FEMA

Discovery Meeting

Piscataqua-Salmon Falls Watershed (partial)

December 3, 2015 – Lee, NH (AM)
December 3, 2015 – Rochester, NH (PM)

RiskMAP
Increasing Resilience Together

Introductions

- **Risk MAP Project Team**
- **Community partners and officials**
- **State of New Hampshire partners and officials**
- **Other federal agency partner representatives**
- **Associations**
- **Others**

Agenda

- **Why We're Here**
- **Risk MAP Program Overview**
- **Discovery Overview & Discussion**
- **Flood Risk Assessment Products Overview**
- **Communities in Study Area**
- **Mitigation Planning and Communication**
- **Questions to Consider**
- **Next Steps**

Why We're Here

- **Start a dialogue about your flood risk**
- **Understand your needs and priorities**
- **Communicate available resources**
- **Offer partnerships and answer questions**
- **Give you a complete, current picture of your flood hazards and risks to help you better:**
  - Plan for the risk
  - Take action to protect your communities
  - Communicate the risk to your citizens

Risk MAP Program Overview

- **Risk MAP**
  - Mapping – Flood hazard and risk identification
  - Assessment – HAZUS and other risk assessment tools
  - Planning – Hazard mitigation planning and HMA grants

- **Risk MAP Vision**
  - Deliver quality data
  - Increase public awareness of flood risk
  - Encourage local/regional actions that reduce risk

RiskMAP

Increasing Resilience Together

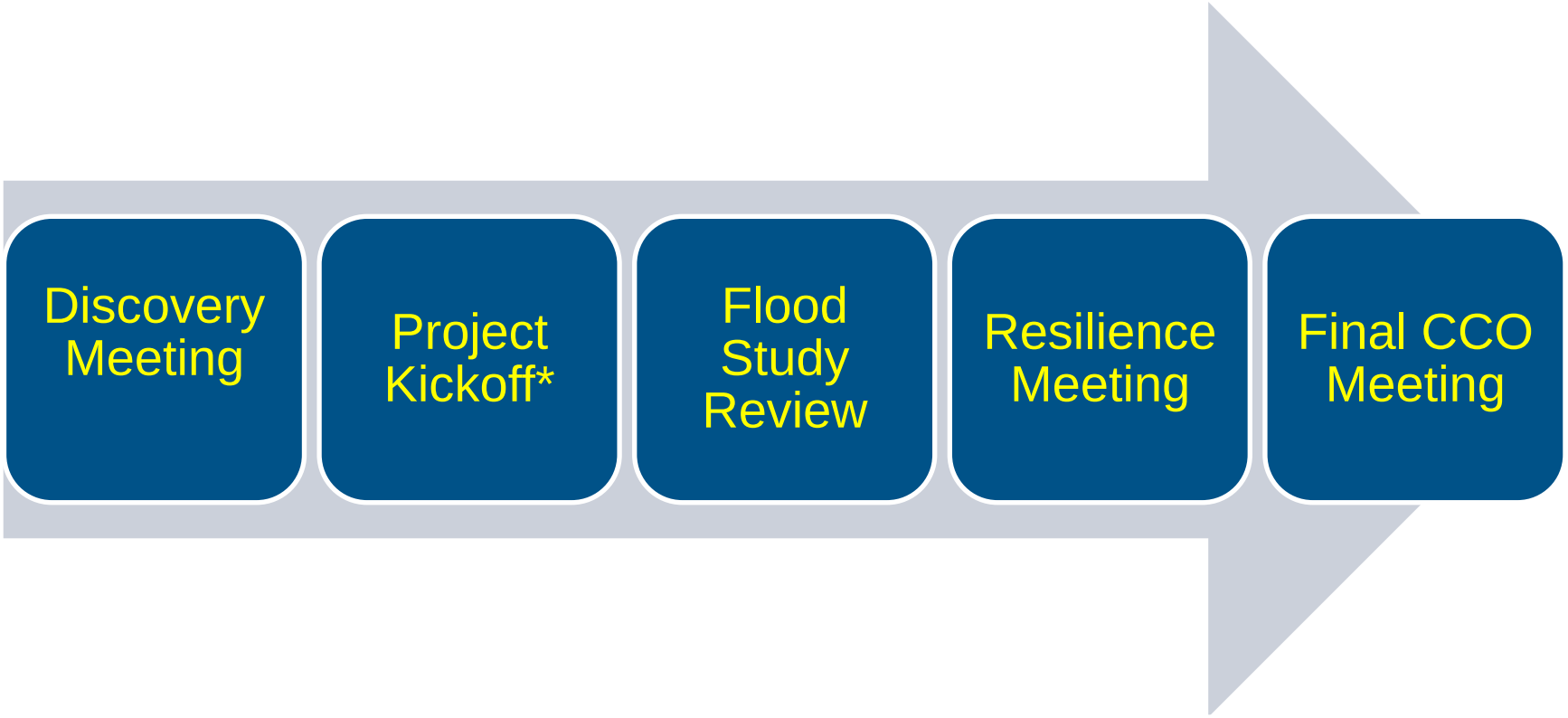
Discovery Overview

Discovery is the process of data mining, collection, and analysis with the goal of conducting a comprehensive watershed study and initiating communication and mitigation planning discussions with the communities in the watershed.

Occurs prior to…

- **Flood studies**
- **Flood risk assessments**
- **Mitigation planning technical assistance projects**

Risk MAP Project Timeline



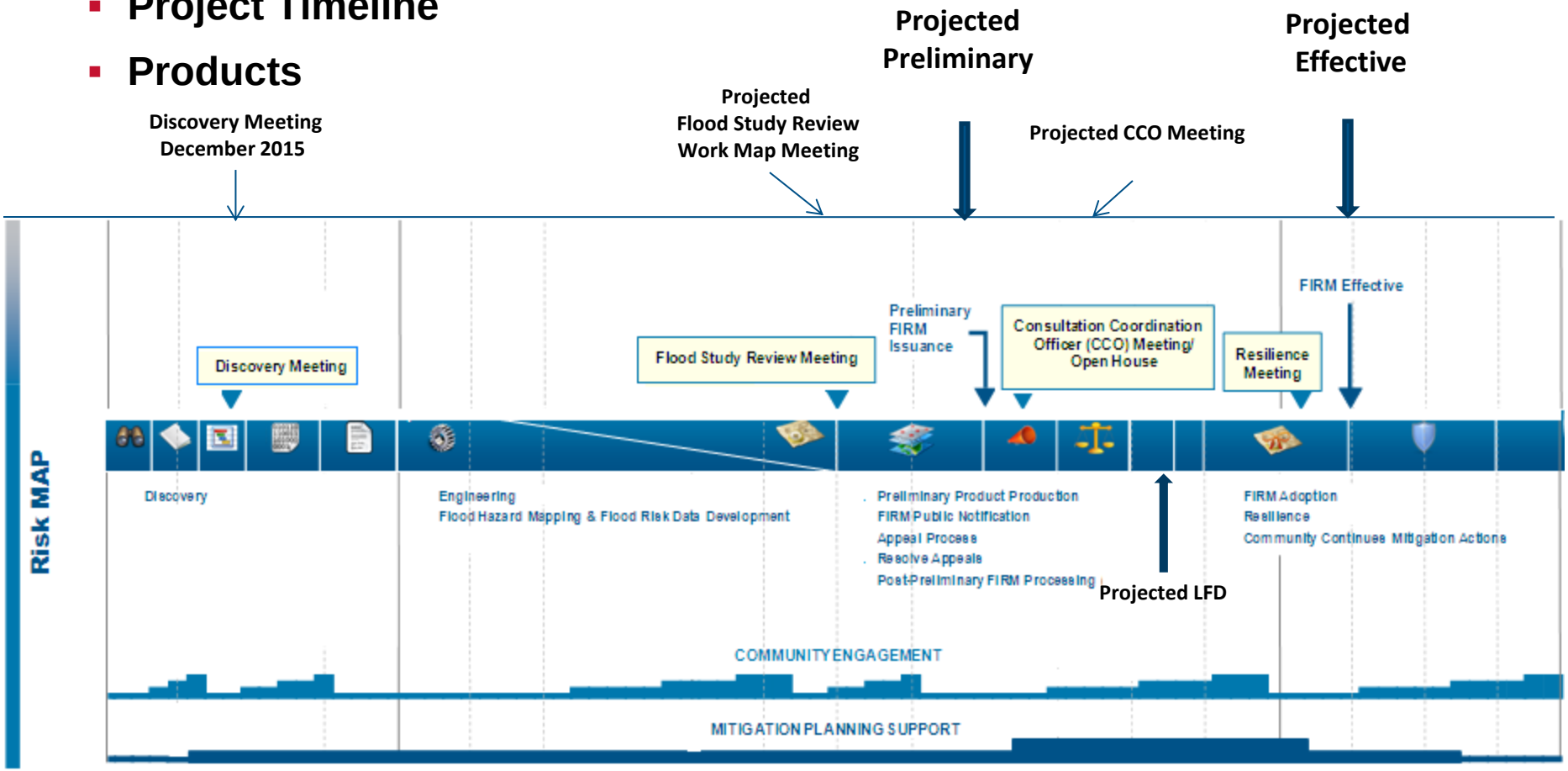
3-5 Year Process

*Kickoff and subsequent steps will only occur if a Risk MAP project is conducted.

Piscataqua-Salmon Falls Watershed Timeline

Use this or previous slide

- **Activities**
- **Project Timeline**
- **Products**



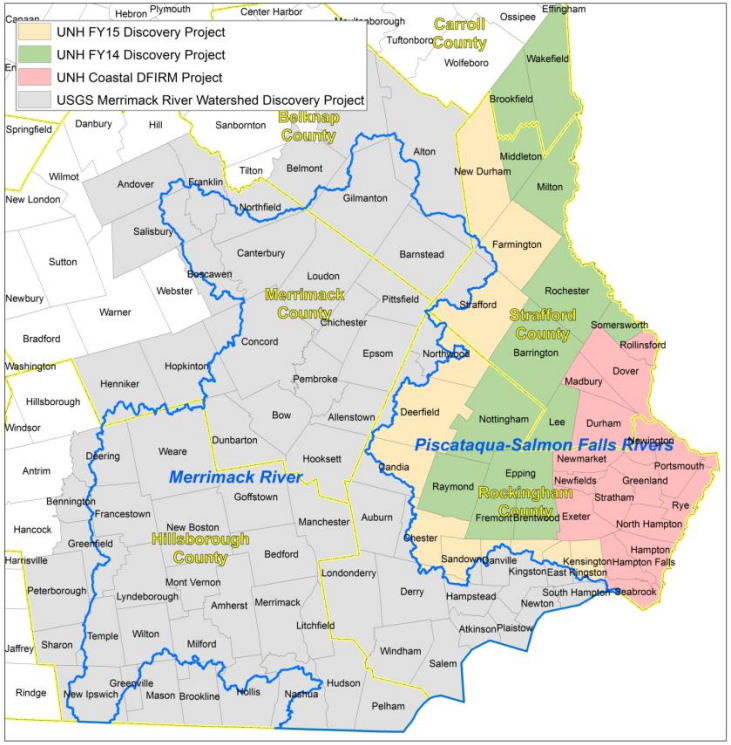
Involvement from Communities

- **Four meetings during the study when involvement from communities is needed:**
  - ***Discovery meeting***
  - ***Work Map meeting***
  - ***Community Coordination & Outreach (CCO) meeting***
  - ***Open House/Resiliency meeting***

Watershed Communities

- **Entire Piscataqua-Salmon Falls Watershed contains or touches 48 communities in 5 counties**

- **<u>Project study area</u> (in green) contains or touches:**
  - **3 counties in NH**
    - **2 communities in Carroll County, 5 communities in Rockingham County, 4 communities in Strafford County**
  - **590 total stream miles**
  - **Approximately 96,698 residents (2010 Census)**



Major Rivers/Streams

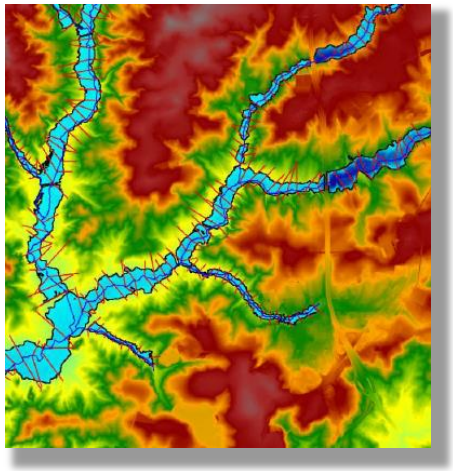
- **Salmon Falls River**
- **Branch River**
- **Cocheco River**
- **Isinglass River**
- **North River**
- **Lamprey River**
- **Exeter River**
- **Other smaller rivers and tributaries**

Need for Updates

- **Known discrepancies in current FISs**
- **Additional problems**
  - Out-of-date hydrology
    - Re-calculation of 10-, 50-, 100-, and 500-year peakflow annual exceedance probabilities (AEPs) needed, due to additional 35+ years of streamflow data and recent large events
  - Clusters of Letters of Map Change (LOMCs) indicating inaccuracies in the effective floodplains
  - First Order Approximation (FOA) indicates that many effective A Zones may be inaccurately mapped and/or may be based on outdated engineering

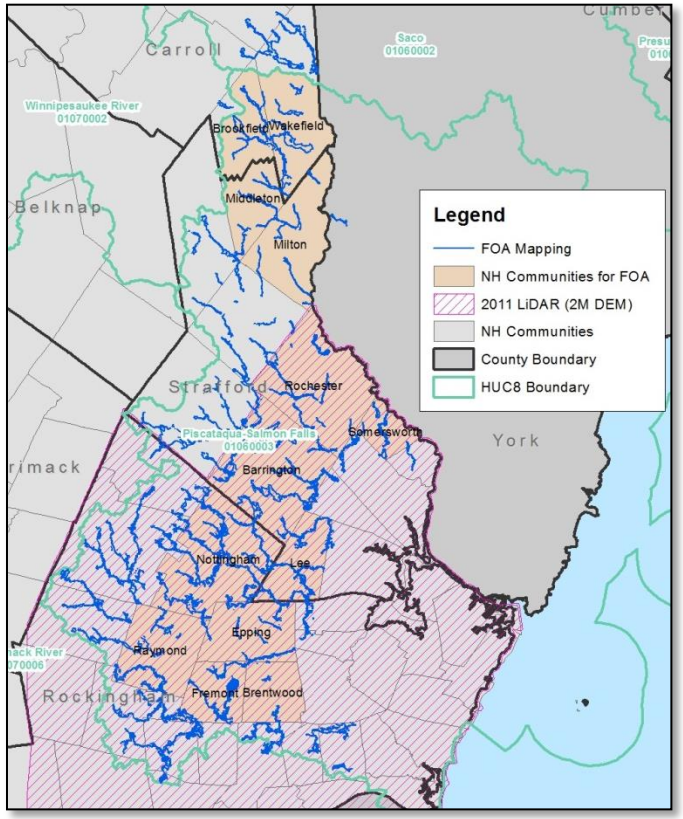
First Order Approximation (FOA)

- **What is it?**
  - Automated process using best available data to model and map estimates of flood hazard boundaries for multiple recurrence intervals.
- **What's it used for?**
  - Helps in illustrating potential changes in flood elevation and mapping that may result from a proposed project scope.
  - Assessing/validating the effective mapped inventory of Zone A flood boundaries
  - Can be leveraged for eventual production of regulatory products.
  - Provides additional value to other program areas (non-regulatory products, outreach and risk communication, best available data in unmapped areas, LOMA processing for Zone A's, etc.).



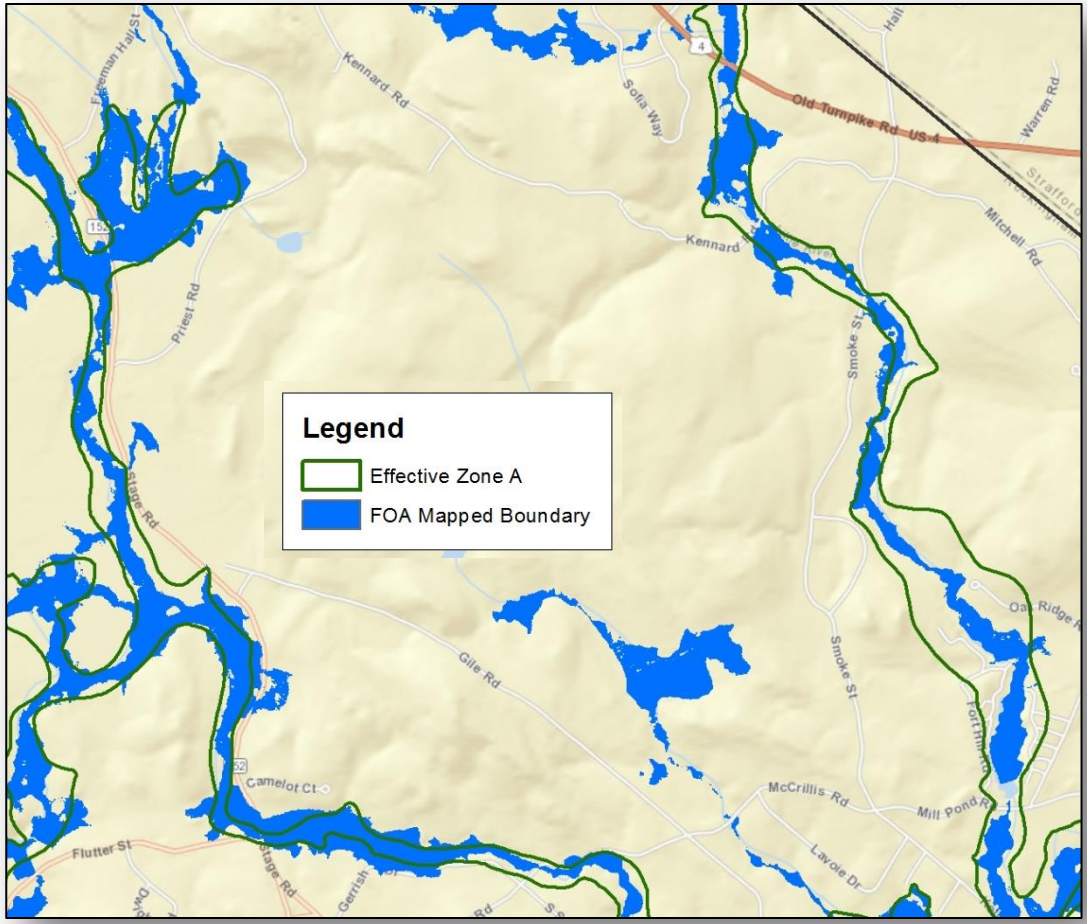
Piscataqua-Salmon Falls Watershed FOA

- **Source Topography:**
  - 2-meter resolution Digital Elevation Model (DEM) from 2011 LiDAR
  - 10-meter USGS National Elevation Dataset (NED) used for Carroll and Strafford County communities (Brookfield, Wakefield, Middleton, Milton)
- **Hydrology:**
  - USGS Regression equation (2009 New Hampshire SIR 2008-5206)
  - Gage analysis where stream gages with sufficient records exist (Oyster River)
- **Hydraulics:**
  - Automated cross section layout, manual inspection/modification
- **Mapped boundaries for 1% annual-chance-storm event**
- **Calculated discharges for the 10%-, 4%, 2%-, 1%-, 0.2%-, 1% plus, and 1% minus annual chance storm events**



FOA Results

- **104 modeled streams in study area**
- **Comparison of effective Zone A boundaries to FOA % annual-chance-storm event boundaries**
  - Inputs: +/-1% flood profiles from FOA, effective boundaries, source topography, horizontal and vertical tolerances
  - Only 47% pass comparison test (>85% needed to validate effective Zone A boundaries)
- **Conclusion: effective Zone A boundaries in study area are not adequately representing flood risk**
- **CNMS database updated: effective Zone A studies classified as "Unverified – To Be Studied"**



Priority Stream Reaches

- **One goal of Discovery:** Coordinate with all watershed stakeholders to select highest-priority reaches for redelineation and/or detailed study
- **Priority list then used to set scope of revision**
  - **Communities having DFIRM panels revised**
  - **Communities not having DFIRM panels revised**
- **Watershed areas done by other recent studies**

Project Discovery Report/Map

- **Select priority reaches based on analysis of :**
  - **C**oordinated **N**eeds **M**anagement **S**trategy (CNMS)
  - **L**etter **o**f **M**ap **C**hanges (LOMCs)
  - Hydrology comparisons
  - HWM comparisons
  - **F**irst **O**rder **A**pproximation (FOA)
  - State **N**ational **F**lood **I**nsurance **P**rogram (NFIP) Coordinator's annual report
  - NFIP claims
- **FOA Report**
  - Will be available soon
- **STAKEHOLDER INPUT NEEDED! Please tell us your mapping needs.**
  - **Community questionnaire – *please fill out - if you have not already done so***
  - Breakout session today

Best Available Data

- **LiDAR (Light Detection And Ranging) elevation data – available for most of study area**
- **U.S. Geological Survey (USGS) regional regression equations for estimating peakflows for selected annual exceedance probabilities - 2008**
- **Existing Digital Flood Insurance Rate Maps (DFIRMs)**
  - Carroll County - effective March, 2013
  - Rockingham County - effective May, 2005
  - Strafford County - effective September, 3015

Data Request

- **Names, titles, roles, addresses, emails, and numbers of community officials involved in NFIP program, floodplain management, etc.**
- **Desired study reaches**
- **Existing data studies**
- **Available funding or data to contribute to a potential study**
- **Areas of Mitigation Interest**
- **Existing, proposed, or altered dams and levees**
- **Past mitigation successes, future mitigation goals**
- **Environmentally sensitive areas**
- **Community-level flood hazard, risk, or general GIS data**
- **Outreach or training methods, goals, and needs**

See questionnaire, and/or provide information whenever possible

Level of Study

- **Coastal Zones AE and VE not relevant for this study**
- **Riverine Zone AE (Detail Study)**
- **Riverine Zone AE (Limited Detail Study)**
- **Riverine Zone A (Approximate Study)**
- **Redelineation (Zone AE or Zone A)**

Level of Study

ZONE AE: Detailed Study

- **Most detailed and most expensive study**
- **Structures and cross-sections are field surveyed**
- **Streamgage data or regression equations used for hydrology and HEC-RAS modeling used for hydraulics**
- **Floodway Data Table and Flood Profiles included in Flood Insurance Study (FIS)**
- **Mapped:**
  - BFEs – Appeal Eligible
  - Cross Sections
  - Floodway
  - 1% annual exceedance probability(100-yr flood) floodplain
  - 0.2% annual exceedance probability (500-yr flood) floodplain

Level of Study

ZONE AE: Limited Detail Study

- **Hydrologic and hydraulic modeling analysis based on new terrain data**
- **Streamgage data or regression equations for hydrology and HEC-RAS modeling used for hydraulics**
- **Basic field survey**
- **Cross-section values derived from new Light Detection And Ranging (lidar) terrain data**
- **Mapped: approximate delineation and Base Flood Elevations (BFE) for the 1% annual exceedance probability (100-yr flood) event (appeal-eligible)**

Level of Study

ZONE A: Approximate Study

- **Hydrologic and hydraulic modeling analysis based on new terrain data**
- **Streamgage data or regression equations used for hydrology and HEC-RAS modeling used for hydraulics**
- **No field survey**
- **Cross-section values derived from new lidar terrain data**
- **Mapped: approximate delineation for the 1% annual exceedance probability (100-yr flood) event (appeal-eligible)**
- **No BFEs**

Level of Study

ZONE A: First Order Approximation

- **Hydrologic and hydraulic modeling analysis based on new terrain data**
- **Streamgage data or regression equations used for hydrology and HEC-RAS modeling used for hydraulics**
- **No field survey**
- **Cross-section values derived from new lidar terrain data**
- **Mapped: approximate delineation for the 1% annual chance event, no BFEs**
- **Also available: delineations and analysis grids for 0.2%, 2%, 4%, 10%, and 1% +/- annual chance events**

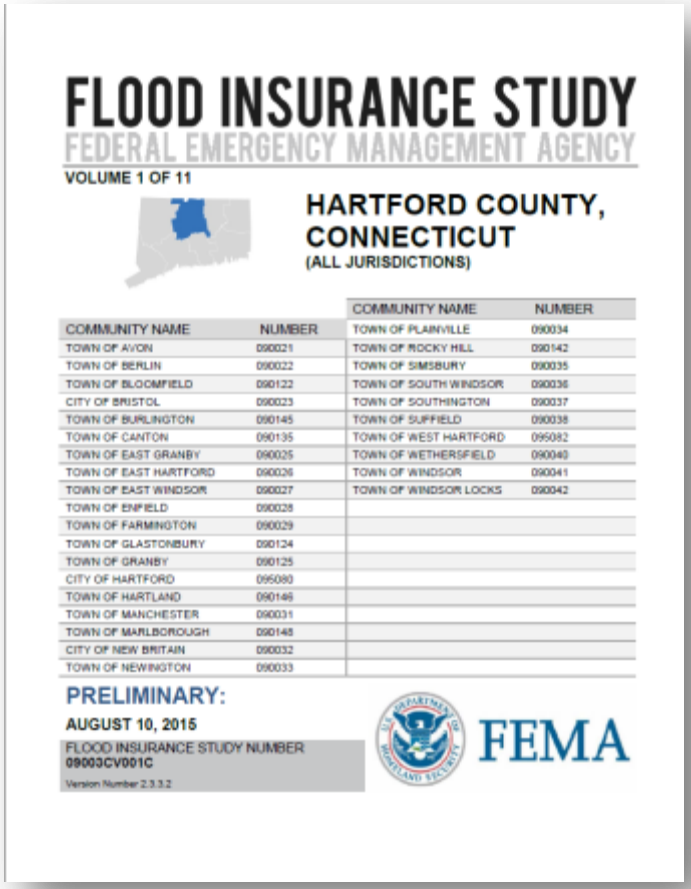
Level of Study

Redelineation

- **No new engineering analysis**
- **Acceptable when effective Base Flood Elevations (BFEs) are considered accurate**
- **Effective model data are transferred to new LiDAR terrain data to create new floodplain delineations for FIRMs**
- **Flood Insurance Study (FIS) data: Same as effective study**

Digital Flood Insurance Rate Maps / Flood Insurance Study

FIS Reports and DFIRM Maps will continue to fulfill regulatory requirements and support the NFIP



FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 11

HARTFORD COUNTY, CONNECTICUT

(ALL JURISDICTIONS)

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
TOWN OF AVON	090021	TOWN OF PLAINVILLE	090034
TOWN OF BERLIN	090022	TOWN OF ROCKY HILL	090142
TOWN OF BLOOMFIELD	090122	TOWN OF SIMSBURY	090035
CITY OF BRISTOL	090023	TOWN OF SOUTH WINDSOR	090036
TOWN OF BURLINGTON	090145	TOWN OF SOUTHINGTON	090037
TOWN OF CANTON	090135	TOWN OF SUFFIELD	090038
TOWN OF EAST GRANBY	090025	TOWN OF WEST HARTFORD	095082
TOWN OF EAST HARTFORD	090026	TOWN OF WETHERSFIELD	090040
TOWN OF EAST WINDSOR	090027	TOWN OF WINDSOR	090041
TOWN OF ENFIELD	090028	TOWN OF WINDSOR LOCKS	090042
TOWN OF FARMINGTON	090029		
TOWN OF GLASTONBURY	090124		
TOWN OF GRANBY	090125		
CITY OF HARTFORD	095080		
TOWN OF HARTLAND	090146		
TOWN OF MANCHESTER	090031		
TOWN OF MARLBOROUGH	090148		
CITY OF NEW BRITAIN	090032		
TOWN OF NEWINGTON	090033		

PRELIMINARY:

AUGUST 10, 2015

FLOOD INSURANCE STUDY NUMBER
09003CV001C

Version Number 2.3.3.2

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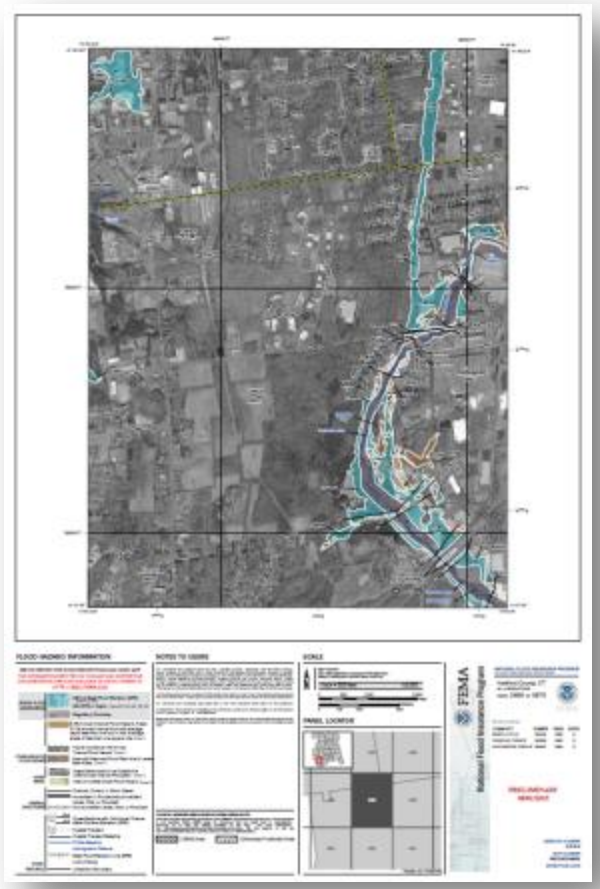
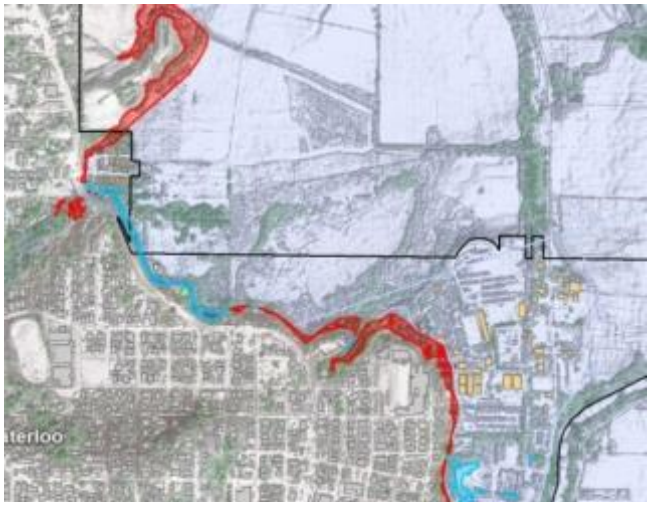


Flood Risk Products

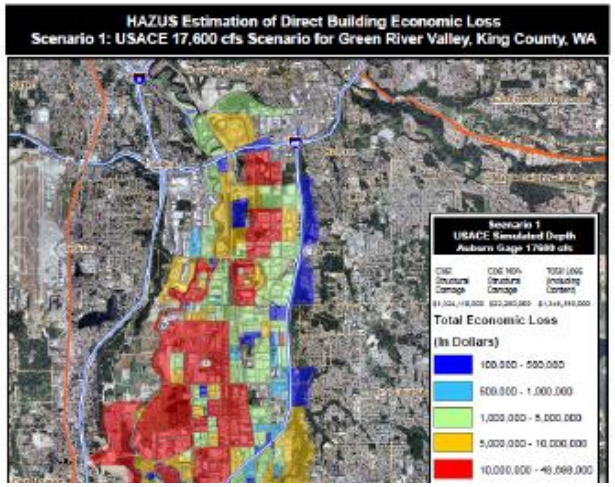
Changes Since Last Map

- Shows areas of change
- Improved outreach



HAZUS Risk Assessment & National Flood Risk Layer

Enables communities to understand risk by reference to existing structure loss



FEMA

Quinebaug Watershed
Flood Risk Report

Watershed
Flood Risk Report

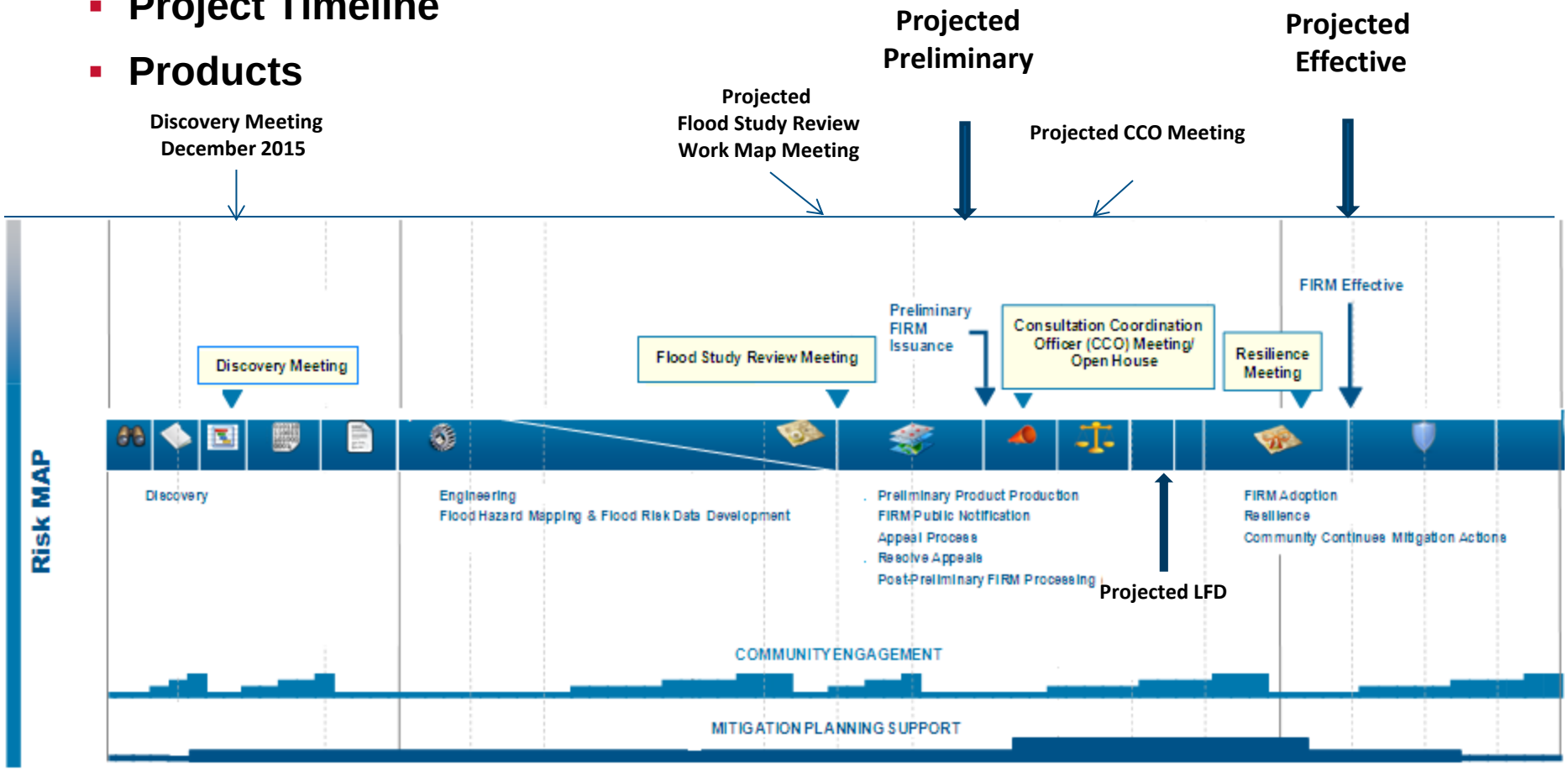
- **Changes Since Last Map**
- **HAZUS Risk Assessment**

RiskMAP
Increasing Resilience Together

FEMA

Piscataqua-Salmon Falls Watershed Timeline

- **Activities**
- **Project Timeline**
- **Products**



Discover the Watershed Communities

Understand local interest, issues, capabilities of communities

- Status of Mitigation Plans
- Communication desire, skills, resources
- Interest in and resources for mitigation
- Experience with flood disasters and recovery
- Floodplain administration
- Mitigation support needs and interests

Hazard Mitigation Plan Status

County	Community	Status	Date Approved
Carroll	Brookfield	Approved	9/10/2014
	Wakefield	Approved	4/28/2011
Rockingham	Brentwood	Approved	8/17/2015
	Epping	Approved	12/20/2013
	Fremont	Expired	7/8/2010
	Nottingham	Approved	11/29/2012
	Raymond	Approvable Pending Adoption	7/1/2009
Strafford	Barrington	Approved	8/30/2011
	Lee	Approved	9/9/2013
	Middleton	Approved	11/29/2012
	Milton	Approved	11/29/2012
	Rochester	Approved	3/29/2013
	Somersworth	Approved	2/3/2011

Please see handout

Discover FEMA Programs

Need text from John/FEMA for Building Science bullet

Flood Mitigation Assistance – annual funding to reduce risk to NFIP-insured structures

Hazard Mitigation Grant Program – declared disaster funding for long-term hazard mitigation measures

Pre-Disaster Mitigation Program – annual funding for hazard mitigation planning and implementation

Community Rating System – proactive communities receive insurance discounts for residents

National Dam Safety Program – dam safety standards

Building Science -

Communication

- **Communication, data sharing, and feedback**
- **Role of each community in keeping their communities informed of**
  - Their flood risk
  - Steps they can take to protect themselves and their property
  - Study progress
- **Communication tools available to help communities communicate about risk and projects**

Community Outreach Plan Template

COMMUNITY LETTERHEAD

COMMUNICATIONS PLAN OBJECTIVES

To support the communications goal, this section of the Plan will describe up to five objective statements to which measures can be applied to evaluate whether the objective is met. In addition, all communications activities (tools/tactics) undertaken by the community need to accomplish one or more of the objectives defined in this section. It is recommended that no outreach activities are conducted that do not meet at least one of the Plan objectives.

The following are example objective statements:

- Increase understanding of flood risk by 50 percent among homeowners in high-risk flood areas.
- Increase awareness of flood risk by 30 percent among insurance agents in **[Community Name].**
- Ensure that all information sent to target audiences contains at least one key message about flood risk.

The following are the community's objective statements for this Plan:

1. _____
2. _____
3. _____
4. _____
5. _____

Community Outreach Plan Template

KEY MESSAGES

Provided in this section of the Plan are the primary and secondary key messages that the community will convey in all information products about flood risk and the Risk MAP project. Primary messages convey broader, less detailed information, and secondary messages include more detailed information in support of the primary message. *[Appendix B provides a list of key messages for consideration.]*

The following is an example of a primary message and supporting secondary messages:

The new maps that result from our Risk MAP project will help us better understand which parts of our community are at a greater risk of flooding.

- The new maps were prepared using information from storms and flood events that happened since the previous flood risk maps were developed.
- The high-risk flood areas on the new maps are an *indication* of where flooding will occur.
- Flooding can occur outside of these high risk zones, depending on the unique characteristics of a storm or flood event.

Each Risk MAP information product that a community prepares should include at least one of the key messages described below.

The following are the community's primary and secondary messages for this Plan:

Points of Contact
Piscataqua-Salmon Falls Watershed

Dick – do you want to be listed here?

- **NH State Contacts**
  - Jennifer Gilbert, NFIP Coordinator, NH Office of Energy and Planning

    jennifer.Gilbert@nh.gov
  - Elizabeth Peck, State Hazard Mitigation Program Officer, NH Homeland Security & Emergency Management

    elizabeth.peck@dos.nh.gov,

- **University of New Hampshire Contacts**
  - Fay Rubin, Project Director, UNH

    fay.rubin@unh.edu
  - Chris Phaneuf, GIS Specialist, UNH

    chris.phaneuf@unh.edu

- **FEMA Contacts**
  - John Grace, Project Manager and Coastal Engineer, FEMA Region I

    john.grace@fema.dhs.gov
  - Marilyn Hilliard, Risk Analysis Branch Chief, Mitigation Division, FEMA Region I

    marilyn.hilliard@fema.dhs.gov
  - Karl Anderson, Floodplain Management & Insurance Branch, FEMA Region I

    karl.anderson@fema.dhs.gov

- **FEMA Regional Service Center**
  - Alex Sirotek, RSC Lead, Compass PTS

    sirotekar@cdmsmith.com

General Points of Contact

- **For general FEMA mapping and Letter of Map Change (LOMC) questions contact FEMA's Map Information Exchange (FMIX): 1-877-FEMA MAP (1-877-336-2627) or email a Map Specialist: FEMAMapSpecialist@riskmapcds.com**

- **Map Service Center (MSC): where you can view effective maps online for free http://www.msc.fema.gov/**

- **To learn more about the National Flood Insurance Program (NFIP): http://www.floodsmart.gov/floodsmart/ or call 1-888-379-9531**

Optional Breakout Session

Community -specific questions on:

- **Study Areas**
- **Data Availability on a Community and Watershed Basis**

QUESTIONS??

Data Request

- **Names, titles, roles, addresses, emails, and numbers of community officials involved in NFIP program, floodplain management, etc.**
- **Desired study reaches**
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