FEMA

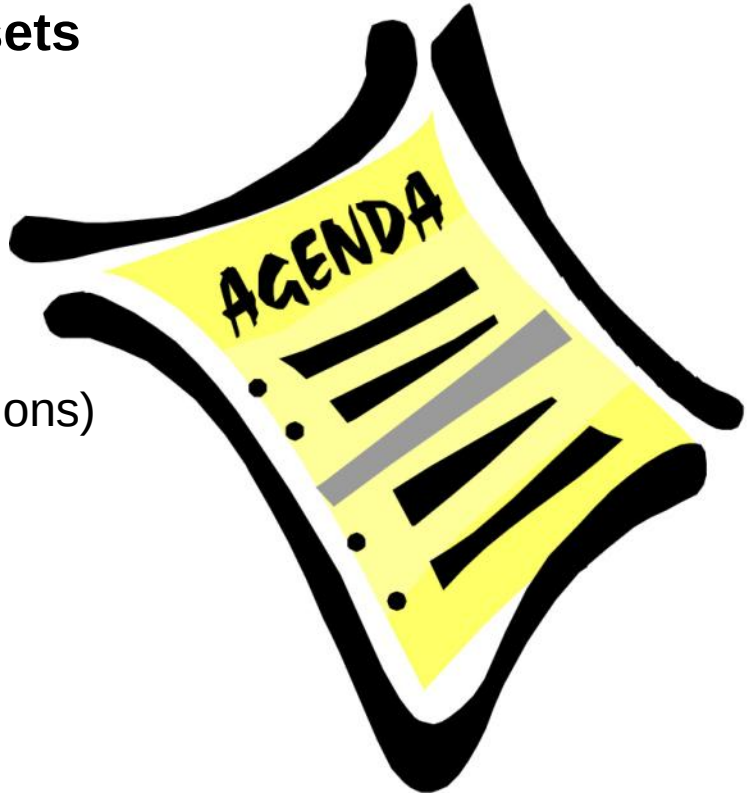
Discovery Meeting:
Southwest Florida Coastal Surge Study

Charlotte/DeSoto Counties, Florida
March 5, 2013

RiskMAP
Increasing Resilience Together

Agenda

- **Introductions**
- **Why we are here**
- **Outline Risk MAP products and datasets**
- **Discovery Overview:**
  - Project scoping and schedule
  - Data gathered
  - Areas of Mitigation Interest
  - Your Discovery Maps (with transect locations)
  - Activities that affect flood risk
  - Mitigation planning role and status
  - Importance of communication
- **Our Next Steps**
- **Meet to gather input**



Introductions – The Team

- **Risk MAP Project Team**
  - FEMA Region IV
  - Florida Division of Emergency Management (FDEM)
  - Southwest Florida Water Management District (SWFWMD)
  - RAMPP staff (supporting contractor)

Introductions – The Audience

- **Please ask your neighbor the following questions:**
  - What is your name?
  - Who do you work with?
  - What is your job?
  - Why are you here – what do you want to get out of this meeting?
  - Did you attend the February 4th Kickoff?
  - What is your favorite hobby?
- **Then take 1 minute to share what you learned about your neighbor with everyone**

Why Southwest Florida Coastal

- **Charlotte:**
  - Effective coastal study: 1976. Used U.S. Department of Commerce's Special Program to List Amplitudes of Surges from Hurricanes (SPLASH) model
  - Revised coastal analysis and wave heights in 2000
  - 30 transects total
- **DeSoto:**
  - No coastal analyses have been performed
  - Revised countywide study effective in 2013
  - 0 transects total

Why We Are Here

- **Your flood risk changes over time**
- **We chose your counties to review due to risk and significant development in the area**
  - Significant flood risk from coastal storms (hurricanes and tropical storms)
  - Increase in population and development since effective coastal FIRMs were published
- **A complete, current picture of your flood hazards and risks will help you better:**
  - Plan for the risk
  - Take action to protect your communities
  - Communicate the risk to your citizens

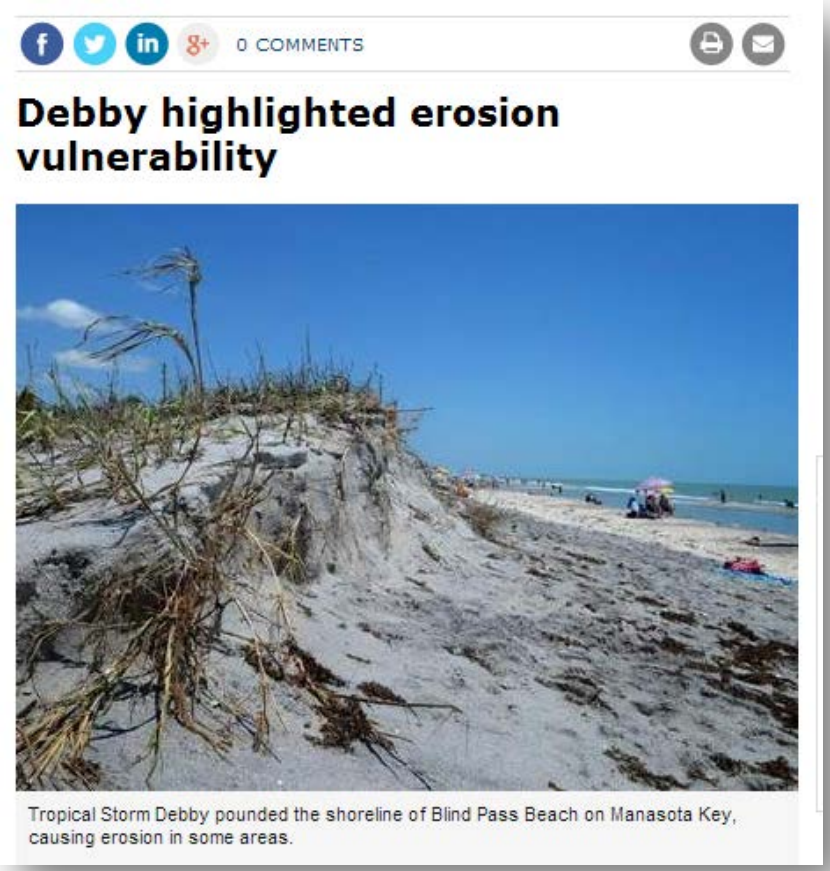
Why We Are Here – Different Project, Different Results

Florida Division of Emergency Management Evacuation Study

- 2010 study to map inundation levels for evacuation planning

- Project area includes all of Florida coast
- Base data includes recent LiDAR data
- Uses SLOSH model

Why We Are Here – Different Project, Different Results

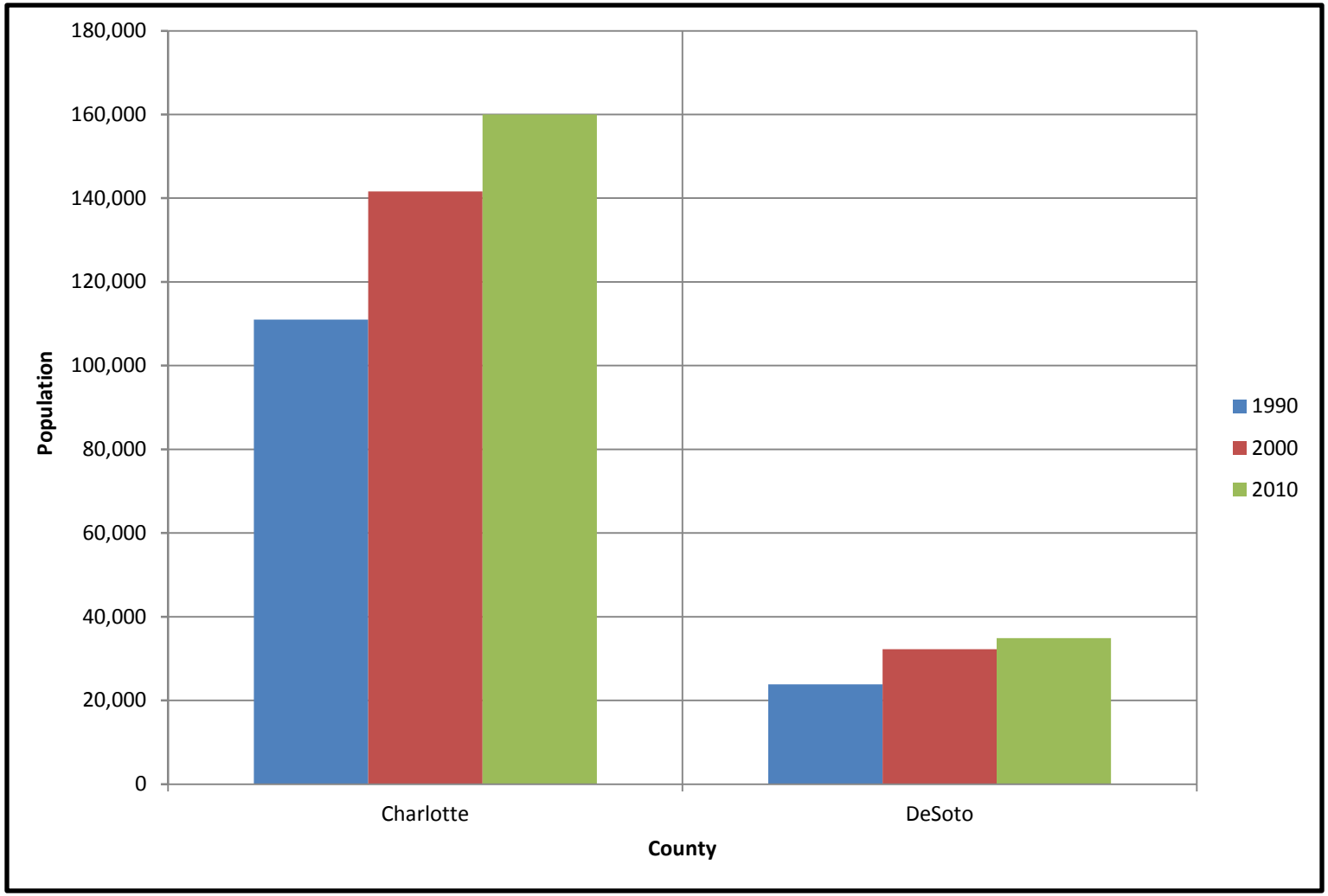


(http://www.heraldtribune.com/article/20120630/ARTICLE/120639963)

Southwest Florida Coastal Study

- Recently started study to map 1% annual chance flood hazard area
- Project includes Southwest Florida counties only
- Base data will include recent LiDAR data
- Uses ADCIRC and SWAN Models

Why We Are Here – Population History



Flood Disasters (1965 – Present)

Date	Incident Type	Description
September 1965	Hurricane	Hurricane Betsy
November 1968	Hurricane	Hurricane Gladys
June 1972	Coastal Storm	Tropical Storm Agnes
July 1982	Coastal Storm	Severe Storms, Tornadoes and Flooding
October 1995	Hurricane	Hurricane Opal
September 1998	Hurricane	Hurricane Georges
October 1999	Hurricane	Tropical Storm Irene
September 2001	Coastal Storm	Severe Storms, High winds, Tornadoes and Flooding associated with Tropical Storm Gabrielle
August 2004	Hurricane	Tropical Storm Bonnie and Hurricane Charley
September 2004	Hurricane	Hurricane Frances
September 2004	Hurricane	Hurricane Ivan
September 2004	Hurricane	Hurricane Jeanne
October 2005	Hurricane	Hurricane Wilma
August 2008	Severe storm(s)	Tropical storm Fay
July 2012	Severe Storm(s)	Tropical Storm Debby

*Data based on FEMA Declared Disasters dated October 2013

Why We Are Here More Accurate Products

- **Your risk is better defined through**
  - New Guidelines to be implemented
    - *Atlantic Ocean and Gulf of Mexico Guidelines Update (2007)*
    - *Sheltered Water Report (2008)*
    - *PM 50 Limit of Moderate Wave Action (LiMWA) (2008)*
  - Higher resolution base data, including: Light Detection and Ranging (LiDAR) and aerial imagery
  - Higher performance numerical modeling
  - Improvement in GIS technologies to allow for more accurate coastal mapping

Goals for Today

- **Promote community engagement and listen to your concerns**
- **Provide an overview of FEMA Risk MAP Program**
- **Discuss the project scope and schedule**
- **Provide an overview of Discovery process**
- **Present collected data**
- **Review importance of mitigation planning**
- **Collect any additional flood hazard data**

Risk MAP

Through collaboration with State, Local, and Tribal entities, Risk MAP will deliver quality data that increases public awareness and leads to action that reduces risk to life and property.

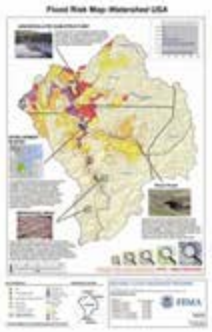
Risk MAP Program Overview

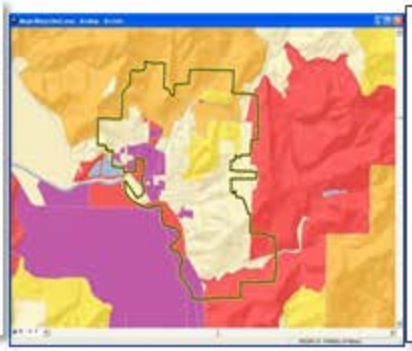
- **Risk MAP**
  - Mapping – Flood hazard and risk identification
  - Assessment – Risk assessment tools
  - Planning – Hazard mitigation planning
- **Risk MAP Vision**
  - Deliver quality data
  - Increase public awareness of flood risk
  - Encourage local/regional actions that reduce risk

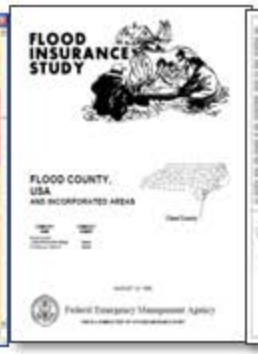
RiskMAP
Increasing Resilience Together

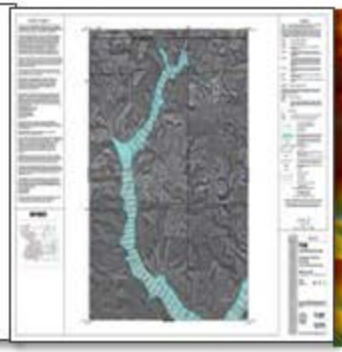
Risk MAP Objectives

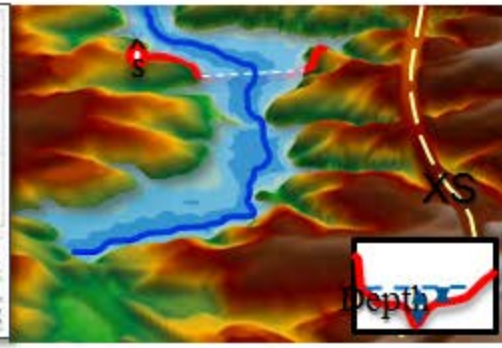
- **Address gaps in flood hazard data through engineering and mapping**
- **Increase public awareness and understanding of risk**
- **Facilitate and enhance Hazard Mitigation Planning**
- **Provide an enhanced digital platform**
- **Align risk analysis programs and develop synergies**









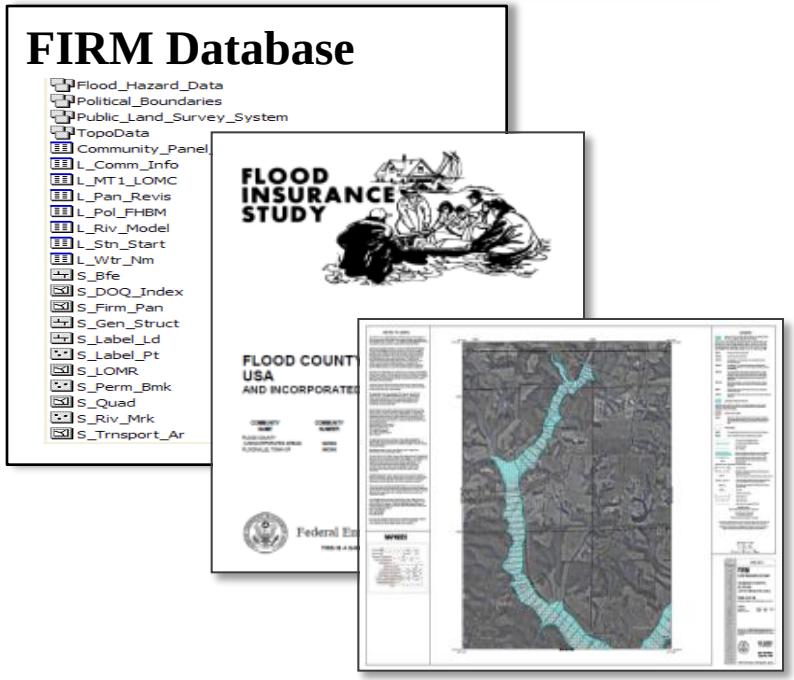


Risk MAP Program Overview

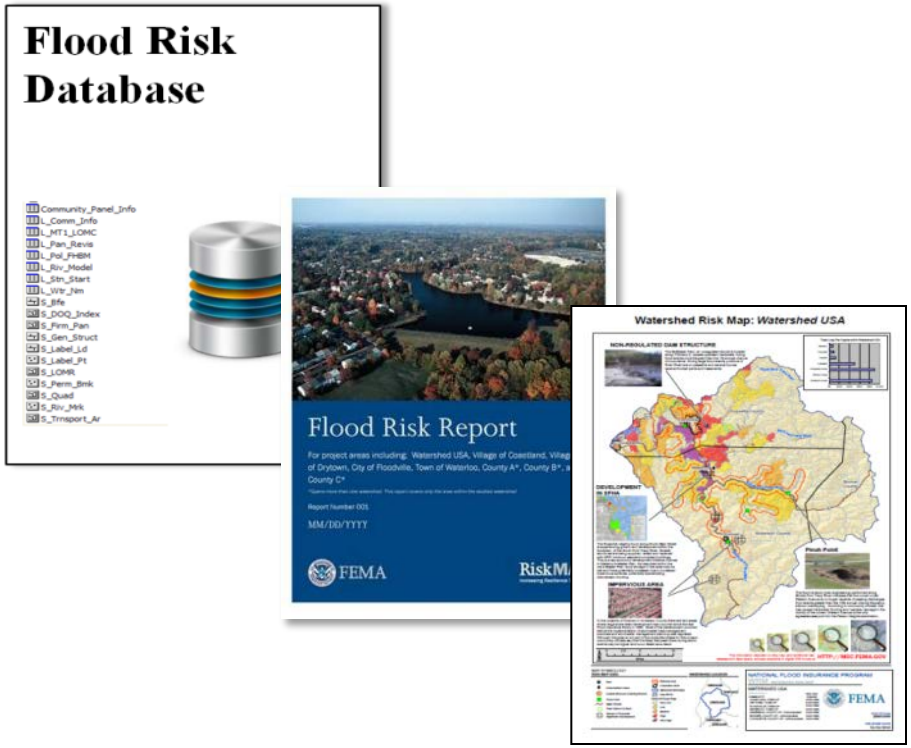
- **FEMA works with communities to develop flood risk products and flood hazard maps that are:**
  - Based on the best available data from the community and latest technologies
  - Conducted by watershed (Riverine)
  - Conducted by affected communities (Coastal)
  - Strengthened by partnerships
- **You can use Risk MAP tools and data to:**
  - Create or improve your Hazard Mitigation Plans
  - Make informed decisions about development, ordinances, and flood mitigation projects
  - Communicate with citizens about flood risk

Program Product Comparisons

Regulatory Products



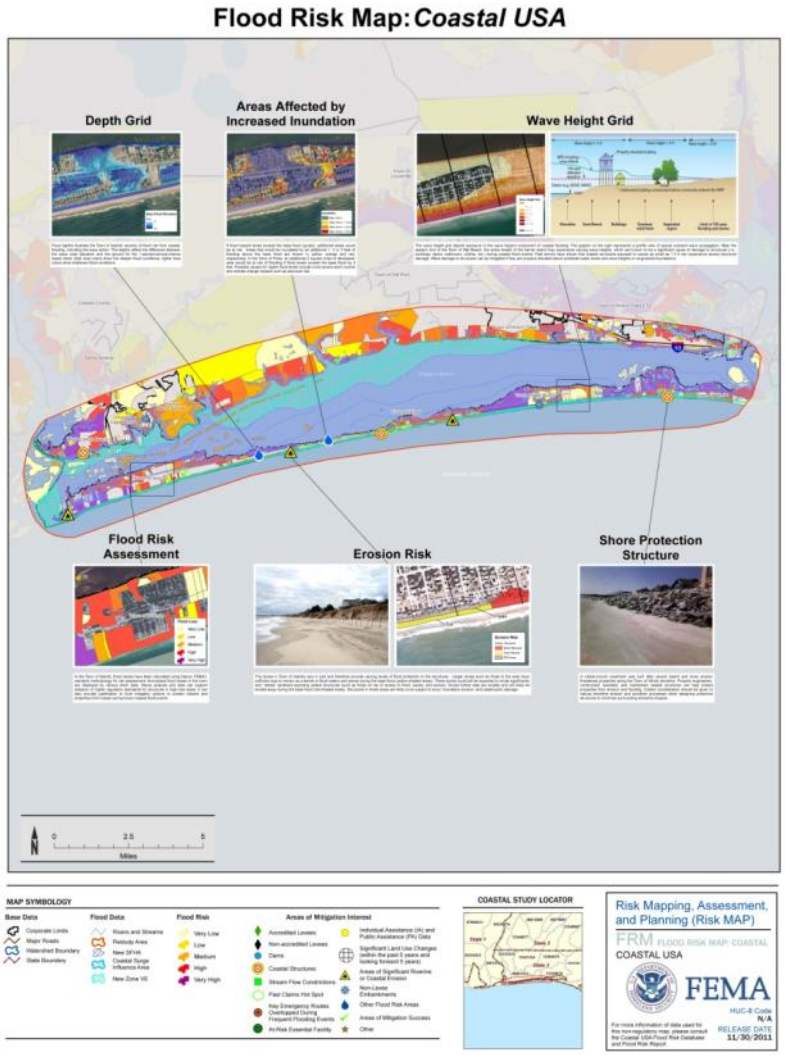
Non-Regulatory Products



Traditional products are regulatory and subject to statutory due-process requirements

Risk MAP products are non-regulatory and are not subject to statutory due-process requirements

Flood Risk Map



- **Visually Promotes Risk Awareness**
  - Contains results of Risk MAP project non-regulatory datasets
  - Promotes additional flood risk data not shown but located within the Flood Risk Database

Flood Risk Database

Changes Since Last FIRM

- Horizontal Changes and Results

Depth & Analysis Grids

- Depth (10, 04, 02, 01, 0.2 percent chance)
- Percent Annual Chance
- Percent 30-Year Grid
- Coastal Increased Inundation Areas
- Coastal Wave Hazard Severity Areas
- Primary Frontal Dune Erosion Areas and Erosion Dune Peak

Flood Risk Assessment

- Average Annualized Loss – 2010
- Refined Flood Risk Assessment

Areas of Mitigation Interest

- Areas of Mitigation Opportunity or Awareness

Discovery

- **First, we want to learn where your flood hazards are, what risk they pose, and how your community addresses that risk**
  - Review local flood hazards and risk
  - Understand local mitigation capabilities, hazard risk assessments, and current or future mitigation activities
  - Collect information about flooding history, development plans, daily operations, and stormwater and floodplain management activities

Discovery (cont.)

- **Next, we want to work with you to understand where the following may help:**
  - New or updated flood hazard information based on engineering studies
  - Additional flood risk assessments
  - Hazard mitigation planning technical assistance
  - Available grants and funding opportunities for actions from FEMA

Discovery Process

- **Discovery Data Collection Period**
  - Stakeholder coordination and data analysis
- **Discovery Meeting**
  - Initial Discovery Maps
- **Post-Meeting Review**
  - Final Discovery Maps and Discovery Report

Discovery Meeting Objectives

- **Our objectives for today are:**
  - Review the flood risk data we have collected and reviewed so far
  - Identify and discuss areas of mitigation interest
  - Envision a holistic picture of the coastal impacts
  - Stress the importance of mitigation plans and risk communication

Discovery Products and Results

- **Final Discovery Report**
  - Potentially affected FIRM panels
- **Finalized Discovery Map**
  - Including feedback from participants
  - Visual representation of meeting outcomes

Discovery Products and Results

- **Project Charter**

FEMA

Risk MAP Project Charter

The goal of the Risk Mapping, Assessment, and Planning (Risk MAP) program is to deliver quality data that increase public awareness and lead to actions that reduce the risk to life and property. Through Risk MAP, FEMA Region IV will work with the City of North Port to provide a more accurate understanding of coastal flood risk and provide valuable tools to help implement actions to protect their citizens and property from risk.

This Project Charter represents a good-faith effort by all parties to share data, communicate findings, and plan mitigation activities to protect the City of North Port from coastal flood risk. **It is not legally binding nor does it preclude the City of North Port from participating in the Flood Insurance Rate Map (FIRM) appeal process.**

Mapping and Assessment

Risk Assessment, Mapping, and Planning Partners (RAMPP) and BakerAECOM, under contract with FEMA, will update the coastal flood hazard analyses for the applicable portions of your county that are impacted by coastal flooding.

Risk MAP Deliverables

Communities can use the updated data and projects to make informed hazard mitigation, land use and development, and emergency management decisions and develop related plans and strategies.

Regulatory Products

FEMA and BakerAECOM will provide the following regulatory products to support floodplain management and flood insurance ratings.

- **Flood Insurance Study (FIS) Report**: Describes the City of North Port's flood history and provides technical information on the study.
- **Flood Insurance Rate Map (FIRM)**: Identifies the community's flood zones, base flood elevations, and flood hazard boundaries. This map is also used to determine where flood insurance is required.

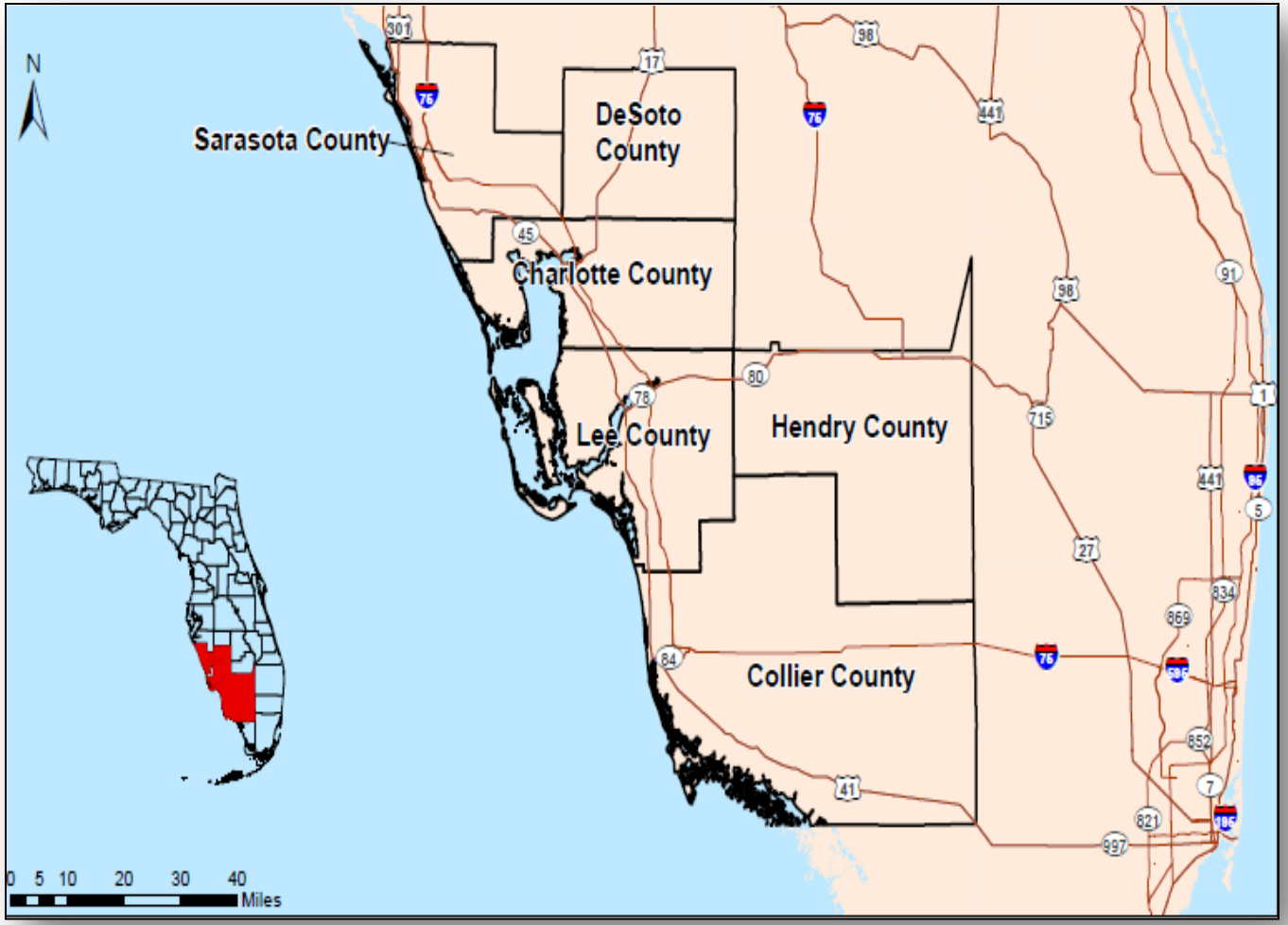
FEMA

FEMA, RAMPP, and/or BakerAECOM will provide the City of North Port officials with regular project status updates, the data and products described above, and outreach guidance to increase local awareness of flood risk. These efforts will better enable the City of North Port to take action to reduce risk, through the adoption of the maps, development, or enhancement of hazard mitigation plans, and increased communication with citizens to inform them about their risk, and the steps they can take to mitigate that risk.

The City of North Port will provide **input and updates, where available, throughout the study process to verify data and ensure that the information accurately represents the community.**

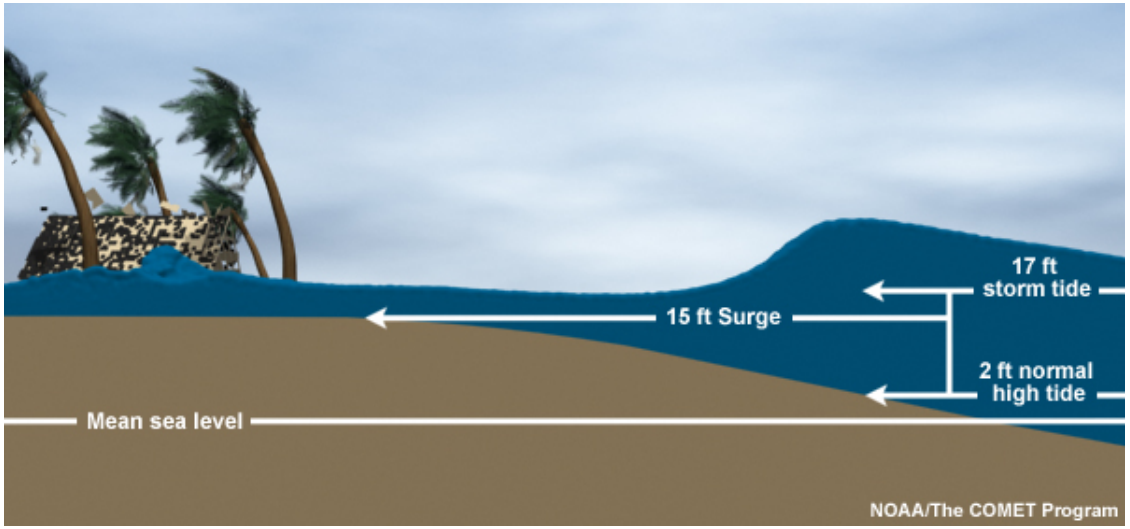
FEMA Representative Robert E. Lowe, RA Branch Chief Mitigation Division FEMA – Region Four	City of North Port Representative
RAMPP Representative	BakerAECOM Representative

Southwest Florida Coastal Study



Project Work Plan

- **Perform coastal storm surge and wave height analyses for Sarasota, Charlotte and Lee Counties**
- **Surge only analysis for DeSoto and Hendry Counties (if necessary)**
- **First pass analysis for Collier County**
- **Perform coastal floodplain delineation**
- **Develop coastal Risk MAP products for all six counties**
- **Support Discovery and outreach to create ownership of the coastal analysis at state and local level**



Generic representation of storm surge components

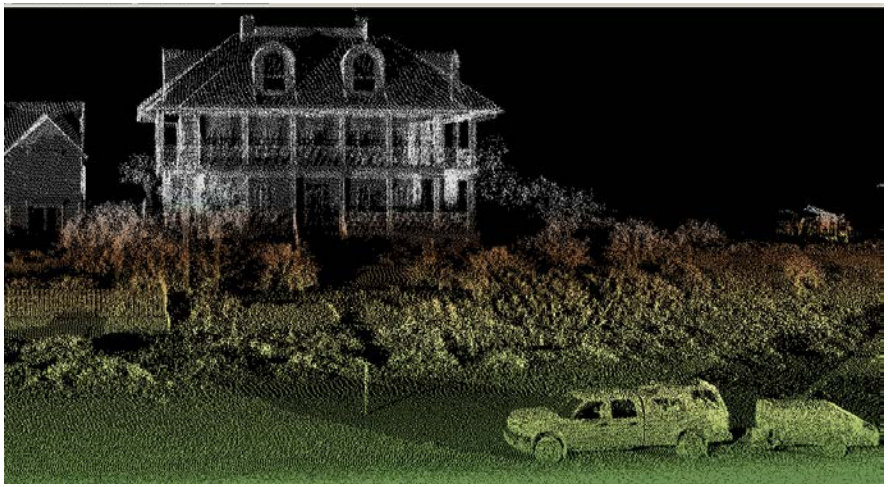
from www.nhc.noaa.gov/surge/

Project Work Schedule

- **Planning & Budgeting: 3 months (Complete)**
- **Discovery: 2~4 months (Commenced)**
- **Data Development & Sharing: 9~15 months (Commenced)**
  - **Complete surge modeling – early 2016**
  - **Complete wave modeling – mid 2016**
  - **Risk MAP products – late 2016**
- **Risk Awareness & Mitigation Outreach: 1~3 months**
- **Proposed NFIP Map Changes & Impacts: 1~3 months**
- **Preliminary NFIP Map Release & Mitigation Plan Path Forward: 1~3 months**
- **Due Process & Path Forward: 9~15 months**

Data Reviewed to Date

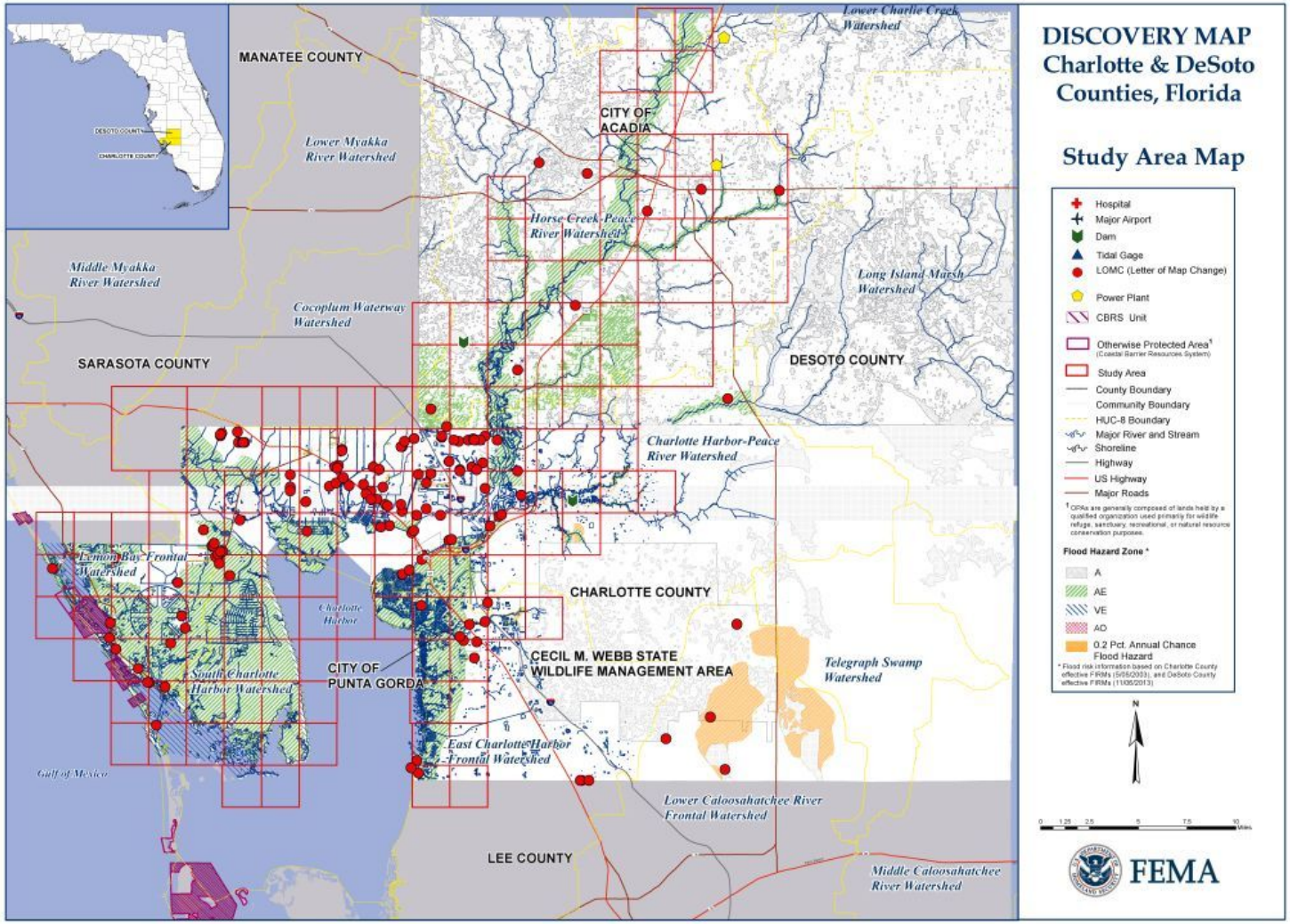
- **Examples of data and documentation reviewed include:**
  - 2007 LiDAR and Topography
    - 2007 is the dominant LiDAR source but more recent collects are included as well
  - NOS/USGS Hydrographic Surveys
  - Levee and dam information
  - 2013 Aerial imagery
  - Historic FIS reports
  - Storm/climatology reports



Additional Data Reviewed to Date

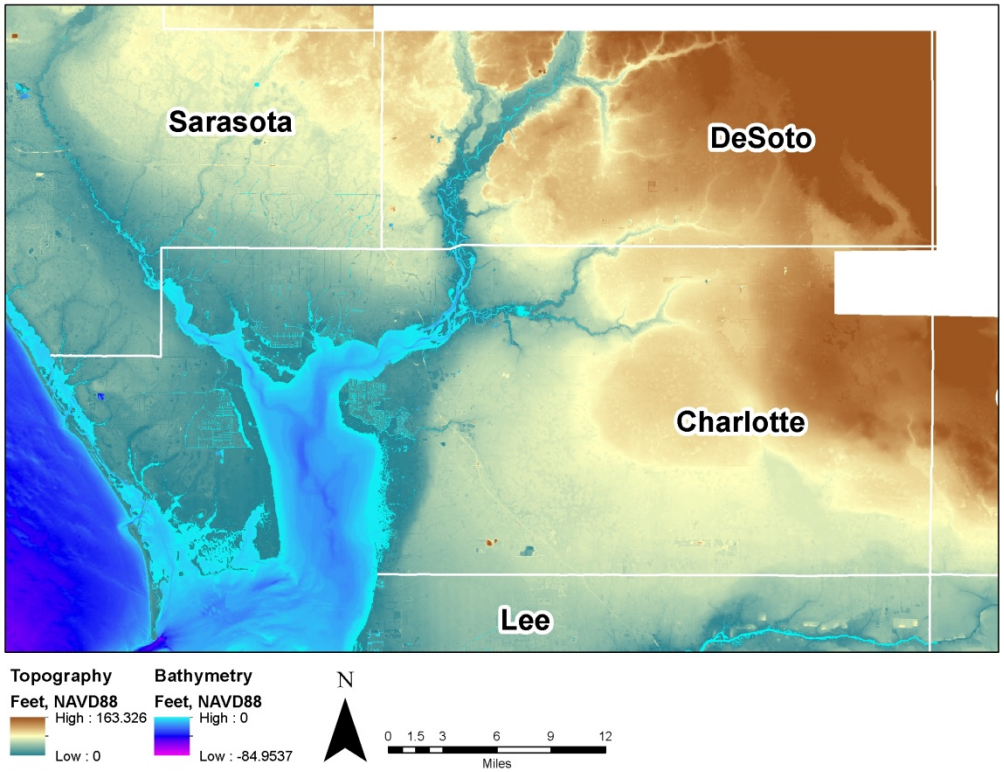
- **Additional data and documentation reviewed**
  - Your FEMA-approved Local Mitigation Strategy
  - Previous non-FEMA flood hazard studies conducted
  - The number of flood insurance policies and claims
  - Letters of Map Amendment and/or Letters of Map Revision
  - Average Annualized Loss information
  - Census data
  - Federal and State disaster information
  - Repetitive Loss/Severe Repetitive Loss

Discovery Map



Charlotte and DeSoto Counties, FL

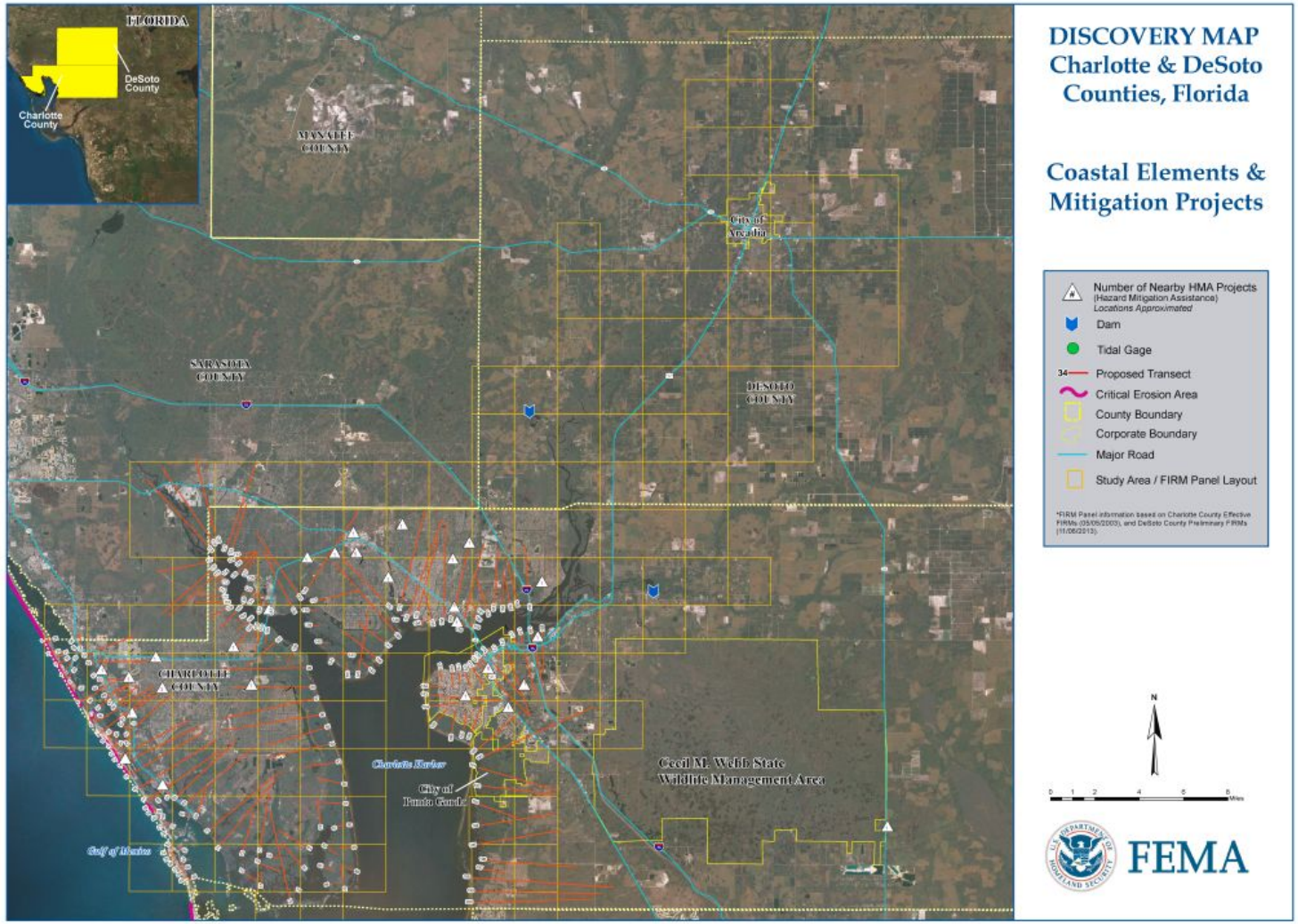
- **Charlotte County contains:**
  - **1 city**
  - **157 miles of shoreline**
    - **142 miles of Surge and Wave Mapping**
    - **15 miles of Surge Only Mapping**
  - **200 Proposed Transects**
- **DeSoto County contains:**
  - **1 city**
  - **5 miles of Surge Only Mapping**



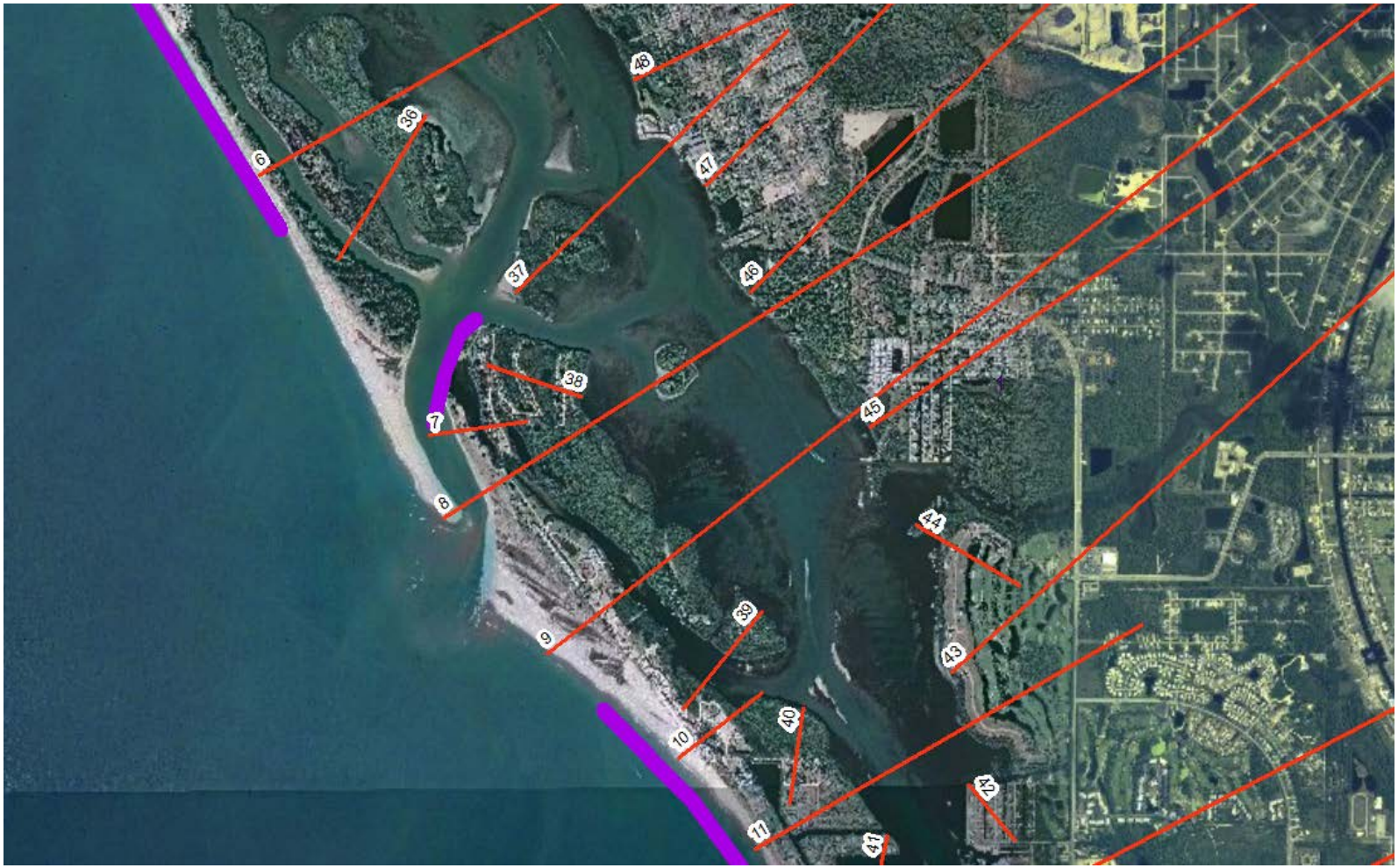
Transect Layout

- **The transect methodology is as follows:**
  - "Published" transects: approximately every mile along the shoreline
  - These transects will appear on the final FIRMs
  - Transects placed to capture topographic and land use changes
    - Populated areas will have increased transect density
  - Field reconnaissance and ground photographs will be collected along all accessible transects
  - "Mapping" transects placed at higher density to provide additional model results to help with the mapping process
- **Mapping transects will not be presented on the final FIRM. Only published transects will be viewed on the FIRM**

Proposed Transect Layout



Proposed Transects - Detail



Proposed Transects - Detail

Local Activities That Affect Flood Risk

- **Upcoming activities that may affect your flood risk**
  - Development plans
  - Planned mitigation activities
- **Local activities you currently take to address flood risk**
  - Stormwater management activities
  - Floodplain management activities
  - Daily operations
  - Outreach activities

Mitigation Planning

- **Local Mitigation Strategies (Hazard Mitigation Plans):**
  - Can help guide your decisions on mitigation activities for all hazards you face
  - Are an important resource responsible for responding to disasters
  - Can help you apply for assistance to take action

Local Mitigation Strategy

2010 Charlotte County LMS

- 14 potential Hazard Mitigation projects were identified and prioritized.
  - Protecting lift stations from flooding
  - Relocating water lines
  - Improved flood control culverts,
  - Protective measures for critical facilities
  - Outreach programs

2010 DeSoto County LMS

- A copy of the LMS has not yet been reviewed

Risk Communication

- **Citizens look to local officials to keep them informed of flood risk**
- **Regular communication is important regarding:**
  - Flood hazard and risk information
  - Steps citizens can take to protect their families and property

Risk Communication (cont.)

- **Risk MAP provides information to help you communicate about flood risk, including:**
  - Flood risk products that are clear and easy to understand
  - Template that can be used to develop a community outreach plan
  - Draft letter that can be used to inform citizens about their risks

Risk Communication (cont.)

- **FEMA Region IV External Affairs**
  - Content for communication materials such as news releases, websites, community newsletters, etc.
  - Media contact lists
  - Consultation or assistance with External Affairs strategies and tactics
  - Contact: Margaret Jody Cottrill, 770-220-5308

    margaret.cottrill@fema.dhs.gov

Taking Action

- **Mitigation and risk reduction can <u>only</u> happen at the local level**
- **Risk MAP can provide:**
  - Risk identification and awareness
  - Education on mitigation alternatives
  - Technical and outreach assistance
- **Risk MAP can also provide information about:**
  - Hazard Mitigation Assistance grants
  - Other Federal Agency grants to support mitigation activities
  - Technical assistance provided by related trade associations

Supplemental Resources

Resource	Website
Community Rating System Fact Sheet	http://www.fema.gov/media-library/assets/documents/9998
Floodplain Management Fact Sheet	http://www.fema.gov/media-library/assets/documents/5686
FloodSmart.gov Fact Sheet	http://www.floodsmart.gov/toolkits/flood/downloads/FloodSmart.gov_Fact_sheet.pdf
Hazus-MH Fact Sheet	http://www.fema.gov/media-library/assets/documents/9696
HMA Grant Programs Fact Sheet	http://www.fema.gov/media-library/assets/documents/16078
Local Mitigation Planning Handbook	http://www.fema.gov/media-library/assets/documents/31598?id=7209
Local Mitigation Plan Sample Scope of Work	http://www.fema.gov/media-library/assets/documents/4170?id=1858
Mitigation Planning Fact Sheet	http://www.fema.gov/media-library/assets/documents/5756
Mitigation's Value to Society Fact Sheet	http://www.fema.gov/media-library/assets/documents/12305
NFIP Fact Sheet	http://www.fema.gov/media-library/assets/documents/10064
Region IV Coastal Analysis and Mapping	http://www.southeastcoastalmaps.com/PublicDocs/IVCoastalAnalysisandMappingFact%20Sheet_SoutheastUnited%20States_eng11-7-12.pdf
Risk MAP Discovery Brochure	http://www.fema.gov/media-library/assets/documents/23137?id=4852
Risk MAP and the NFIP Fact Sheet	http://www.fema.gov/media-library/assets/documents/21372
Risk MAP Informational Flyer	http://www.fema.gov/media-library/assets/documents/18274
Acronyms: HMA = Hazard Mitigation Assistance, NFIP = National Flood Insurance Program, MAP = Mapping, Assessment, and Planning	

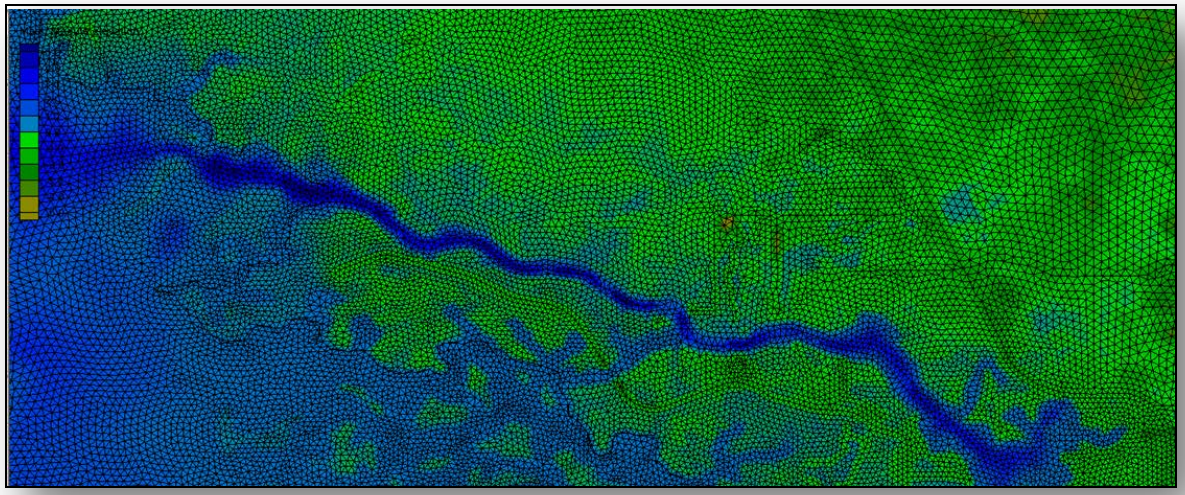
Next Steps

- **Breakout Session**
- **Within two weeks, we would like from you:**
  - Outstanding questionnaires & signed Project Charters
  - Supplemental data (if any)
- **Based on today's discussion, we will complete and forward to you draft versions of:**
  - Discovery Maps that reflect our discussions
  - Discovery Report that summarizes the data collected

Next Meeting (Fall 2014)

- **Technical Outreach Meeting (Mesh Review Meeting)**
  - Topographic and Bathymetric Surface
  - Shoreline Construction
  - ADCIRC (Advanced CIRCulation Model) Mesh
  - Storm Climatology
  - Validation Storm Selection

Sample of a draft mesh from West Florida Study



Thank you

We look forward to continuing to work with you to help the Southwest Florida coastal area become more resilient to flooding

Questions

Contact Information

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