

Host: **Senator Tony Hwang**

Extreme Weather & Coastal Resiliency Informational Forum



Fairfield 9-13-26 flooding event photo: Fairfield Fire Department / Facebook

Our coastline and riverways are at a greater risk of flooding, erosion, and water damage. What impact do these hurricanes, super storms, and flash flooding have on our homes and neighborhoods? What can we do better to prepare, protect, and develop safety plans against these storms? Join us to learn more from expert speakers.

FEATURED PANALISTS:

- **Becky Bunnell**
  Fairfield Flood & Erosion Control Board
- **Matt Paul**
  Fairfield CERT (Community Emergency Response Team)
- **Douglas Glowacki**
  Emergency Management Program Specialist
- **Emergency Services Expert Invited**
  Fairfield First Responders

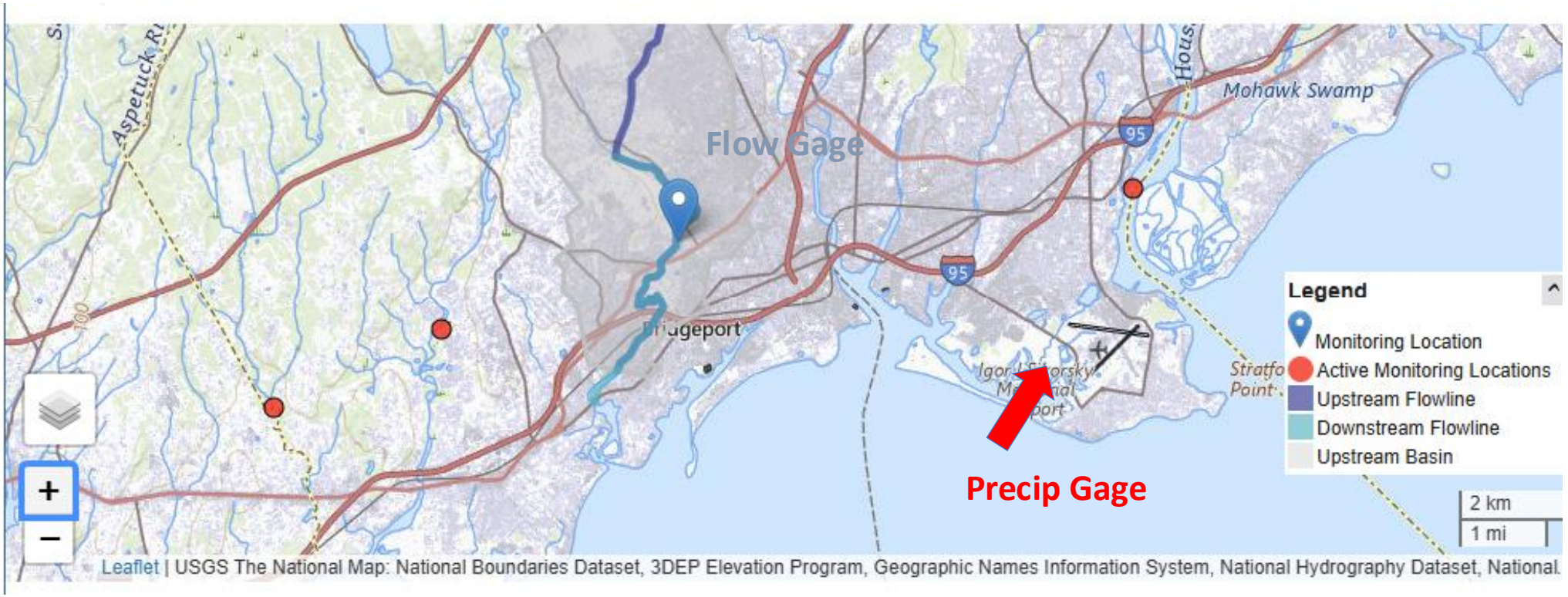
Jim O'Donnell
odonnell@uconn.edu



CIRCA Mission:

Increase the resilience and sustainability of vulnerable communities in Connecticut's coastal and inland areas to severe storms and the growing impacts of climate change on the natural, built, and human environment in response to critical, identified needs and priorities.

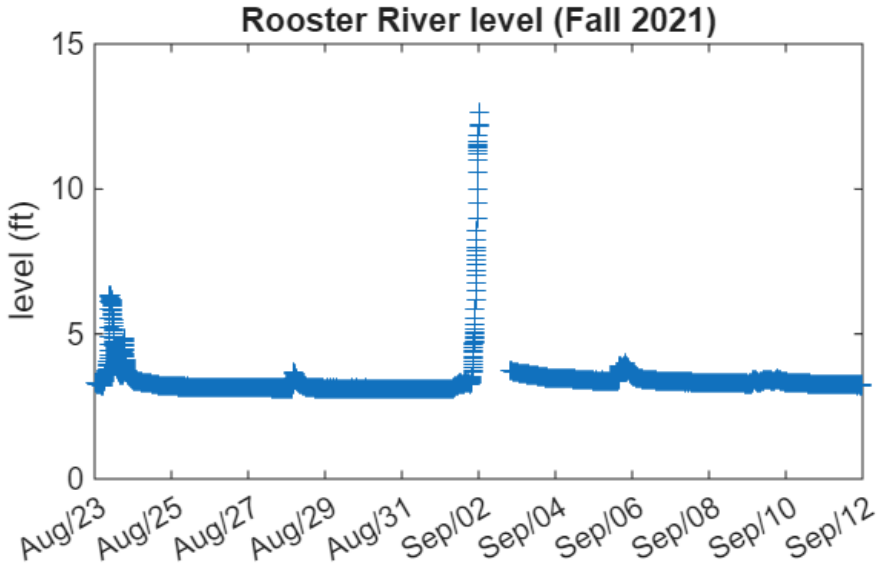
[Rooster River at Fairfield, CT - USGS Water Data for the Nation]

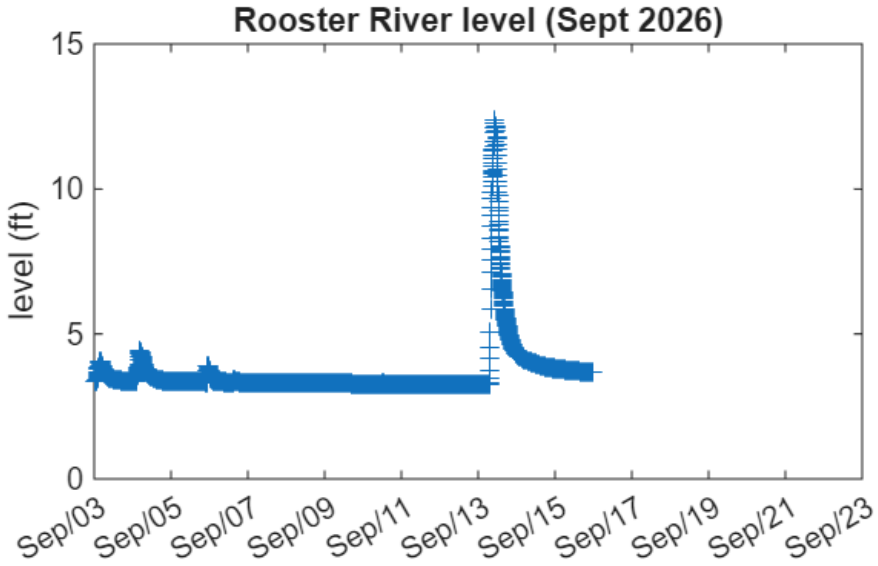


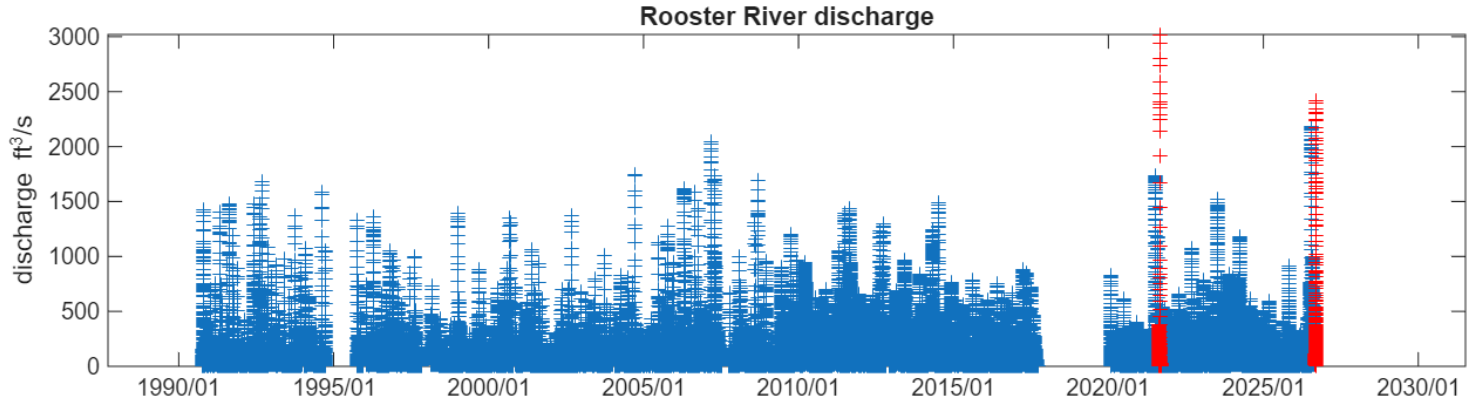
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Two Largest flow rates in the Rooster River at the USGS Flow Gage
No strong evidence of increasing high values.

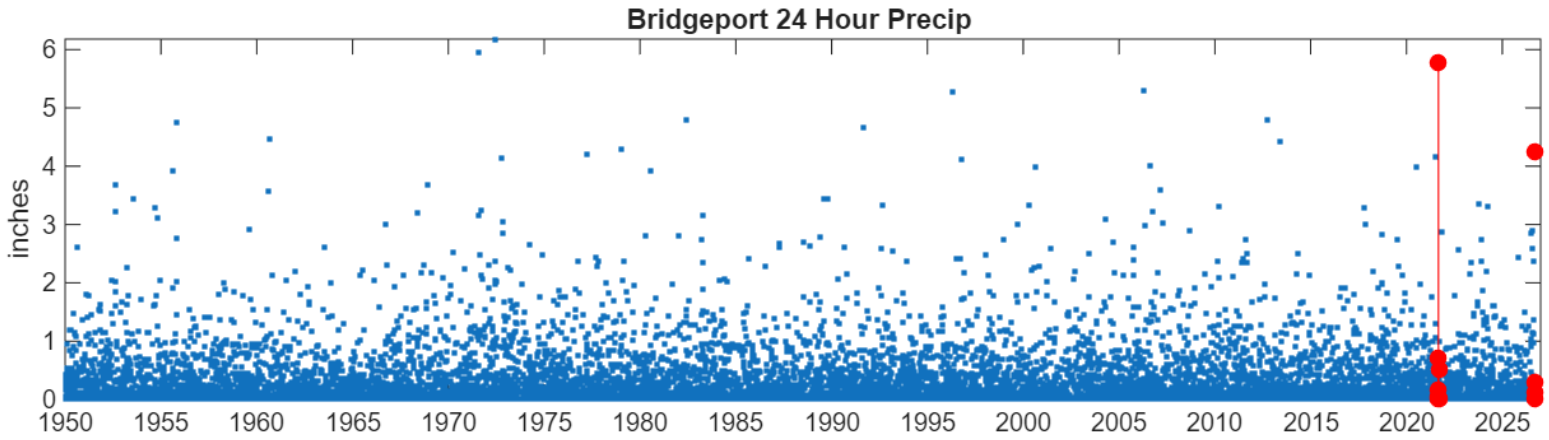
CIRCA
Connecticut Institute for Resilience and Climate Adaptation

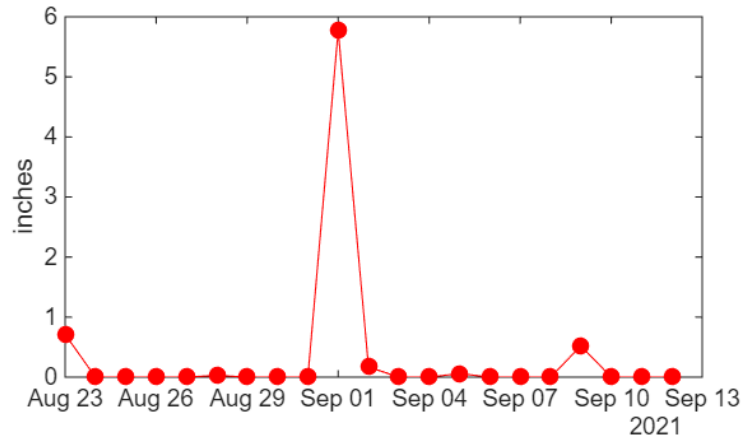


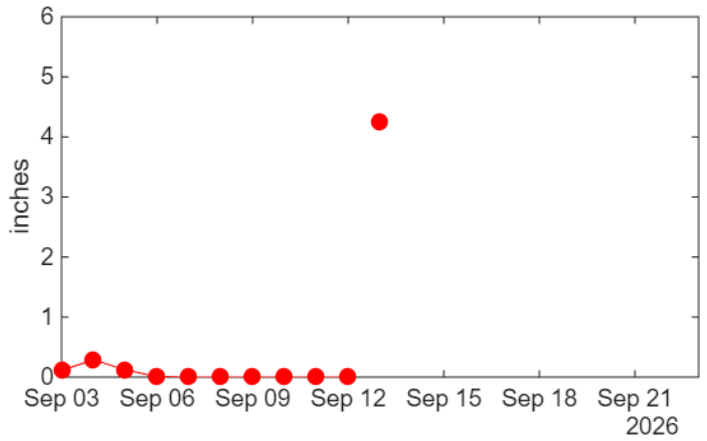




Rainfall (precipitation) at Bridgeport-Sikorsky Airport Gage







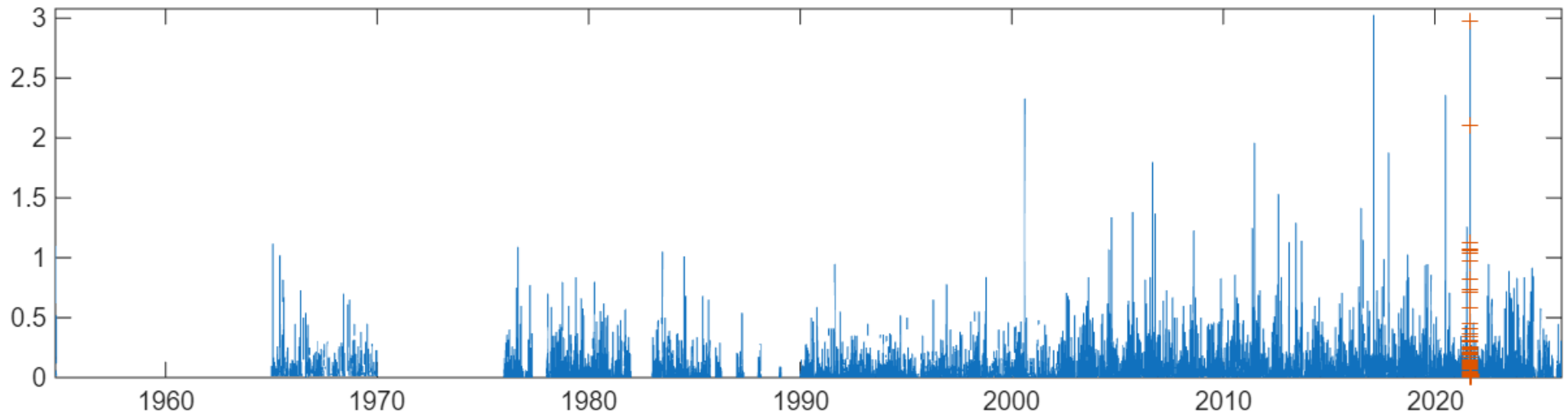
Large 24 Hour precipitation accumulations in 2021 and 2026 (more than 4 inches) have occurred 17 times in 76 years.

On average, once every 4.5 years.

There is no strong evidence of increasing 24 hour precip values.

Rainfall (precipitation) at Bridgeport-Sikorsky Airport Gage at hourly intervals.

There is evidence of increasing high values.



What's in Your Go Bag? When the going gets tough the tough get going.

Personal preparedness and resiliency is community resiliency. We are here to help.

Information provided is meant as a starting point and a resource. Each family and individual may have different requirements for their own preparedness needs.

Food Items
Ready-to-eat canned meats, fruits, and vegetables
- Canned, juices, milk, soup
- Sugar, salt, pepper
- High-energy foods (Peanut butter, jelly, crackers, granola bars, trail mix
- Foods for infants, elderly persons, or persons on special diets
- Comfort and stress foods (Cookies, hard candy, sweetened cereals, lollipops, instant coffee, tea bags)

Kitchen Items
- Manual can opener
- Mess kits or paper cups, plates, and plastic utensils
- All-purpose knife
- Small cooking stove / cooking fuel
- Trash bags
- Household liquid bleach to treat drinking water
- Aluminum foil and plastic wrap

Disaster First Aid Kit
- First aid manual
- Two-inch sterile gauze pads
- Hypoallergenic adhesive tape
- Needle
- Antibacterial ointment
- Assorted sizes of safety pins
- Non-latex exam gloves
- Four-inch sterile roller bandages
- Sunscreen
- Tweezers
- Aspirin or non-aspirin pain reliever
- Antacid (for upset stomach)
- Laxatives
- Sterile adhesive bandages
- Four-inch sterile gauze pads
- Triangular bandages
- Moistened towelettes
- Thermometer
- Tube of petroleum jelly or other lubricant
- Cleaning agent/soap
- Cotton balls
- Three-inch sterile roller bandages
- Scissors
- Hot and cold compress
- Anti-diarrhea medication
- Allergy medication
- Tourniquet

Disaster Tool Kit
- Emergency preparedness manual*
- Battery-operated weather radio and extra batteries
- Tube tent
- Duct tape
- Matches in a waterproof container
- Plastic storage containers
- Paper, pencil*
- Work gloves
- Flashlight and extra batteries*
- Fuel for vehicle and generator
- Plastic sheeting

Non-sparking shut-off wrench to turn off household gas and water
- Pliers
- Compass*
- Fire extinguisher(small ABC type)
- Signal flare(s)*
- Needles, thread
- Medicine dropper
- Whistle
- Land line telephone

Personal Items
Toilet paper, towelettes*
- Feminine supplies*
- Household chlorine bleach
- Disinfectant
- Plastic garbage bags, zip-ties
- Soap, liquid detergent*
- Personal hygiene items*
- Plastic bucket with tight lid
- Liquid hand sanitizer

Medication and medical records
(stored in a waterproof container)
- Copies of prescriptions and/or original prescription bottles
- Heart/Blood Pressure Medications
- Contact Lens supplies
- Insulin
- Denture and oral hygiene needs
- Eyeglasses

Household Documents and Contact Numbers
(stored in a waterproof/fireproof container)
- Current photos of family members
- Emergency contact list and other important phone numbers
- Personal identification,
- Cash, including change
- credit card
- Physical and electronic copies of important documents: birth certificates, marriage certificate, driver's license, Social Security cards, passports, wills, deeds, inventory of household goods, insurance papers, contracts, immunization records, bank and credit card account numbers, and stocks and bonds.
- Extra set of car keys and house keys
- Map of the area and phone numbers of places you could go

Items for Infants
Formula, Bottles, Medications, Diapers, Binkys, entertainment

All Family Members
- Entertainment/games
- Personal comfort item

Don't Forget Your Pets -
Food, potable water, bowls, cat litter, pan, can opener
- Pet beds and toys, if easily transportable
- Information on feeding schedules, medical conditions behavior problems
- Pet First Aid Kit
- Current photos of your pet in case they get lost
- The name and number of your veterinarian in case you have to foster or board your pets
- Sturdy leashes, harnesses, and/or carriers to transport pets safely and ensure that your animals can't escape

For more detailed information on disasters and emergencies, building a kit, making a plan, preparedness for kids, teens, families, educators and organizations visit: www.ready.gov

Town of Fairfield

www.fairfieldct.org
Sign up, on the website, for **Fairfield Alert**; an emergency alert system
Text 'FairfieldCT' to 888777 or
www.fairfieldct.org/alerts

Bigelow Center for Senior Activities
www.fairfieldct.org/bigelowcenter
203-256-3166

Community Resource Directory
www.fairfieldct.org/service/human_and_social_services_department/community_resource_directory.php

Fairfield Animal Control
www.fairfieldct.org/animalcontrol
203-254-4857

Fairfield Fire Department
https://cms3.revize.com/revize/fairfieldfire/
Fire Dispatcher Non-Emergency:
203-254-4700
Fire Department Administrative Office:
203-254-4713

Fairfield Health Department
www.fairfieldct.org/health
203-256-3020

Fairfield Police Department
www.fpdct.com
Emergency: 9-1-1
Non emergency: 203-254-4800

Poison Control
1-800-222-1222 (toll free, 24-hour)
www.poison.org

State & National Organizations

State of CT
https://portal.ct.gov/CTPrepares
Connecticut's Emergency Management News and Resource Center
Sign up for CT Alert
Emergency Checklists
Emergency Contacts

CT Division of Emergency Management and Homeland Security
https://portal.ct.gov/demhs

American Red Cross
www.redcross.org
The American Red Cross website is full of excellent tips and information related to most of the natural disasters that occur, including a few topics not covered at FEMA's Ready.gov website.

CDC
www.pandemicflu.gov
The Centers for Disease Control and Prevention (CDC) established this website as a hub for national information on pandemic influenza

FEMA
https://community.fema.gov
A New Way to Experience Your Preparedness Journey

https://www.ready.gov/community-emergency-response-team
Resources, trainings, and information about the CERT program.

Ready.Gov
www.ready.gov
FEMA's national website for disaster preparedness. Provides excellent, general advice and is a good place to start.

Apps to Download

American Red Cross - Emergency: Severe Weather App
Download from your favorite app store or text: "GETEMERGENCY" to 90999

CT Prepares Mobile App
https://portal.ct.gov/CTPrepares
The Connecticut Emergency Preparedness Mobile Application will allow Connecticut residents to access emergency information and alerts on the go in the event of an emergency. Connecticut residents would be able to create interactive emergency kits, customize family communication plans, and view preparation guides on what to do in an emergency all from their mobile device.

CT Safe Mobile App
https://portal.ct.gov/CTPrepares/Stay-Informed
The CT Safe Mobile App allows citizens of Connecticut to report on suspicious activities within their communities.
Connecticut citizens can view and select suspicious activities from a list of predefined activities, elect the appropriate activity, and generate an email to the Connecticut Intelligence Center (CTIC).

FEMA Mobile App
www.fema.gov/about/news-multimedia/mobile-products
Allows you to receive real-time weather alerts, locate emergency shelters in your area, prepare for common hazards, and more.

Zello
www.zello.com
Zello is a walkie-talkie right on your phone. Users can send short audio messages to one another. Two options are available, one for personal use in an emergency and another for work. Emergency responders can connect cheaply and quickly, and community groups can also connect easily.

Local Power Company and Utilities Contacts

Aquarion
800-732-9678
www.aquarionwater.com
Sign-up for emergency and outage alerts

Frontier
Residential: 800-921-8101
Commercial: 800-921-8102
www.frontier.com
Outage information and online account access

Optimum
866-950-3278
@OptimumHelp
www.optimum.net
Sign-up for service alerts or chat online

Southern CT Gas Company
800-659-8299
www.soconngas.com
If you smell gas, leave your house and call 9-1-1

United Illuminating
Report an outage at: 800-722-5584
For outage alerts text REG to 839884
or visit: www.uinet.com

CONNECTICUT'S
EXTREME WEATHER
September 19th, 2026

EXTREME WEATHER IN CONNECTICUT

Douglas Glowacki

Emergency Management Program Specialist

Connecticut Department of Emergency Services & Public Protection

Division of Emergency Management & Homeland Security

Governor Ned Lamont
Ronnell A. Higgins, Commissioner
William H. Turner III, Director

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Weather and Technology

Storm Surge & Flash Flooding

Hurricane Vulnerability

AI Forecasting

The Connecticut Mesonet



AI Generated Image

WEATHER'S INFLUENCE IN THE 21ST CENTURY…

Newscasts in the 1970's started with headlines, sports and then weather at 20 minutes past the hour. Technology in the 70's was not as sensitive to significant weather events. Roadmaps were hardcopy, computers were almost non-existent in homes and businesses and there were no self-driving cars or cell phones.

Today, weather is the number one search term on the internet and for good reason. Severe weather is the number one potential disrupter of our technology.

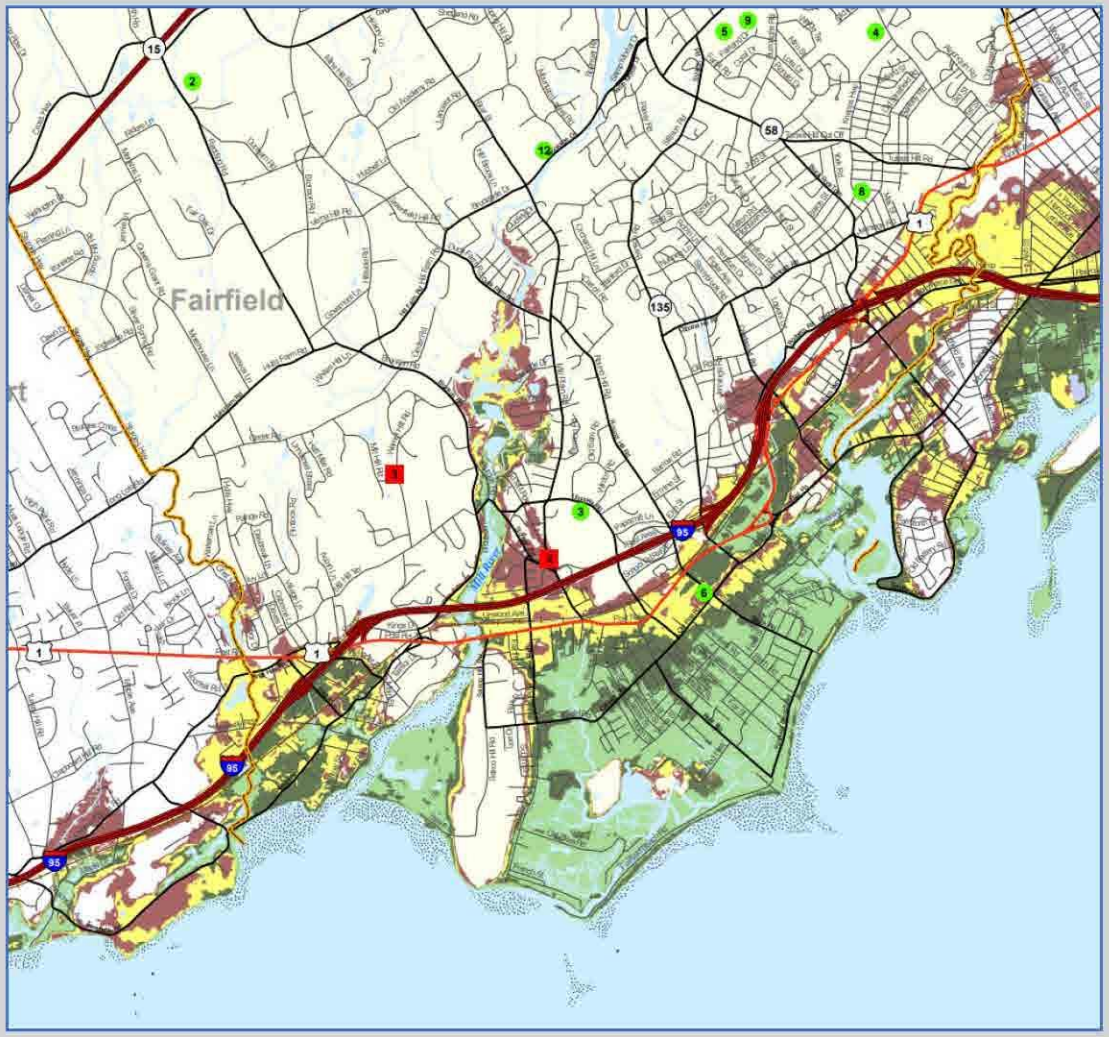


AI Generated Image

Self-driving cars cannot operate on snow covered roads and the loss of electricity can disrupt work, communications, banking, food transport and travel. The laptop computer on your desk has more processing power than all the PC's in the world COMBINED in 1980.

STORM SURGE FROM HURRICANES

The number one killer in a hurricane is storm surge, not high winds. This map of Fairfield shows how much of the coast would be under water in a hurricane. The green shaded areas would be inundated from a Category I or II hurricane. The yellow shaded areas would be flooded during a Category III hurricane and the red areas flooded during a Category IV hurricane.



COASTAL EROSION

Major hurricanes and even strong winter storms can reshape a coastline. New inlets can be formed that can cut off parts of the coast and isolate neighborhoods. Sand from beaches can be washed into roadways and homes.





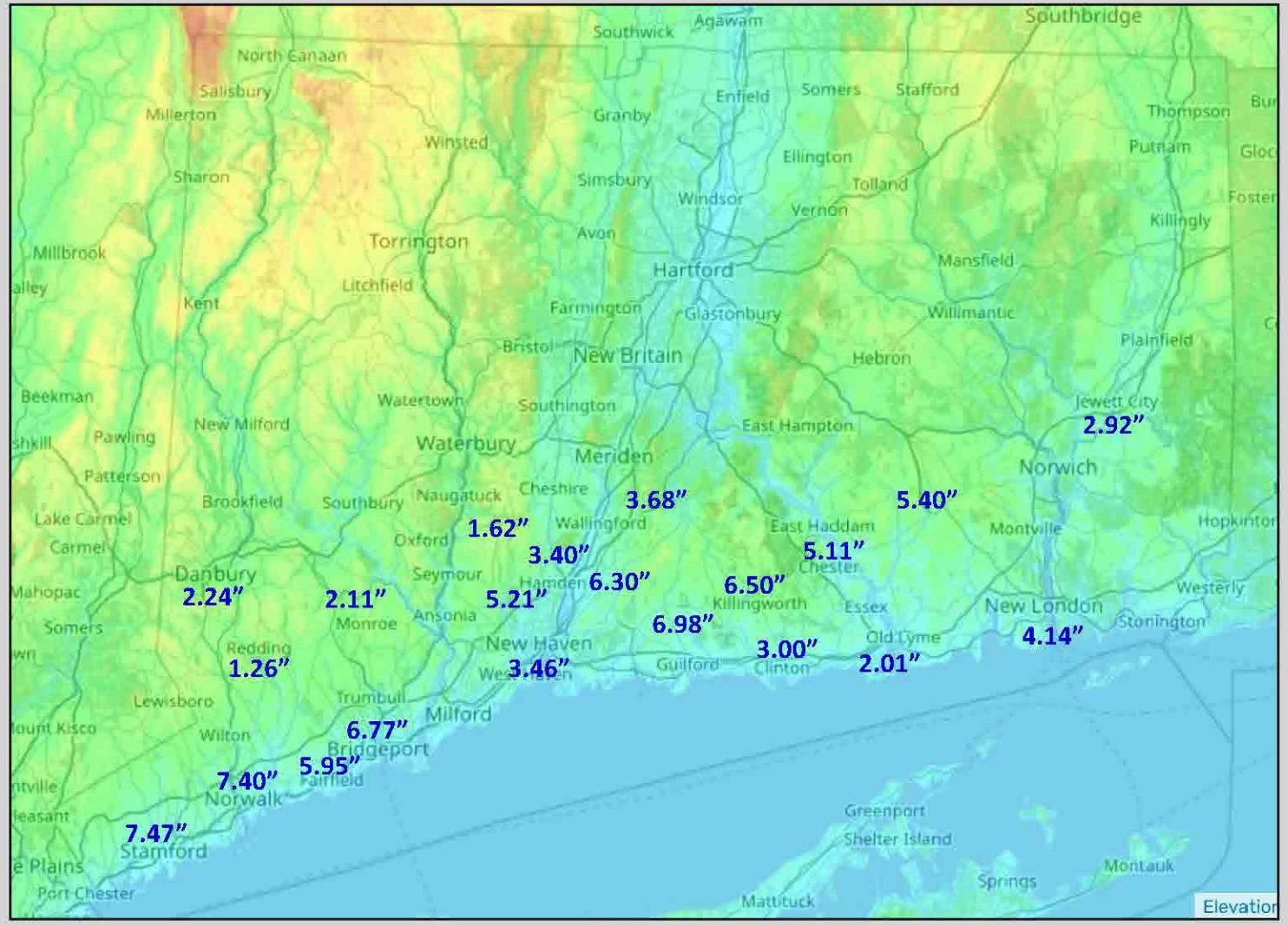
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SEVERE FLASH FLOODING 9/13/26…

A slow-moving moisture packed low pressure system generated extremely heavy rainfall over southern Connecticut on the morning of September 13th, 2026.

This storm surprised sophisticated computer models and was not forecast in advance. Total rainfall ranged from 2 – 7.5 inches in only 6 hours across southern CT.

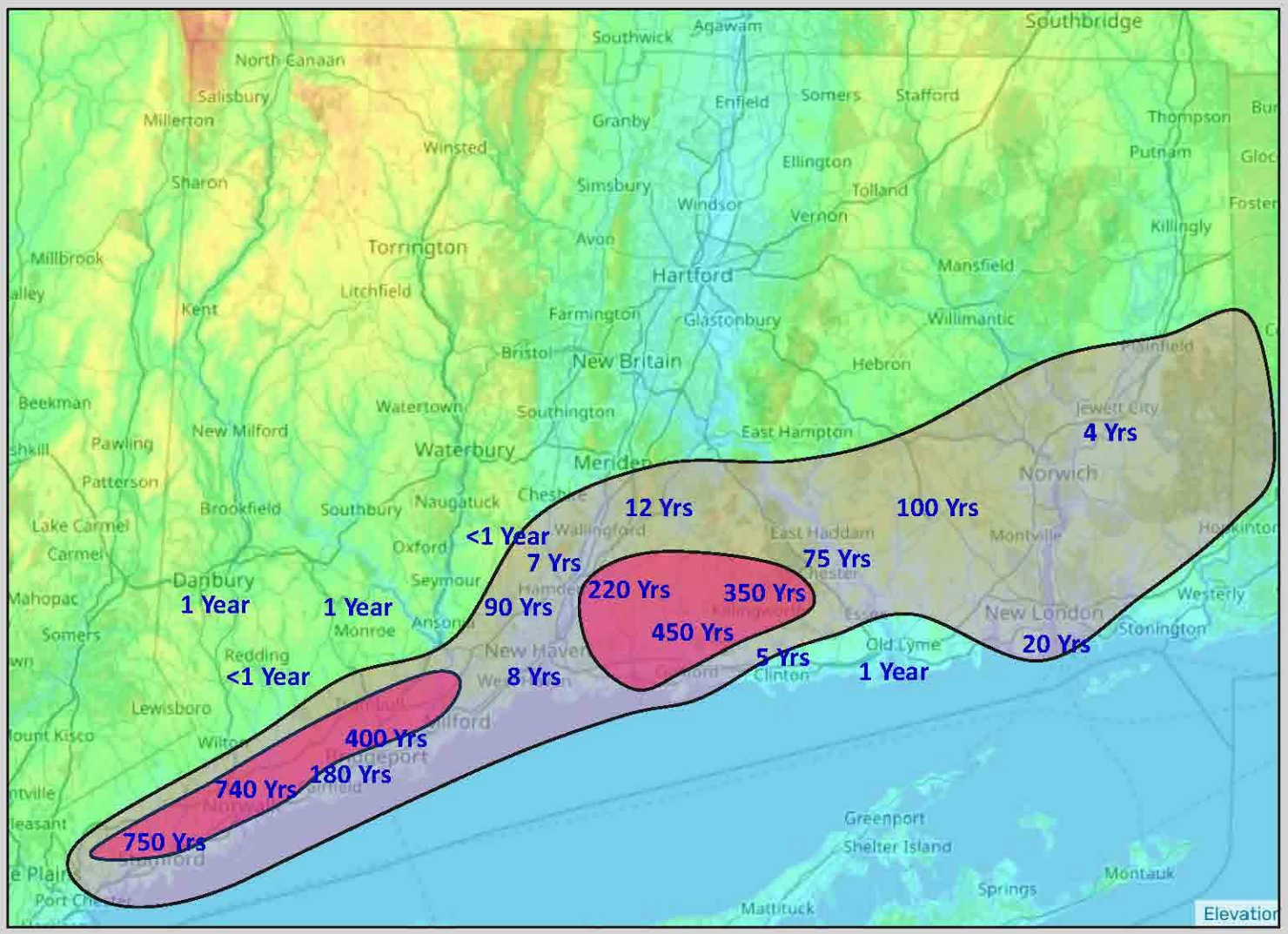
Multiple Flash Flood Warnings were issued by the National Weather Service warning of life-threatening urban flooding with rainfall rates up to 3” per hour at times.



RAINFALL RECURRENCE INTERVAL…

This map shows the preliminary rainfall recurrence intervals (based on PDS-Based Precipitation Frequency Estimates Published by NOAA Atlas 14) the for the September 13th storm. The band of very heavy rain is shown as light red, the band of extreme rainfall is shown in red.

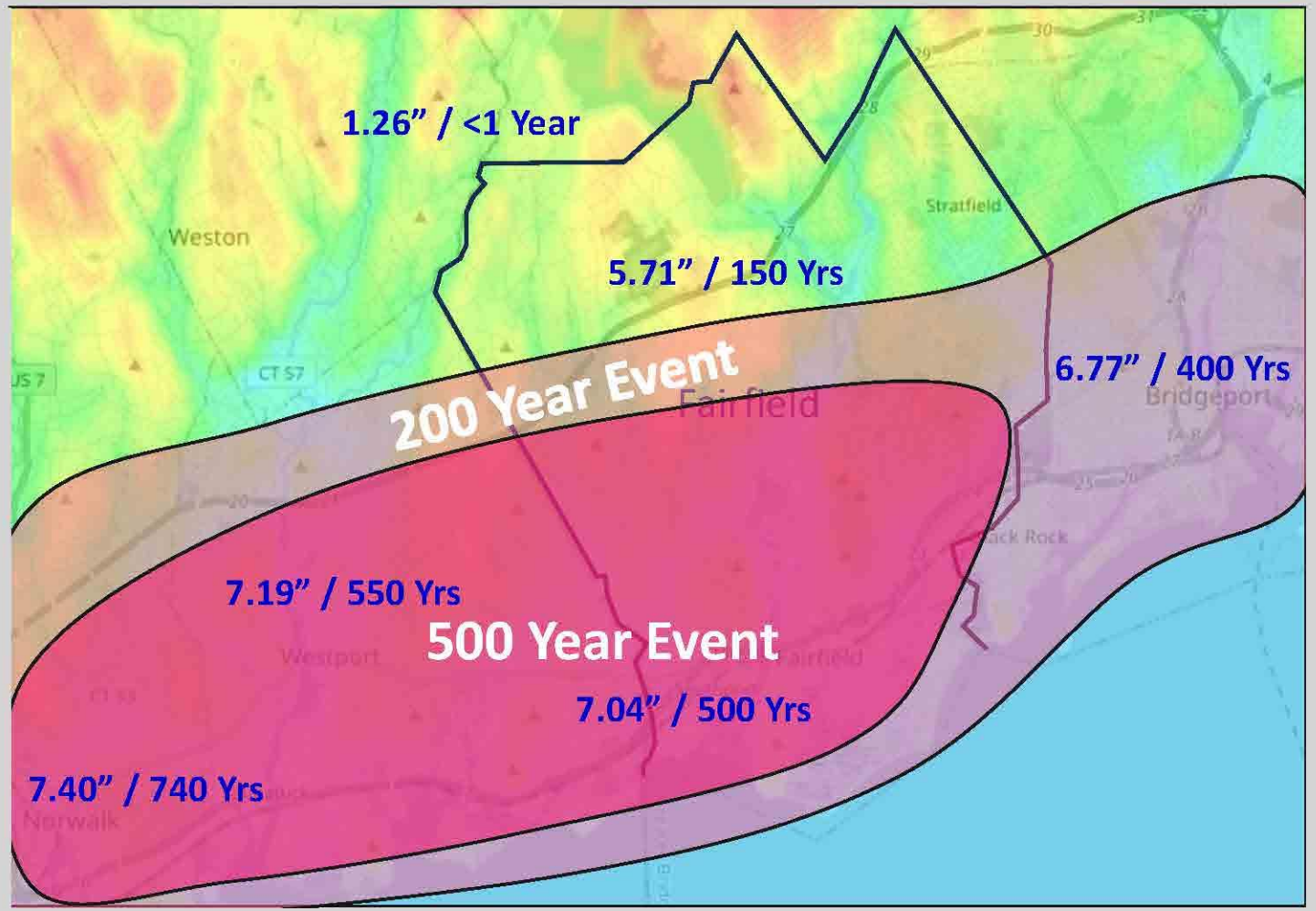
The recurrence intervals are based on a 6-hour duration and represent the average number of years before this event would be expected to occur again in the same town.



ZOOMING INTO THE FAIRFIELD AREA…

Readings are still preliminary however it appears that southern Fairfield along with Westport and Norwalk may have experienced a 500+ year rainfall event.

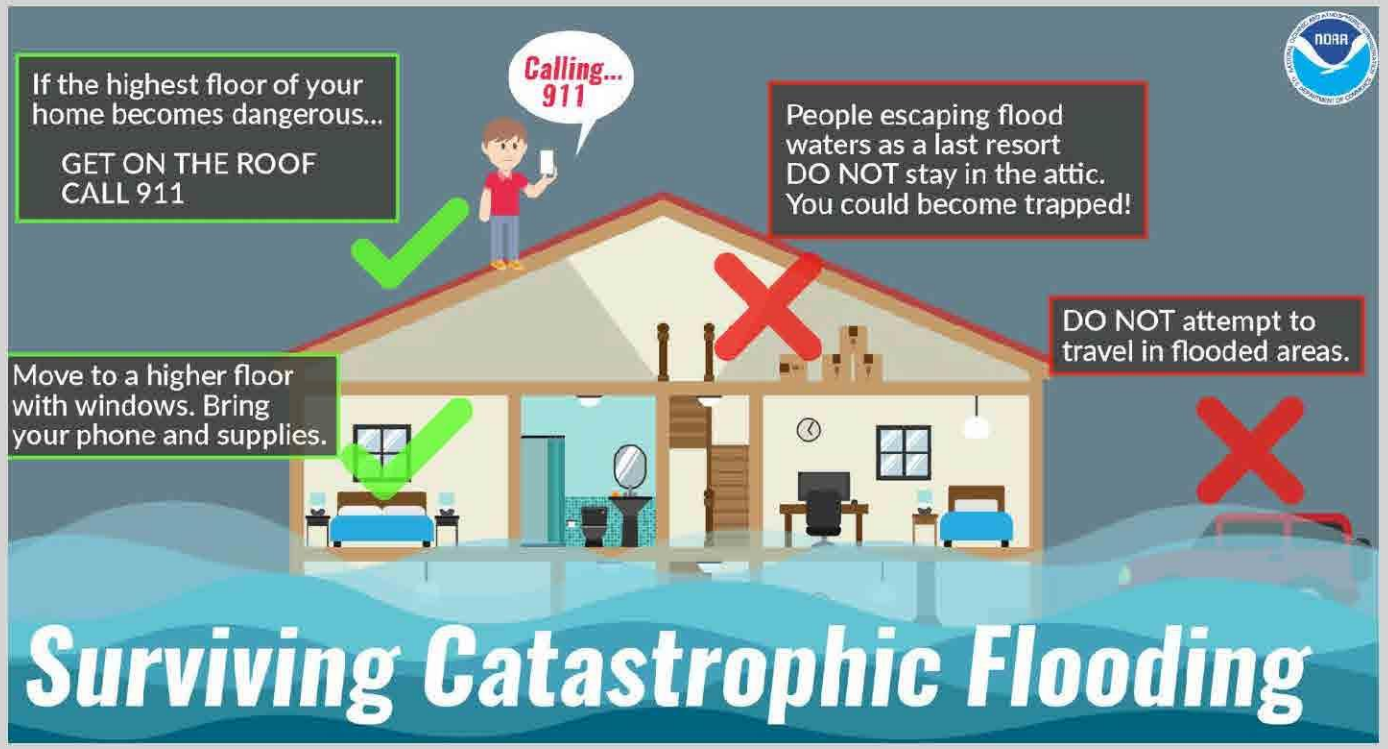
Major urban and small stream flooding occurred with some small brooks such as Sasco Brook in Southport recording all time high water levels.



FLASH FLOOD WATCHES AND WARNINGS…

FLASH FLOOD WATCH: Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain or imminent.

FLASH FLOOD WARNING: Issued to inform the public, emergency management, and other cooperating agencies that flash flooding is in progress, imminent, or highly likely.



FLASH FLOOD EMERGENCY: Issued for severe flash flooding that can threaten life, cause catastrophic damage or cause the failure of a major dam.

INLAND AREAS ARE NOT SAFE EITHER

Overall, we had a typical summer with several heat waves and numerous rainfall events resulting mainly from afternoon thunderstorms.

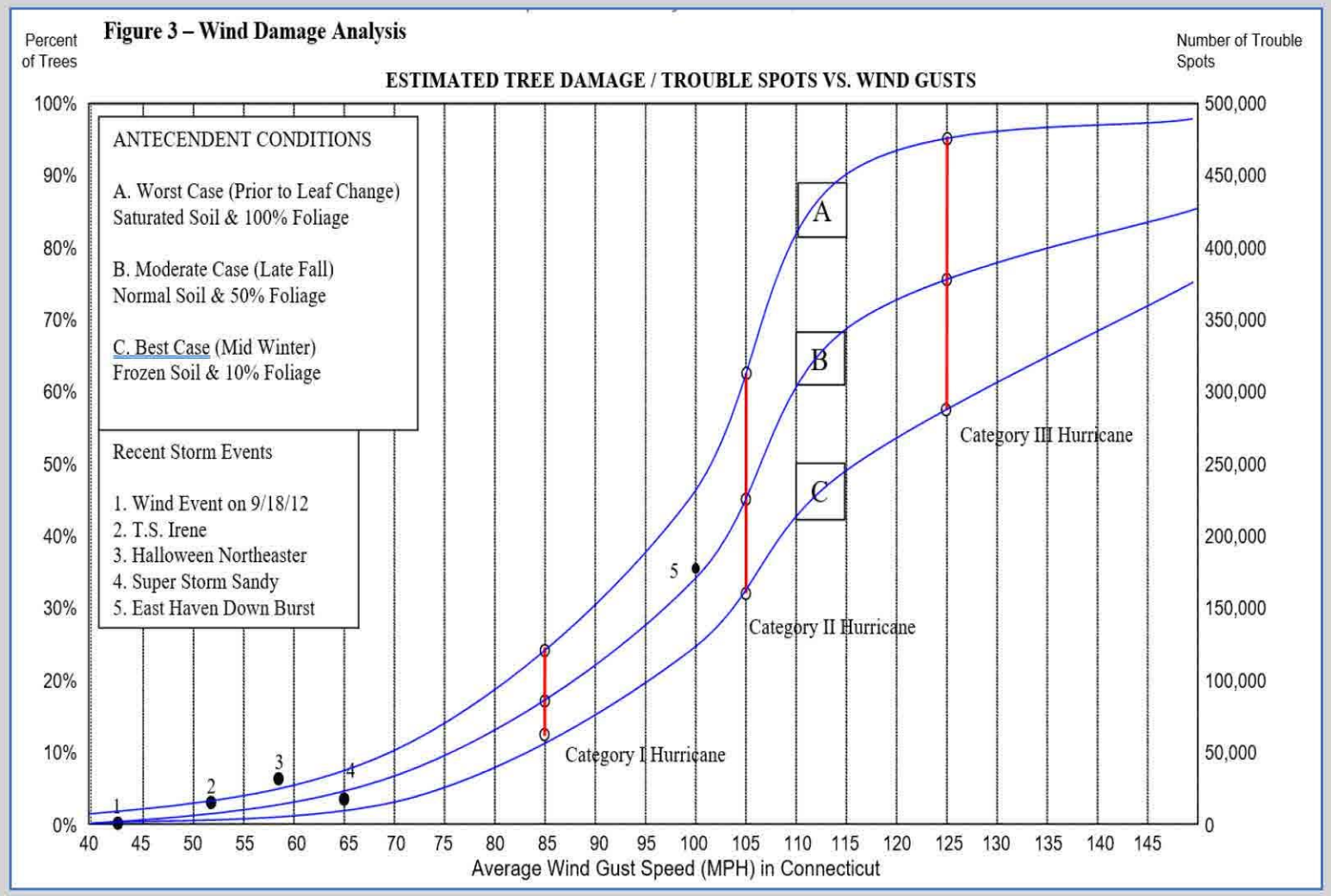
In the long term, this was another season of tree growth which will continue to increase our vulnerability to hurricanes as the tree stock continues to grow and age.



TREE AND POWERLINE VULERABILITY TO TROPICAL STORMS AND HURRICANES

Back in 2010 DEMHS conducted a tree density survey in seven towns across the state. The results of that survey determined that there are approximately 10 million trees growing on the sides of our state roads.

These trees are old and overgrown. If Connecticut is impacted by even a Category I hurricane the damage would be very severe. A Category III hurricane would cause catastrophic damage statewide.



REPEAT OF 1938 - CATEGORY III… Catastrophic Damage…

- Average Wind Gust 140 MPH. Peak Gust 160 MPH
- 50% - 75% of trees felled
- Estimated 1.5 Million (90%) power outages with over 200,000 line breaks.
- 2500 Roads closed due to fallen trees and power lines
- Recovery Time 5 – 7 weeks.



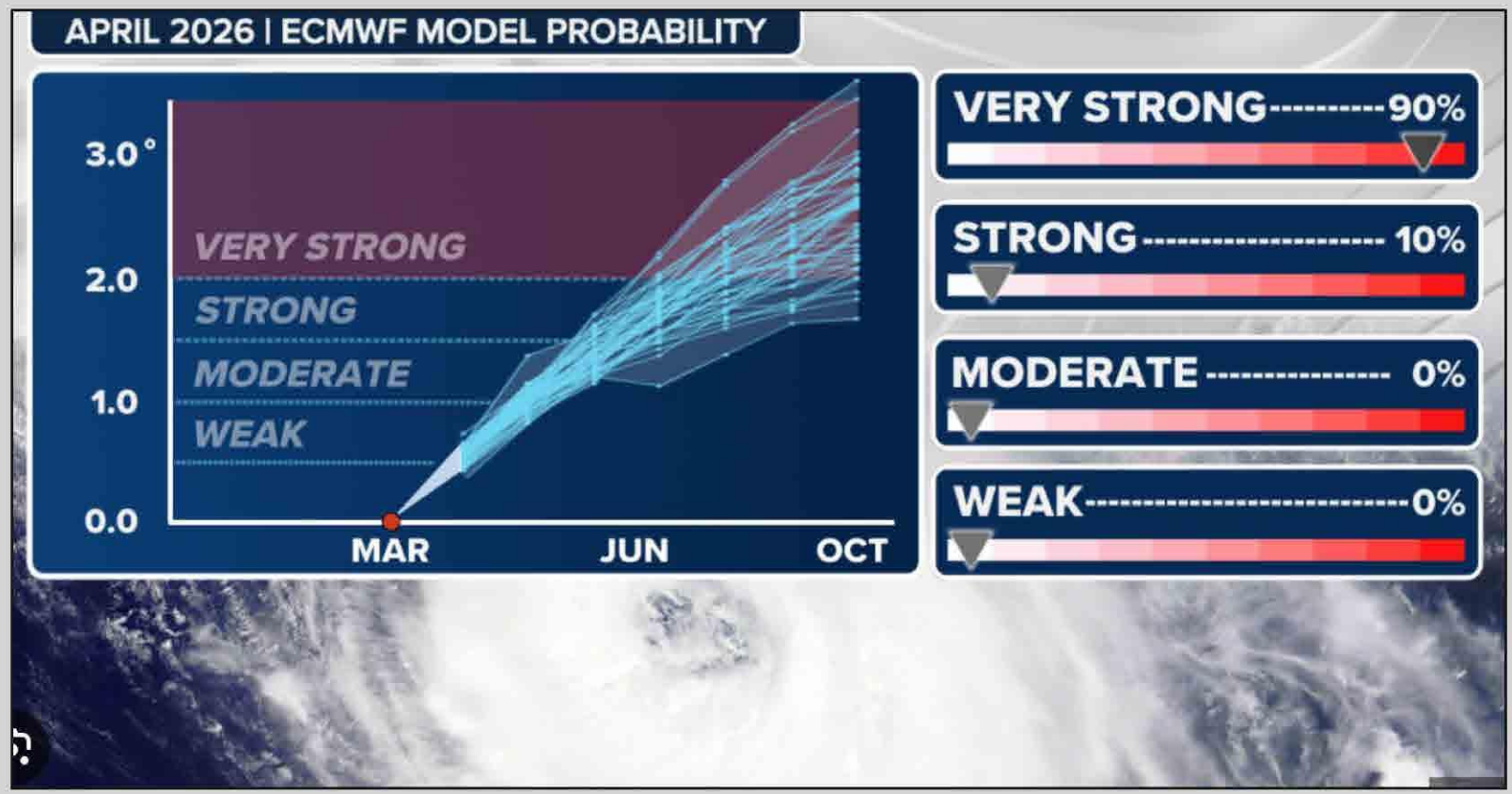
AI Generated Image

Where are All the Hurricanes This Year??? El Nino Is to Blame…

The current El Nino is near record strength over the eastern Pacific ocean where many hurricanes are forming.

El Nino's tend to increase upper air wind shear in the Atlantic Ocean which has the effect of shearing off the tops of developing tropical storms.

Strong Hurricanes can still develop, however there tend to be fewer strong hurricanes in an El Nino year. So far this year, not one hurricane has formed in the Atlantic Ocean. NEXT YEAR COULD BE A DIFFERENT STORY.

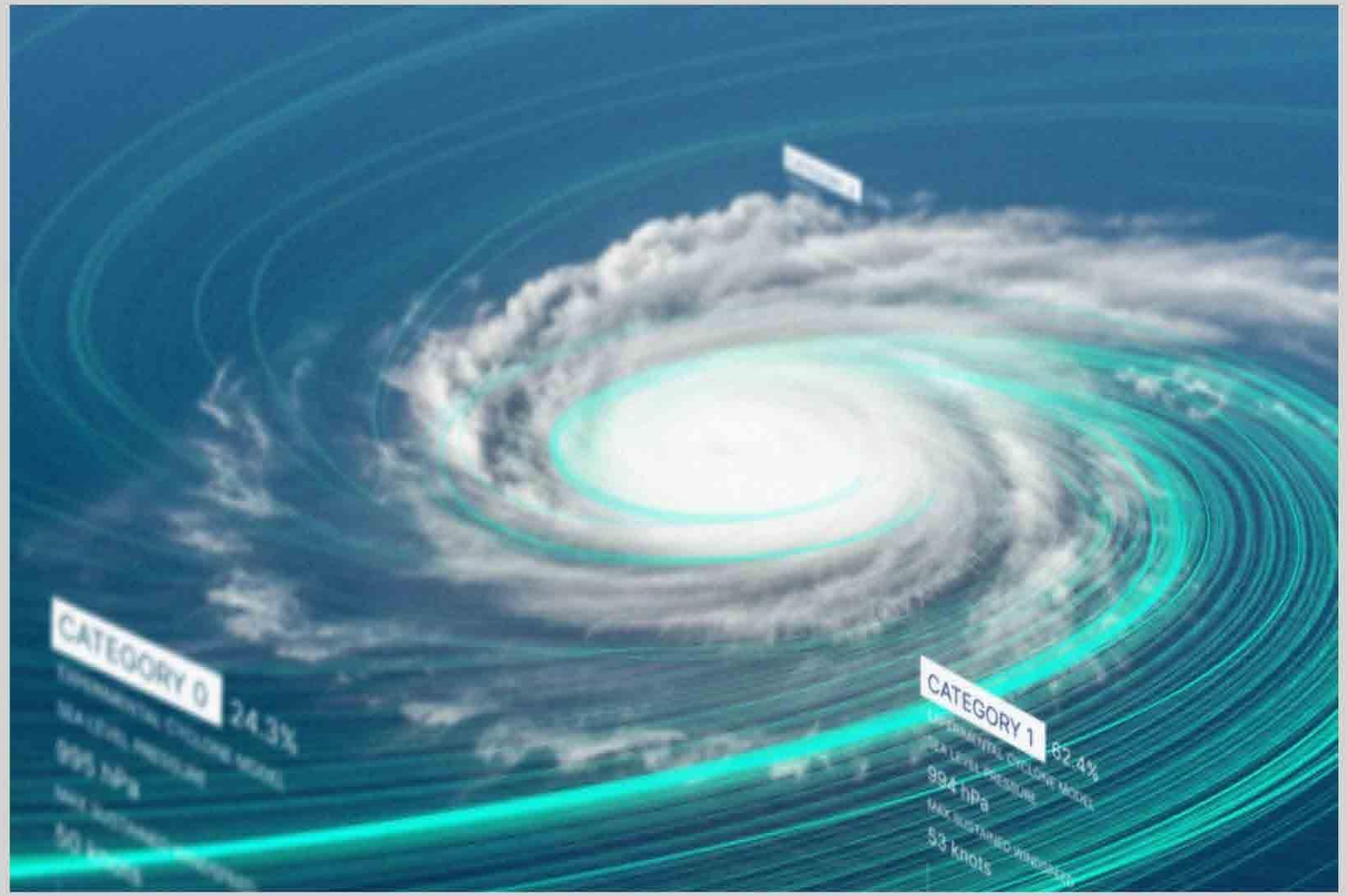


Courtesy of Fox Weather

A NEW ERA OF AI HURRICANE FORECASTING…

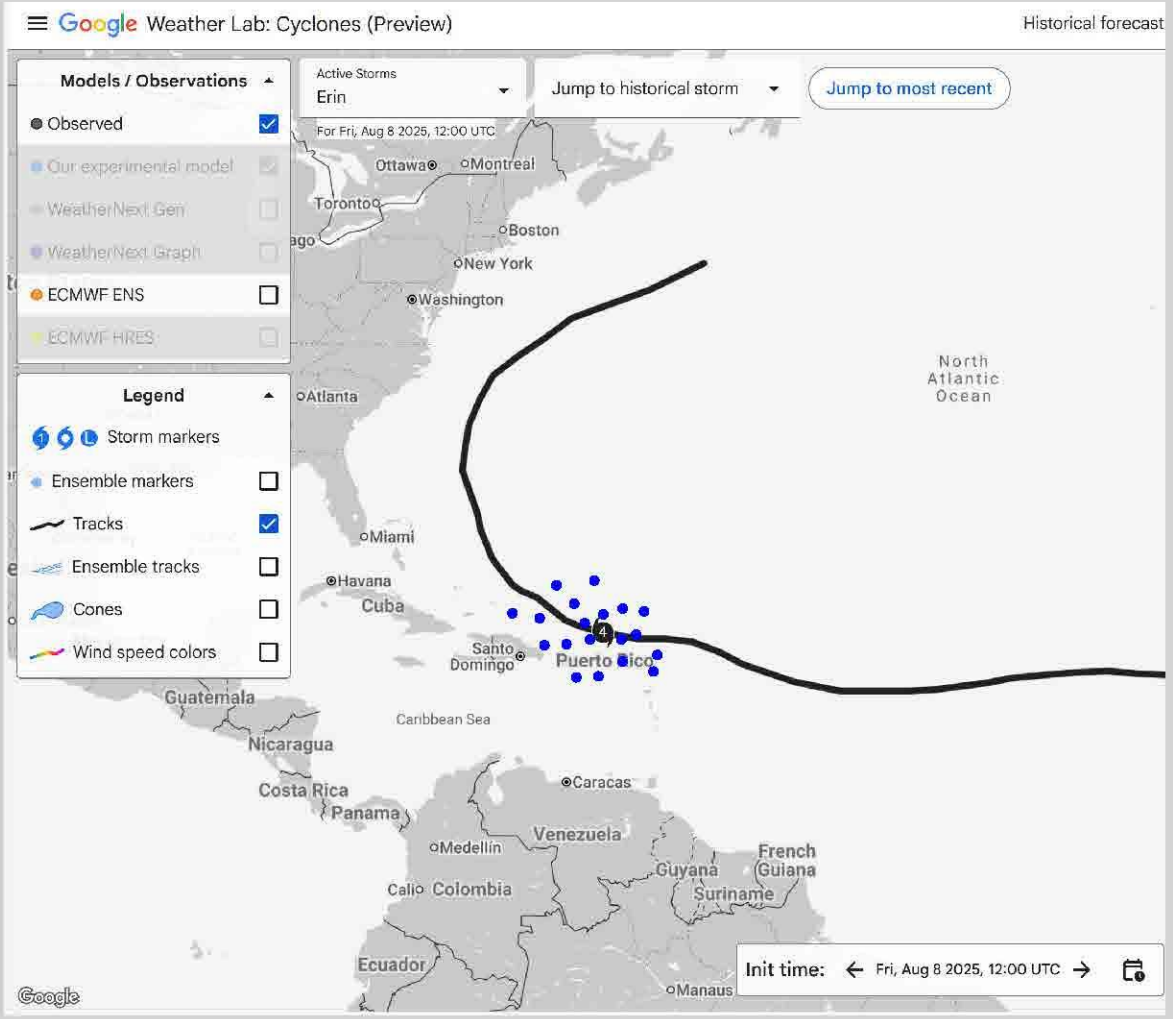
Launched on June 12, 2025, the Google Weather Labs AI Hurricane Forecasting tool is a major step forward in hurricane forecasting.

Making the already very good National Hurricane Center (NHC) forecasts even better.



AI HURRICANE FORECASTING…

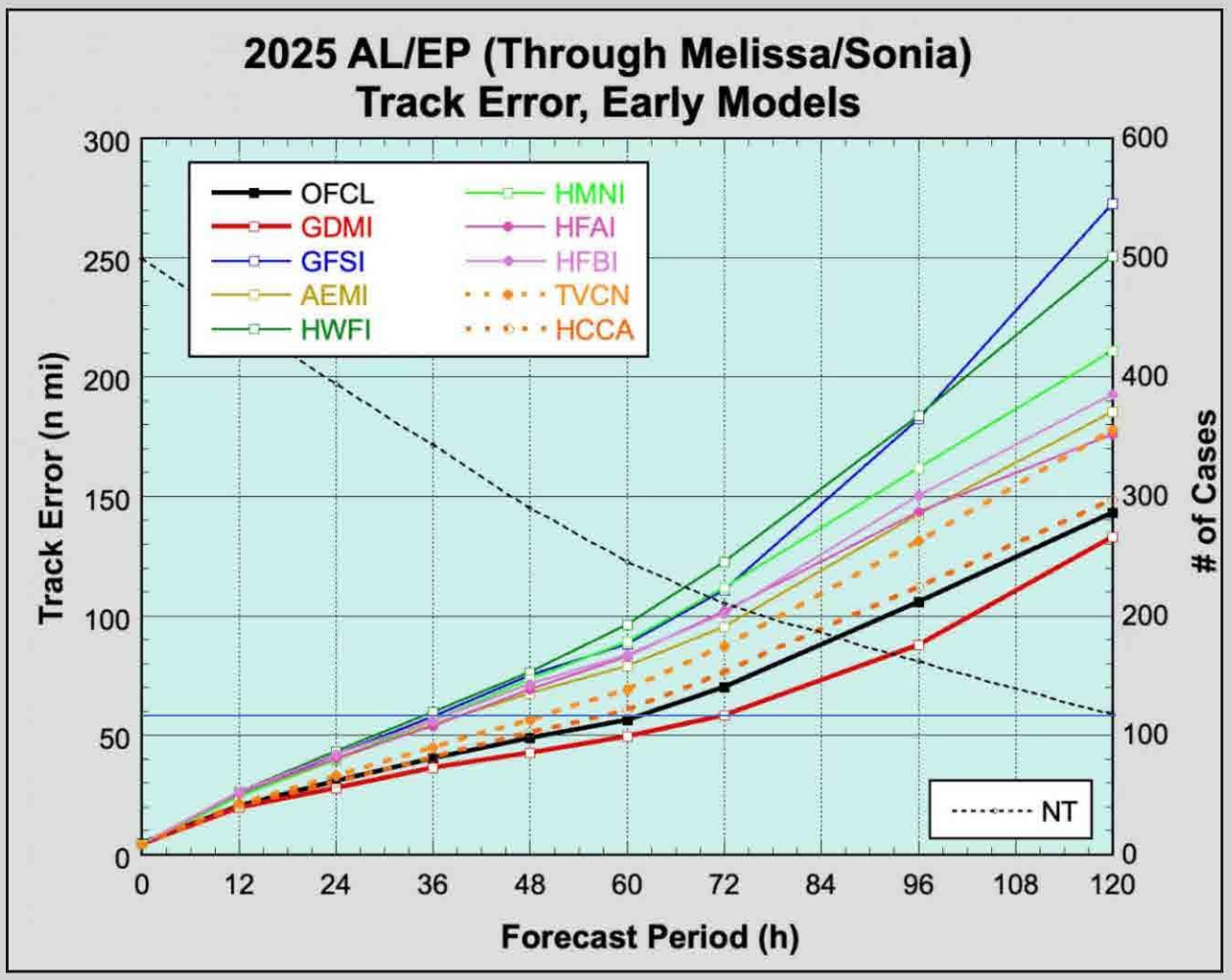
AI Models such as Googles Deep Mind AI Hurricane Forecasting Model don't use actual physical atmospheric measurements of a hurricane. Essentially, AI models are "trained" to learn patterns by analyzing vast amounts of historical data. They learn relationships between different variables and how those relationships vary over space and time. Most of the current AI models are trained on "reanalysis" datasets, which are huge global datasets that incorporate all global observations and span many decades.



AI HURRICANE TRACK ACCURACY…

Googles Deep Mind AI Hurricane Forecasting Model out-performed all other major models in the critical 3-day track forecast window IN ITS FIRST YEAR OF OPERATION.

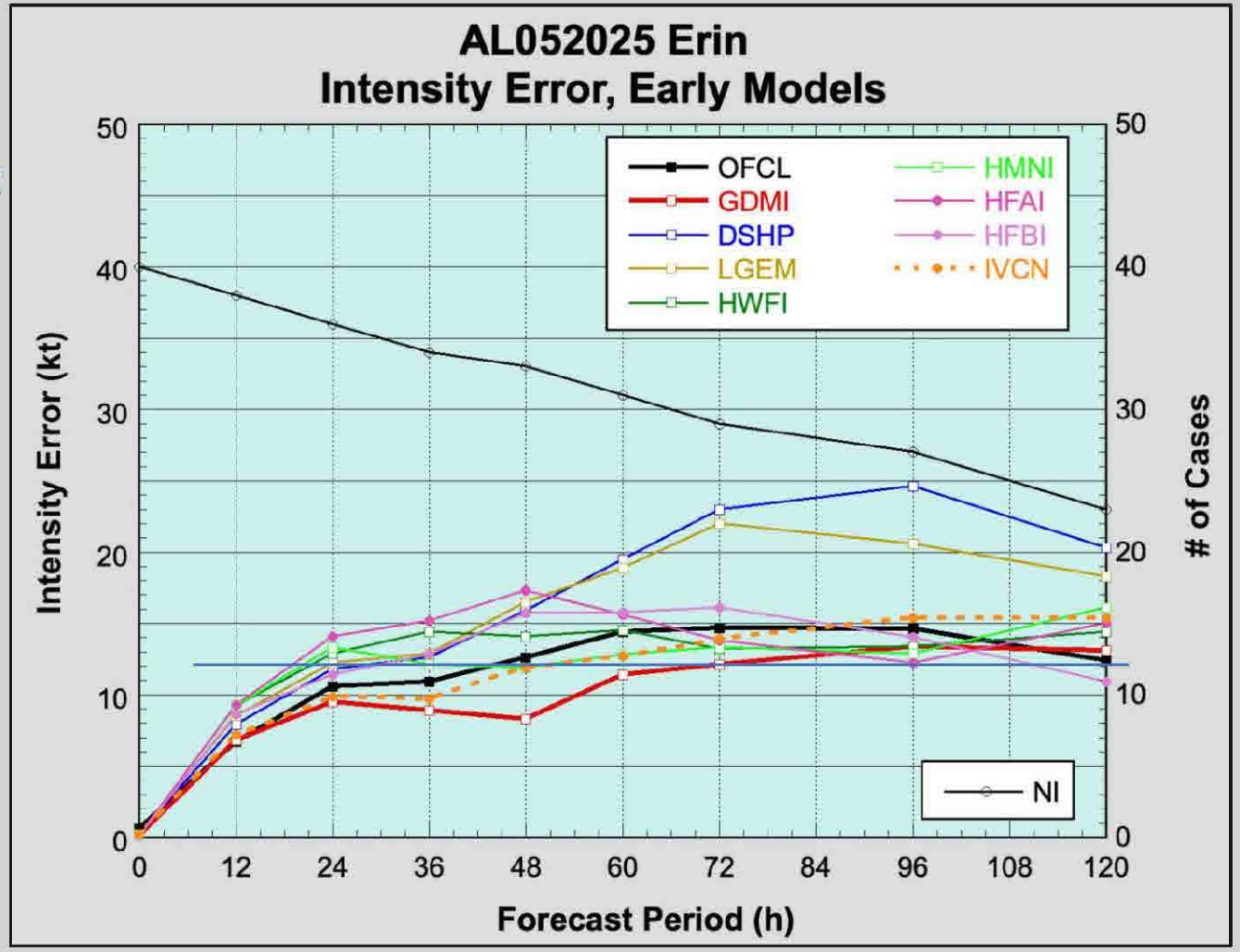
Googles Deep Mind AI (red line on graph reduced the average 72-hour major model track error from 80 miles down to 55 miles (a 30% improvement). The AI even beat the NHC's official forecast, which is based on a consensus of major model tracks, by 12 miles (20% improvement) at 72 hours. Similar results were shown with forecasts ranging from 1 to 5 days.



AI HURRICANE INTENSITY ACCURACY…

Googles Deep Mind AI Hurricane Forecasting Model also out-performed other major models in the critical 3-day intensity forecast window IN ITS FIRST YEAR OF OPERATION.

One example was hurricane Erin where Googles Deep Mind AI (red line on graph reduced the average 72-hour major model intensity error from 16 knots down to 12 knots (a 25% improvement). The AI even beat the NHC's official forecast, which is based on a consensus of major model tracks, by 2.8 Knots (20% improvement) at 72 hours. Similar results were shown with forecasts ranging from 1 to 2 days.



OTHER AI MODELS IN DEVELOPMENT…

Google DeepMind WeatherNext 2: An advanced model capable of producing forecasts 8x faster, providing hundreds of scenarios for high-resolution, short-term forecasting, now integrated into Google services.

NVIDIA Earth-2: A suite of open models (including FourCastNet3 and CorrDiff) for high-resolution regional simulation, running up to 500x faster than traditional methods to predict severe weather, wind, and temperatures.

ECMWF AIFS (Artificial Intelligence Forecasting System): An AI-based system operational since 2025, using graph neural networks to create global ensemble forecasts that use up to 1,000 times less energy than conventional models.



Image Courtesy of Arjan Willemse & Christian Versloot

HYPER-REALISTIC DAMAGE SIMULATIONS…

New AI tools such as Google Gemini can generate hyper-realistic simulations of hurricane damage to individual homes.

Anyone can paste a picture of their home into Gemini and ask the AI to generate a simulated picture of their home after a major hurricane.

The result is a very realistic post-hurricane picture that helps to convince a homeowner that they are not immune from damage.



AI Generated Image

WHAT IS A MESONET

A mesonet is a regional network of automated weather stations spaced close together to monitor rapidly changing, medium-scale (mesoscale) weather conditions.

Stations are typically placed 1 to 40 kilometers (0.6 to 20 miles) apart and report every few minutes to track fast moving or quickly developing severe weather events.

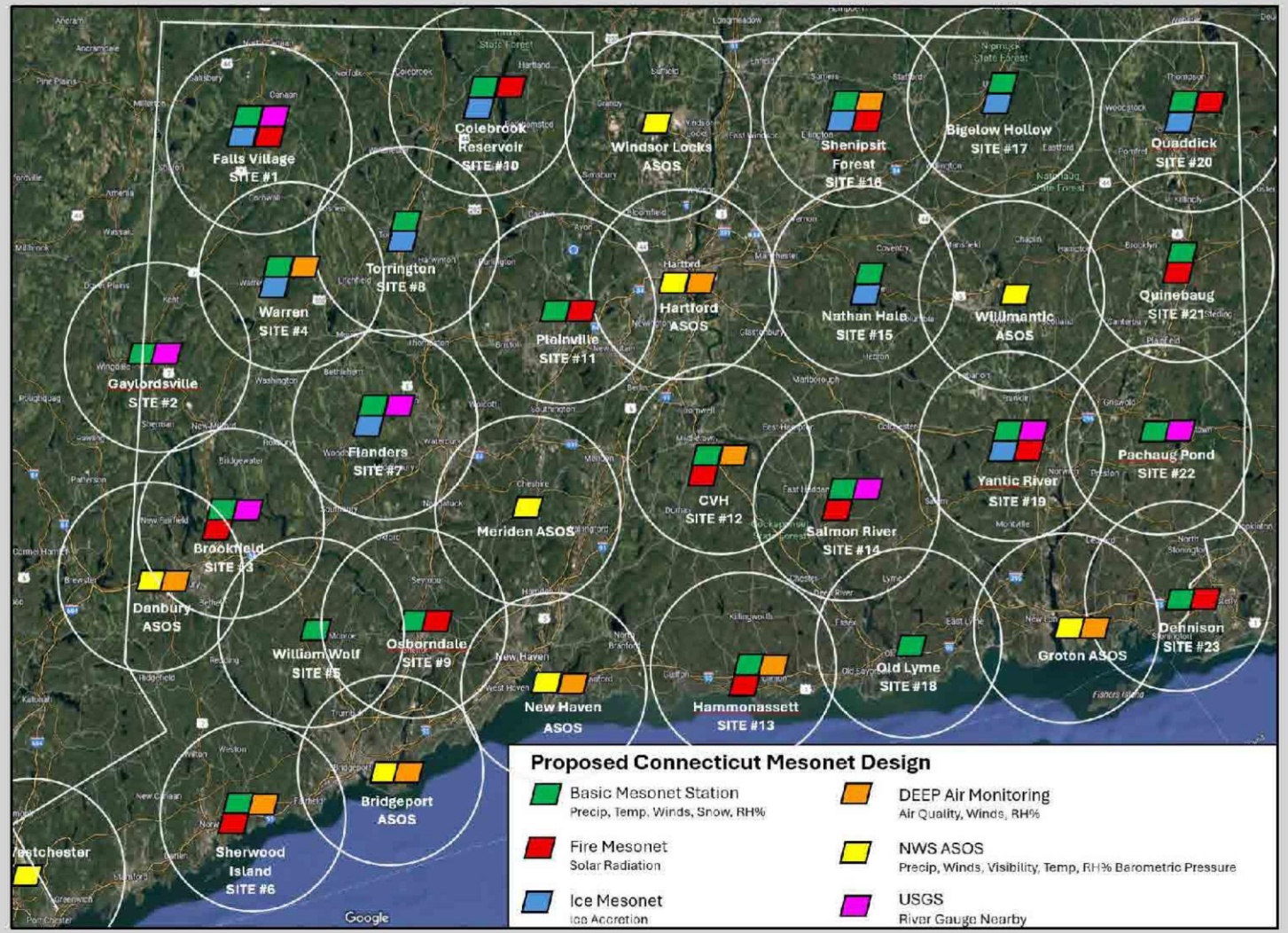
Sites being considered in Connecticut include state parks, farms, water company land and state or local facilities that contain large open fields (e.g. CVH, Southbury Training School etc.).



CONNECTICUT MESONET - SITE ASSESSMENT

Phase I of the site assessment process is commencing under the Siting Sub-Committee to analyze 69 potential locations for the 23 surface weather stations. Members from OPM, SUNY, DPH and DEMHS are participating on the Siting Committee.

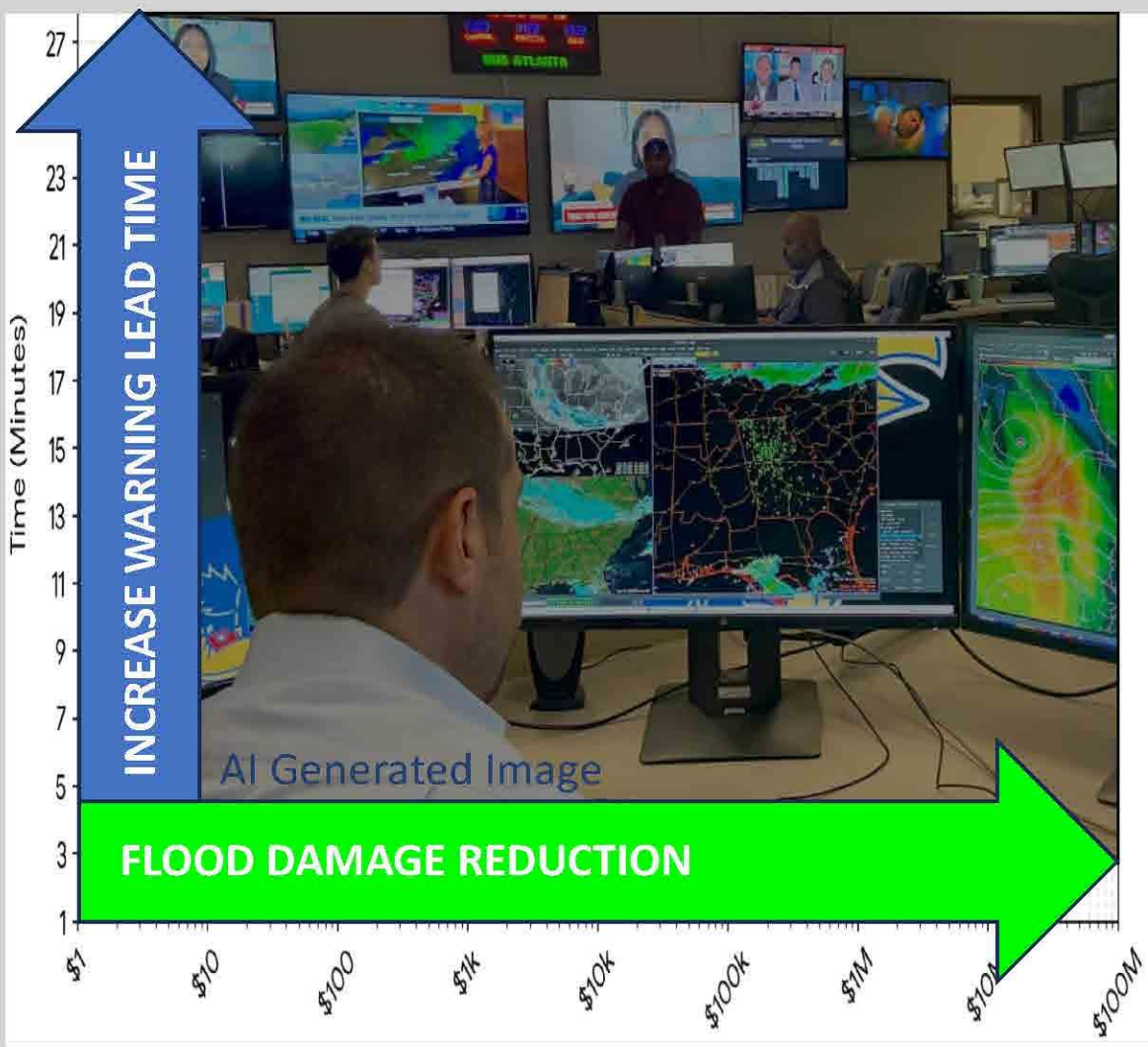
All work is currently being done in-house at OPM, DPH, DEMHS and SUNY to google potential sites and research contact information. No outreach has occurred yet.



MESONET BENEFITS TO CONNECTICUT

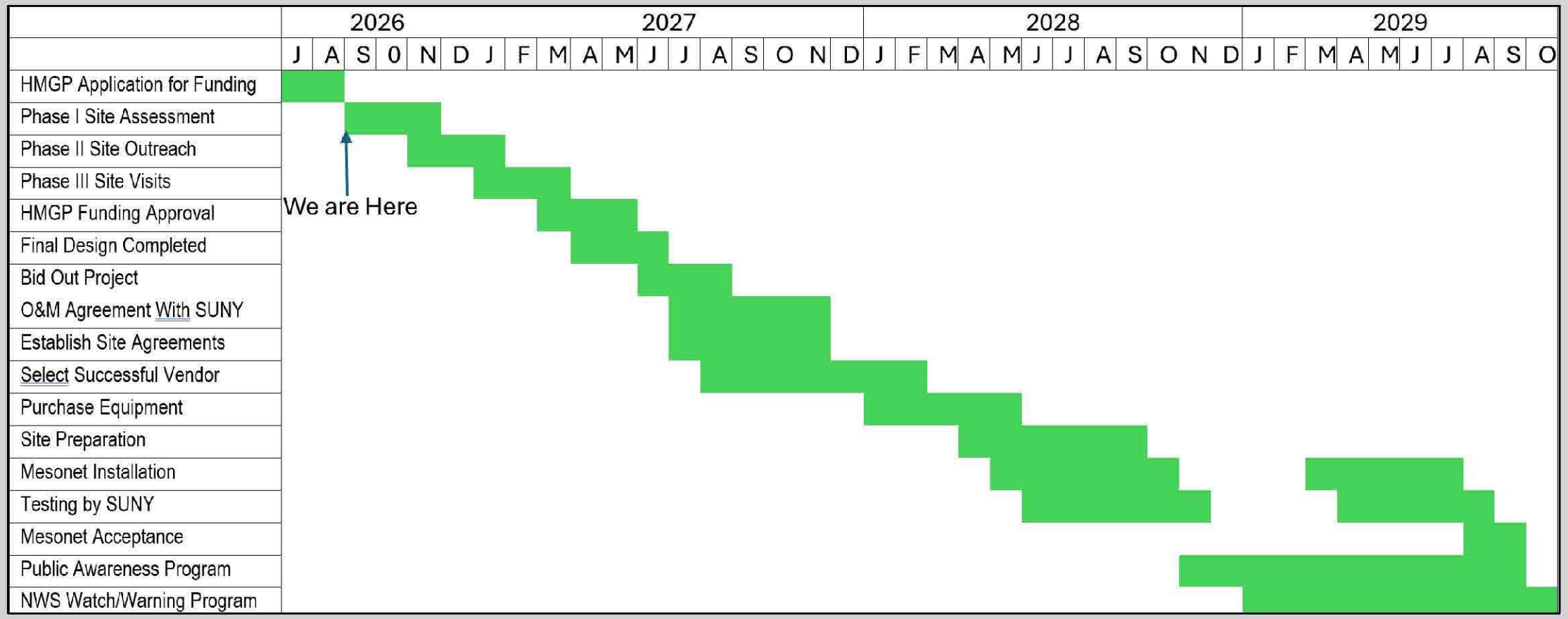
Mesonets provide an average increase in Flash Flood Warning Lead Time from 52 up to 73 Minutes which results in a 20% reduction in Damage. This 21-minute increase in warning lead time could save lives and allow first responders, businesses and residents more time to prepare for flash flooding.

It is estimated that a 20% reduction in damage would provide 139 Million Dollars in savings to the state of Connecticut over the 40-year lifetime of the Mesonet.



PRELIMINARY TIMELINE

We are at the beginning of the implementation process. Shown below is the estimated timeline over the next 3.5 years.



CONNECTICUT
MESONET

QUESTIONS ???

Connecticut Department of Emergency Services & Public Protection
Division of Emergency Management & Homeland Security

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Resilient Fairfield

Flood and & Erosion Control Master Plan update

September 19, 2026



Agenda

1. Flooding challenges - Hurricanes, rain bombs, sea level rise
2. Review Master Plan
3. Coastal
4. Riverine

Fairfield's Flooding Challenges

- Increasing **storm intensity**
- Increasing **riverine flooding**
- Increasing **sunny day flooding** and **storm surge**
- **Aging** or **undersized** infrastructure
- Capital **costs**

Major flooding events in Fairfield





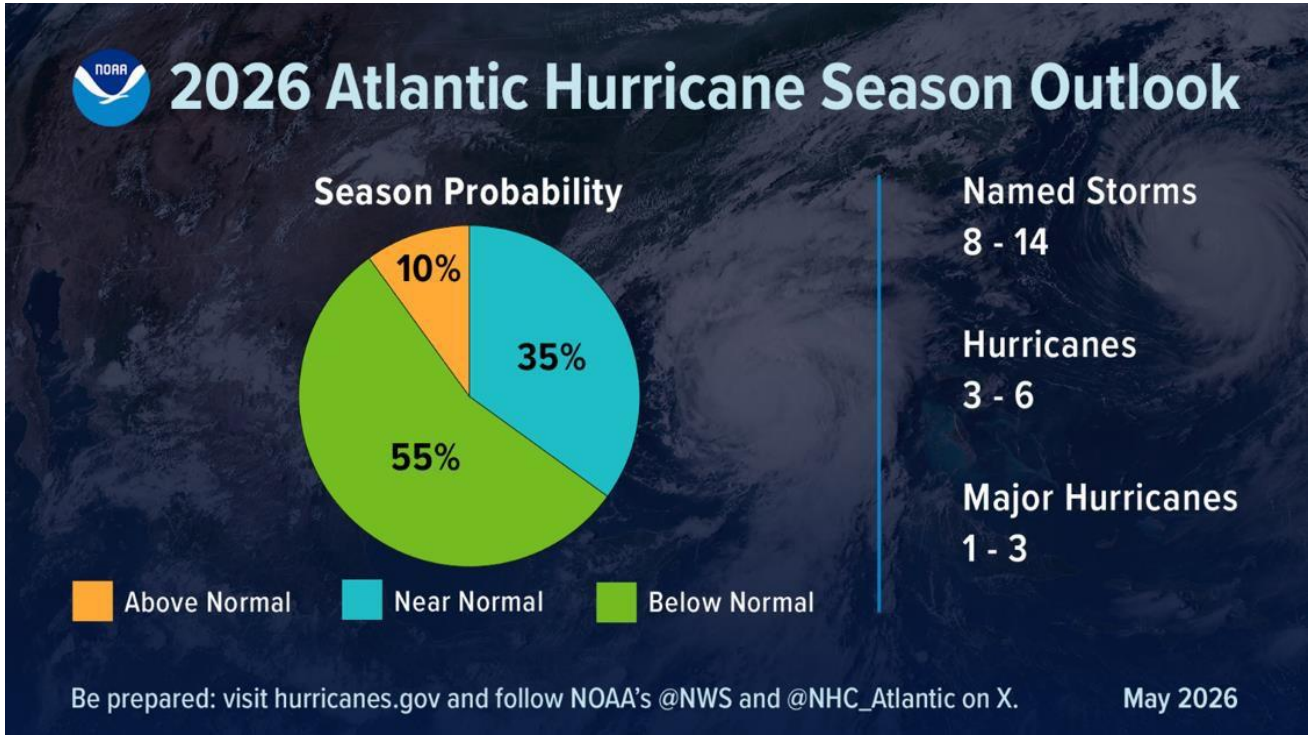




Predicted 2026 Hurricane season

NOAA predicts below-normal 2026 Atlantic hurricane season

According to NOAA – the season is from June 1 to November 30th with the peak on September 10th ; most of the activity mid August to mid October



Source: NOAA May 2026

Typical Hurricane return periods

While El Nino years typically do not produce a large number of Hurricanes, it only takes one.

HURRICANE RETURN PERIODS IN CONNECTICUT

(Not Including Hybrid Storms Such as Sandy)

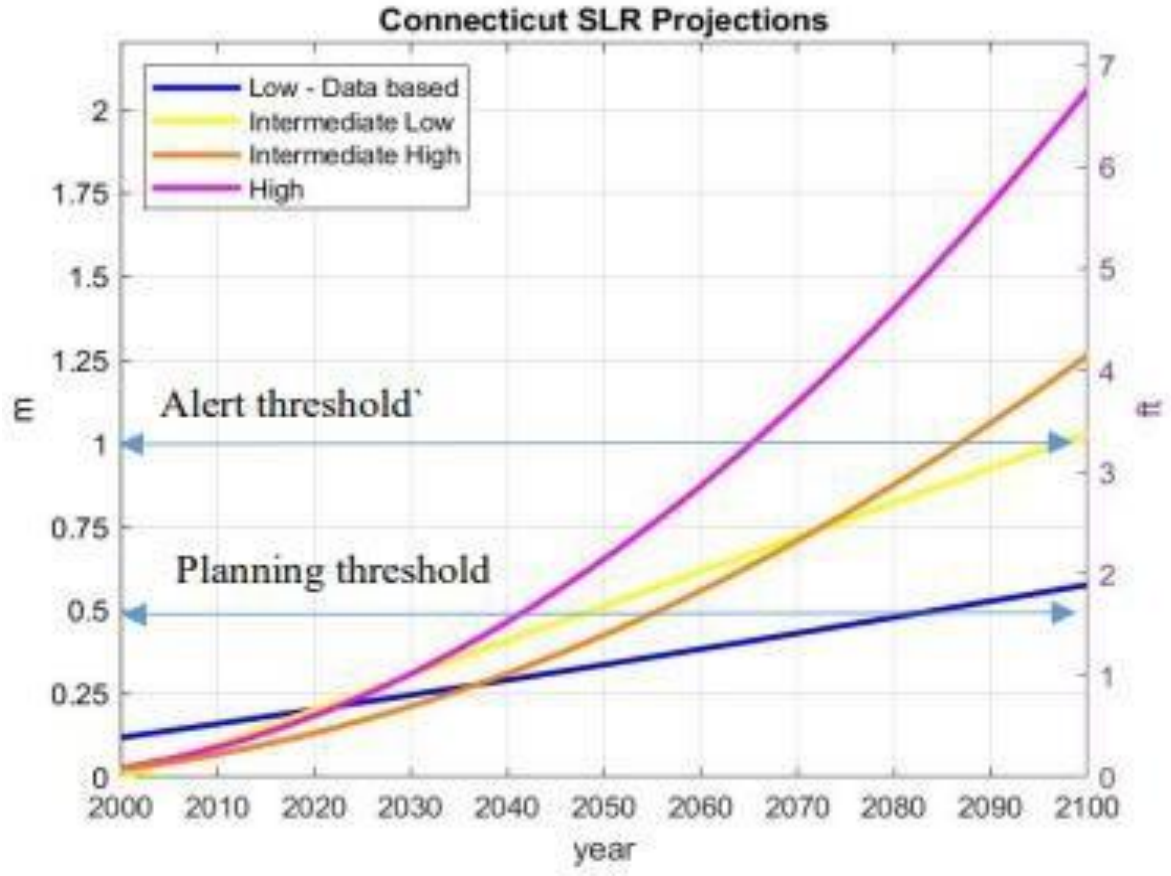
CATEGORY	WINDS	RETURN PERIOD	LAST OCCURRED	Implications:
CAT. I	74-95 MPH	18 Years	1985	22 years Overdue
CAT. II	96-110 MPH	40 Years	1985	2025 - last year
CAT. III	111-130 MPH	70 Years	1954	2024 - Overdue
CAT. IV	131-155 MPH	155 Years	< 1851	20 Years Overdue

Source: Department of Emergency Services and Public Protection
Division of Emergency Management and Homeland Security

Expected Sea-level Rise in Fairfield

Phase 1
Connecticut is expected to experience up to 20 inches of sea level rise by 2050,

Phase 2
By 2080, projections are currently 2 ft to 4.5 ft . Although there is increasing uncertainty the further out we project.



Source: CIRCA

Where we Are

1. ASSESS RISKS & VULNERABILITIES

- ✓ Existing Conditions
- ✓ Site Visits
- ✓ Coastal Flooding
- ✓ Riverine Flooding
- ✓ Pluvial Flooding

2. VISUALIZATION & PRIORITIZATION

- ✓ Mapping/Analysis
- ✓ Town of Fairfield **FloodViewer**
- ✓ Screen + prioritize mitigation strategy opportunities:
  - ✓ 15 coastal sites
  - ✓ 10 inland sites

3. CONCEPTUAL DESIGN

- **Concept designs:**
  - 15 coastal sites
  - 10 inland sites
- **Site renderings:**
  - 5 coastal visuals

4. FINANCIAL IMPACT & FUNDING

- **FEMA Hazus:**
  - Inland
  - Coastal
- **FEMA FAST tool:**
  - Elevated vs. at-grade structures in the floodplain

5. FLOOD & EROSION MASTER PLAN

- **Sept. 17, 2026:** Public Meeting
- *Incorporate public feedback*
- **October 2026:** Board approval of Final Master Plan

We are here.

RACE COASTAL ENGINEERING Weston & Sampson

1. Assess Risks & Vulnerabilities

Shading indicates time horizon

Present | 2050 | 2100

Coastal Flooding & Shoreline Change

Storm surge, sea level rise (SLR), & shoreline change under varying storm intensities

RACE

No SLR	25-yr	100-yr	
20" SLR	10-yr	25-yr	100-yr
40" SLR	25-yr		

Riverine Flooding

FEMA-based flood profiles applied to current & future precipitation conditions (depth in inches)

Weston & Sampson

Present	2-yr (2.5")	10-yr (5.4")	100-yr (8.3")
2050	2-yr (4.3")	10-yr (6.6")	100-yr (10.2")

Blue Spot Analysis

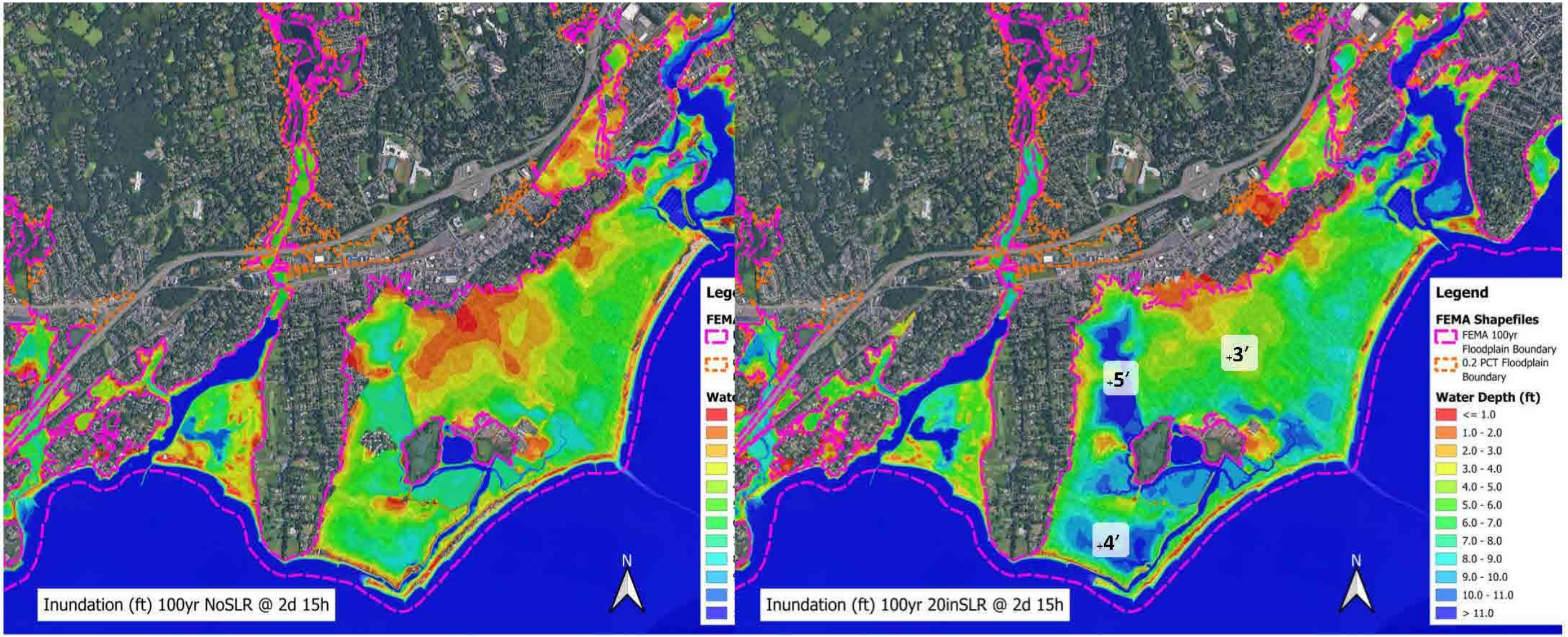
Low-lying areas where surface runoff accumulates during rainfall

Weston & Sampson

- **LiDAR-derived elevation data** to identify low points and depressions where stormwater may accumulate.
- Assessed **present-day and 2050 conditions** using projected rainfall data for **2-, 10-, and 100-year storm events**.

RACE COASTAL ENGINEERING Weston & Sampson

FEMA Floodplain vs. Modeling Results: Side-by-Side



Present Day

by 2050

RACE COASTAL ENGINEERING

Weston & Sampson

Coastal Strategies

We picked a Coastal protection level of 12 FT NAVD 88

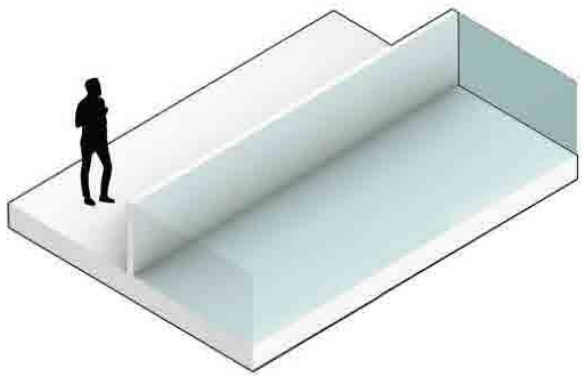
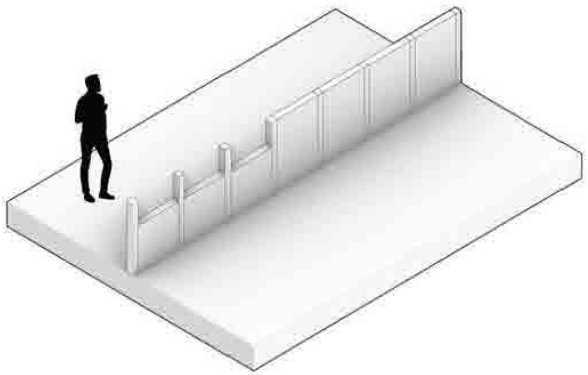
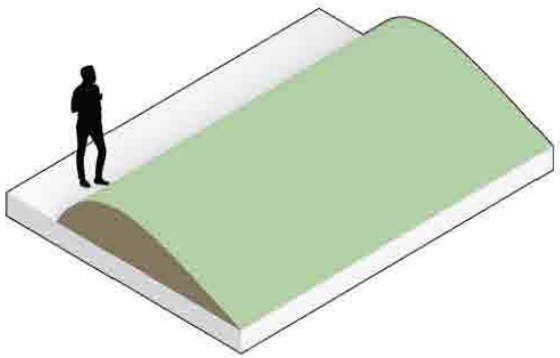
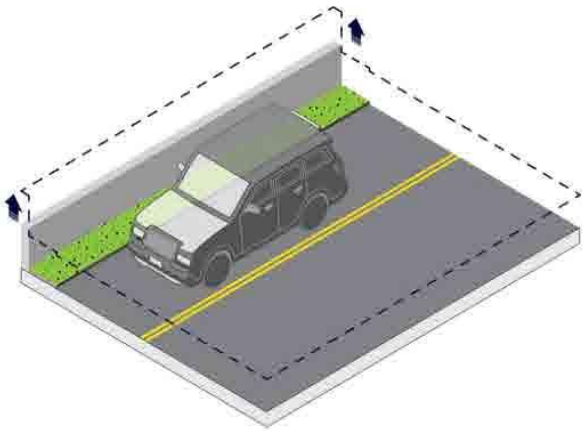
- Superstorm Sandy Storm surge level

Balancing protection from most storms and keeping the character of the neighborhood versus higher costs

Constraints:

1. We can not protect all houses - Right along the coast, Peninsula
2. We are unlikely to get grants at this level – Not FEMA eligible

Coastal Strategy Types

Walls	Deployables	Berms	Raise Roadways
			
Permanent, continuous separation and protection	Temporary, flexible rapidly “deployed” protection	Raised mound or bank creating shielding and separation	Raise low-lying roads above anticipated flood levels

RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Town Hall – Alt. 1



LEGEND

2023 TERRAIN EL. (FT, NAVD88)

- <= 7
- 7 - 8
- 8 - 9
- 9 - 10
- 10 - 11
- 11 - 12
- > 12

MISC. SYMBOLS

- Property Lines
- Building Footprints
- 2.8 Flood Control Structure Height (ft)

NORTH

FLOOD CONTROL STRUCTURES

- Berm
- Deployable
- Raise Road
- Wall

Sources: CT ECO GIS Database (2023 LiDAR topography DEM & Contours, 2023 Aerial Imagery, property line & building footprint GIS data), Google Maps (road and location labels), OpenStreetMap (road labels), and proposed site development plan from Pereira Engineering for 185 Thorpe Street.

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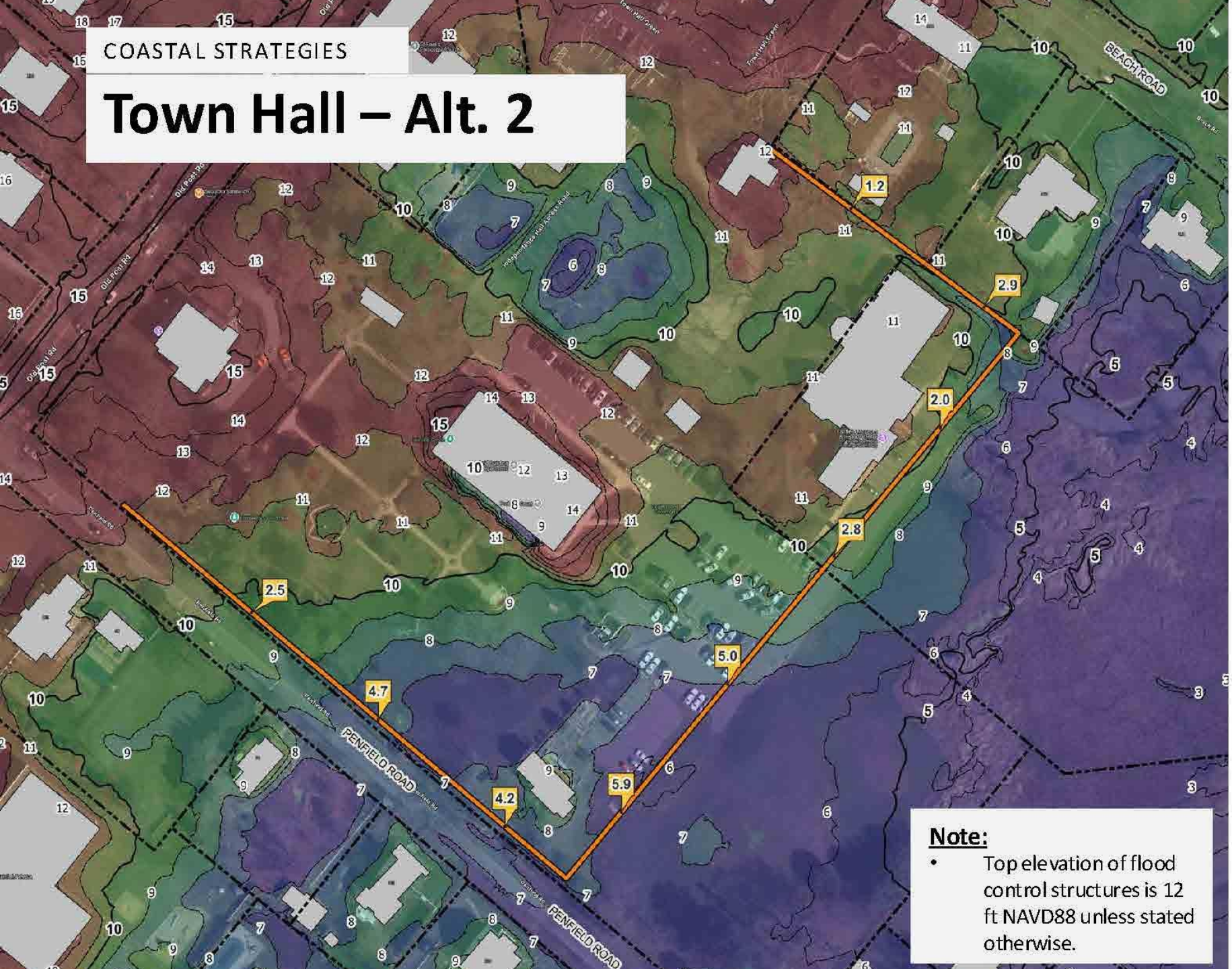
- Top elevation of flood control structures is 12 ft NAVD88 unless stated otherwise.

RACE COASTAL ENGINEERING

Weston & Sampson

COASTAL STRATEGIES

Town Hall – Alt. 2



LEGEND

2023 TERRAIN EL. (FT, NAVD88)

- <= 7
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- 8 - 9
- 9 - 10
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MISC. SYMBOLS

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FLOOD CONTROL STRUCTURES

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Museum/Town Hall Complex - *BEFORE*



RACE COASTAL ENGINEERING Weston & Sampson

Museum/Town Hall Complex - *AFTER*

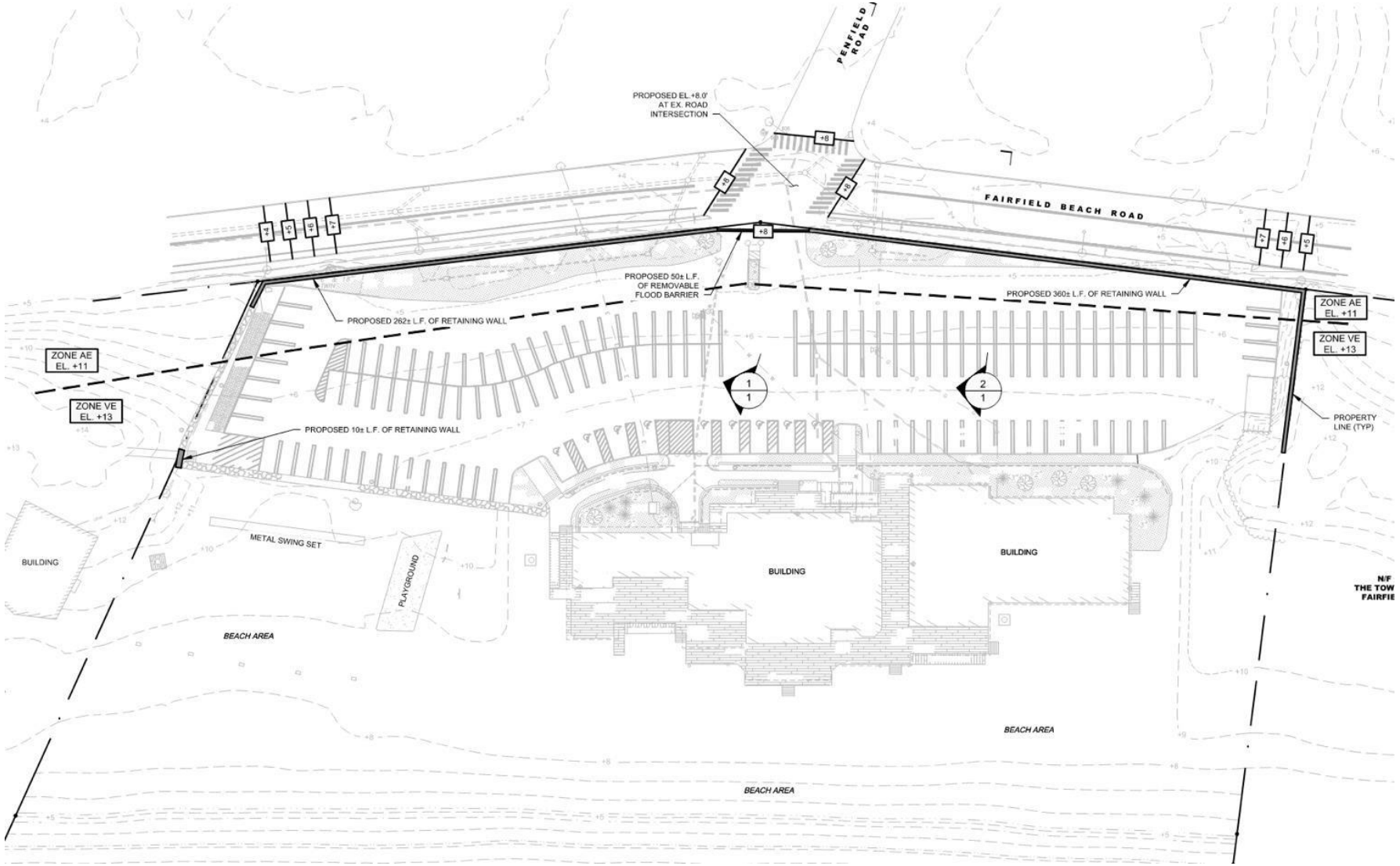


RACE COASTAL ENGINEERING Weston & Sampson

Museum/Town Hall Complex - *AFTER*



RACE COASTAL ENGINEERING Weston & Sampson


PENFIELD ROAD
PROPOSED EL. +8.0' AT EX. ROAD INTERSECTION
FAIRFIELD BEACH ROAD
PROPOSED 50± L.F. OF REMOVABLE FLOOD BARRIER
PROPOSED 360± L.F. OF RETAINING WALL
PROPOSED 262± L.F. OF RETAINING WALL
ZONE AE EL. +11
ZONE VE EL. +13
ZONE AE EL. +11
ZONE VE EL. +13
PROPERTY LINE (TYP)
PROPOSED 10± L.F. OF RETAINING WALL
METAL SWING SET
PLAYGROUND
BUILDING
BUILDING
BUILDING
BEACH AREA
BEACH AREA
BEACH AREA
N/F
THE TOW
FAIRFIE

Penfield Pavillion - *BEFORE*



RACE COASTAL ENGINEERING Weston & Sampson

Penfield Pavillion – *Raised Road plus short wall*



RACE COASTAL ENGINEERING Weston & Sampson

Penfield Pavillion – *larger wall*



RACE COASTAL ENGINEERING Weston & Sampson

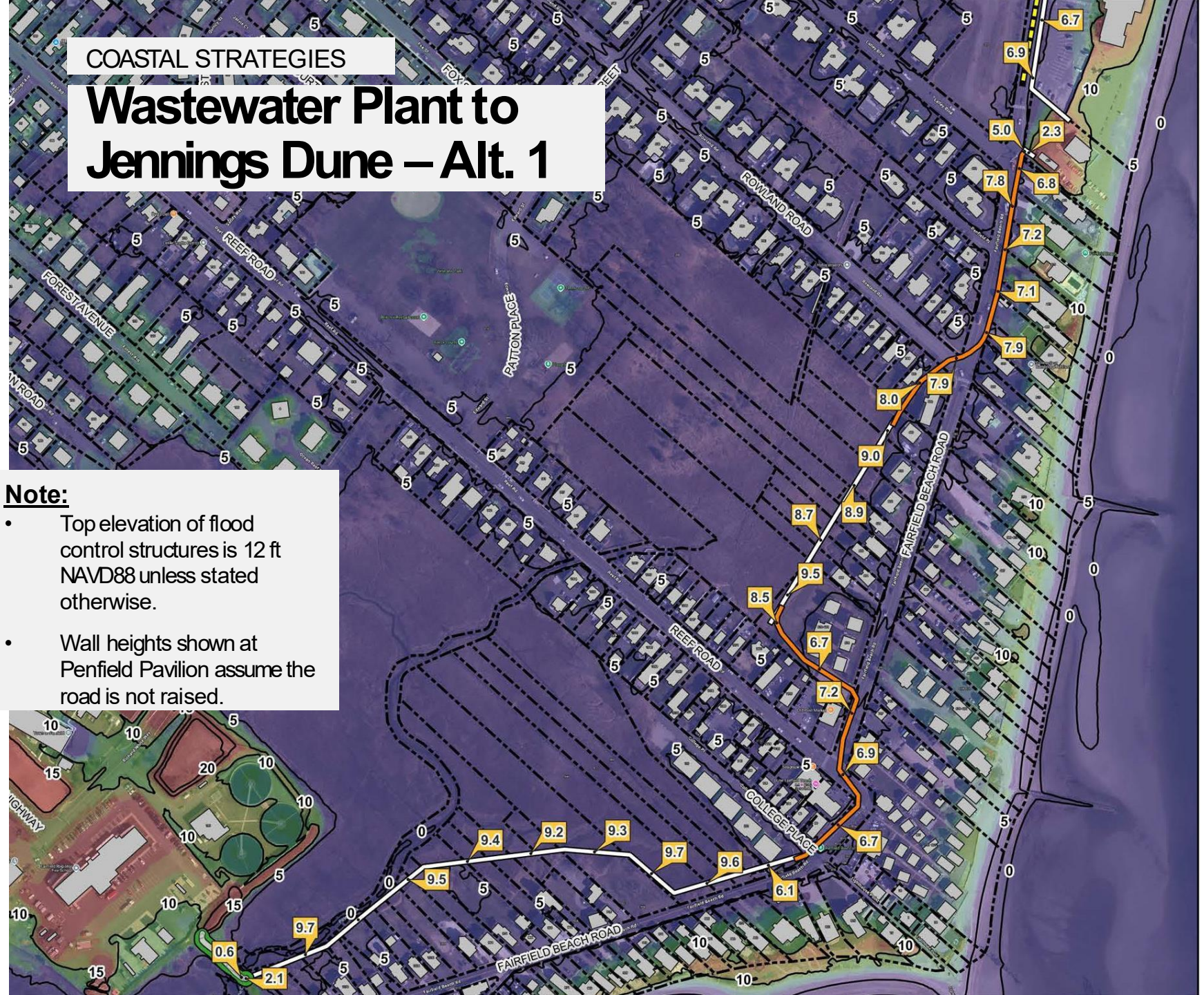
Penfield Pavillion - *AFTER*



RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Wastewater Plant to Jennings Dune – Alt. 1



Note:

- Top elevation of flood control structures is 12 ft NAVD88 unless stated otherwise.
- Wall heights shown at Penfield Pavilion assume the road is not raised.

LEGEND

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- > 12

MISC. SYMBOLS

- Property Lines
- Building Footprints
- 2.8 Flood Control Structure Height (ft)

NORTH

FLOOD CONTROL STRUCTURES

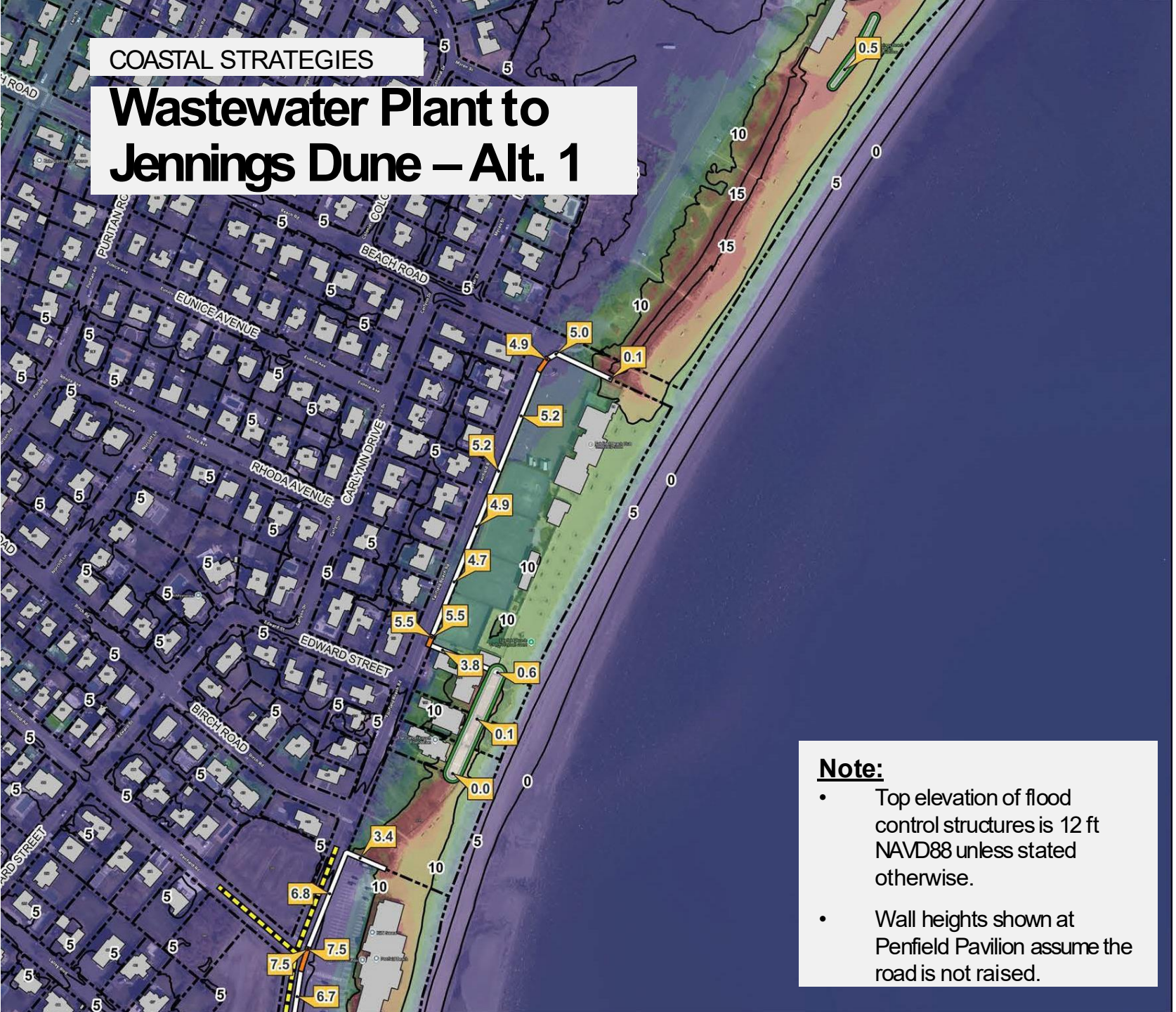
- Berm
- Deployable
- Raise Road
- Wall

Sources: CT ECO GIS Database (2023 LiDAR topography DEM & Contours, 2023 Aerial Imagery, property line & building footprint GIS data), Google Maps (road and location labels), OpenStreetMap (road labels), and proposed site development plan from Pereira Engineering for 185 Thorpe Street.

RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Wastewater Plant to Jennings Dune – Alt. 1



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FLOOD CONTROL STRUCTURES

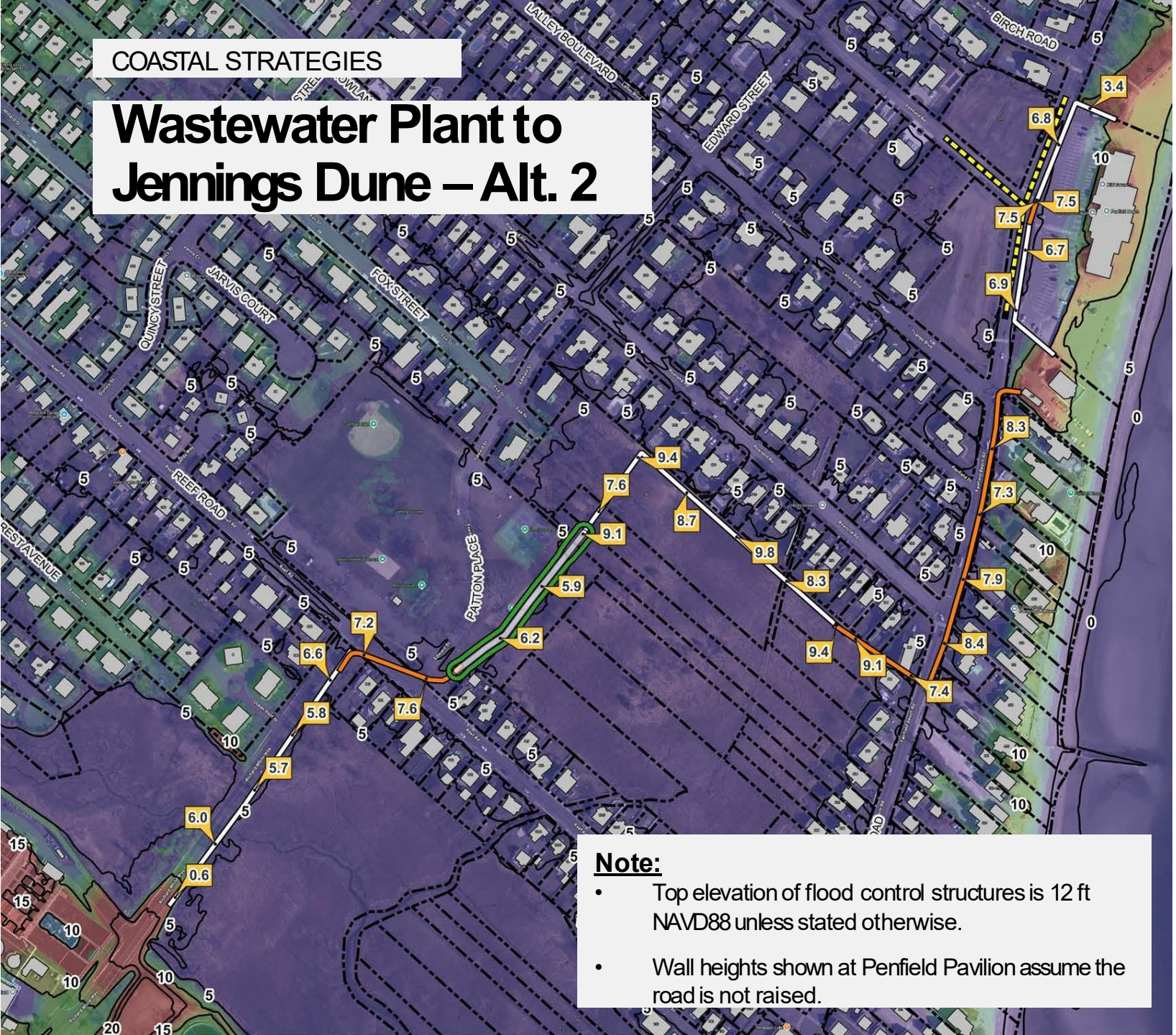
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RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Wastewater Plant to Jennings Dune – Alt. 2



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RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Wastewater Plant to Jennings Dune – Alt. 2



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FLOOD CONTROL STRUCTURES

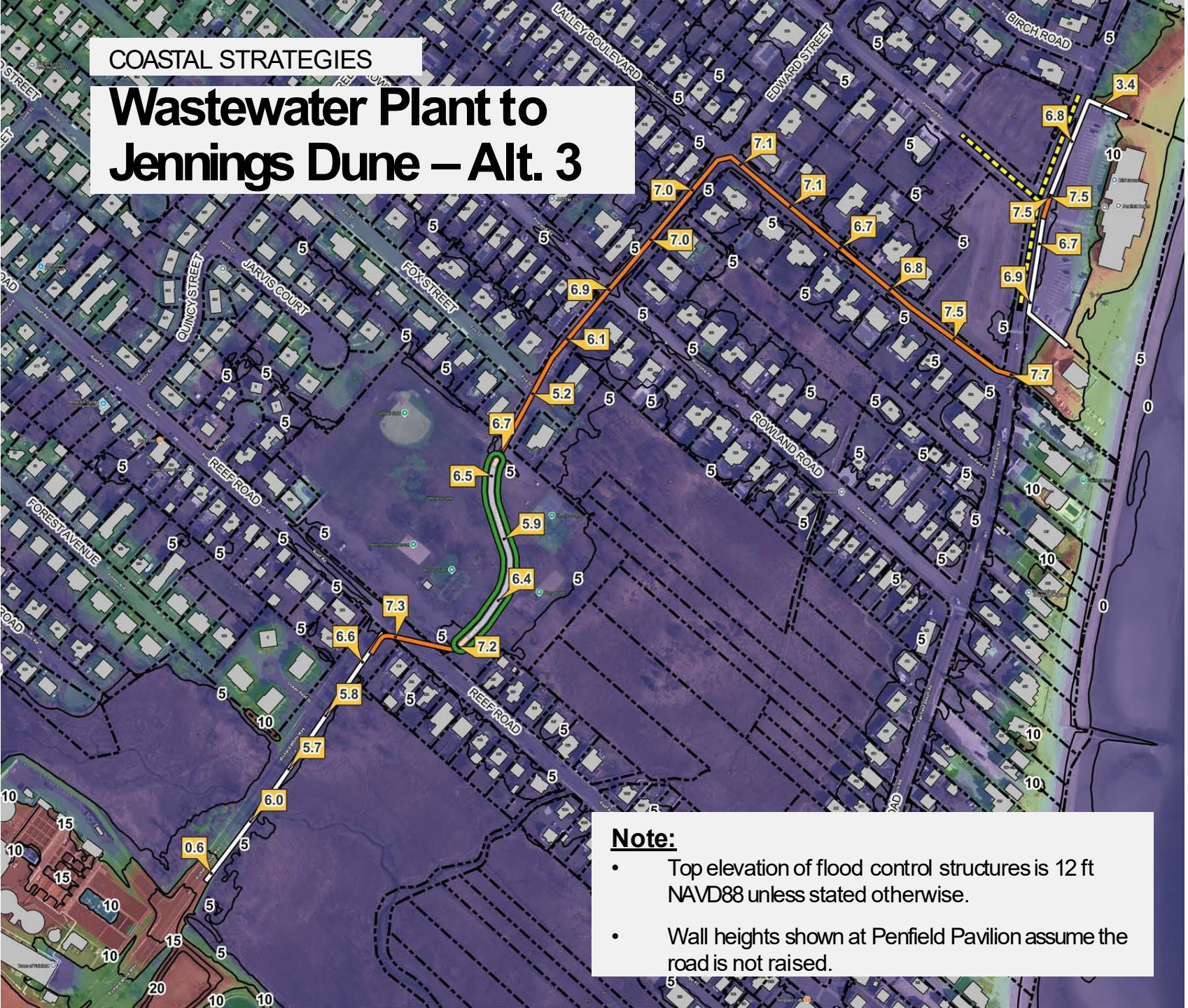
- Berm
- Deployable
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COASTAL STRATEGIES

Wastewater Plant to Jennings Dune – Alt. 3



Note:

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LEGEND

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- Building Footprints
- 2.8 Flood Control Structure Height (ft)
- NORTH

FLOOD CONTROL STRUCTURES

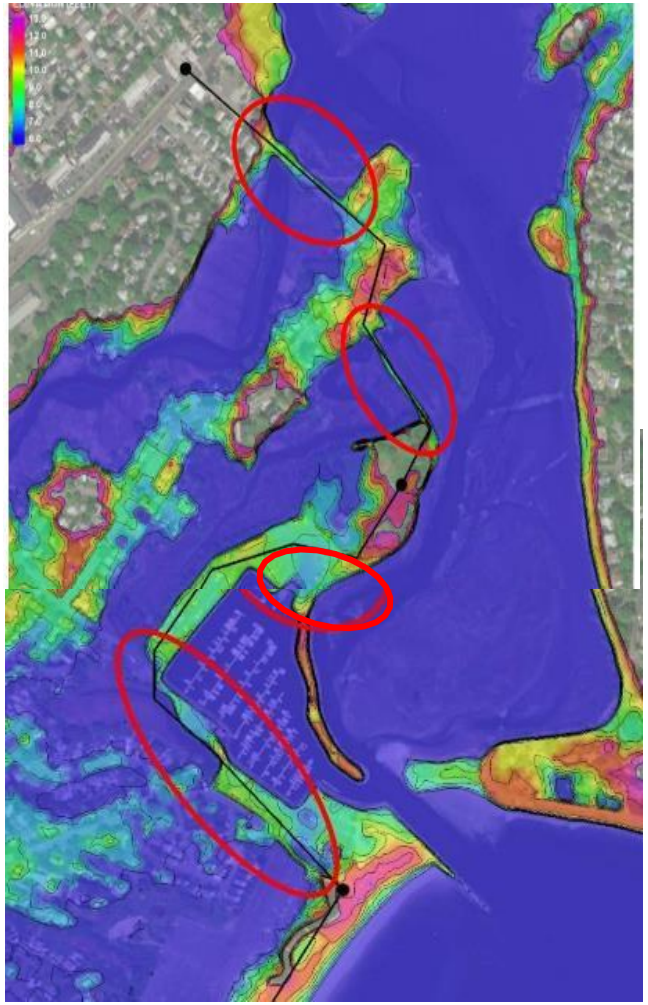
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Resilient Fairfield

Mitigating flooding in Riverside Drive and Ash Creek area



Zone 4

Total Length 3140 feet

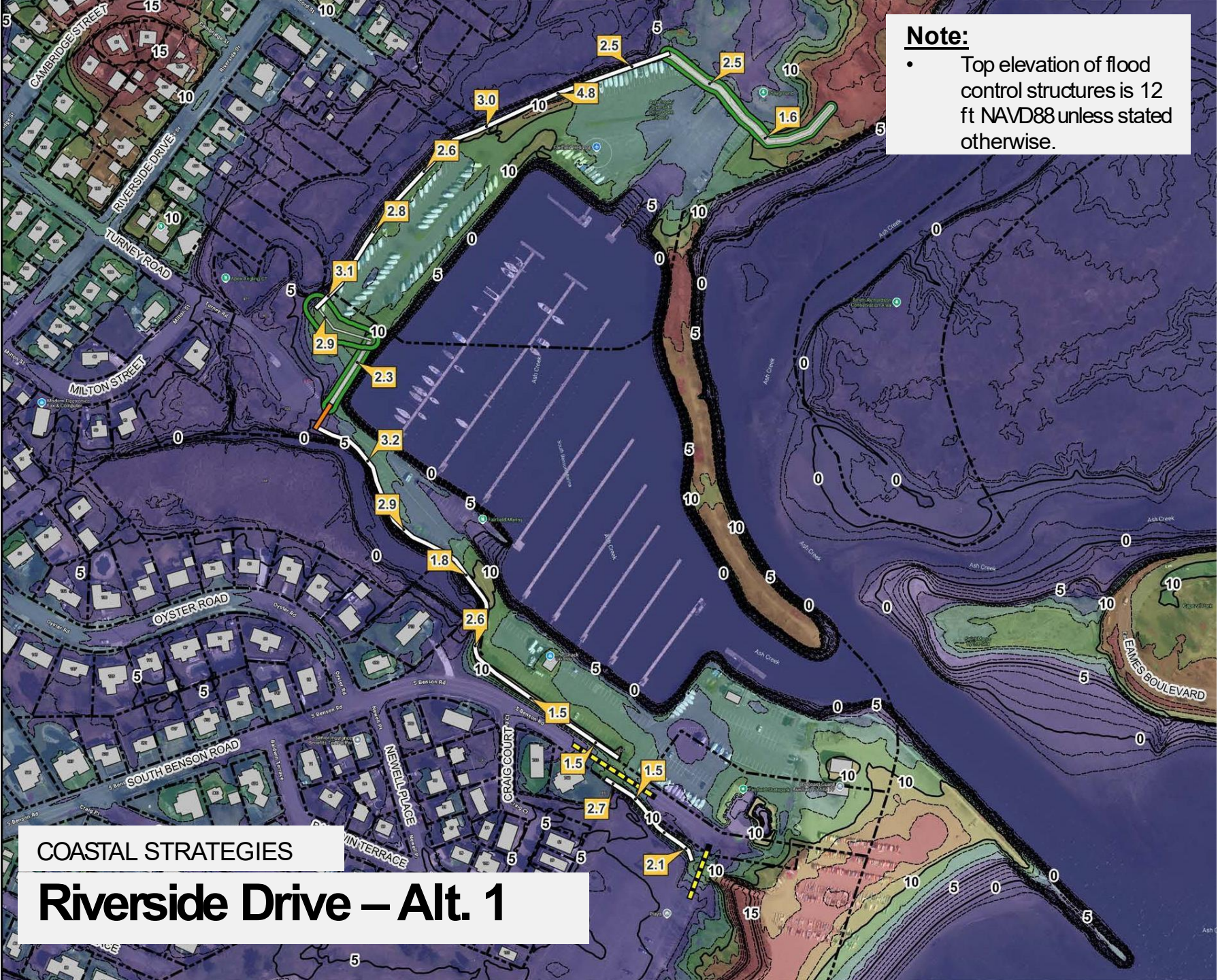
Sea Level Rise					
Return Period (years)	Stillwater Level (feet)	Total Water Level (feet)	Max Water Depth Relative to Avg. Crest Elevation (EL. = 7.4ft)	Cumulative Length of Breach (feet)	Breach Percentage of Total Length
10	9.6	10.4	3.0	2559	82%
25	10.3	11.3	3.9	2615	83%
50	11.2	12.3	4.9	2713	86%

Zone 5

Total Length 2352 feet

Sea Level Rise					
Return Period (years)	Stillwater Level (feet)	Total Water Level (feet)	Max Water Depth Relative to Avg. Crest Elevation (EL. = 10.4ft)	Cumulative Length of Breach (feet)	Breach Percentage of Total Length
10	9.6	10.5	0.1	1191	51%
25	10.3	11.4	1.0	1306	56%
50	11.2	12.4	2.0	2057	87%

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LEGEND

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FLOOD CONTROL STRUCTURES

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COASTAL STRATEGIES

Riverside Drive – Alt. 1

RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Riverside Drive – Alt. 1



LEGEND

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FLOOD CONTROL STRUCTURES

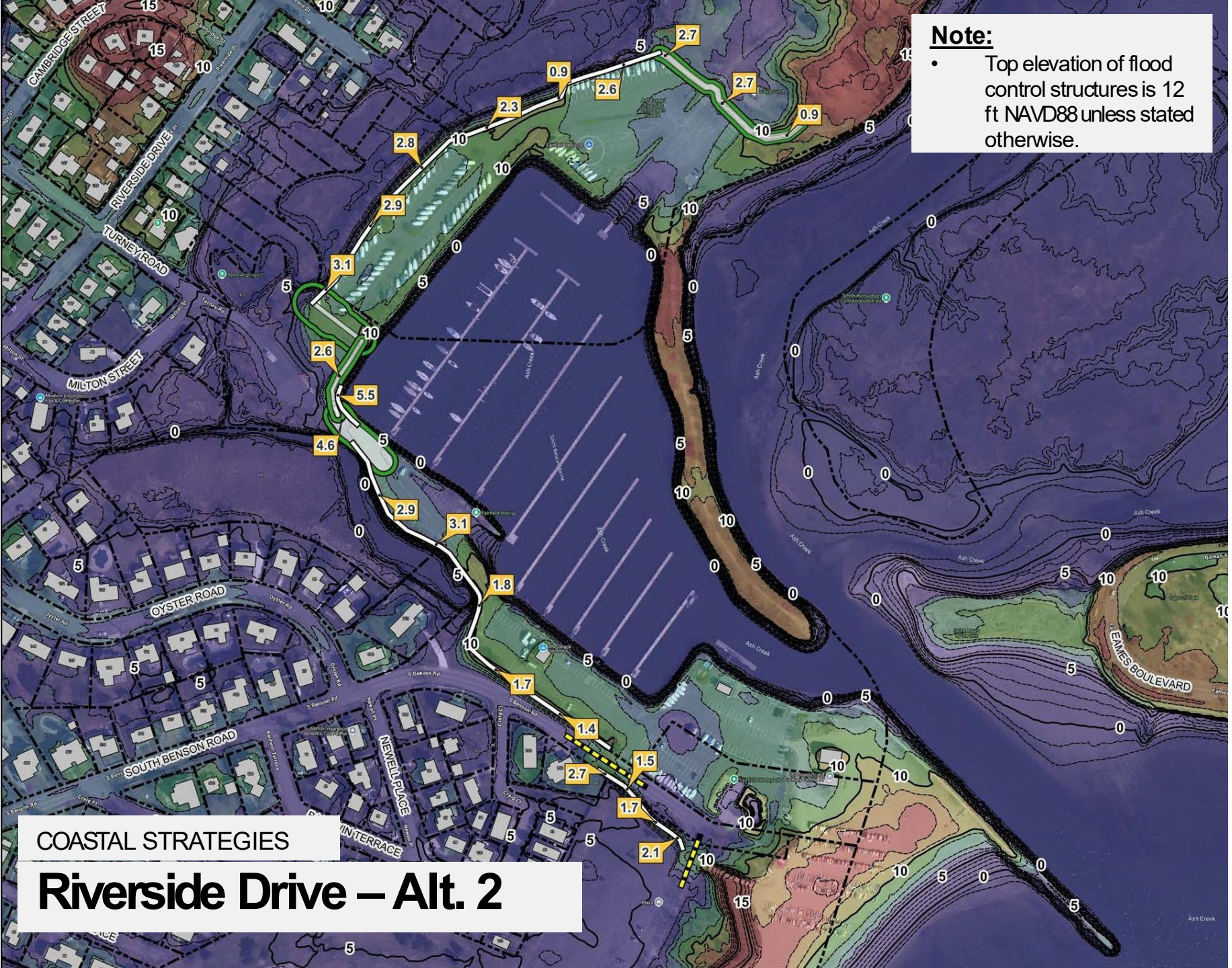
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RACE COASTAL ENGINEERING Weston & Sampson



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LEGEND

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MISC. SYMBOLS

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- 2.8 Flood Control Structure Height (ft)
- NORTH

FLOOD CONTROL STRUCTURES

- Berm
- Deployable
- Raise Road
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COASTAL STRATEGIES

Riverside Drive – Alt. 2

RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Riverside Drive – Alt. 2



LEGEND

2023 TERRAIN EL. (FT, NAVD88)

- <= 7
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FLOOD CONTROL STRUCTURES

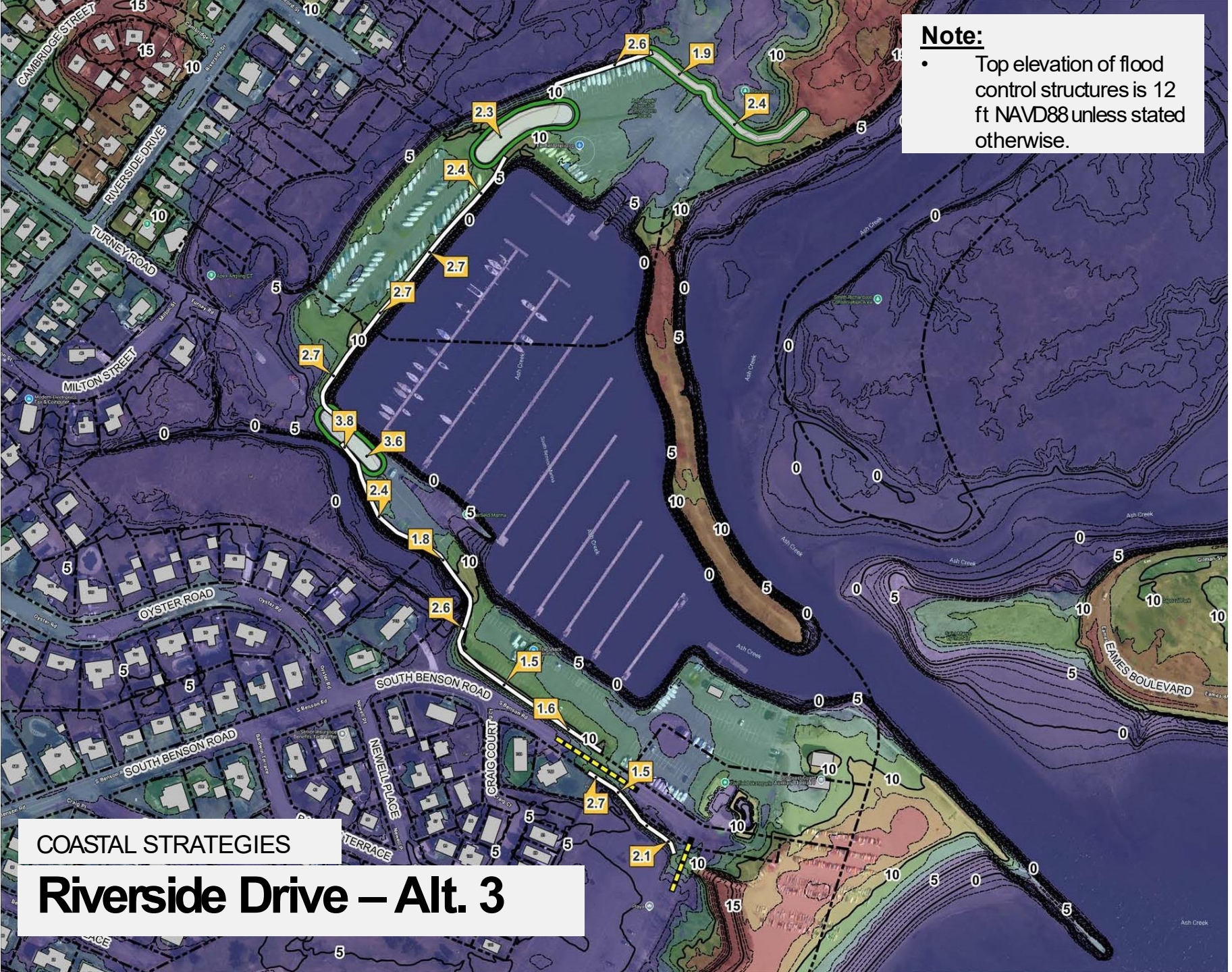
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RACE COASTAL ENGINEERING Weston & Sampson



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LEGEND

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MISC. SYMBOLS

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- Building Footprints
- 2.8 Flood Control Structure Height (ft)

NORTH

FLOOD CONTROL STRUCTURES

- Berm
- Deployable
- Raise Road
- Wall

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COASTAL STRATEGIES

Riverside Drive – Alt. 3

RACE COASTAL ENGINEERING Weston & Sampson

COASTAL STRATEGIES

Riverside Drive – Alt. 3



LEGEND

2023 TERRAIN EL. (FT, NAVD88)

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MISC. SYMBOLS

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- 2.8 Flood Control Structure Height (ft)
- NORTH

FLOOD CONTROL STRUCTURES

- Berm
- Deployable
- Raise Road
- Wall

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RACE COASTAL ENGINEERING Weston & Sampson

Riverside Drive - *BEFORE*



RACE COASTAL ENGINEERING Weston & Sampson

Riverside Drive - *AFTER*



RACE COASTAL ENGINEERING Weston & Sampson

Riverside Drive - *AFTER*



RACE COASTAL ENGINEERING Weston & Sampson

Also looking at Flood Mitigation options including dry flood proofing Police, Fire, DPW and other Town facilities

Inland Mitigation Strategies

Inland Strategy Types

Green infrastructure: natural or engineered systems that capture, absorb, and manage stormwater where it falls, reducing runoff and flooding.



Soil & storage



Porous paving



Tree planters



Bioswale



Stream bank restoration



Bioretention basin



Floodable field



Upstream/pond storage

2. Visualization & Prioritization: Inland (Riverine) Sites

PRIORITIZATION CRITERIA

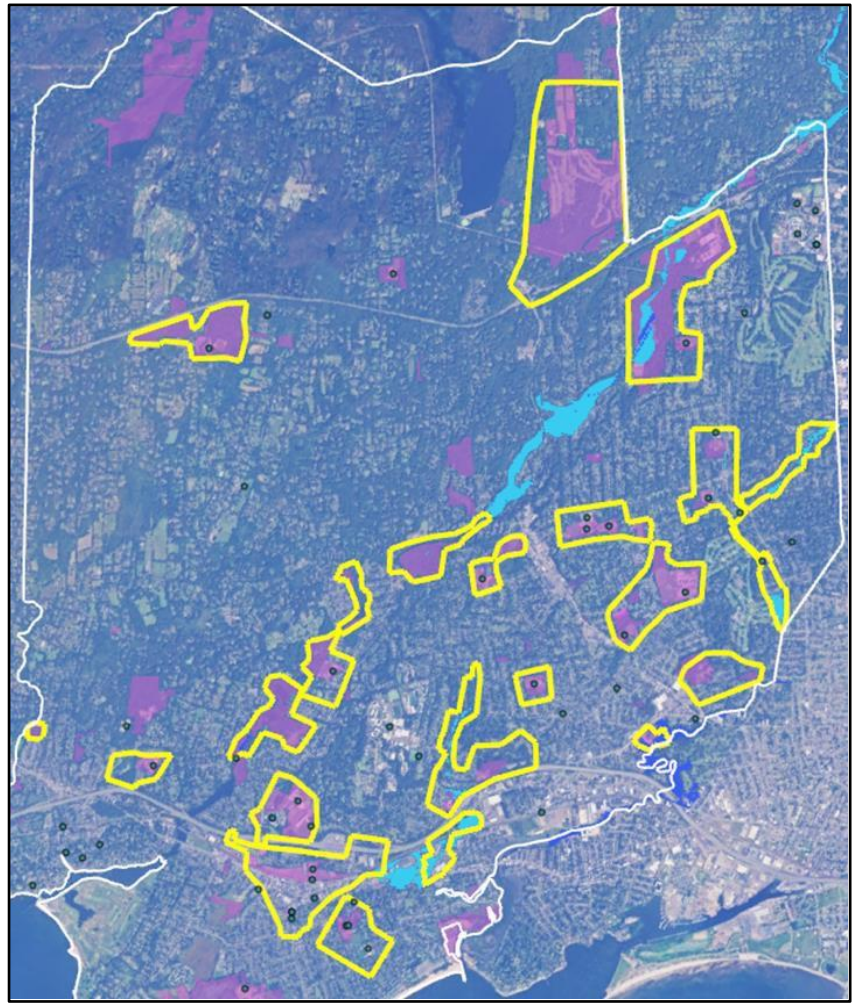
1. **Critical Infrastructure**

2. **Town-Owned Property**
   - 1000 sq. ft. or greater for impact of mitigation strategy
   - Ease of Implementation

3. **Historic Flooding Sites**
   - Gathered from existing data and studies, Town/FERB identified sites, field investigations

4. **Limits of Fluvial (Riverine) Flood Risk**
   - 10-yr storm event
   - FEMA X Zone (will remain dry from coastal flooding)
   - *FEMA VE Zones screened out – not an effective location for green infrastructure due to future coastal flooding*

5. **Limits of Pluvial (Stormwater) Flood Risk**
   - Bluespot Analysis

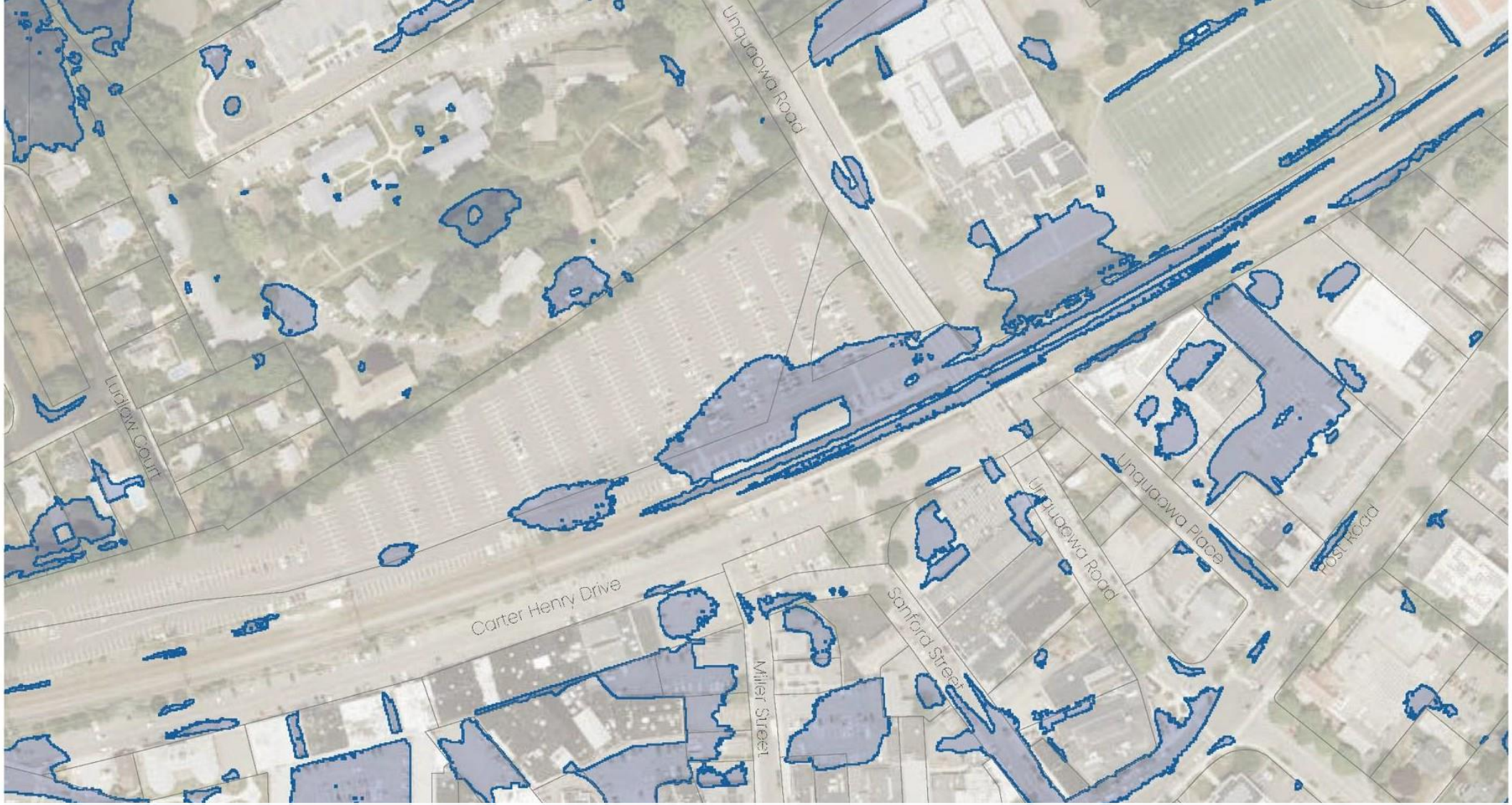


Inland Strategy Locations

- Conceptual **green infrastructure** projects were developed for **priority inland sites** to reduce localized flooding and downstream impacts.

#	Location	Bioswale/ conveyence	Bioretention basin	Tree planters	Porous paving	Trees/tree cells soil & storage	Upstream/ pond storage	Floodable field	Underground storage	Stream bank restoration
1	Downtown - Train Station	X	X	X	X	X				
2	Round Hill Rd. - underpass	X	X						X	
3	Mill Plain Rd. - underpass	X	X		X	X				
4	N. Benson Rd. - underpass	X	X						X	
5	N. Pine Creek Rd. - underpass	X	X		X				X	
6	Owen Fish Park	X			X		X	X		X
7	Black Rock Turnpike	X	X		X				X	X
8	Littlebrook Rd. & Marian Rd.	X	X		X		X			X
9	Horse Tavern Brook	X	X							X
10	Riverfield School	X	X		X			X		
11	Fairchild-Wheeler Country Club	X	X				X	X		
12	Tunxis Hill Park	X	X		X	X			X	

Start date: Sept. 2026



Train Station - *BEFORE*

0.02 0.04 0.09 0.14 0.18

Legend:

Existing

Parcels

Identified Bluespots

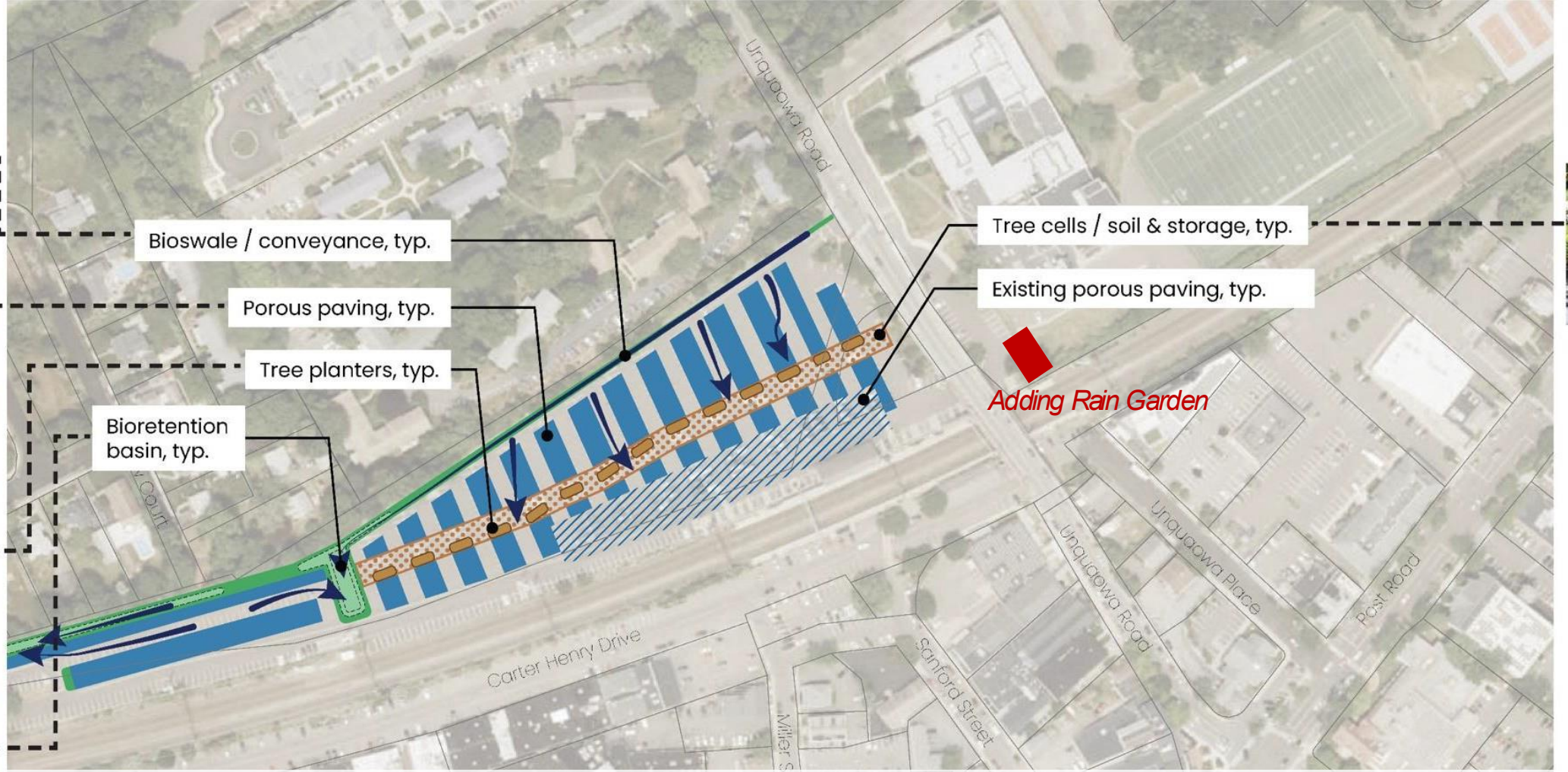
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri USDA FSA, Esri, Vantor, Earthstar Geographics, and the GIS User Community













Train Station - *AFTER*

0.02 0.04 0.09 0.14 0.18

Legend:

Existing

- Parcels
- Porous paving

Proposed

- Bioswale/conveyance
- Bioretention basin
- Tree Planters
- Porous Paving
- Tree cells/soil & storage
- Surface conveyance

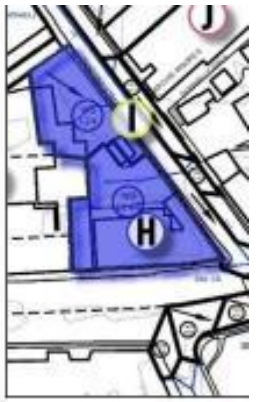
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Resilient Fairfield

Options to Mitigate flooding in Downtown area

AREA H

SOUTH OF RAILROAD TRACKS





Parking on North Side of Post Road



Potential LID Planters Within Existing Non-used Space

Description

- Parcels on the west side of Sanford Street

Typical Land Uses

- Commercial such as B. Good, Captain's Pizza, and Fairfield Center Jewelers

Benefits of Selected Green Infrastructure

- Underground stormwater detention will not disrupt parking areas
- Greens roofs cool buildings and reduce stormwater runoff
- Installing GI planters along the Post Road provides infiltration
- Potential for 8% reduction of peak flow from 1-year rain event

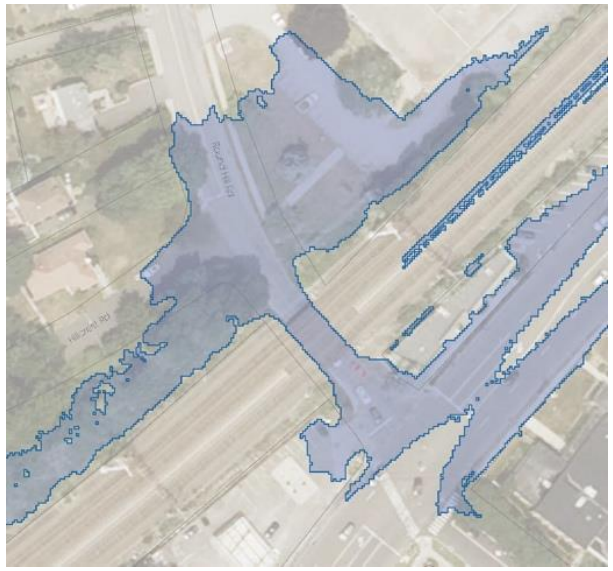
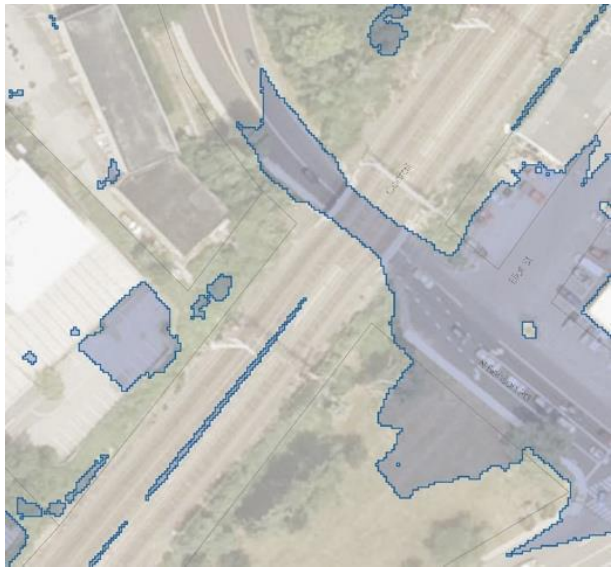
4 Underpasses

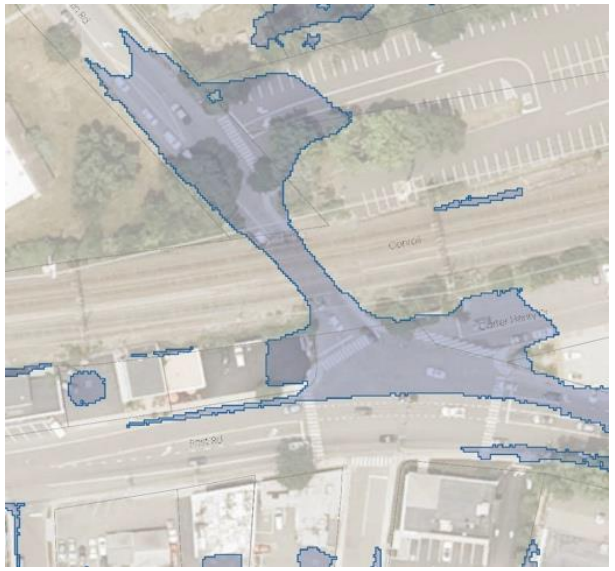
Flooding at **four New Haven Line underpasses** can force closures along critical north-south connections during major storm events.









Round Hill Road | **North Benson Road** | **North Pine Creek Road** | **Mill Plain Road**

0 0.01 0.02 0.03 0.04 Miles

Alternative 1

N. Benson Rd. - *AFTER*

Legend:

Proposed

- Bioswale/conveyance
- Bioretention basin
- Underground storage
- Underground conveyance
- Surface conveyance

0.01 0.02 0.03 0.04

Bioswale/conveyance, typ.

Bioretention basin, typ.

Underground storage

Underground conveyance, typ.









Alternative 2

Automated Roadway Flood Warning System





Owen Fish Park - *BEFORE*

Legend:

Existing

- Parcels
- Identified Bluespots
- FEMA Flood Zone AE
- FEMA Flood Zone X

0 0.01 0.03 0.05 0.08 Miles

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri USDA FSA, Esri, Vantor, Earthstar Geographics, and the GIS User Community

Owen Fish Park - *AFTER*



Legend:

Proposed

- Bioswale/conveyance
- Bioretention basin
- Stream bank restoration
- Floodable field
- Porous Paving
- Increase pond storage
- Upstream storage
- Surface conveyance

0 0.01 0.03 0.05 0.08 Miles

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri USDA FSA, Esri, Vantor, Earthstar Geographics, and the GIS User Community

Questions?



Host: **Senator Tony Hwang**

Extreme Weather & Coastal Resiliency Informational Forum



Fairfield 9-13-26 flooding event photo: Fairfield Fire Department / Facebook

Our coastline and riverways are at a greater risk of flooding, erosion, and water damage. What impact do these hurricanes, super storms, and flash flooding have on our homes and neighborhoods? What can we do better to prepare, protect, and develop safety plans against these storms? Join us to learn more from expert speakers.

FEATURED PANALISTS:

- **Becky Bunnell**
  Fairfield Flood & Erosion Control Board
- **Matt Paul**
  Fairfield CERT (Community Emergency Response Team)
- **Douglas Glowacki**
  Emergency Management Program Specialist
- **Emergency Services Expert Invited**
  Fairfield First Responders