



KENAI RIVER FLOOD STUDY: FY19 KICK-OFF

Detailed Riverine Analysis

May 1, 2020



FEMA

WHY ARE WE HERE?

- Kenai Peninsula Borough participates in the National Flood Insurance Program (NFIP)
 - Cities of Soldotna and Kenai do not participate
- Kenai River Floodplain maps are not all updated
 - 1981: Original FIS and mapping
 - 1999: First revision included Big Eddy area
 - 2016: Third revision included Coastal Hazard Analysis

DisasterAssistance.gov
ACCESS TO DISASTER HELP AND RESOURCES

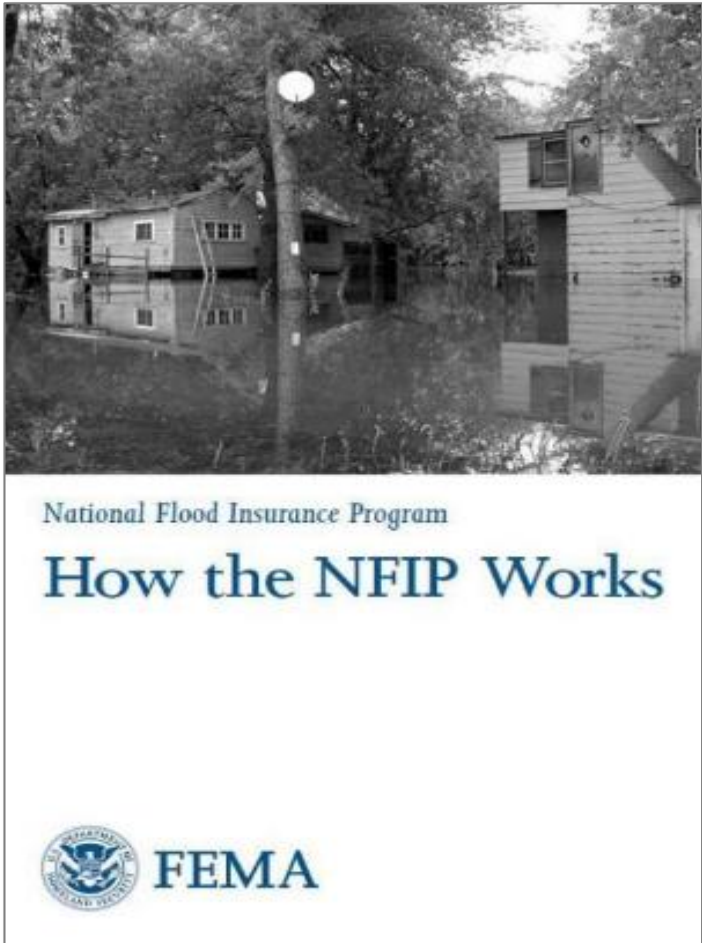


KICK-OFF MEETING OBJECTIVES

- ü Reach consensus on scoped areas and modeling approaches
- ü Discuss data collection and modeling completed to date – determine any additional data gaps
- ü Review Next Steps



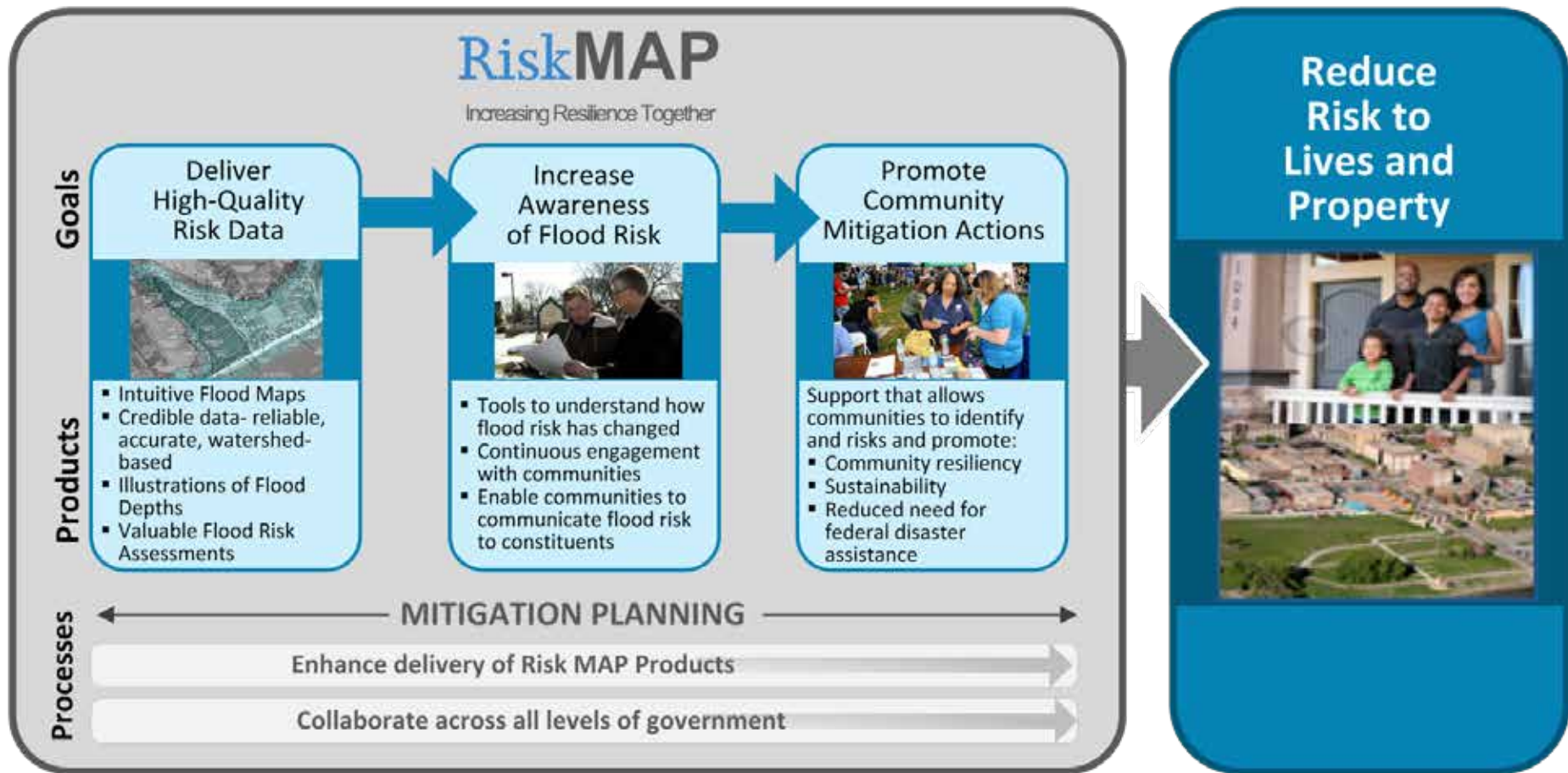
PURPOSE OF THE NFIP



Reduce Economic Loss Caused By Flood Events

- Maps the flood risk and assigns insurance rates
- Makes flood insurance available
- Sets minimum floodplain construction standards
- May reduce the dependency on structural flood control
- Promotes floodplain management practices increasing resilience

RISKMAP, THE NFIP AND HAZARD MITIGATION PLANNING



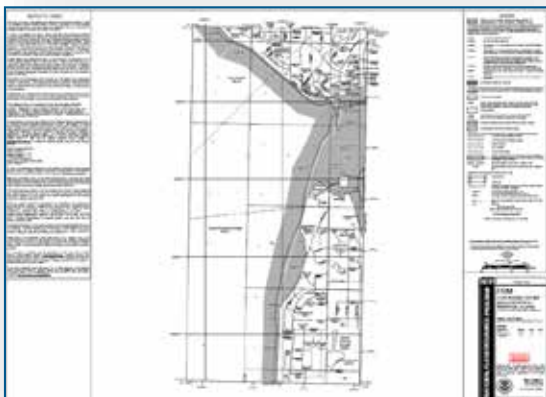
REGULATORY & RISK ASSESSMENT RISKMAP PRODUCTS

Regulatory Products

- Flood Insurance Study (FIS)



- Flood Insurance Rate Maps (FIRM)



Risk Assessment Products

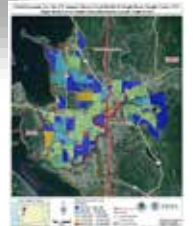
- Changes Since Last FIRM



- Flood Depth Grids



- HAZUS Risk Assessment



- Risk Report



- Risk Database



RISK MAP CYCLE

YOU
ARE
HERE

YEAR
1-2

- 1 DISCOVERY**
Gather local risk knowledge and identify future work



- 2 FLOOD RISK REVIEW MEETING**
Technical review of draft maps



DRAFT

YEAR
3-4

- 3 CCO MEETING**
Communicate risk and regulatory changes

PRELIM

- 4 PUBLIC MEETING**
Risk awareness open house



YEAR
5+

- 5 RESILIENCE MEETING & ACHIEVING RESULTS**

Resilience Meeting: Identify and review resilience strategies, and steps towards implementation

Achieving Resilience: Mitigate risk and increase local resilience to disasters



2019 SCOPE OF WORK

USACE – Alaska District

- 1-D detailed analysis for 47 miles, outlet of Skilak Lake to mouth of Kenai River
- Multi-frequency analysis (10%, 25%, 50%, 1% and 0.2%)
- Water surface elevation and depth grids
- 1-ft increment inundation (for gages)



STARR II

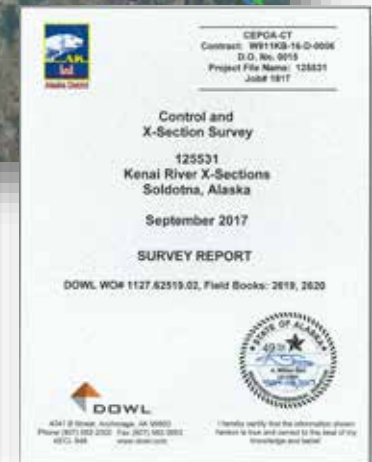
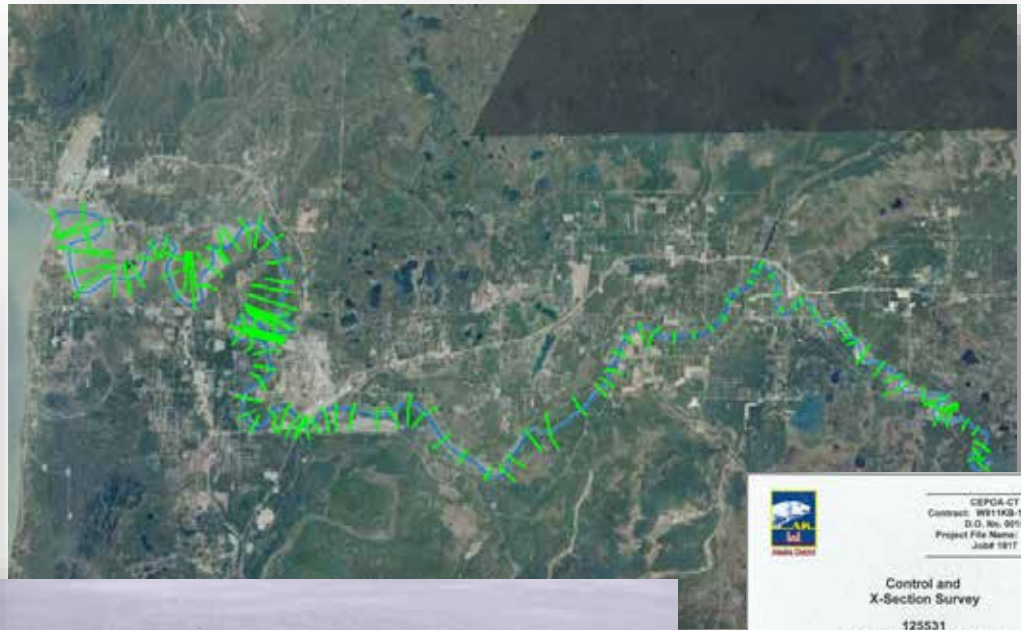
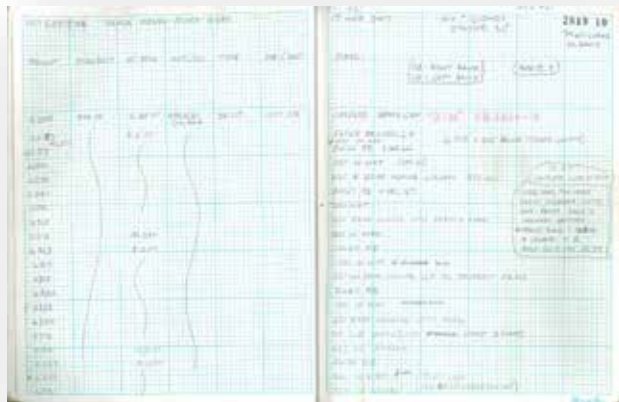
- Floodway modeling and mapping

- ü National Weather Service developed calibrated model with 1995 and 2012 flood events.

2017 RIVER SURVEY

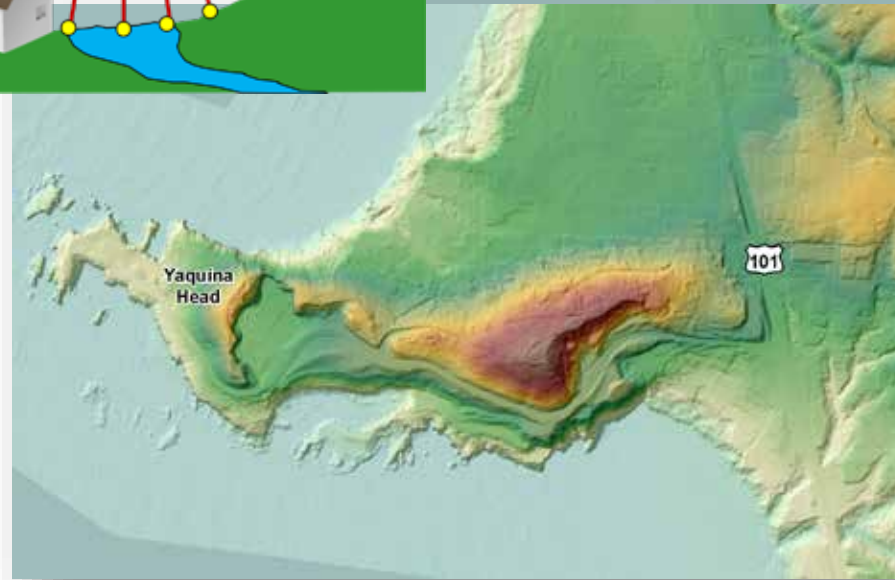
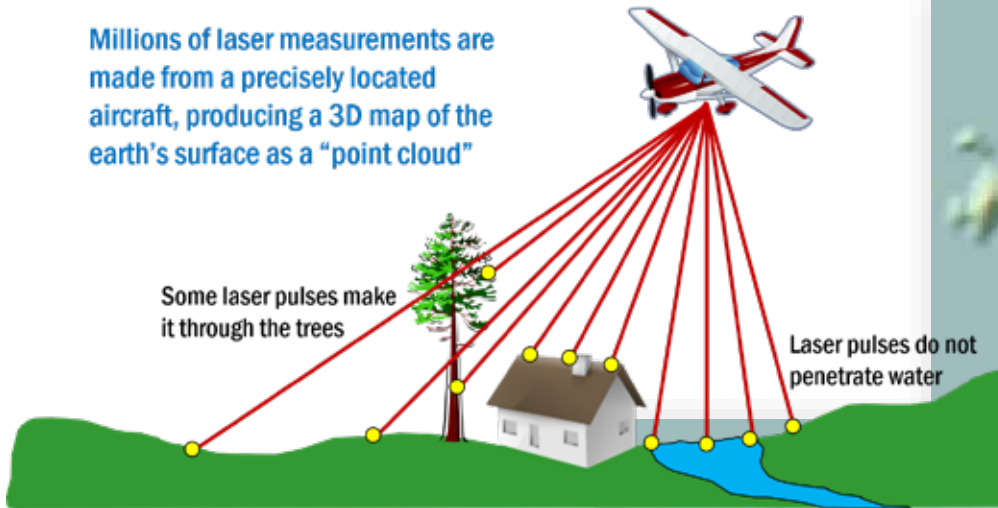
USACE – Alaska District & FEMA

- 113 Channel cross-sections
(via contract with DOWL)



LIDAR (LIGHT DETECTION AND RANGING)

Millions of laser measurements are made from a precisely located aircraft, producing a 3D map of the earth's surface as a "point cloud"

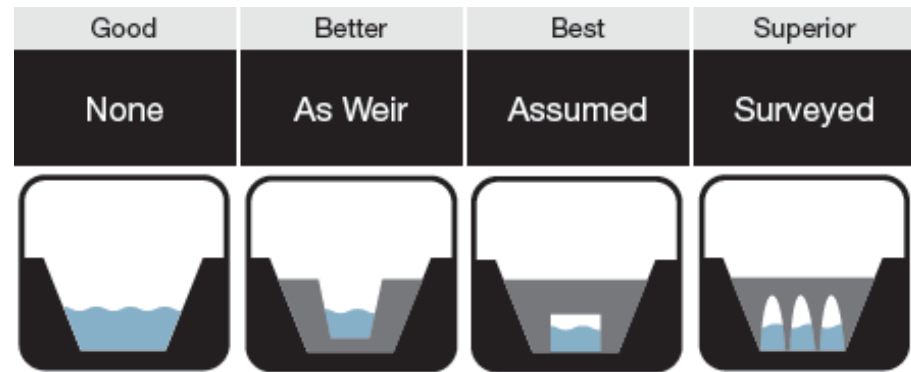
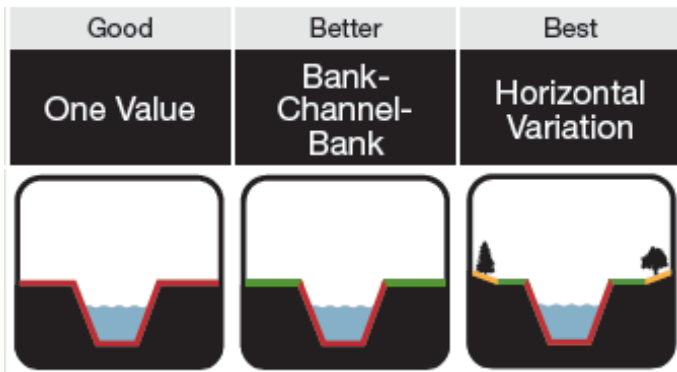


FEMA

RiskMAP
Increasing Resilience Together

HYDRAULIC METHODS

Methodology	Zone A	Zone AE
HEC-RAS Steady-State model	P	P
Banks modeled	P	P
Roughness based on land cover (Horizontal Variation)	P	P
Structures assumed (bridges, culverts)	P	P
Surveyed Bath. and Struct.		P
Calibrate to observed event (1996)		P
Floodway analysis		P



PROJECT MILESTONES

(Now Through Flood Study Review)

Task Name	Projected End Date*
Modeling Completed (including floodway analysis)	May 2021
Flood Risk Review Meeting	June 2021
Flood Risk Products	August 2021
Preliminary Maps	Spring 2022
CCO and Public Meeting	Summer 2022

Your Roles

- 1) Ask questions, provide comments and feedback by **June 5, 2020**.
- 2) Explore options to use completed work as best available data where appropriate.
- 3) Share any information on potential LOMRs or CLOMRs as well as any additional available data.
- 4) Expect to see model notification letters and that formally describe the study area and modeling approach in the coming months
- 5) Look for a Partnership Agreement for your review.

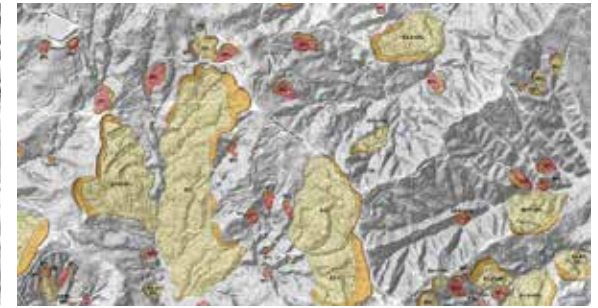
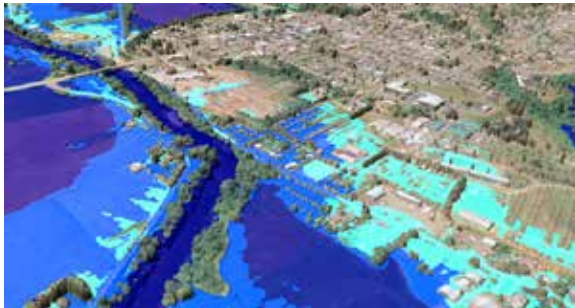
BENEFITS AND USES OF COMPLETED ANALYSIS

- Supplement regulatory products (FIRM/FIS)
- Best available information for BFE determinations for development and Letter of Map Amendments. Possibly Letters of Map Revision.
- Can be used for planning efforts – emergency, mitigation, preparedness, land use, and capital improvements
- Provide data to inform Hazard Mitigation Plans
- Models are intended to be upgradable or enhanced. No need to start from scratch.



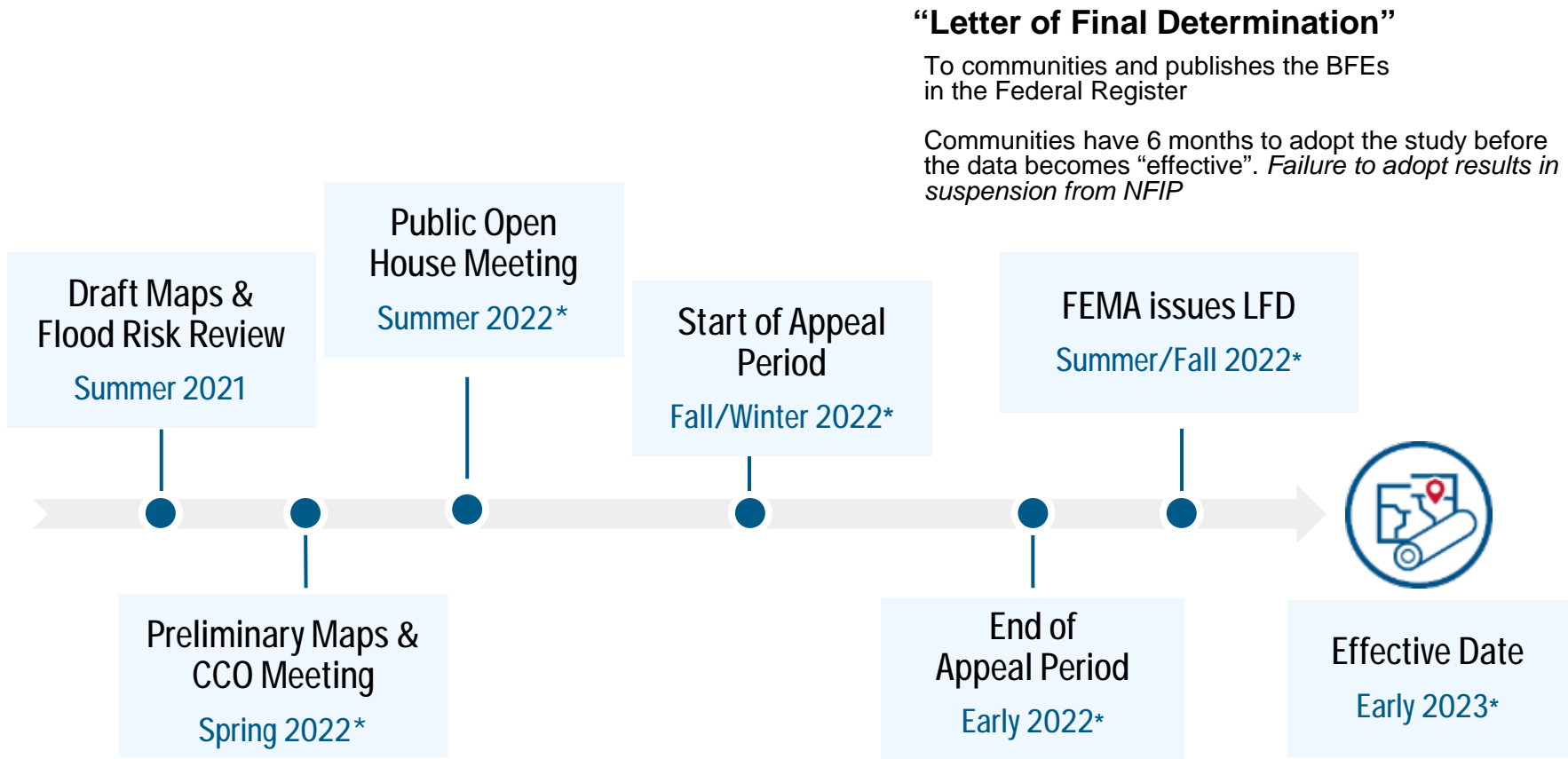
NON-REGULATORY PRODUCTS

- Flood Depth Grids
- Water Surface Elevation (WSE) Grids
- Multi-Hazard Risk Assessments
 - Loss estimation and hazard exposure analysis
 - Based on hazard data (e.g. flood, earthquake, liquefaction, landslide, wildfire) combined with local datasets
- Risk Report & Geodatabase
- “Scenario-based” Assessments
- GIS Visualization (e.g. Story Maps)
- Outreach and Education Tools



- ü Provide data to inform Hazard Mitigation Plans and projects
- ü Help guide land use and development plans
- ü Inform incident response plans
- ü Help support community engagement, training, and outreach activities

TIMELINE



* All projected dates are subject to revision as the project progresses.

Risk MAP Team

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Partners

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