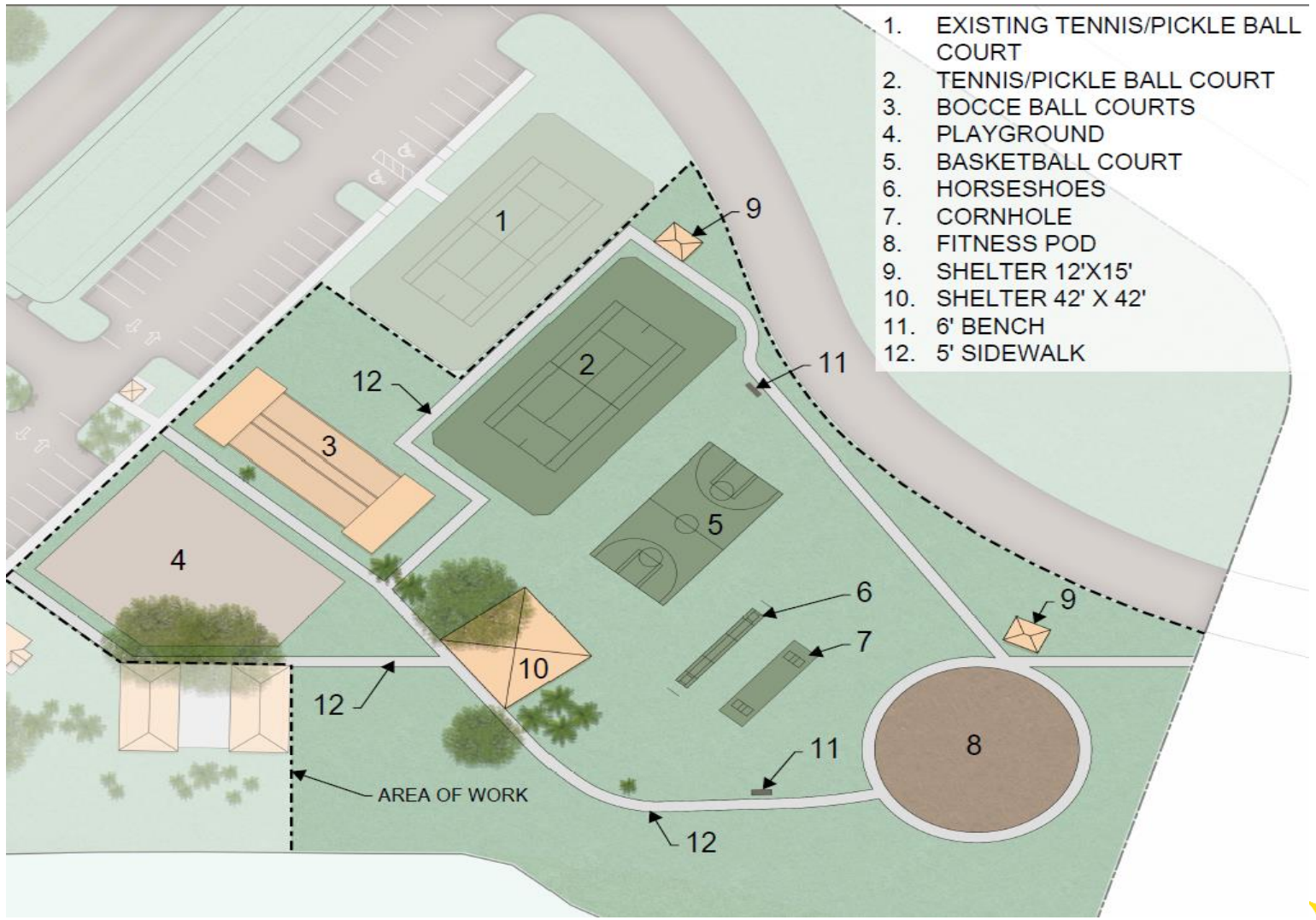
Port Charlotte Beach Complex (2020)

CHARLOTTE COUNTY FLORIDA

Port Charlotte Beach Complex (2020)



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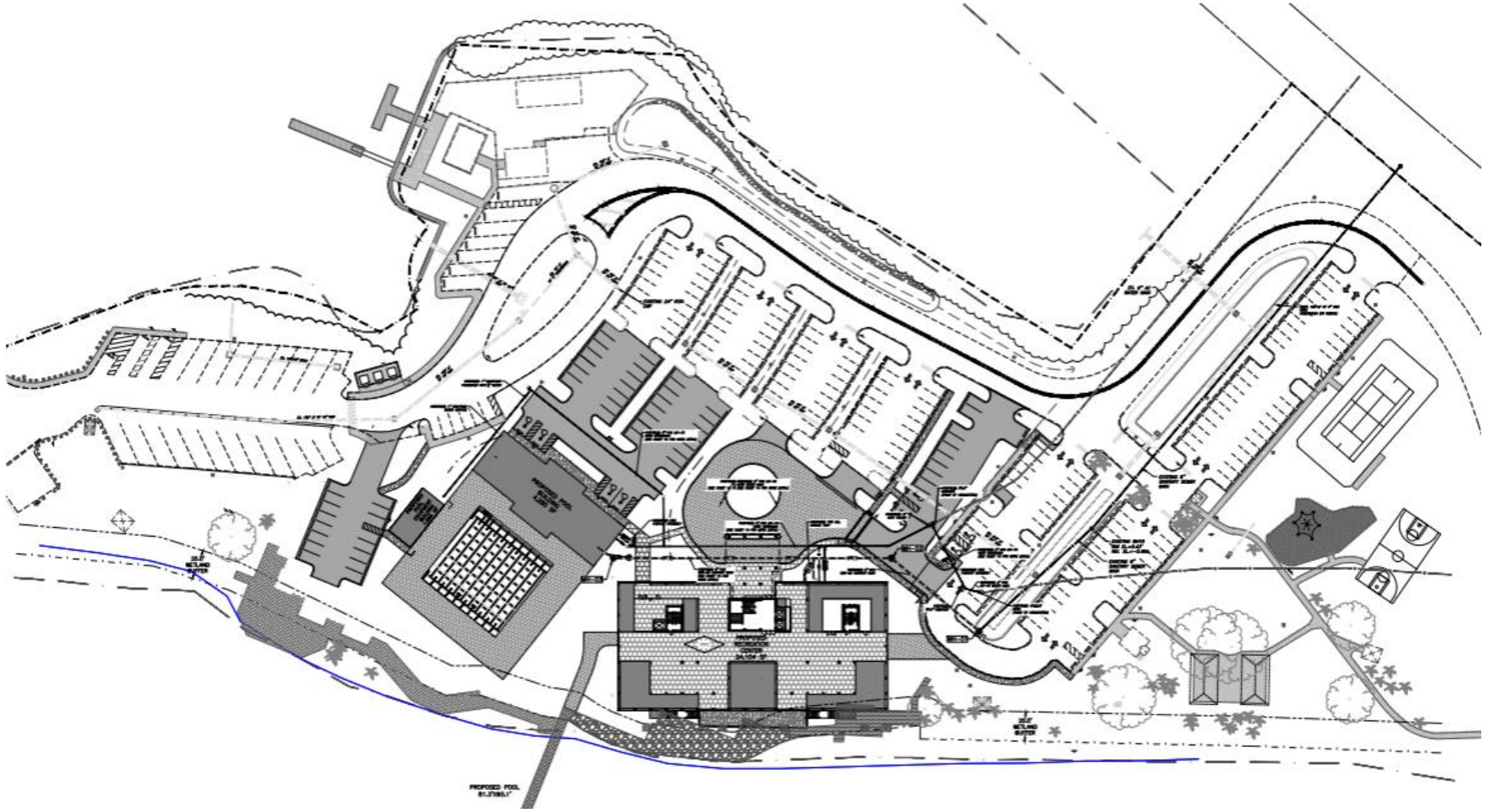
Port Charlotte Beach Complex (2020)



Port Charlotte Beach Complex (2020)

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Port Charlotte Beach Recreation Center (2020)

Project Budget $10M (Estimated $25M)

- Replace Recreation Center
  -current facility destroyed in storms
  -provide meeting and event space
- Estimated completion dates
  - Design: Summer 2025
    - 80% Complete
  - Construction: Fall 2026
- Design: PBK
- CM@R: Tandem

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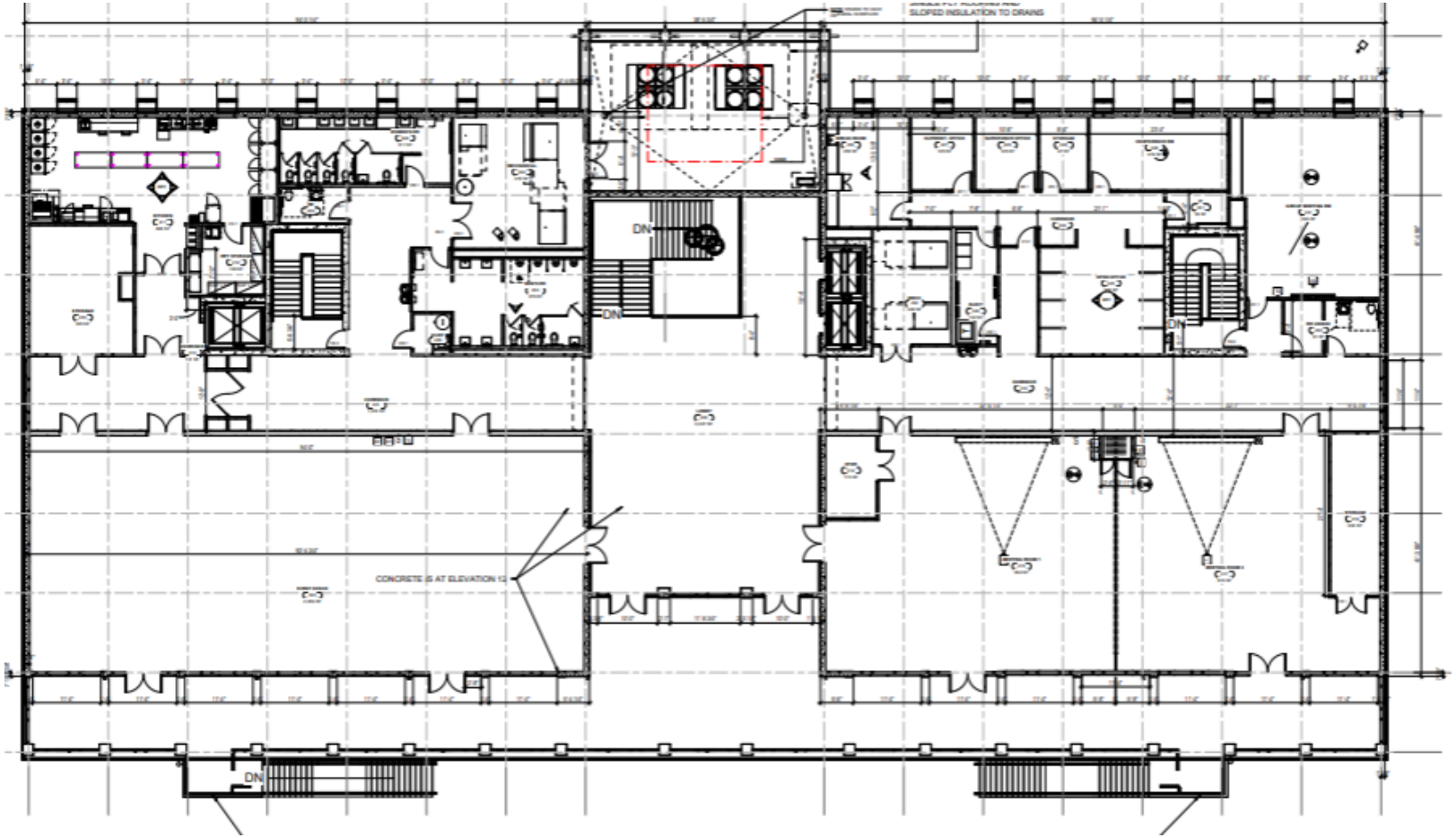
Port Charlotte Beach Recreation Center (2020)



- Grand Lobby
- Expansive porch area
- Two large event rooms
- One event room can be divided into two
- Conference room
- Kitchen
- Office space
- Multiple restrooms

Port Charlotte Beach Pool (2020)

Project Budget $4.5M (Estimated $5.5M)

- Replace Pool and Pool House
  -current facility destroyed in storms
- Estimated completion dates
  - Design: Summer 2025
    - 60% Complete
  - Construction: Fall 2026
- Design: PBK
- CM@R: Tandem

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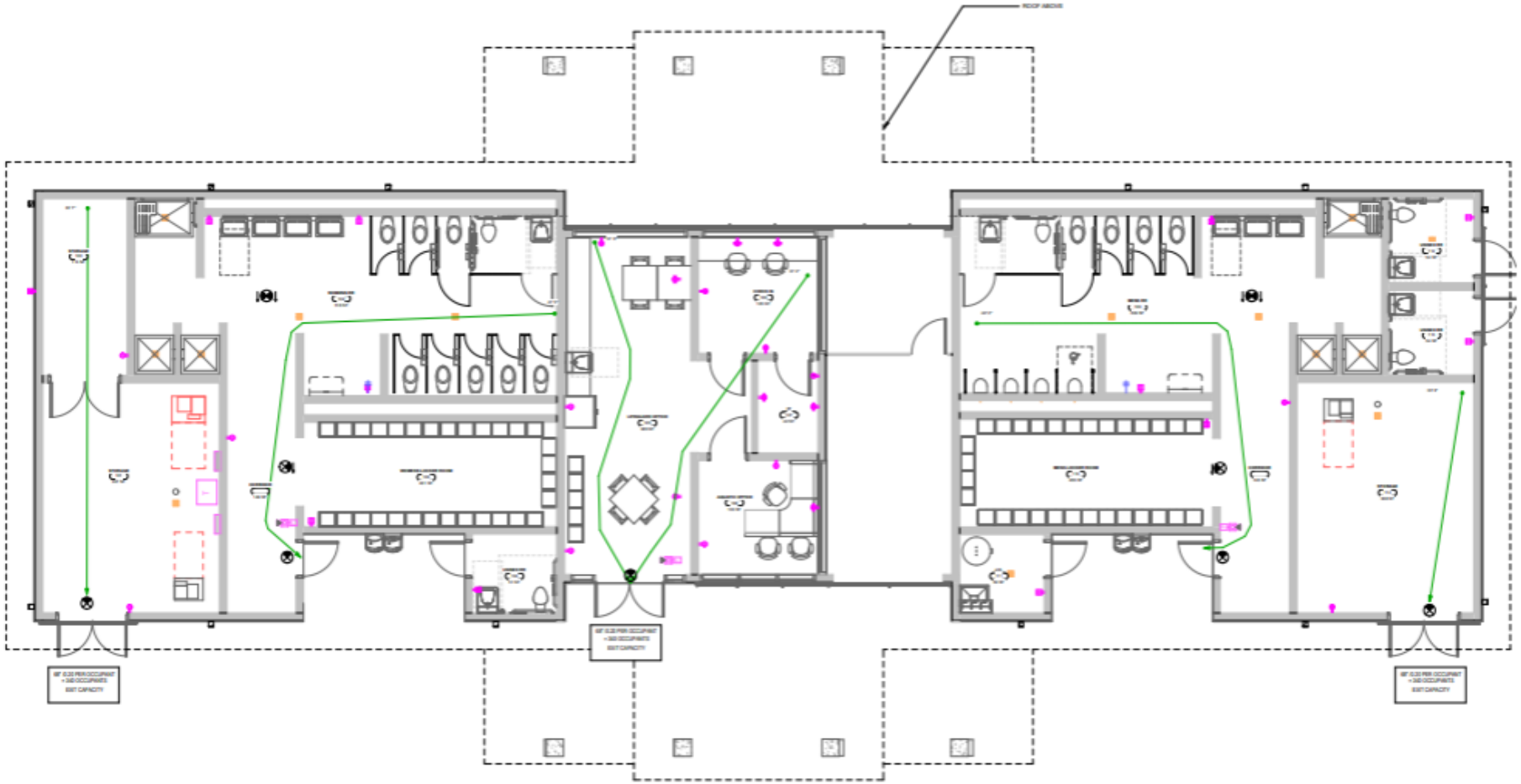
Port Charlotte Beach Pool (2020)



- Check-in station
- Locker rooms
- Multiple restrooms
- Office space
- Break room
- Storage
- Restrooms for pier

CHARLOTTE COUNTY FLORIDA

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FLORIDA

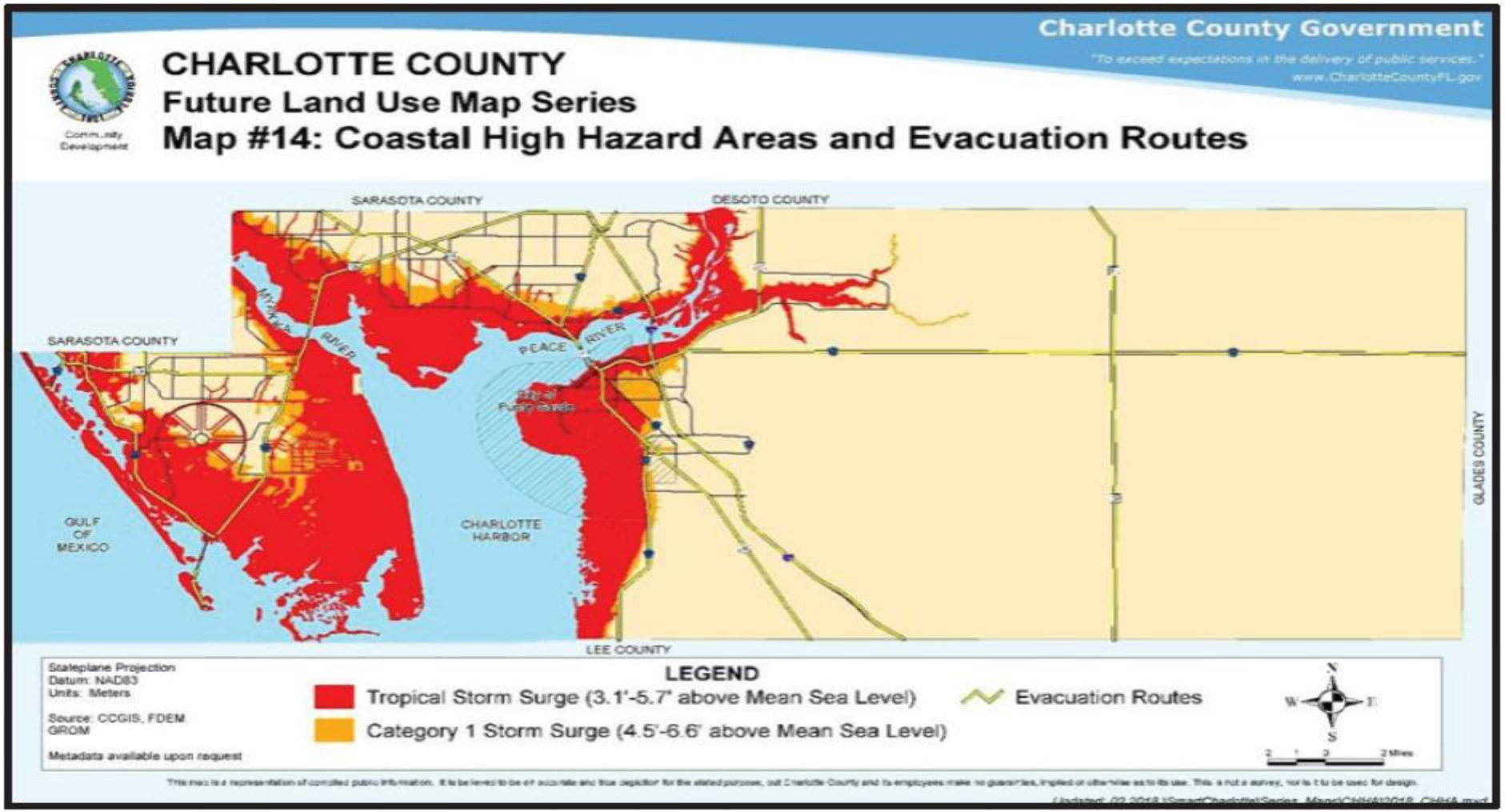
RESILIENCY DISCUSSION

April 14, 2025
Presented by PBK

FEMA MAP

CHARLOTTE COUNTY FLORIDA

COASTAL HIGH HAZARD AREAS & EVACUATION ROUTES



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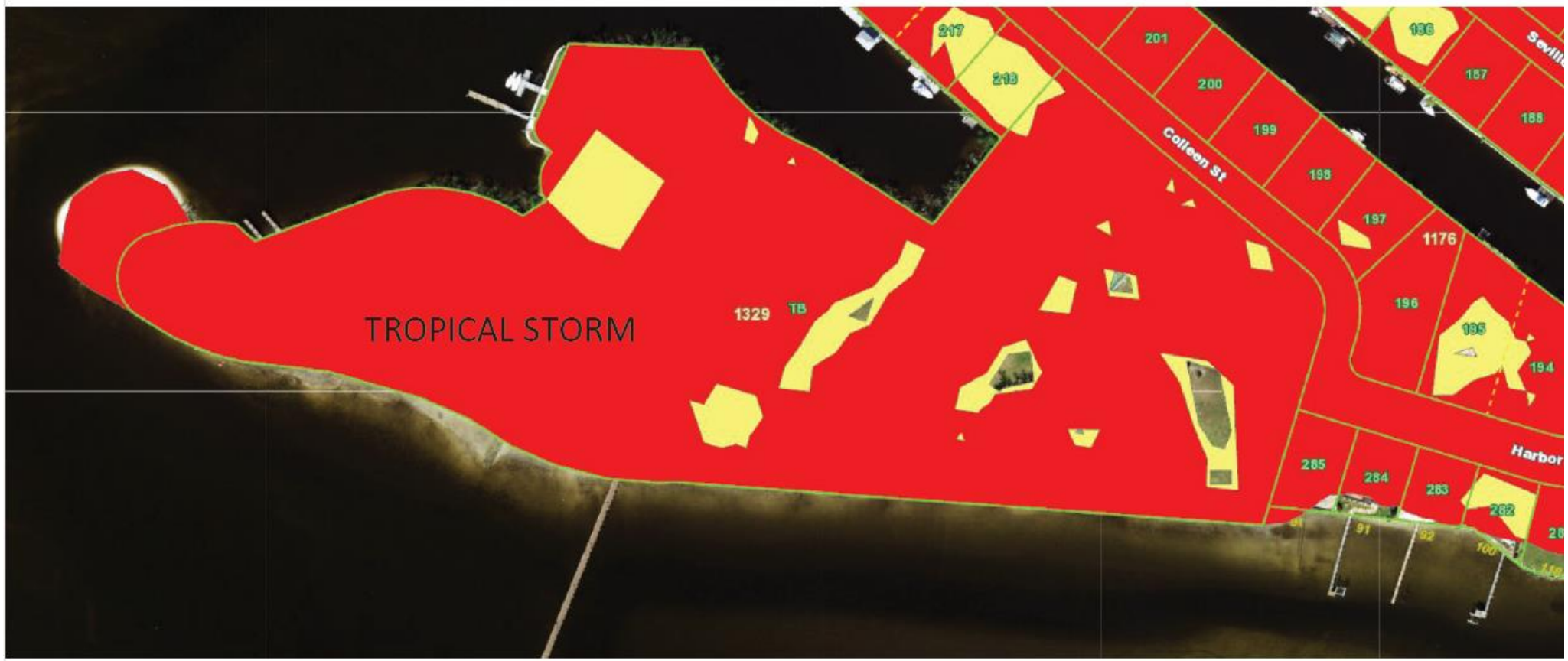
CHARLOTTE COUNTY

COASTAL HIGH HAZARD AREAS & EVACUATION ROUTES

Project Area | Tropical Storm



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FLORIDA

SLOSH DATA

Introduction

The National Oceanic and Atmospheric Administration (NOAA), specifically the National Weather Service's (NWS) National Hurricane Center (NHC), utilizes the hydrodynamic Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model to simulate storm surge from tropical cyclones. Storm surge information is provided to federal, state, and local partners to assist in a range of planning processes, risk assessment studies, and operational decision-making. In regards to the former, tens of thousands of climatology-based hypothetical tropical cyclones are simulated in each SLOSH basin (or grid), and the potential storm surges are calculated. Storm surge composites – Maximum Envelopes of Water (MEOWs) and Maximum of MEOWs (MOMs) – are created to assess and visualize storm surge risk under varying conditions. While MEOWs and MOMs provide a local assessment of storm surge risk, they do not provide a seamless perspective of the hazard owing to the many discrete SLOSH grids. This section briefly describes the scientific techniques used to create the seamless inundation maps for Category 1-5 hurricanes using the SLOSH MOM product as well as a description of the datasets and map viewer available to the public.

SLOSH Storm Surge Modeling

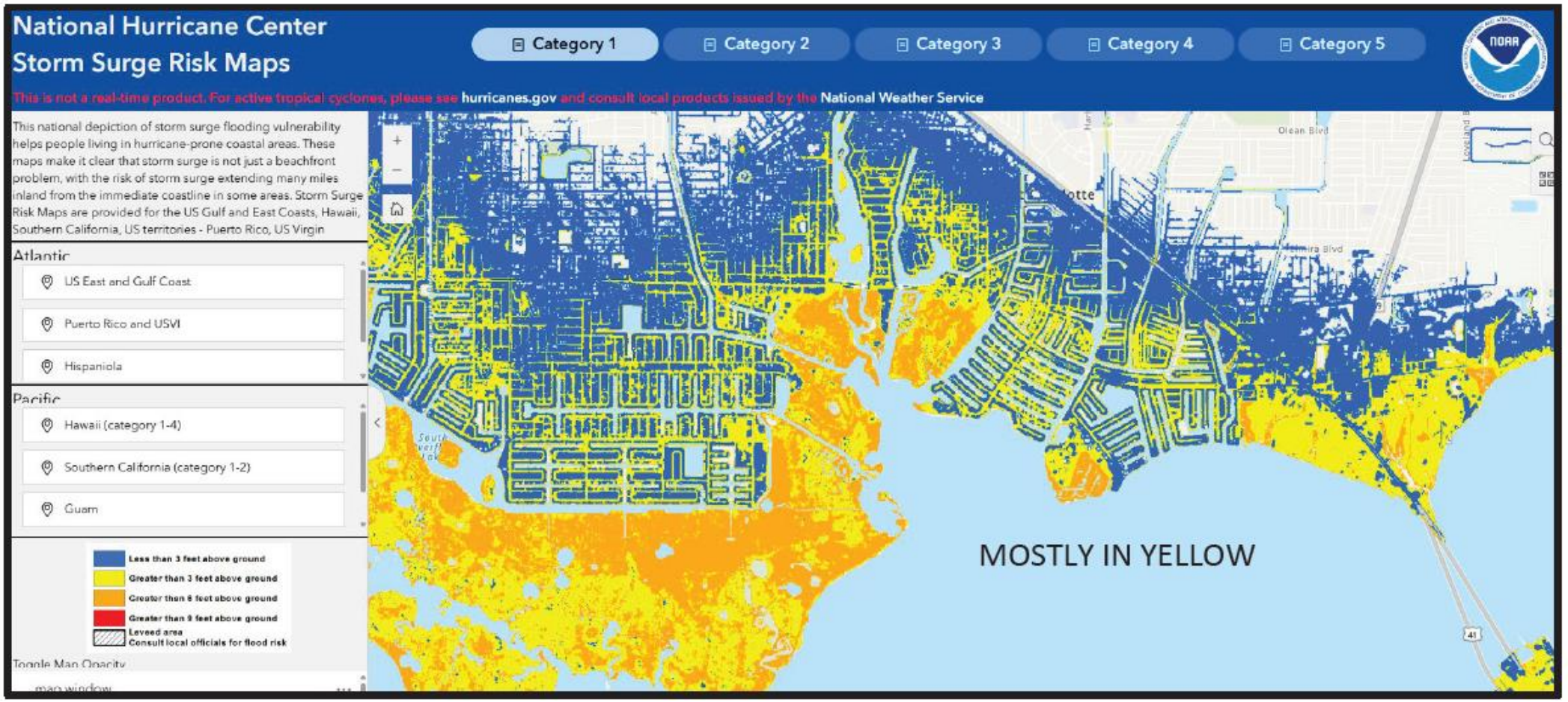
SLOSH has been used operationally for more than three decades. Over this time, SLOSH has provided valuable and accurate storm surge forecasts. For planning purposes, the NHC uses a representative sample of hypothetical storms to estimate the near worst–case scenario of flooding for each hurricane category. These SLOSH simulations are used to create a set of operational and planning products.

The NHC provides two products based on hypothetical hurricanes: MEOWs and MOMs. MEOWs are created by computing the maximum storm surge resulting from up to 100,000 hypothetical storms simulated through each SLOSH grid of varying forward speed, radius of maximum wind, intensity (Categories 1-5), landfall location, tide level, and storm direction. A MEOW product is created for each combination of category, forward speed, storm direction, and tide level. SLOSH products exclude Category 5 storms north of the NC/VA border and for Hawaii. For each storm combination, parallel storms make landfall in 5 to 10 mile increments along the coast within the SLOSH grid, and the maximum storm surge footprint from each simulation is composited, retaining the maximum height of storm surge in a given basin grid cell. These are called MEOWs and no single hurricane will produce the regional flooding depicted in the MEOWs. SLOSH model MOMs are an ensemble product of maximum storm surge heights. SLOSH MOMs are created for each storm category by retaining the maximum storm surge value in each grid cell for all the MEOWs, regardless of the forward speed, storm trajectory, or landfall location. SLOSH MOMs are available for mean tide and high tide scenarios and represent the near worst-case scenario of flooding under ideal storm conditions. A high tide initial water level was used for the storm surge risk maps.

SLOSH employs curvilinear polar, elliptical, and hyperbolic telescoping mesh grids to simulate the storm surge hazard. The spatial coverage for each SLOSH grid ranges from an area the size of a few counties to a few states. The resolution of individual grid cells within each basin ranges from tens to hundreds of meters to a kilometer or more. Sub–grid scale water features and topographic obstructions such as channels, rivers, and cuts and levees, barriers, and roads, respectively are parameterized to improve the modeled water levels. Figure 1 shows the SLOSH basins used to create the surge risk maps.

STORM SURGE RISK MAP

Category 1 Hurricane Event



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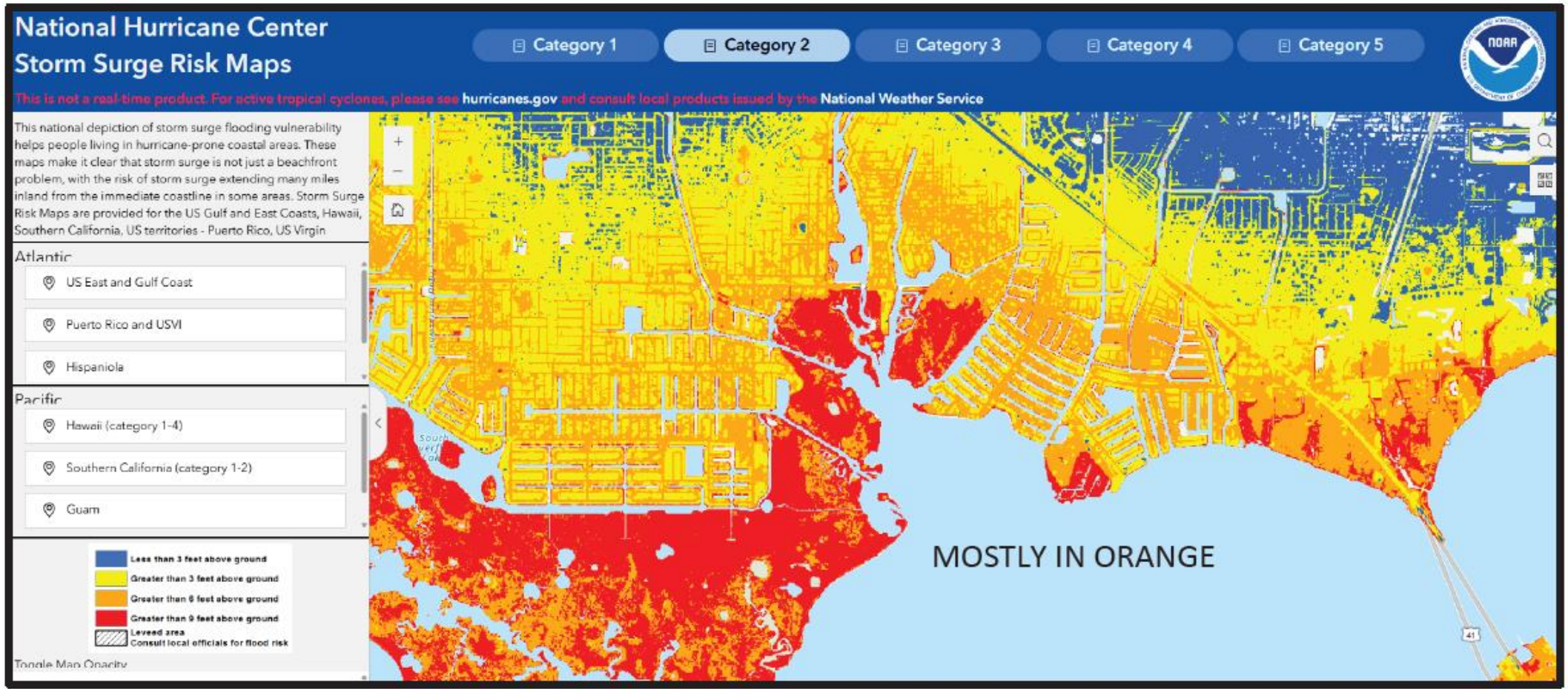
STORM SURGE RISK MAP

Category 2 Hurricane Event



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FLORIDA

RECREATION CENTER & POOL AREA DEVELOPMENT SUMMARY

EXISTING GRADES OF PROPERTY (PROJECT AREA ONLY):

- RANGE OF EXISTING GRADES: 3.51 FEET – 5.94 FEET
- AVERAGE EXISTING GRADE: 4.7 FEET

PROJECT FEMA ZONES:

- 11 VE (RECREATIONAL BUILDING AREA)
- 11 AE (POOL BUILDING AREA)

REQUIRED FINISHED FLOOR PER FEMA:

- 11 FEET (VE BOTTOM OF STRUCTURAL ELEMENT
- AE FINISHED FLOOR)

REQUIRED FINISHED FLOOR FLORIDA BUILDING CODE:

- 12 FEET (1.0 FOOT ABOVE FEMA)
- (VE BOTTOM OF STRUCTURAL ELEMENT)
- (AE FINISHED FLOOR)

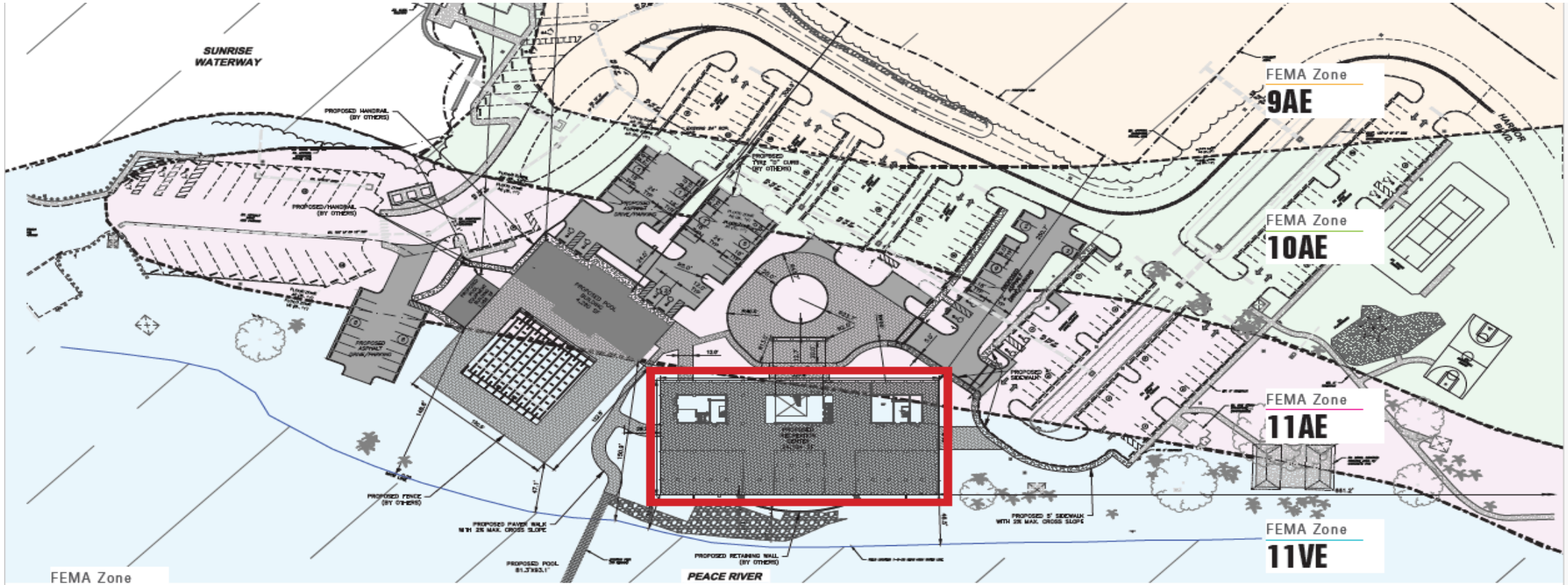
MAX STORM SURGE ELEVATION PER CHHA MAP:

- TROPICAL STORM: 5.7 FEET
- CATEGORY 1: 6.6 FEET

ESTIMATED SURGE LEVEL PER NOAA SLOSH MAPS:

- CATEGORY 1: 7.7' – 10.7' (3 – 6 FEET ABOVE EXISTING GROUND)
  - 9.2' AVERAGE SURGE ELEVATION
- CATEGORY 2: 10.7' – 13.7' (6 – 9 FEET ABOVE EXISTING GROUND)
  - 12.2 AVERAGE SURGE ELEVATION
- EVALUATION CONSIDERED UP TO CATEGORY 2 ONLY.

CHARLOTTE COUNTY FLORIDA



FEMA Zone
11VE

RECREATION CENTER BUILDING

SITE CONDITIONS COMPARED TO STANDARDS

MINIMUM FINISHED FLOOR PER CODE OF 12 FEET (STRUCTURAL ELEMENT) IS:

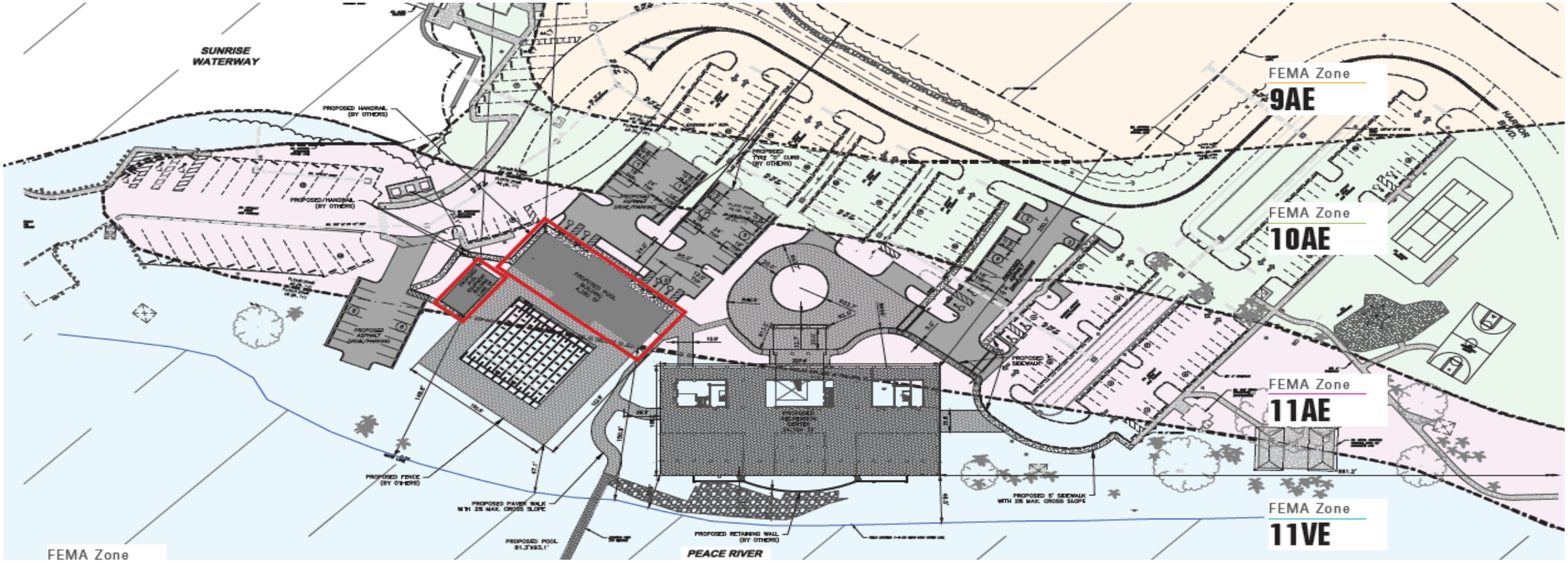
- 1.0 FEET ABOVE MINIMUM FEMA REQUIRED FINISHED FLOOR
- 6.3 FEET ABOVE TROPICAL STORM SURGE ELEVATION OF CHHA MAP
- 5.4 FEET ABOVE CATEGORY 1 STORM SURGE ELEVATION OF CHHA MAP
- 2.8 FEET ABOVE THE AVERAGE CATEGORY 1 ELEVATION OF THE SLOSH MAP
- -0.2 FEET BELOW THE AVERAGE CATEGORY 2 ELEVATION OF THE SLOSH MAP

PROPOSED SITE CONDITIONS

PROPOSED FINISHED FLOOR OF 19.0 FEET IS:

- 8.0 FEET ABOVE MINIMUM FEMA REQUIRED FINISHED FLOOR
- 9.0 FEET ABOVE MINIMUM FLORIDA BUILDING CODE (FEMA PLUS 1 FOOT)
- 13.3 FEET ABOVE TROPICAL STORM SURGE ELEVATION OF CHHA MAP
- 12.4 FEET ABOVE CATEGORY 1 STORM SURGE ELEVATION OF CHHA MAP
- 9.8 FEET ABOVE THE AVERAGE CATEGORY 1 ELEVATION OF THE SLOSH MAP
- 6.8 FEET ABOVE THE AVERAGE CATEGORY 2 ELEVATION OF THE SLOSH MAP

CHARLOTTE COUNTY FLORIDA



FEMA Zone
11AE

POOL BUILDINGS [Proposed Structural Flood-Proofing]

SITE CONDITIONS COMPARED TO STANDARDS

MINIMUM FINISHED FLOOR PER CODE OF 12 FEET (FINISHED FLOOR) IS:

- 1.0 FEET ABOVE MINIMUM FEMA REQUIRED FINISHED FLOOR
- 6.3 FEET ABOVE TROPICAL STORM SURGE ELEVATION OF CHHA MAP
- 5.4 FEET ABOVE CATEGORY 1 STORM SURGE ELEVATION OF CHHA MAP
- 2.8 FEET ABOVE THE AVERAGE CATEGORY 1 ELEVATION OF THE SLOSH MAP
- -0.2 FEET BELOW THE AVERAGE CATEGORY 2 ELEVATION OF THE SLOSH MAP

PROPOSED SITE CONDITIONS

PROPOSED FINISHED FLOOR OF 8.2 FEET IS:

- -2.8 FEET BELOW MINIMUM FEMA REQUIRED FINISHED FLOOR
- -3.8 FEET BELOW MINIMUM FLORIDA BUILDING CODE (FEMA PLUS 1 FOOT)
- 2.5 FEET ABOVE TROPICAL STORM SURGE ELEVATION OF CHHA MAP
- 1.6 FEET ABOVE CATEGORY 1 STORM SURGE ELEVATION OF CHHA MAP
- -1.0 FEET BELOW THE AVERAGE CATEGORY 1 ELEVATION OF THE SLOSH MAP
- -4.0 FEET BELOW THE AVERAGE CATEGORY 2 ELEVATION OF THE SLOSH MAP

CHARLOTTE COUNTY FLORIDA

CHARLOTTE COUNTY

PORT CHARLOTTE BEACH RECREATION CENTER & POOL

ARCHITECTURAL

- Recreation Center Finished Floor = 19.0 FEET
- Pool Building & Storage = 8.2 FEET
  - Dry Flood-proofing Provided
  - 4.0 FOOT Flood Panels Per ASCE 24-14
  - Flood Panels To Be Stored On-Site

STRUCTURAL

- Building Designed with Wind Loads of:
  - 150 MPH (Ultimate), 116 MPH (Allowable)
  - Risk Category II / Exposure D
  - Roof Live Load of 20 PSF
- Pool Building Foundations
  - Concrete Piles
  - Thickened, Reinforced Slab
- Pool Building Load Bearing Elements
  - Full Height 8" Poured Concrete Walls

MECHANICAL

- Chillers Located Above Flood Plane
- Chillers Anchored to Isolation Curb & Curb to the Structure
- Over 40% Redundancy

ELECTRICAL

- All Outlets Above Base Flood Elevation +1' including Pedestrian Lighting
- Recreation Center Building Electrical All Above Flood Plane

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PORT CHARLOTTE BEACH RECREATION CENTER & POOL

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