NAVD88 prior to review against ABFE information.

Each cross-section shown on the ABFE maps includes a value of the calculated 1% annual chance Advisory Base Flood Elevation at that location. Aerial Imagery provided by National Agriculture Imagery Program. Community boundaries provided by Texas Water Development Board.

For exact data release dates for these ABFE maps, review the Best Available Data spreadsheet at the following link: http://riskmaps.com/documents/resource/DR4223_Best%20Available%20Data_TX.xlsx

MAP LOCATOR

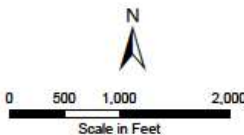


SEE COMMUNITY FIS FOR FLOOD RISK OUTSIDE FLOOD RECOVERY BOUNDARY SHOWN HERE

FLOOD HAZARD INFORMATION

- Advisory Zone A (1% Annual Chance) Floodplain
- Advisory Shaded Zone X (0.2% Annual Chance) Floodplain
- Advisory Zone AH (1% Annual Chance) Shallow Flooding
- Study Stream
- Regulatory Floodway (Not Updated; for Informational Purposes Only)

- Jurisdiction Boundary
- Stream Station
- Advisory (1% Annual Chance) Base Flood Elevation (ABFE)
- Supplemental ABFE
- Cross Section
- Advisory Limit of the 1% Annual Chance Flood Hazard Area



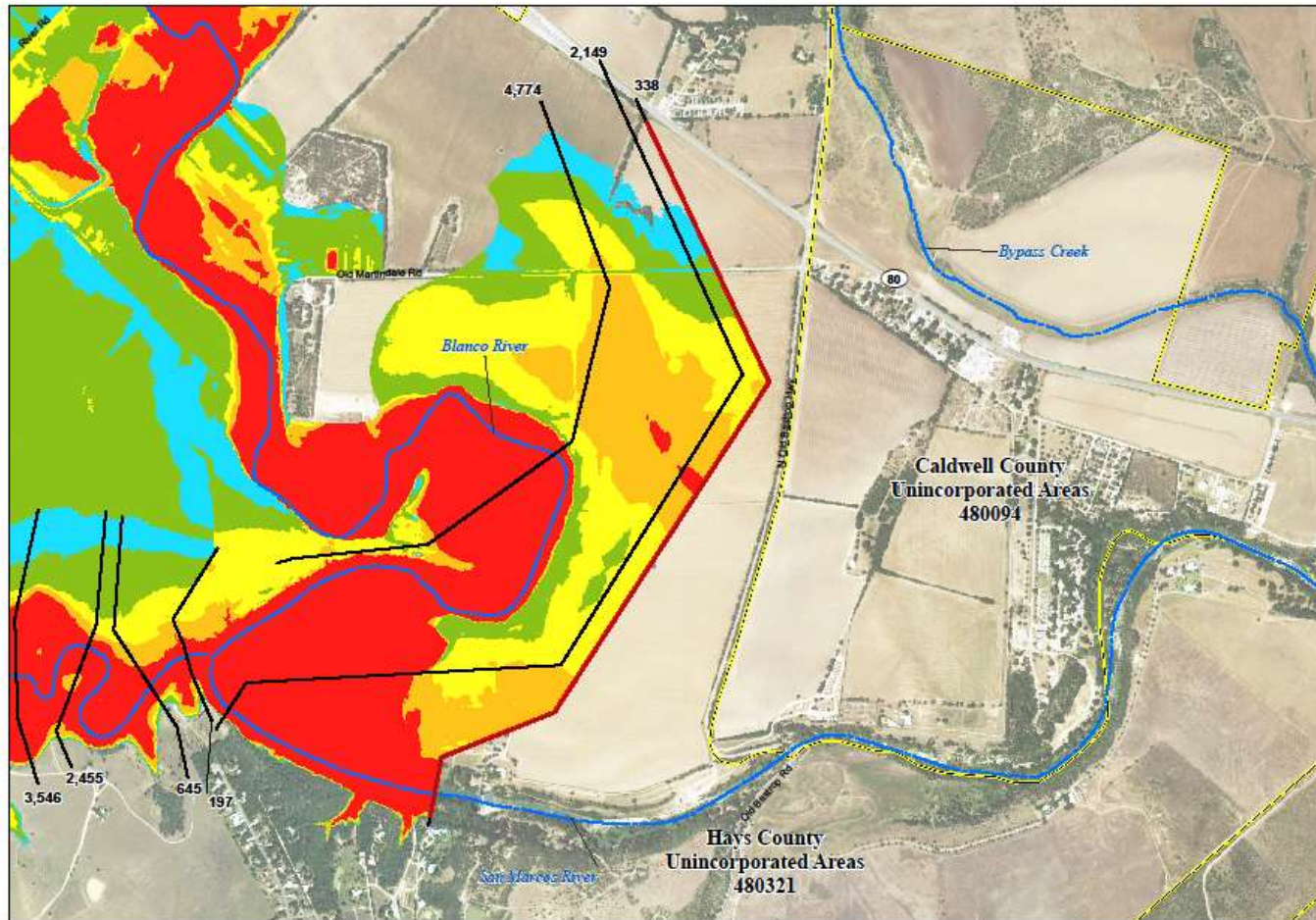
FLOOD RECOVERY DATA HAYS COUNTY, TEXAS AND INCORPORATED AREAS

ABFE Panel 1 of 7

RELEASE DATE
OCTOBER 2015



Region VI (Disaster) – Estimated Flood Depth Mapping



FLOOD HAZARD INFORMATION

<Feet>	
0 - 1	3 - 5
1 - 3	5 - 10
10 +	

999 Stream Station

— Cross Section

— Study Stream

— Jurisdiction Boundary

— Advisory Limit of the 1% Annual Chance Flood Hazard Area



0 500 1,000 2,000
Scale in Feet

ESTIMATED FLOOD DEPTH (1% Annual Chance Event)

BLANCO AND SAN MARCOS RIVERS (NEAR SAN MARCOS)

NOTES TO USERS

Flood Depth Grids estimate flood depth values within a mapped floodplain. They help to visualize and increase understanding of the variability of risk throughout the identified floodplain. The flood depths shown on the map exhibits are estimated for the 1% annual chance storm event.

How To Use This Information

Flood depth grids are a tool for Federal, State, and local officials, building officials, planning staff, builders and architects, insurance professionals, and property owners to make informed decisions during rebuilding and to mitigate against losses from future flood events, safeguard lives, and protect the private and public investment in rebuilding. Flood depth grids can assist to:

- Assist with local mitigation project identification and prioritization based on risk
- Assist local permit officials by identifying areas of high risk flood hazard
- Assist with cost effectiveness screening
- Provide an effective visual tool to communicate flood risk to public

The Flood Depth grid allows community officials to better understand and communicate the flood risks within their community. This dataset equips community officials with data that is easier to convey to the public at large, communicating a depth of possible flooding versus an obscure water surface elevation that is related to sea level. Speaking in measurements that are relative to residents will allow community officials to discuss the possibility of an area being inundated or flooded in a storm event.

Map Notes

Aerial Imagery provided by National Agriculture Imagery Program.

Community boundaries provided by Texas Water Development Board.

MAP LOCATOR



FLOOD RECOVERY DATA HAYS COUNTY, TEXAS AND INCORPORATED AREAS

FLOOD DEPTH Panel 1 of 7

RELEASE DATE
OCTOBER 2015





**Your
Example
Here**

Best Strategies / Recommendations for FEMA

Best Strategy #1 – Operate As-Is

Regions would have the authority to release in-progress and provisional data at their discretion during the study process.

Best Strategy #1 Recommendation – Develop a decision support tool in conjunction with identified best practices to create better controls for shared data which may include:

- Purpose for sharing
- How the data should be delivered
- Who is responsible for delivering the data

Selecting this Best Strategy could encourage greater consistency across FEMA when responding to data requests.

BS#1 – Potential Questions for Decision Support Tool

- What is the current state of the data: (I) In Progress; (II) Provisional; (III) Preliminary; or (IV) Final/Effective?
 - Who is the primary requestor of the dataset?
 - Has the requestor provided justification for the data request?
 - Can the requestor wait until the data are Final? Or Effective?
- Is the data request in opposition with FEMA's Project?
- Are the data being requested to avoid/prevent an appeal or to enable an appeal of the Flood Risk Project?
- Would the use of the data be consistent with FEMA's Risk MAP program?
- Following release of the data, what is expected of FEMA or its contractor?
- How will FEMA manage communication with the requestor?
- Does FEMA expect the requestor to comment on the data? What process is set up for responding to comments?
- Have (Provider) budgets been secured to support the data request?
- Who will approve the data release?
- Are disclaimers needed?
- How will the data be transferred?
- How will the data be used? Will data be used to guide rebuilding efforts? Mitigation efforts? Floodplain management efforts?
- What is the potential benefit of sharing the data?
- Will sharing the data potentially delay project schedules and/or increase mapping costs? If so, how will FEMA mitigate that risk?

Best Strategy #2 – Update and create new Guidance and Technical Reference documents

Best Strategy #2 – Update Guidance Documents

- *Stakeholder Engagement: Data & Product Development*
- A new work map guidance document to specify format, quality and content of a work map product to augment *Riverine Mapping and Floodplain Guidance* and in the *Coastal Floodplain Mapping Guidance*
- The *Data Capture Technical Reference* - Re: digital datasets vs. traditional maps
- Update the *Metadata Profiles Technical Reference* and *Metadata Guidance* documents
- Also
 - Consideration should be given to using the GeoPlatform as the delivery mechanism for the work map product.
 - Draft data Use Disclaimers and/or restrictions on use
 - effectively communicate the degree of uncertainty (TMAC)

Best Strategy #3 – Develop a New Program

Develop new program or working standard(s) that specify in-progress or provisional data delivery, quality, implementation, and use.

Best Strategy Recommendations:

- A working standard that prohibits the release of **in-progress data** unless approved by the Regional FEMA Project Officer.
- A program standard that requires that **provisional data** be released only after a formal quality review, as determined by the study workflow process.
- A minimum **30-day comment period** for the work map product or provisional data, following the Flood Risk Review meeting.

Memo Conclusions

The following recommendations from the December 2015 Compass Memo

- FEMA should consider applying any new policy or policies related to sharing draft flood risk project data for all new studies
- Compass recommends **BS#1** in the short-term until **BS#3** can be fully implemented.
- Develop new program or working standard(s) similar to **BS#3** and supporting guidance and technical references outlined in **BS#2**

Review of Changes to the Policy for Flood Risk Analysis and Mapping

June 6, 2006

Homeowner Flood Insurance Affordability Act of 2014

HFIAA Section 30. Mapping (*abridged*)

The 2016 Spring update to the Policy for Flood Risk Analysis and Mapping implement elements of the mapping program defined by the Biggert Waters Flood Insurance Reform Act of 2012, as amended by the Homeowner Flood Insurance Affordability Act of 2014

- A) before commencement of any map updating process, notify each community affected of the model or models to be used;
- B) provide each community affected a 30-day period beginning upon notification under subparagraph (A) to consult with the Administrator regarding the appropriateness;
- C) upon completion of the *draft data products*, transmit a copy to the affected community, provide the affected community a 30-day period to provide data to supplement or modify the existing data, and incorporate any consistent data.

FEMA Policy

Standards for Flood Risk Analysis and Mapping

FEMA Policy #FP 204-078-1 (Rev 5)

Risk MAP Spring/May 2016 Maintenance Cycle - Public Review

- Announcement in February 2016
- 30-day comment period

SID #	Change	Description
620	New	Requires notification to community officials and 30 day response period regarding models to be used for a flood risk project.
621	New	Requires provision of draft data to community officials, 30 day response period, and incorporation of appropriate data provided by community.

Approved – June 6, 2016

ASFPM Comments on draft FEMA Policy

ASFPM comments on the latest proposed changes to the Guidelines and Standards for spring 2016

- There is an inherent value to sharing project data during data development and prior to preliminary issuance.
- vagueness of the language in the new 620 and 621 standards could be used to indefinitely delay the flood mapping process.
- The addition of two new comment periods also opens up mapping partners to additional costs
- standards should be written in a way that is understandable by mapping partners.
- Discovery process/study initiation and seems to be duplicative
- Provide clear terminology

FEMA Policy Update

Standards for Flood Risk Analysis and Mapping - SID#620

SID #620 - FEMA should send written notification to community officials to inform them about engineering model(s) selected before starting the analysis for a flood risk study and provide a 30-day review period.

Guidance Document Changes:

- *Guidance for Stakeholder Engagement: Discovery Phase*
- *Guidance for Flood Risk Analysis and Mapping: Discovery*
- *Guidance for Stakeholder Engagement: Data and Document Development Phase*
- *Key Decision Points & KDP Form 1* –added check as part of KDP 1 that confirms whether the 30-day review period has been provided to community

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
620	6/6/2016	Effective for all new work funded in FY16	Coordination	Program Standard	Before commencing the analysis and mapping activities that take place during the Data and Product Development Phase of a flood risk study, FEMA shall provide a written notification to community Chief Executive Officers and Floodplain Administrators that explains the selected modeling, explains why the selected modeling is appropriate, and provide a 30-day period for communities to consult on the appropriateness of the modeling.

FEMA Policy

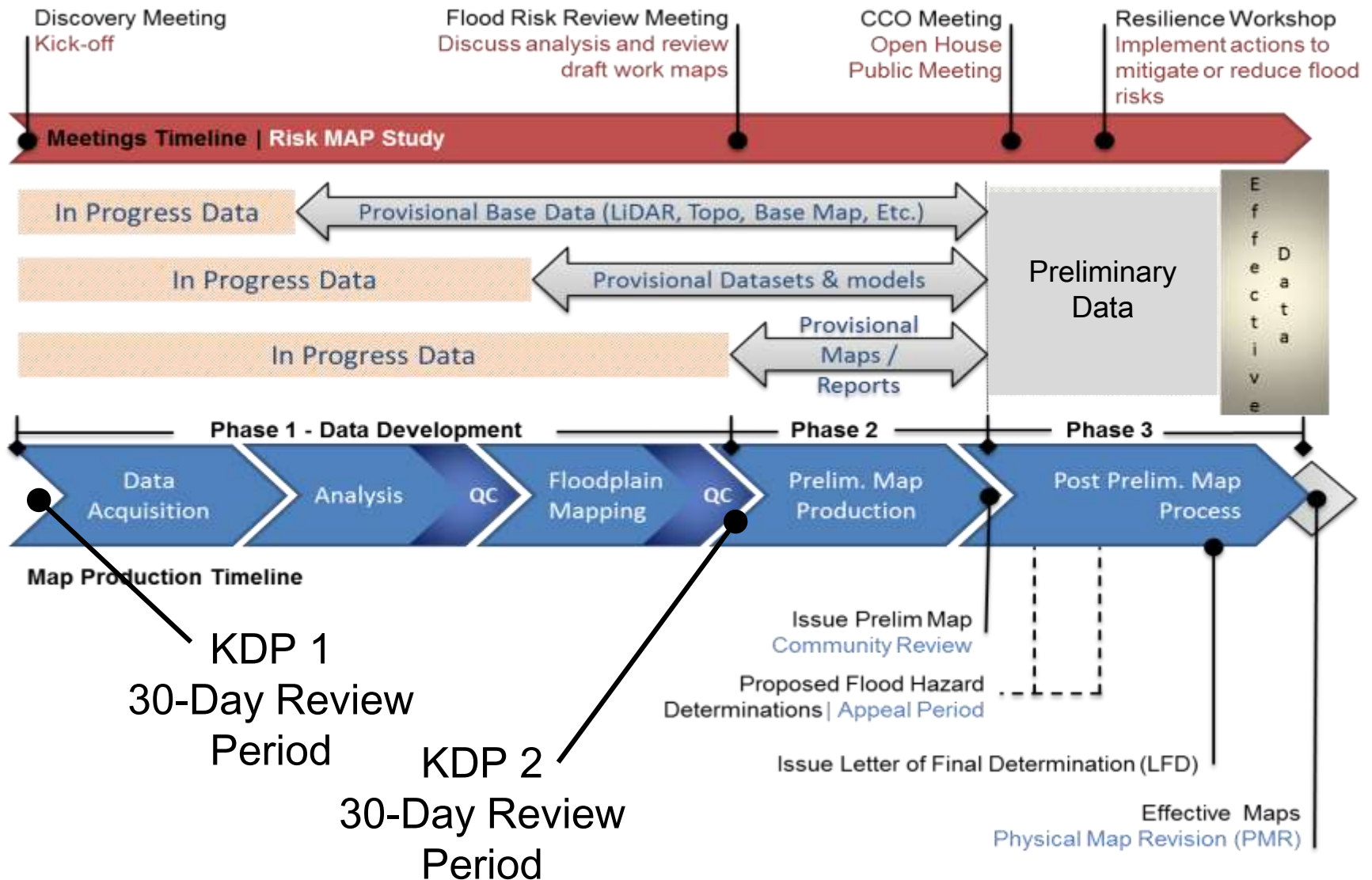
Standards for Flood Risk Analysis and Mapping - SID#621

SID #621 - Requires provision of draft data to community officials, 30-day response period, and incorporation of appropriate data provided by community.

Guidance Document Changes:

- *Guidance for Stakeholder Engagement: Data and Document Development Phase*; Revised to address the data submission notification to community officials
- Quality Review-added language regarding the 30-day review requirement prior to completion of QR1, and referenced reader to other guidance docs with more detail.
- *Key Decision Points & KDP Form 2* –added check as part of KDP 2 that confirms whether the 30-day review period has been provided to community

SID #	Effective Date	Implementation Description	Category	Standard Type	Standard
621	6/6/2016	Effective for all new work funded in FY16	Coordination	Program Standard	Prior to completion of Quality Review 1, FEMA shall transmit a copy of the draft FIRM database and other contributing data as requested to the affected community Chief Executive Officers and Floodplain Administrators, provide a 30-day period during which the affected communities may provide data to FEMA that can be used to supplement or modify the existing data, and incorporate any data that are consistent with prevailing engineering principles.



Additional information/Documentation

- CERC has prepared template letters
- Documents on Sharepoint



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Thank you for participating!

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