

Hurricane Evacuation Zones & FEMA Flood Zones

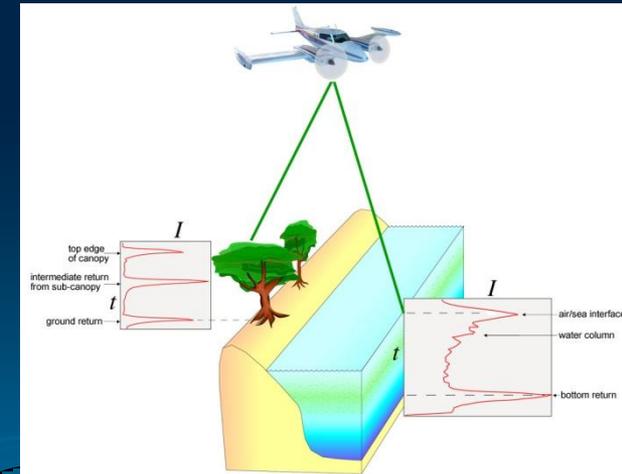
Flood zones and evacuation
zones are different!



SLOSH & the Statewide Regional Evacuation Study

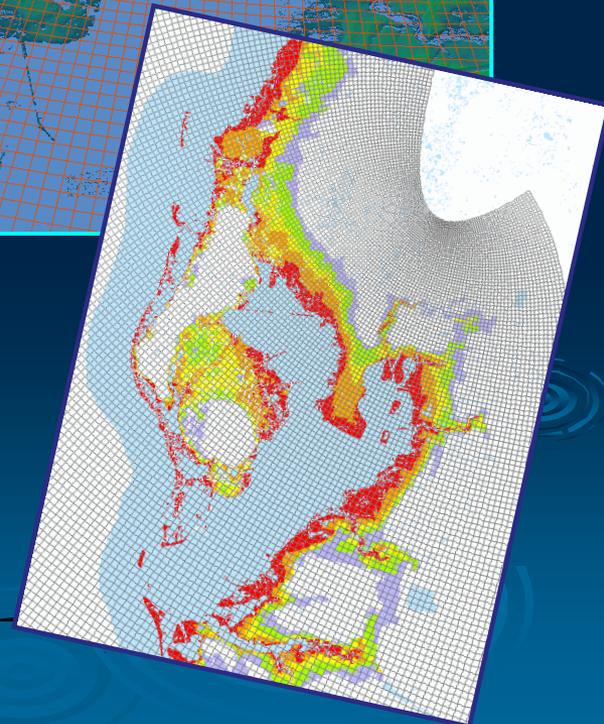
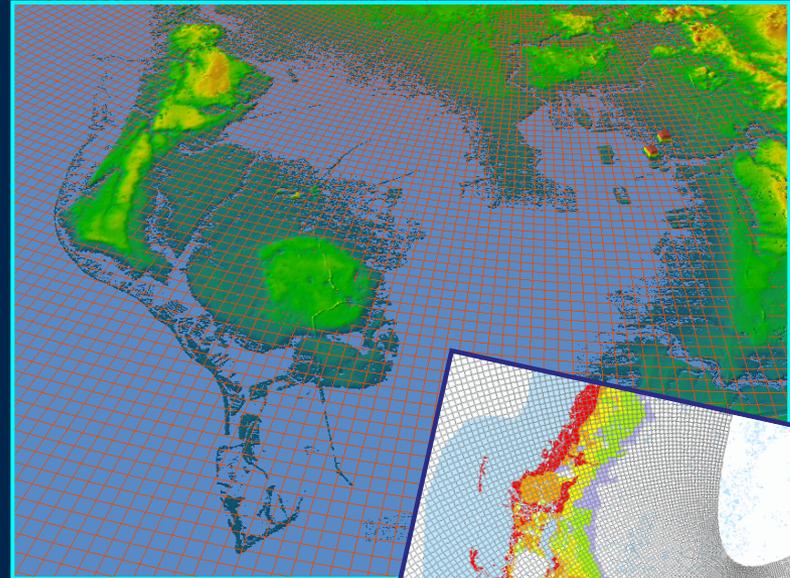
Two (2) inter-related & dependent projects:

- \$24.5 million - Light Detection and Ranging (LiDAR) data collection for storm surge analysis
- \$4.5 million – Update eleven (11) Regional Evacuation Studies

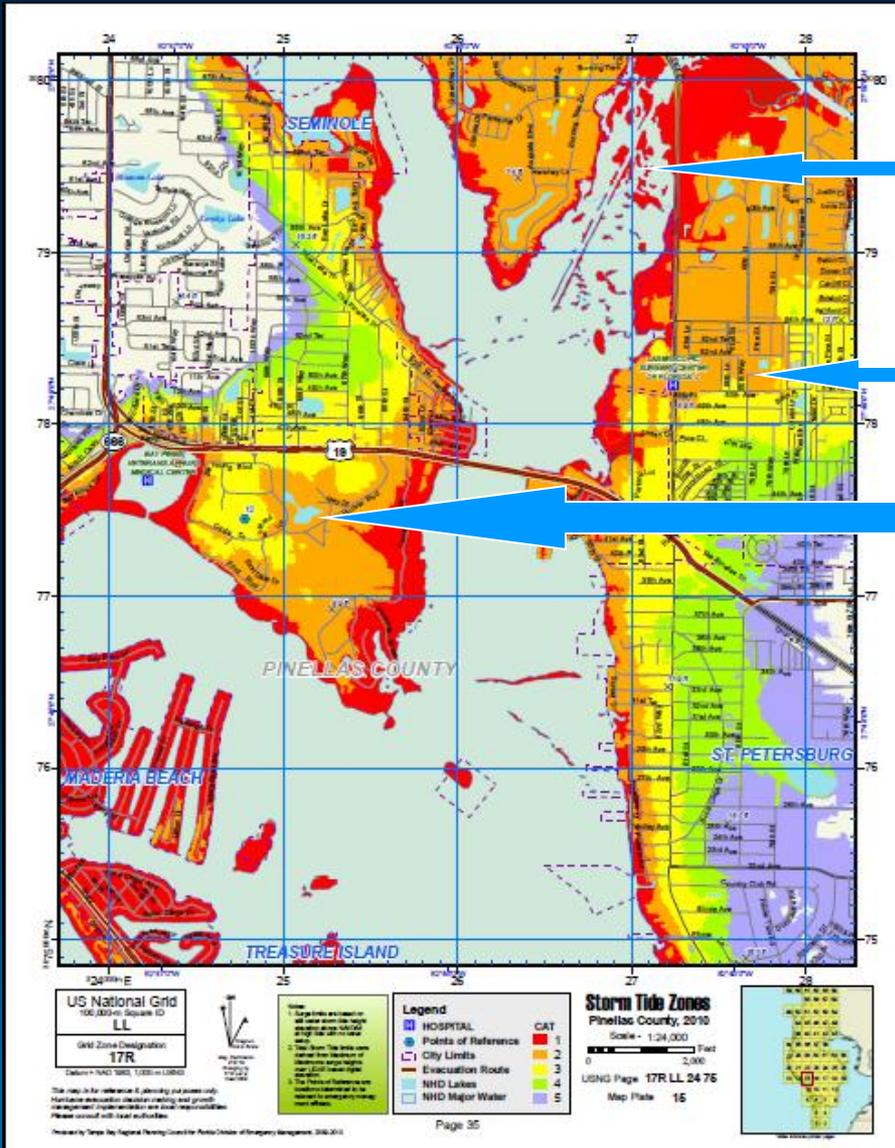


NOAA's SLOSH Model

- Developed by NOAA/ NHC Storm Surge Modeling Center
- Datum updated to NAVD88
- Much higher SLOSH grid resolution
- Significantly more accurate elevation data in SLOSH
- More than 130,000 hypothetical storms modeled statewide with varying forward speed, size and astronomical tide



Storm Tide Atlas



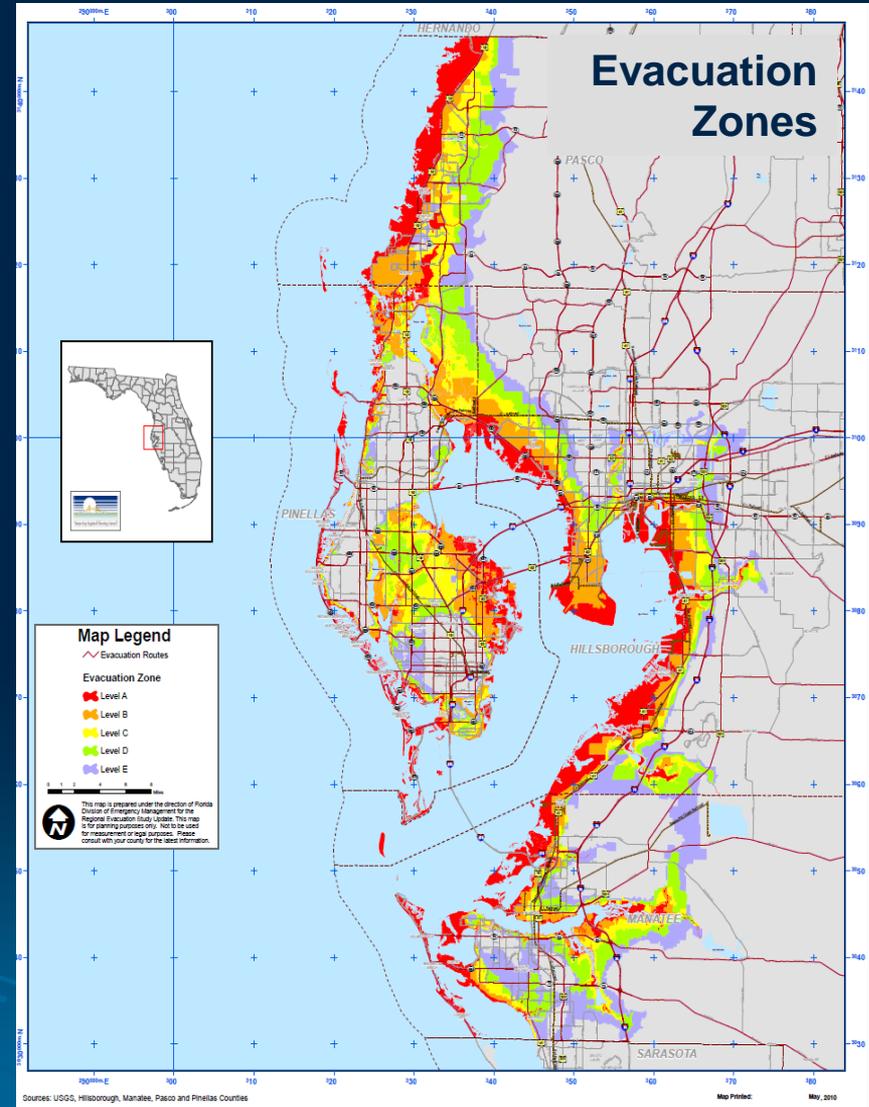
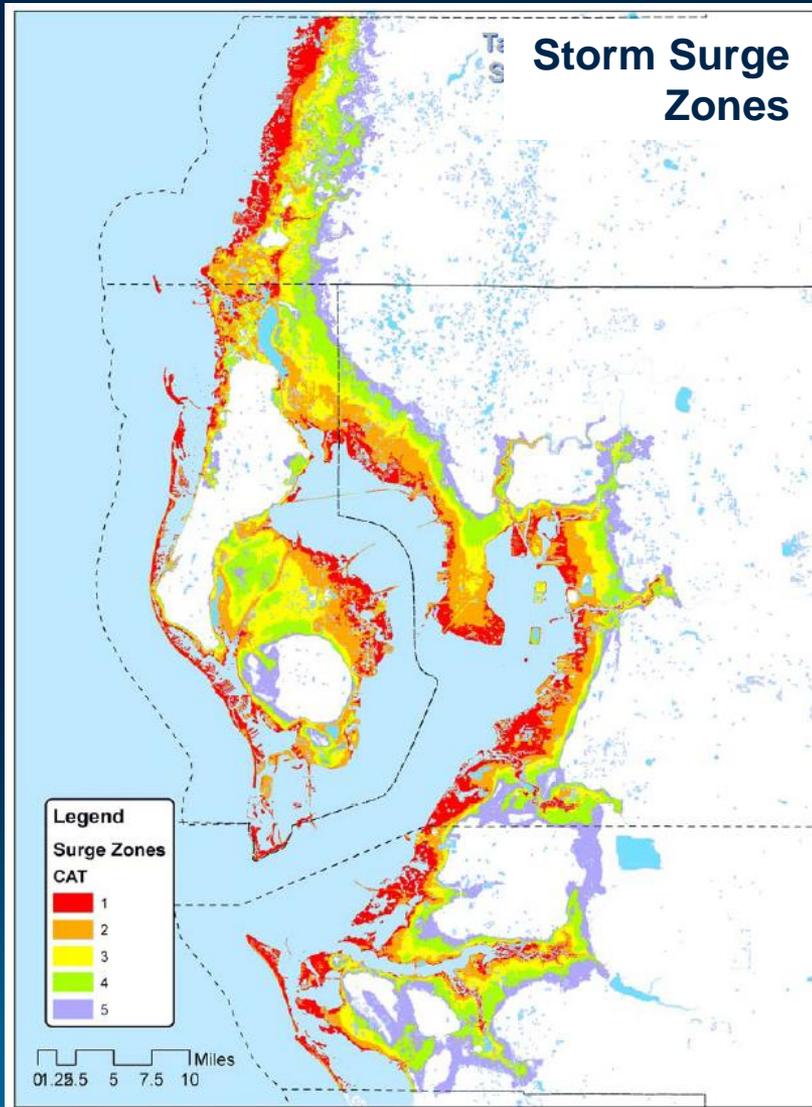
Spot Elevations

Surgical Center

Point of Reference

Bay Pines VA Hospital
(Surge and Depth)

Surge Zones and Evacuation Zones



SLOSH



- Developed by NOAA and the National Hurricane Center
- They are Public Safety Oriented
- Evacuation Levels A, B, C, D and E
- Storm Tide Limits from SLOSH have No Return Intervals/ No Probabilities associated with them. They are the results of thousands of simulations of hurricanes of different strengths, forward speed, size and approach.
- Storm Surge **Only**. Does not take into account rainfall. No inland flooding
- SLOSH does not include **wave height**

FEMA Flood Zones

100-Year Flood Events

- **SFHAs** are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A

500-Year Flood Events

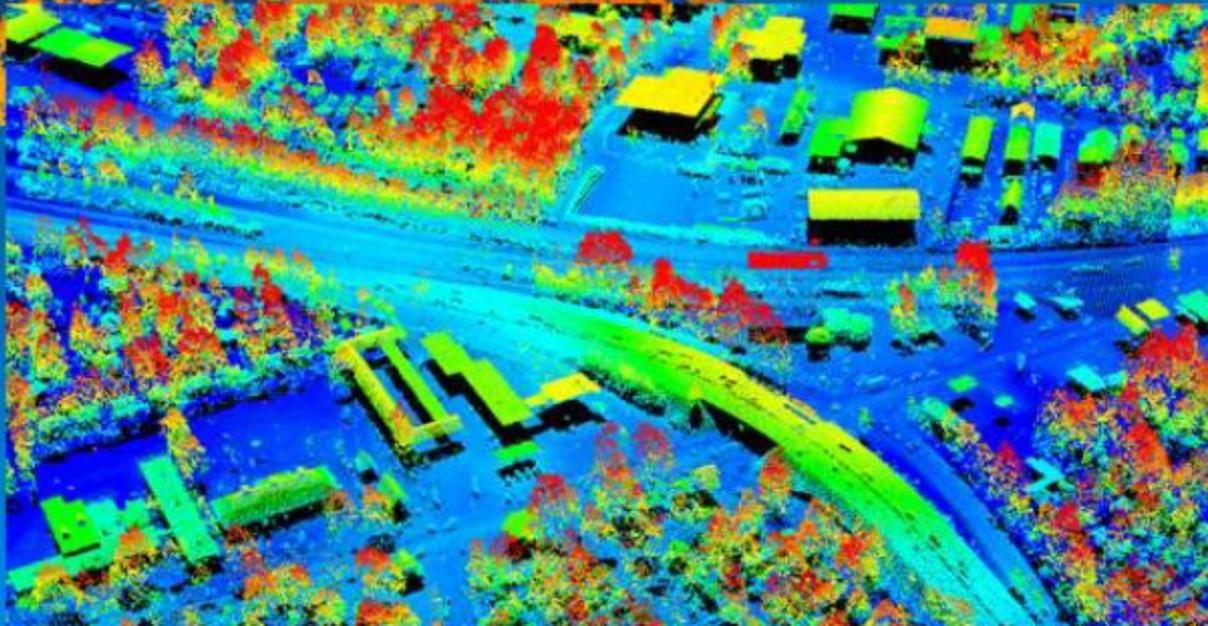
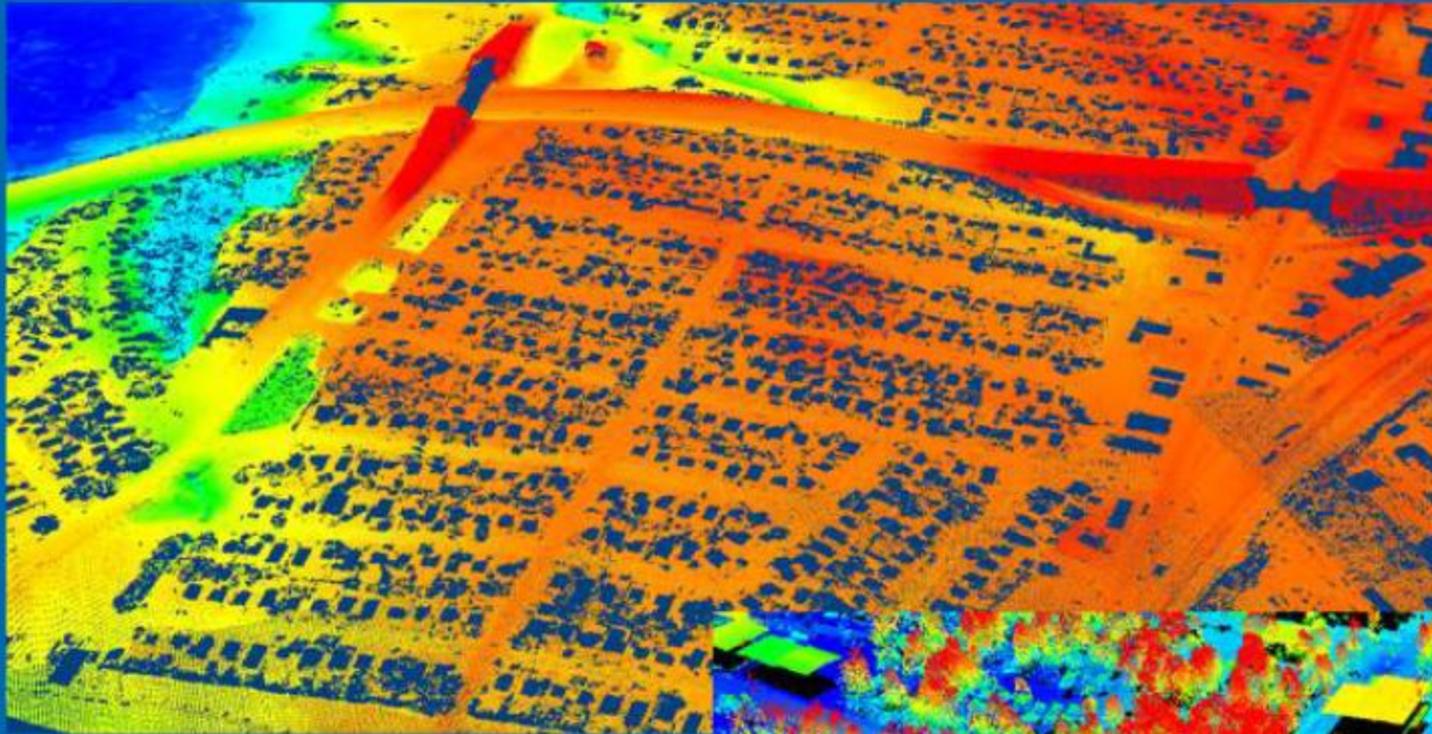
- Moderate flood hazard areas, labeled **Zone B or Zone X** (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood.

Velocity Wave Action

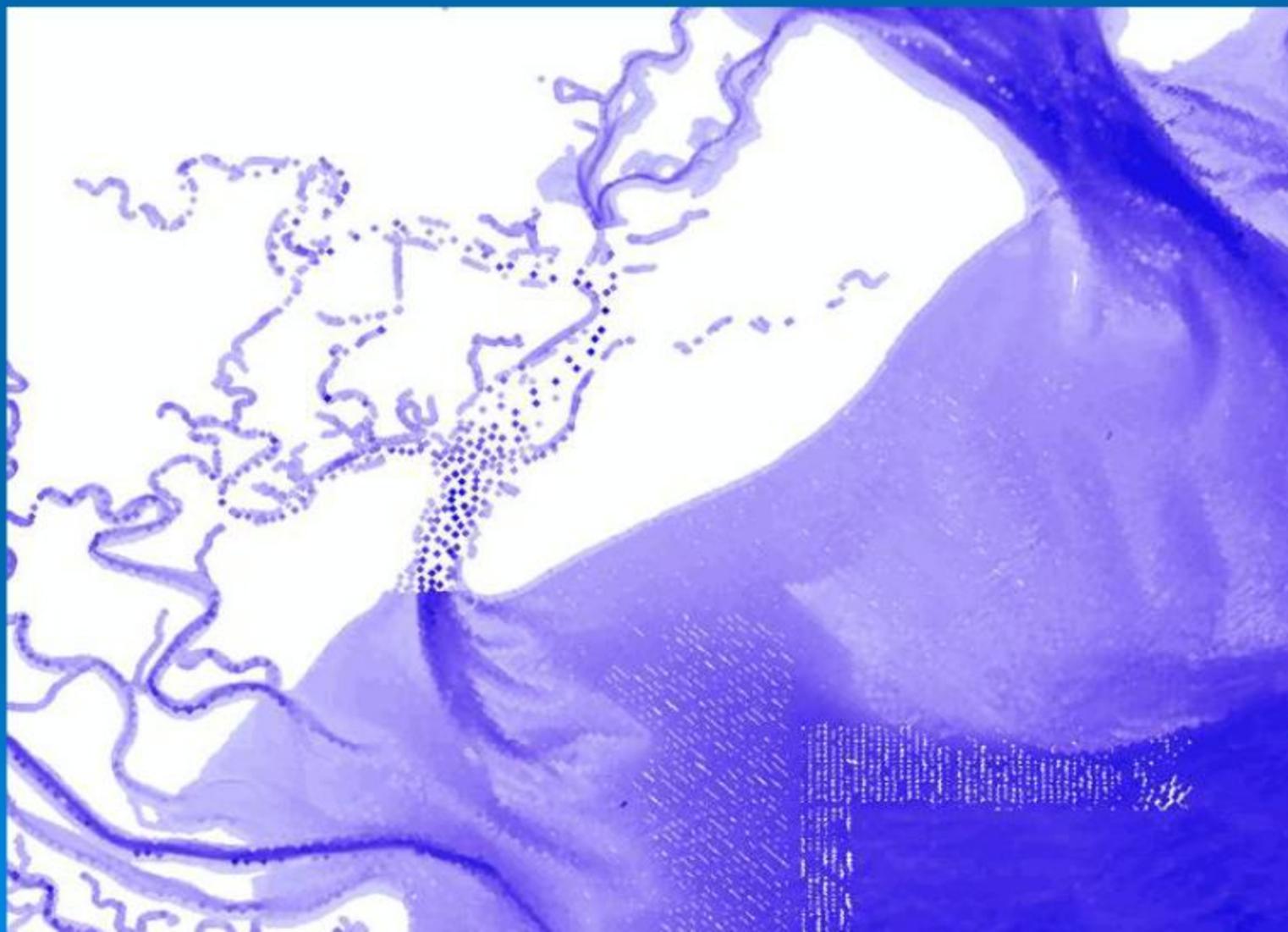
- **Coastal Velocity zones** are labeled Zone V, Zone VE, and Zones V1-V30.



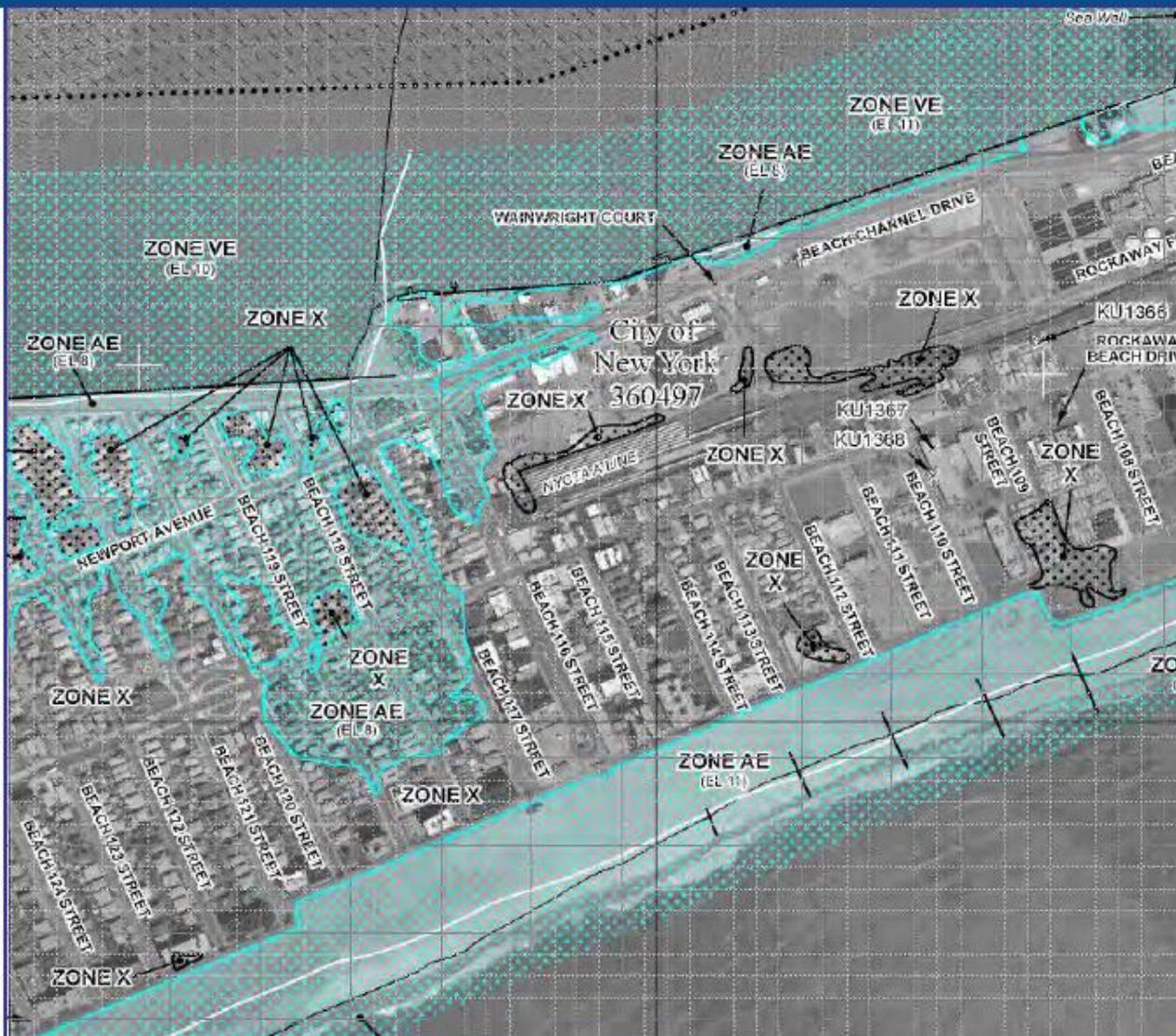
Sample LIDAR Data



Bathymetric Data



FIRM Production



NFP

PANEL 0379F

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
NEW YORK,
NEW YORK

BRONX, RICHMOND, NEW YORK,
QUINNS, AND KINGS COUNTIES

PANEL 379 OF 457

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEW YORK, CITY OF	360497	0379	F

- NOTE -

THIS MAP AND USFS COASTAL MAPS ARE PRODUCED BY THE
BOUNDARIES ESTABLISHED UNDER THE COASTAL BARRIER
RESOURCES ACT OF 1982 AND/OR SUBSEQUENT LEGISLATION.

Notice to User: The Map Number shown below should be
used when placing map orders; the Community Number
shown above should be used on insurance applications for the
subject community.



MAP NUMBER
3604970379F

MAP REVISED
SEPTEMBER 5, 2007

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

Different Models: Different Purposes



SLOSH MODEL

- Developed by NOAA and the National Hurricane Center
- They are Public Safety Oriented
 - EVACUATION
- Storm Tide Limits from SLOSH have No Return Intervals/ No Probabilities associated with them. They are the results of thousands of simulations of hurricanes of different strengths, forward speed, size and approach.
- SLOSH provides storm surge only.
- SLOSH does not include **wave height**



FEMA FLOOD MODELS

- Model(s) developed for FEMA
 - ADCIRC, SWAN, WHAFIS
- They are **Regulation-oriented**
 - **Flood insurance and Floodplain Regs**
- Results are portrayed on Flood Insurance Rate Maps (FIRMs) and are based on simulations of flood events with a 1% chance of occurring annually.
- Provides information on coastal flooding including **Velocity (wave action)**, **Riverine Flooding**, inland flooding.

Questions and Comments?

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For More Information on flood zones, visit the National Flood Insurance Program at www.floodsmart.gov

For more information on evacuation levels, visit www.tampabayprepares.org or your county emergency management website.