# Resilient Community Partnership (RCP)

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# Definition of Coastal Resiliency:

The ability of a community to *bounce back* after hazardous events like hurricanes and coastal storms.

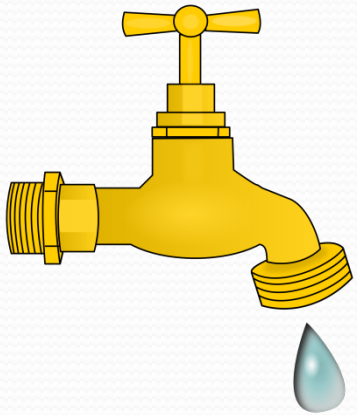
# Resilient Community Partnership :

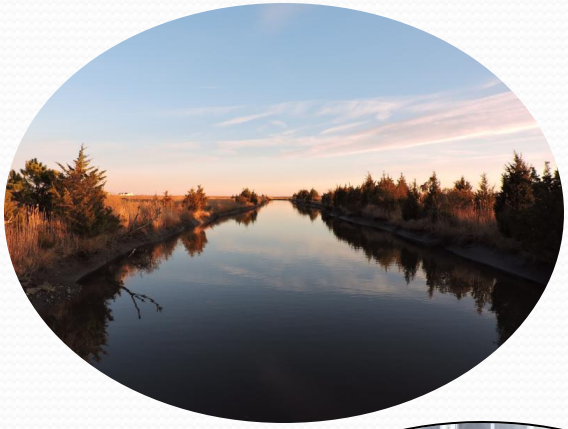
GOAL: To help communities undertake the necessary planning to become more *resilient* to coastal hazards

## DNREC Capabilities:

- Resilience planning and coastal management
- Coordination with federal and state partners
- Data analysis and other technical assistance
- GIS mapping
- Meeting facilitation
- Public education and outreach

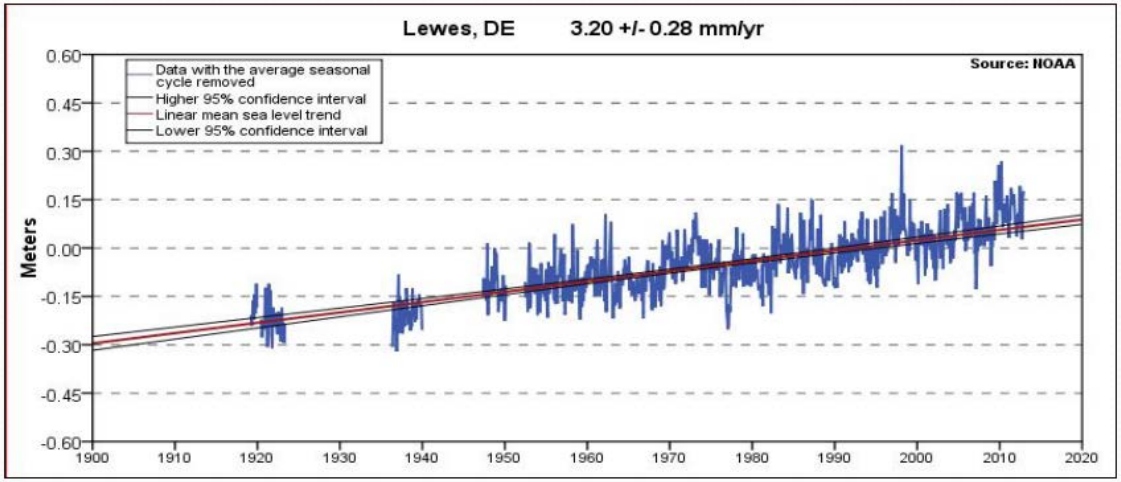
# Slaughter Beach Has An Abundance of Water



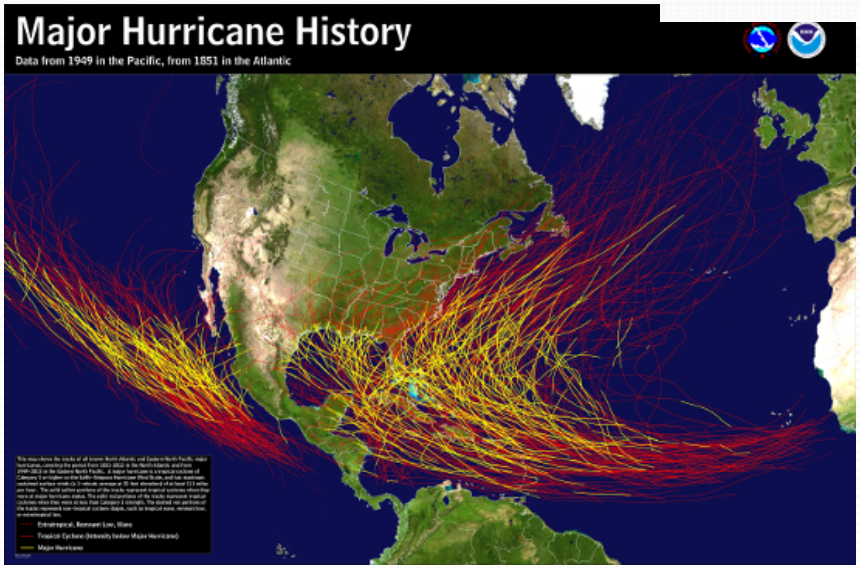


# Coastal Hazards That Cause Flooding

- Tropical Storms
- Nor'easters
- Heavy Precipitation
- Extreme Tides
- Sea Level Rise




**Global rate = 1.7 mm/yr**




Nuisance Flood

# Other Coastal Hazards

- Extreme Heat
- Wildfires

# Step 1 of Our Project – Community Inventory of Assets and Values

- What makes the community a special place to live in, and why?
  → Values Survey
- What infrastructure and assets are critical to the continuity of Town operations and/or quality of life?
- Identify location and elevation of infrastructure like roads and propane tanks

# Step 2 – Vulnerability Assessment

- Identify and characterize existing *and future* hazards
  - Past history: FEMA Floodplain maps, Town's experience with actual events
  - Future: DNREC sea level rise scenarios, climate trends for heat
- Document potential impacts of each hazard on assets and prioritize the hazards

# Step 3 – Adaptation and Mitigation

Avoid

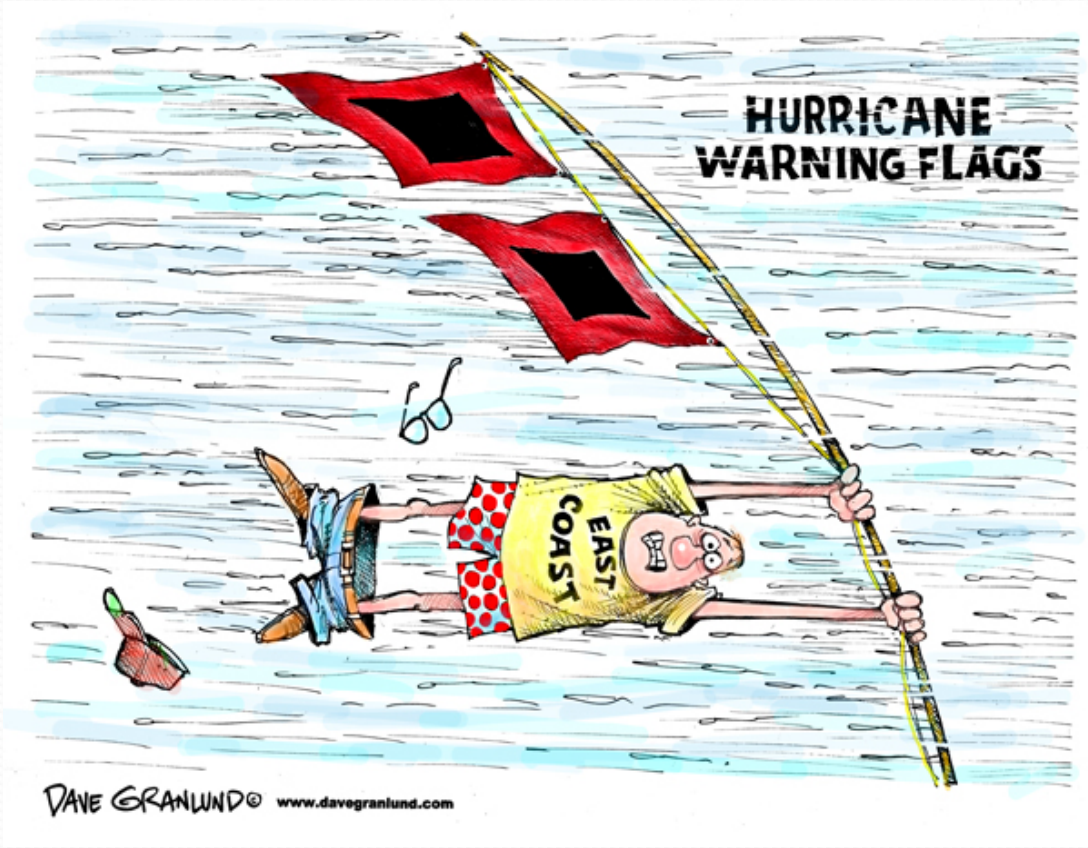
Protect

Accommodate

# Resilient Community Partnership

## Scope of Project

- 20 Years
- Extreme Heat
- Flooding caused by:
  - Hurricanes
  - Tropical Storms
  - Nor'easters
  - Extreme Tides
  - Sea Level Rise
  - Heavy Precipitation Events



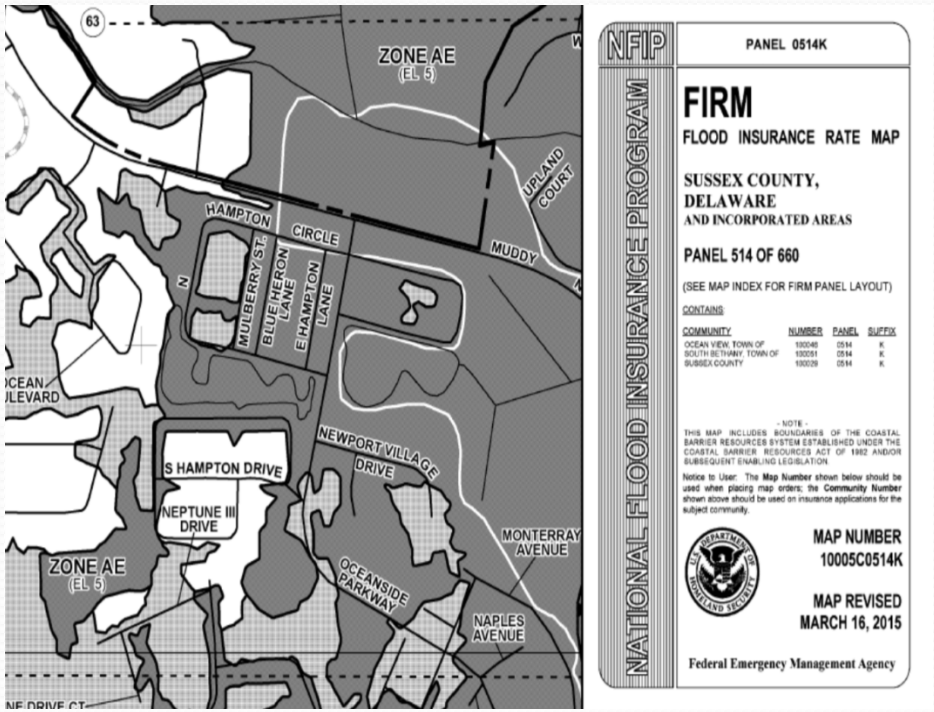
# Resilient Community Partnership

Steps to Date –

- Inventoried community infrastructure, assets, and values
- June workshop collected resident and stakeholder data
- Data analysis and risk characterization
  - Past history, recent history, and future trends


(Past History)

# FEMA Flood Insurance Rate Map (FIRM)

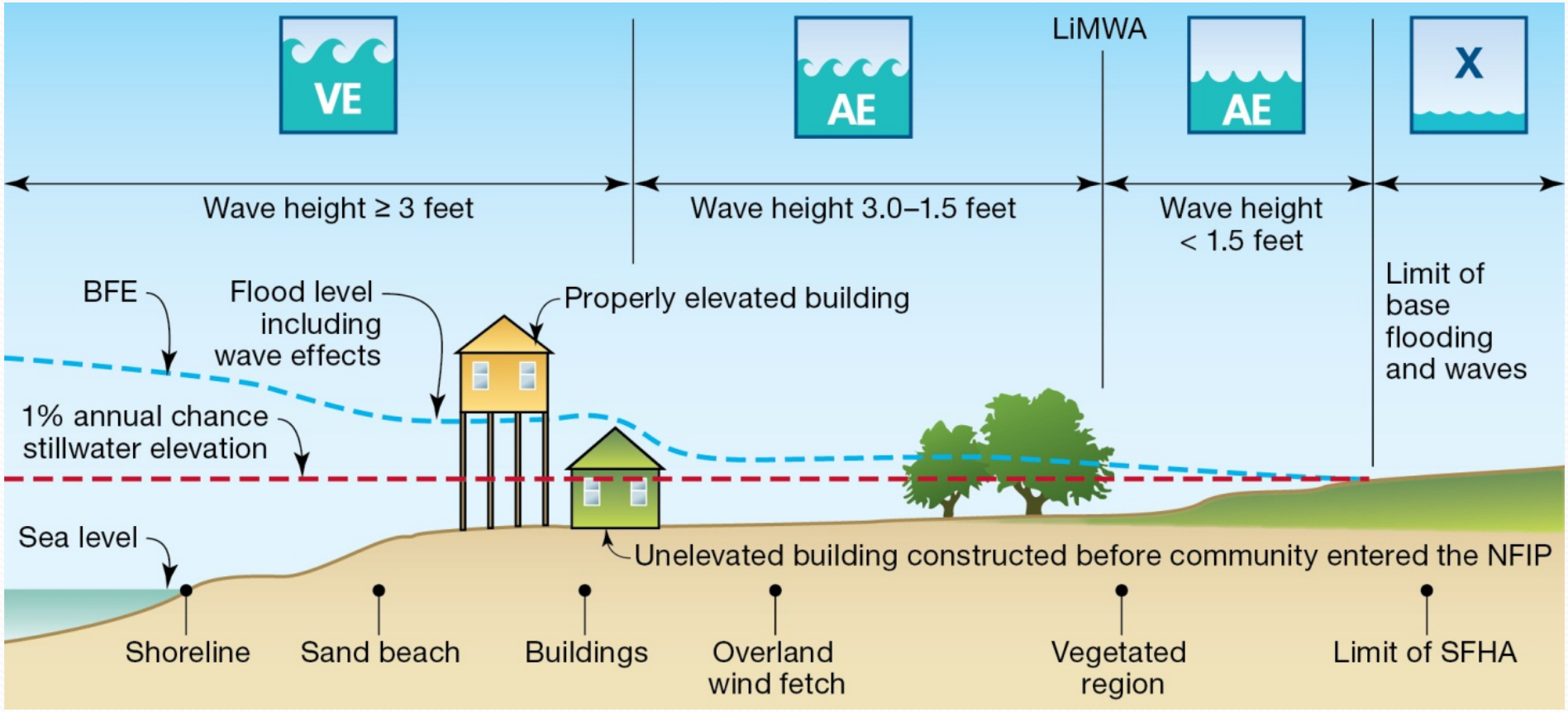






Indicates areas of high, moderate, low risk based on an analysis of past flooding events

# Profile of FEMA Flood Insurance Rate Map (FIRM)




Zone AE
(EL 11 Feet)
PANEL
10005C0070K
eff. 3/16/2015
Zone VE
(EL 12 Feet)
Zone AE
(EL 10 Feet)
LOMA 16-03-0497A
eff. 12/24/2015


PANEL
10005C0070K
eff. 3/16/2015
Zone AE
(EL 10 Feet)
Zone VE
(EL 12 Feet)
Zone AE
(EL 11 Feet)

# FIRMs do not account for:

- Future conditions such as changes in storm climatology and sea level rise
- Shoreline erosion, wetland loss, subsidence
- Upland development or topographic changes
- Degradation or settlement of levees and floodwalls
- The effects of multiple storm events

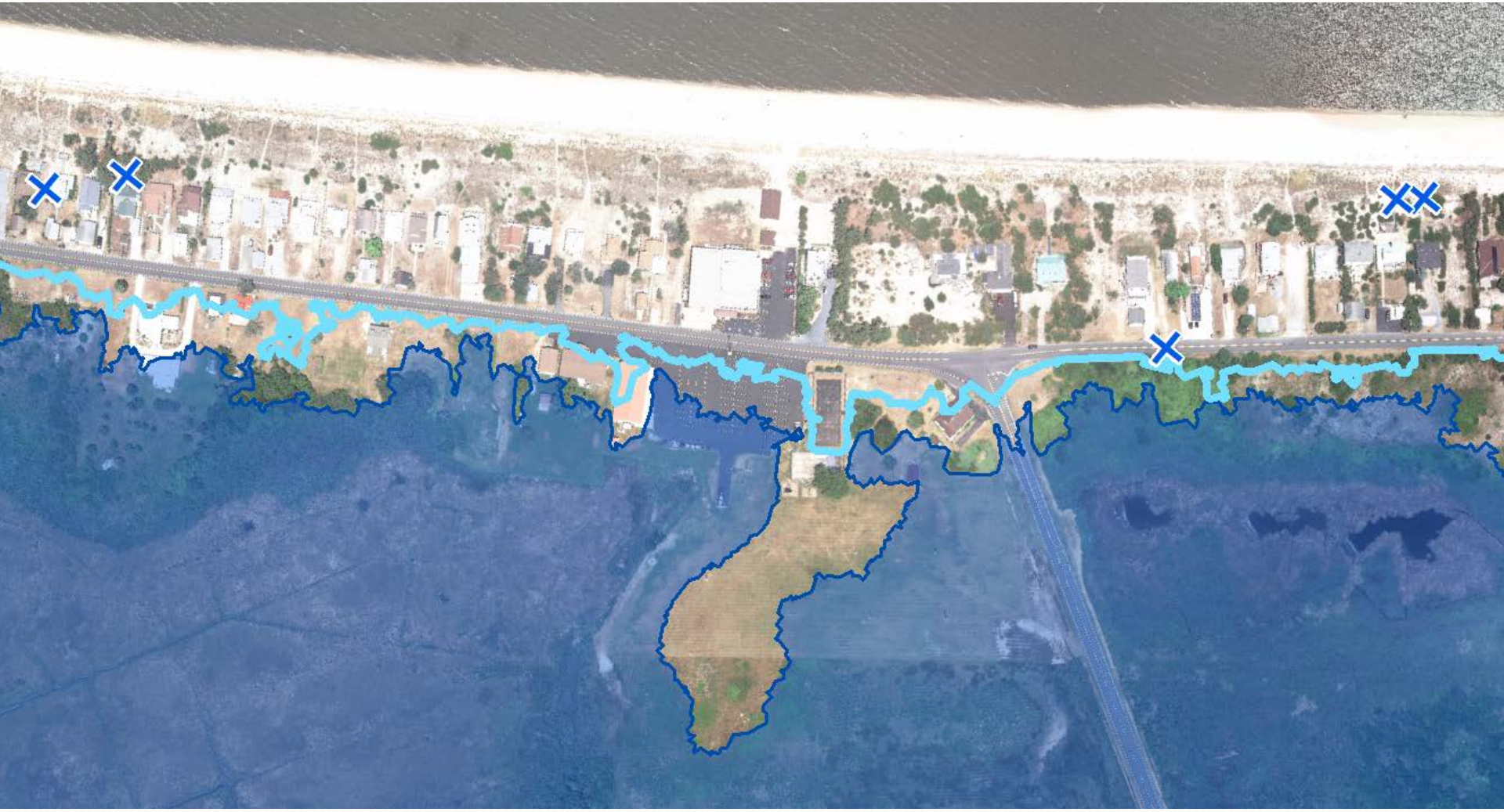
One map will not suffice

(Present History)

# Flood Contour Mapping

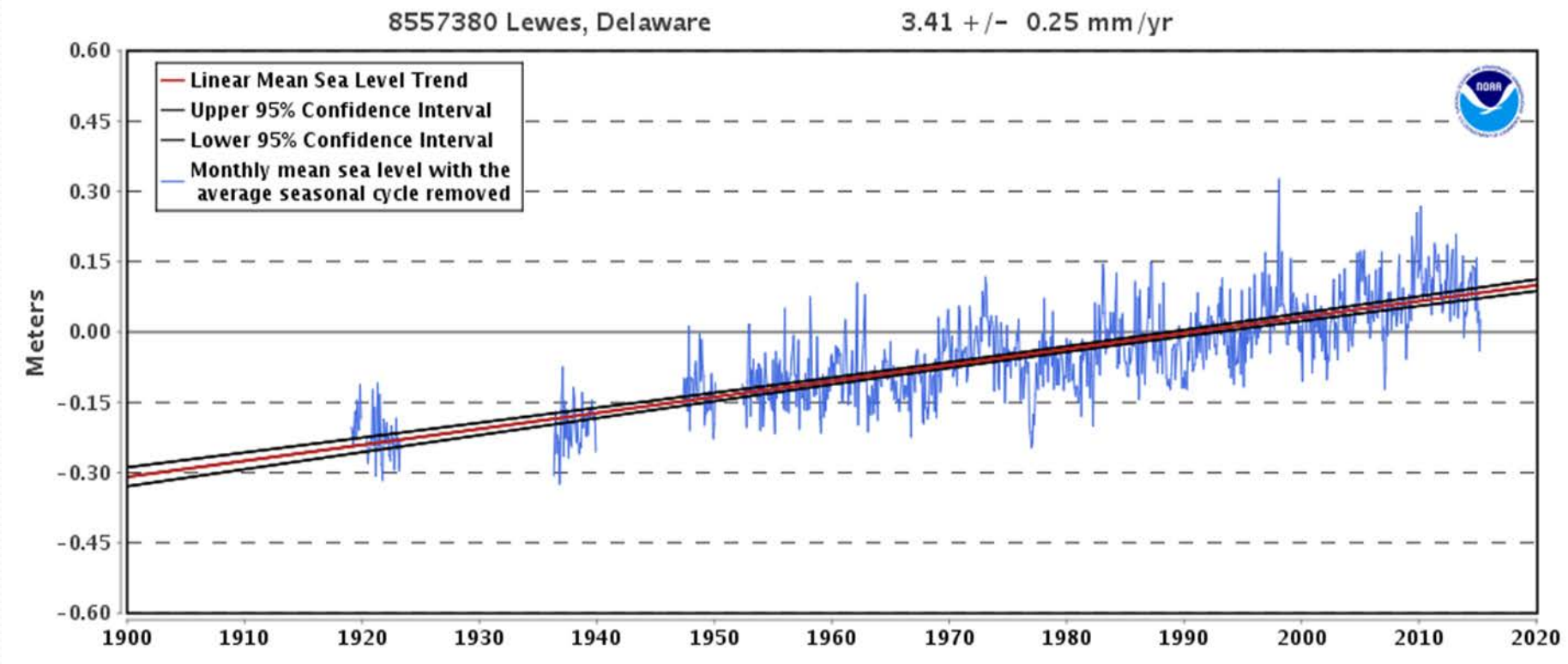
- Based on feedback from first public workshop
- Depicts average extent of flooding as recorded by YOU
- Mainly depicts recent events such as Snowstorm Jonas and the October 2015 storm
- More marsh-side flooding reported as compared to Bay-side flooding
- Sufficient data to build a flood contour line for marsh side

# Flood Contour Map: Intersection of Slaughter Beach Road and Bay Avenue



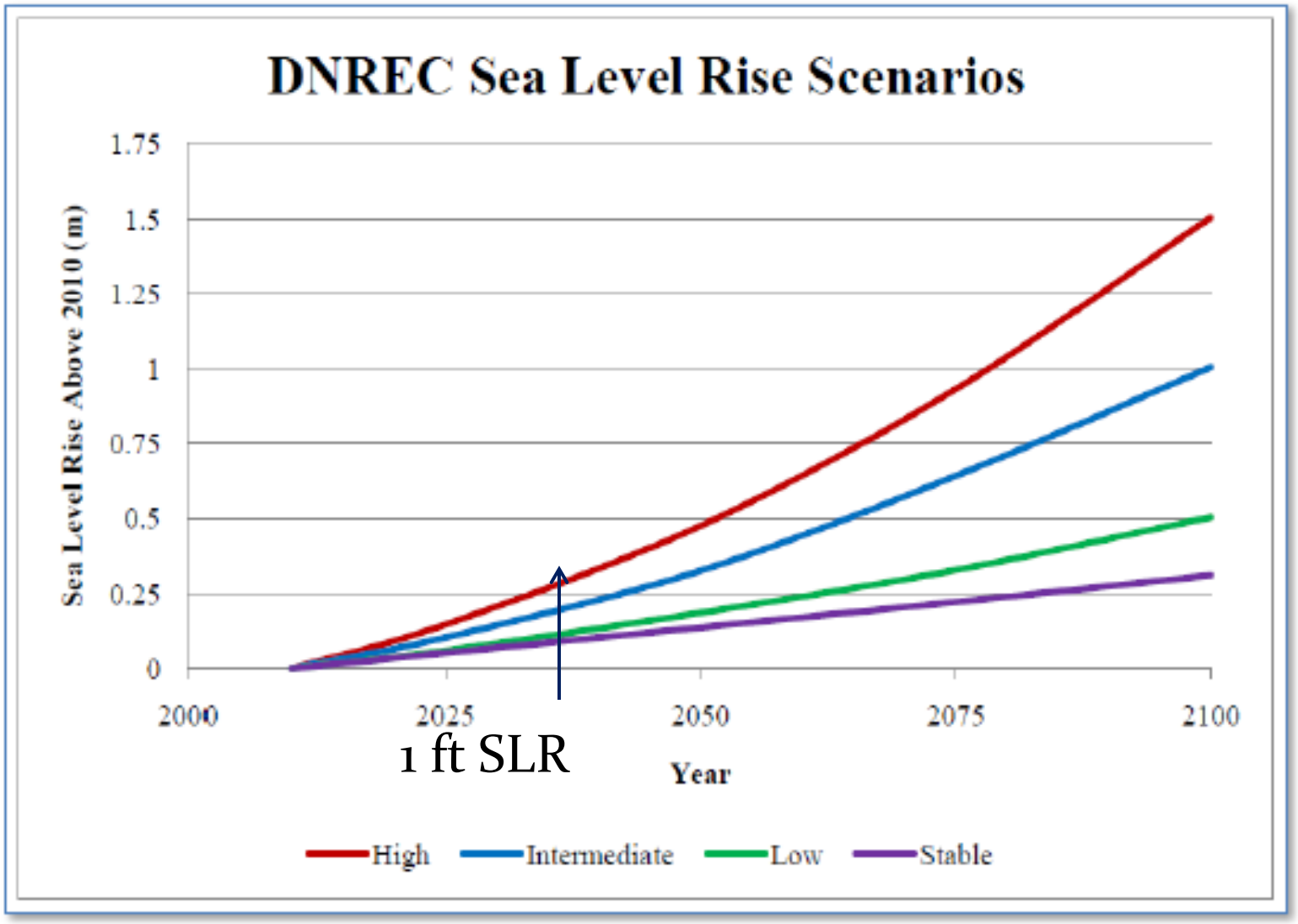
Dark Blue Line = Average extent of flood risk from marsh side, based on recent events. Light Blue Line will be discussed shortly. Blue X = locations of Bay flooding based on recent events.

# Local sea levels are rising at twice the global average




**Global rate = 1.7 mm/yr**
**Lewes, DE rate = 3.41 mm/yr**

# The rate of sea level rise is very likely to accelerate in the future




4.9 ft

3.3 ft

1.6 ft

# *Adaptation and Mitigation Options Fall Into 4 Main Categories*

Protect

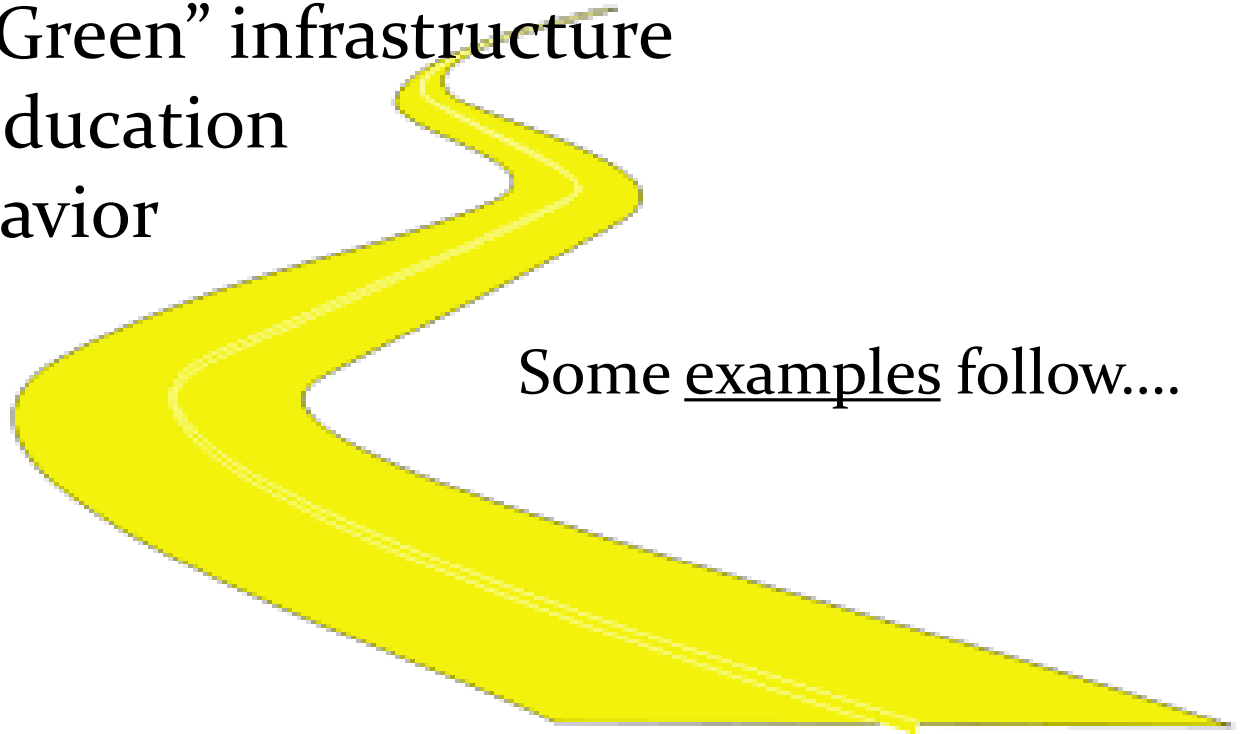
Accommodate

Avoid


Retreat

## *And are implemented in different ways…*

- Comprehensive Plan updates
- Town codes and ordinances
- Zoning designations
- Design and engineering projects
  - "Grey" and "Green" infrastructure
- Outreach and education
- Changes in behavior

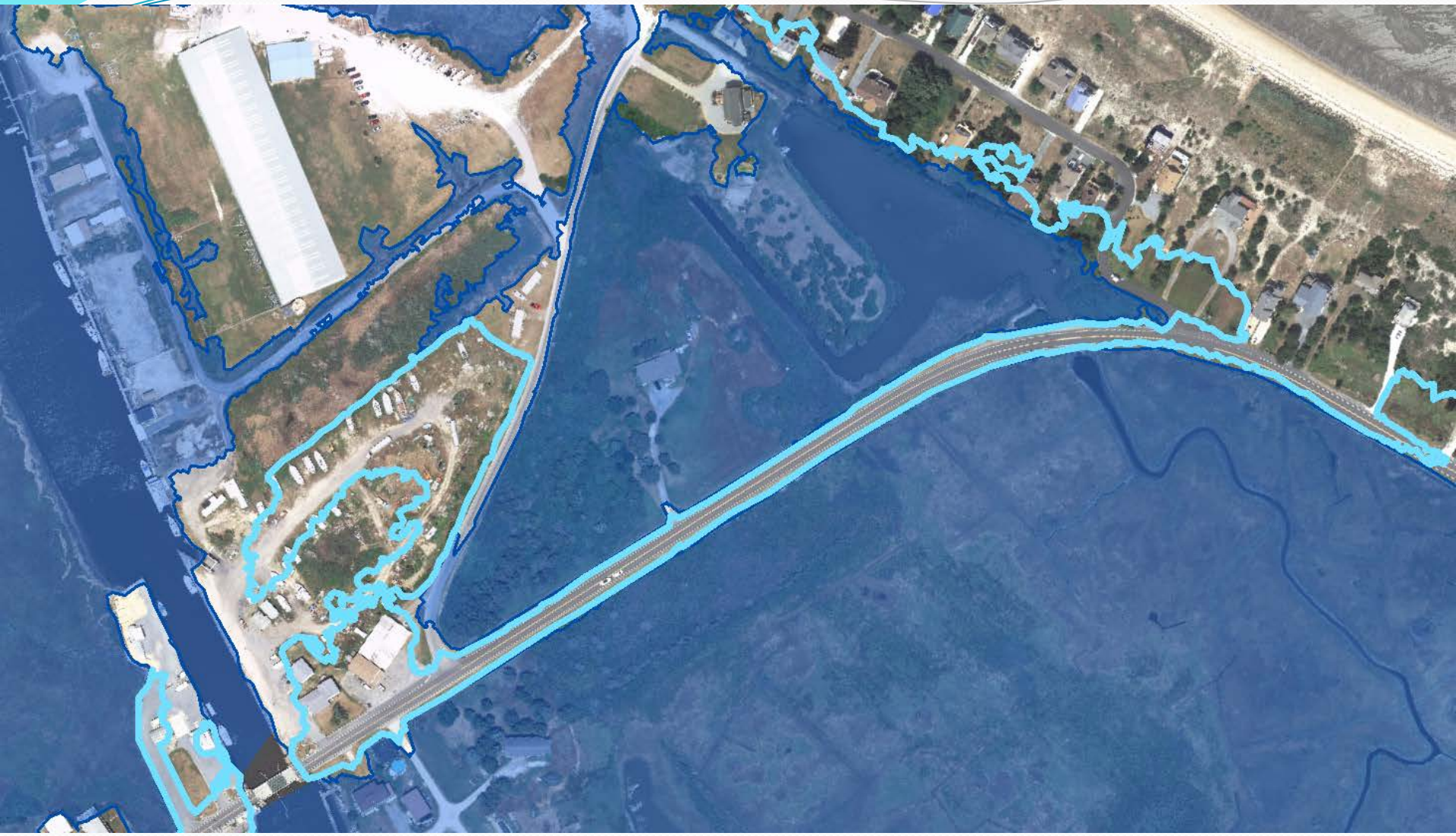


Some examples follow….

# Flood Contour Map: North Bay Avenue

Dark Blue Line = Average extent of flood risk from the marsh, based on recent events.
Light Blue Line = 1 ft of sea level rise added to flood line on marsh side.
Blue X = locations of Bay flooding

# Flood Contour Map: Bay Avenue to Cedar Beach Road



Dark Blue Line = Average extent of flood risk from the marsh, based on recent events.
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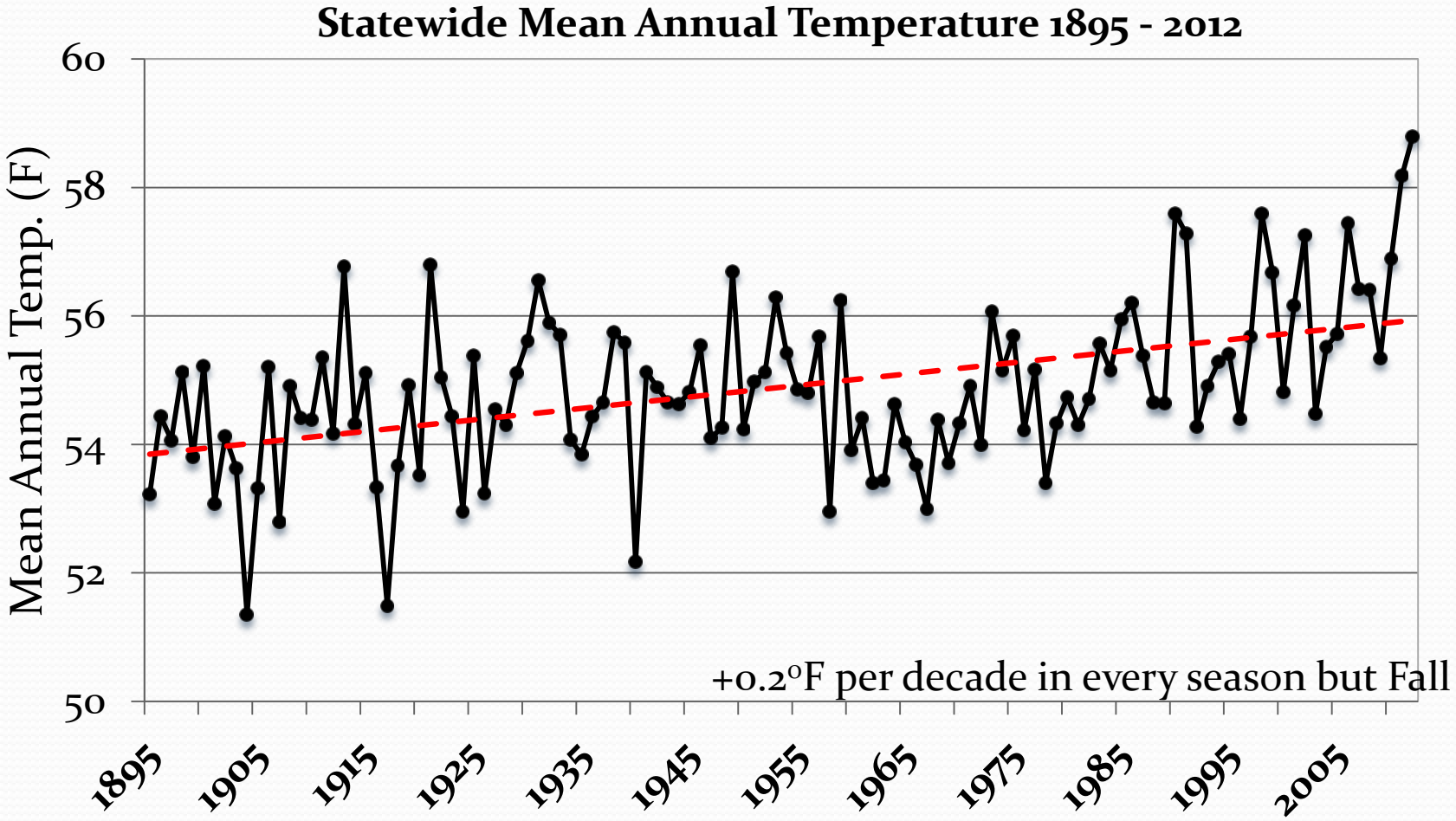
# Let's Talk Heat…

## Average temperatures are increasing in Delaware




Source: Dr. Dan Leathers, Delaware State Climatologist

**Adaptation and Mitigation Projects are carried out at different scales:**

Federal
State
County
Community
Property Owner


Community resiliency begins with **YOU**:

Know Your Risks

Plan for the future

Act NOW

Photos courtesy of Amy Parker and Bill McSpadden

# Questions/Comments?

- Please visit our tables and experts
- Interested in being in a focus group in December or January?  Sign in sheet at the lunch ticket table
- Inventory of first floor elevations, a/c units, and propane tanks – please visit Adaptation table

SLAUGHTER Beach DELAWARE

**"Safeguarding our heritage through conservation, education, and the sharing of our abundant natural resources."**

YOUR input led to the creation of this final Vision Statement for Slaughter Beach.

*Thank you for your feedback!*