PLANNING BOARD MEETING
CITY OF ST. PETE BEACH
COMMISSION CHAMBERS

155 Corey Avenue
St. Pete Beach, FL 33706

Monday, July 15, 2024
4:00 PM

Call to Order
Pledge of Allegiance
Roll Call

REGULAR MEETING

1. Approval of the Agenda -

   Action Request: Motion to approve the July 15, 2024 agenda.

2. Audience Comments -
   Comments shall be limited to 3 minutes for general and agenda items. Public comment on agenda items will be allowed when that item is called. Please complete and submit a comment card to the Clerk.

3. Approval of Minutes
   a. March 18 and May 20, 2024, Meeting Minutes

4. Discussion Items
   a. Coastal Resiliency Planning
   Providing a discussion of resiliency in planning efforts focused on coastal protection, flood mitigation, and stormwater management.

   b. Right-of-Way Application for Marine Contractors & Commercial Operators
   Providing an update on expected cost for the permit discussed at the May 2024 meeting.

5. Adjournment- Next meeting August 19, 2024 -

APPEAL: In accordance with 286.0105, Florida Statute (Notices of meetings and hearings must advise

that a record is required to appeal), if a person decides to appeal any decision made by this committee, board, agency, or commission with respect to any matter considered at this meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

AMERICANS WITH DISABILITIES ACT (ADA): In accordance with the Americans with Disabilities Act and Florida Statutes, if any person with a disability defined by the ADA needs special accommodation to participate in this proceeding, then not later than two business days prior to the proceeding, he or she should contact City Hall at (727) 367-2735.

The public is cordially invited to attend this meeting.
All agenda material is available for review at City Hall or www.stpetebeach.org.

DRAFT PLANNING BOARD MEETING MINUTES

March 18, 2024 2:30 PM

MEMBERS PRESENT: Greg Premer, Chair
Tom DeYampert, Vice Chair
David Hubbard, Member
Susan Konczal, Member
Tiffany Secka, Member

STAFF PRESENT: Jennifer McMahon, Chief Operating Officer
Andrew Dickman, City Attorney
Ginny Bodkin, Deputy City Clerk
Brandon Berry, Senior Planner

Chair Premer called the meeting to order at 2:30 PM, followed by the Pledge of Allegiance.

1. Approval of the Agenda –

Motion: Member Secka moved, and Vice Chair DeYampert seconded to approve the March 18, 2024 agenda as presented: the motion passed unanimously.

2. Audience Comments –

John Kurzman gave comments regarding lots and beach access in the Comprehensive Plan.

City Attorney Andrew Dickman noted for the record that he asked Mr. Kurzman to refrain from his comments as the subject matter he was discussing was germane to the agenda.

Chair Premer adjourned the meeting as the Planning Board called the meeting to order as the Local Planning Agency (LPA) at 2:36 PM.

3. Approval of Minutes – December 18, 2023

Motion: Member Secka moved, and Vice Chair DeYampert seconded to approve the December 18, 2023 minutes as presented: the motion passed unanimously.

Attorney Dickman addressed the board regarding acting as the Local Planning Agency (LPA) under Florida Statute 163.3174 and reviewed the quasi-judicial process. Items 4a. and b. are companion items and will be heard at once. Mr. Dickman requested that the members announce any ex-parte communication they had regarding this Conditional Use Permit.

Chair Premer adjourned the meeting as the Planning Board and reconvened as the LPA at 2:30 PM.

Member Secka disclosed that she drove by the property to take an overall look and read the letters that were forwarded by the City.

Vice Chair DeYampert stated that he was familiar with the property; he received letters through the City and reviewed them including lobbyist Robin Miller but did not discuss anything with her.

Chair Premer disclosed that he viewed the property multiple times from different angles, and he researched 1754 Properties.

Member Hubbard disclosed that he had general conversations with some residents, and studied the Tradewinds website, as a guest would.

Member Konczal disclosed that she reviewed all of the emails forwarded from the City and she did not receive any personally. She had two conversations with her neighbors and walked through all of the buildings of the Tradewinds.

Following the ex-parte disclosures, the Deputy City Clerk swore in all those who would be speaking, presenting, or providing testimony to the Board.

4. Action Items –

a. Conditional Use Permit #23033 (Resolution 2023-27): Tradewinds Resort (5600, 5700, 5750, 5800, 5900, 6000 Gulf Blvd) - Companion item to Agenda Item 4.b.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF ST. PETE BEACH, FLORIDA, APPROVING A CONDITIONAL USE PERMIT, PURSUANT TO SECTIONS 35.3.(b)(1) AND 35.4.(b) OF THE LAND DEVELOPMENT CODE, TO ALLOW THE CONSTRUCTION OF A FOUR-PHASE TEMPORARY LODGING REDEVELOPMENT THAT WILL INCLUDE 1,596 TOTAL TEMPORARY LODGING UNITS, OR 63.18 UNITS PER BUILDABLE ACRE, OF WHICH 629 UNITS ARE ADDITIONAL ABOVE EXISTING, 59,895 SQ. FT. OF MEETING SPACE OF WHICH 14,303 SQ. FT. IS ADDITIONAL ABOVE EXISTING, 79,126 SQ. FT. OF RETAIL AND RESTAURANT SPACE OF WHICH 42,964 SQ. FT. IS ADDITIONAL ABOVE EXISTING, 31,105 SQ. FT. OF OFFICE SPACE OF WHICH 10,486 SQ. FT. IS ADDITIONAL ABOVE EXISTING, AND DEVELOP NEW LODGING, ACCESSORY AND AMENITY STRUCTURES CONTAINING THE AFOREMENTIONED UNITS, ACCESSORY SPACES AND AMENITIES, AS WELL AS OUTDOOR AMENITIES AND PARKING GARAGES, THAT WILL EXTEND UP TO 116 FEET IN HEIGHT ABOVE BASE FLOOD ELEVATION (BFE) TO THE ROOFLINE AND 128 FEET IN HEIGHT ABOVE BFE WHEN INCLUDING ROOFTOP AMENITIES OR DECORATIVE FEATURES, AND PERMIT TWO ROOFTOP DINING AND DRINKING AMENITIES THAT INCLUDES THE PLAYING OF OUTDOOR MUSIC, TO PARCELS #06-32-16-00000-230-0300, 06-32-16-00000-230-0200, 01-32-15-00000-110-0600, 01-32-15-00000-110-0610, 01-32-15-18142-000-0000, 01-32-15-18142-000-0001, 01-3215-00000-110-0500, AND 01-32-15-00000-110-0400 WITH ADDRESSES OF 5600, 5700, 5750, 5800, 5900, AND 6000 GULF BOULEVARD; INCORPORATING THE CONDITIONS OUTLINED HEREIN; AND PROVIDING FOR CORRECTION OF SCRIVENER'S ERROR AND AN EFFECTIVE DATE.

Senior Planner Brandon Berry made a presentation to the LPA (Board) that is made part of the record. The presentation included the following information:

- Timeline
- Site plans

- Phases of the proposed development
- Floor plans for rooftop dining, drinking and music areas
- Open areas and benefits to the community
- Staff recommendation
- Recommended conditions

Mr. Berry noted that the approval of the CUP would be contingent upon the passage of the companion Development Agreement (agenda item 4.b.), which he reviewed:

- Applicant requests the project's development to span up to 20 years
- The CUP and Development Agreement are companion items
- Development commitments by developer and the City
- Concurrency
- Transportation Study updates needed
- Notice of next hearing - April 15, 2024, 4:00 PM Commission Chambers, City Hall

Following the City's presentation, Mr. Berry introduced the City's Transportation Expert, Engineer Dave Muntean of Halff Associates, who had reviewed the traffic study and methodology.

- Applicant's Traffic Study was submitted and re-submitted and appears on track for approval
- Reducing driveway number from 10 to 4 was a positive change for pedestrians and flow
- Communication with the applicant substantial during the process

Mr. Berry indicated that the Public Works Director and Fire Marshall were available to answer questions regarding sewer, stormwater or fire concerns. There is currently no per room data per room EMS or Sheriff calls.

Following the City's presentation, the applicant presentation began with Joe Smith, the CEO of 1754 Properties, Weston, Florida; he spoke about his organization , some of their other properties, and reviewed their healthy financial and technical capabilities in conjunction with the Cumming Group.

Ms. Batsel began the review of the applicant's presentation, which is part of the meeting record.

- Proposed project spans 3 districts in the Comp Plan (map); Zoning/FLU
- Request details: 63.18 temporary lodging units (TLU), height, 2 rooftop amenities, net increase of 629 units, over 4 phases
- New and existing buildings
- Review of Four Phases – new units and parking for each, eliminating curb cuts, meeting, office and retail space, temporary beach access during construction
- Integration of the entire site including comprehensive stormwater redevelopment, internal road, landscaping and branding/theme – one zoning lot
- Conceptual Timeline 2024 – 2044

The following professionals provided their expert testimonies as outlined; their presentations are included with the applicant's presentation in the meeting record:

Steve Henry, PE of Lincks & Associates, Tampa - Transportation

- Methodology – used Institute of Transportation Engineers (ITE) trip generation rates for both existing and proposed units for net increase in traffic; future analyses will be counts

- Looked at full build out traffic, linked roadways and intersections, and worst-case peak hour volumes
- The Analyses will be updated for each phase
- The project does comply with the Land Development Code

Mr. Henry answered Board questions.

Scott Eisenhart, AIA of Nunzio Marc Desantis, Dallas, TX – Architect

- Beach access diagrams and north/south connection of the proposed beach walkway
- Vehicular access diagram – gets circulation off of Gulf Blvd.
- Pedestrian circulation – buffered from Gulf Blvd., elevated sidewalks over internal roadway, way-finding signs, proposed beach walkway
- Building heights and compatibility – turtle friendly lighting, garage car light screening – comparable in height to Seamark
- Beach-front restaurant - Scrubber for exhaust control, tall glass second level to screen terrace noise, high walls top of tower 2 to control roof deck noise
- Fire and Security
- View Corridors and Separation – balconies have no direct sight into Seamark, panoramic views from rooftop terrace, shadow study
- Garage facades – use of greenery, façade options
- Energy saving techniques
- Rooftop terrace, garage screening elements and landscaping, Florida friendly vegetation

David Perry, PLA, ASLA of Perry Becker Design, LLC - Landscape Architect

- Requirements and compliance
- Gulf Blvd. buffer and shade trees
- Beach access/fire access
- Dune restoration

Chair Premer called for a recess at 4:45 PM and reconvened at 4:55 PM.

Abdul Alkadry, PE, Harris Civil Engineers, Orlando - Engineering

- Existing drainage conditions and proposed design
- Pretreatment, post treatment exfiltration for each phase; each phase will stand on its own
- Underground vault detail
- Site circulation and access - Queueing for up to 65 cars, fire access
- As conditioned, the CUP is consistent with provisions of LDC and Comp Plan

Greg Pepitone, Tourism Economics/Oxford Economics Company, Economist

- Impact Study for the expansion of Tradewinds 2027-2046
- $3.5 billion in sales to local businesses and $409 million in state and local taxes over the 20 years; 508 jobs annually; direct spending impacts
- Property Tax analysis

Ken Metcalf, AICP Planning Director for Stearns, Weaver, Miller - Planning

- Planning Overview – CUP Summary – 629 units, 3 towers, 25.26 acres
- Statutory Requirements – consistency with Comp Plan

- CUP Use & Numeric Consistency, Setbacks
- Compatibility (consistency with Sec. 4.4(a), 4.12(a)) – project is consistent with all
- Professional opinion was - No unreasonable or disproportionately negative impacts

Joe Smith of 1754 Properties reviewed the community benefits of the project, including a view terrace on 12th story which will be open to the public.

Attorney Elise Batsel summarized that the applicant has met all of criteria required in the CUP application. The Development Agreement is a contract between the Developer and the City specifying what the Developer will do in return for the City allowing pauses for the phases to allow those units to be absorbed into the market without the CUP expiring.

The LPA members began a question period for the applicant experts.

- Rooftop view terrace is opened as public space if there are no events
- Residents requested no excessive parking; applicant donated $1.25 million for mobility services (Free Bee)
- Turtle lighting is in Development agreement; part of lighting standards for new development
- On demand airport shuttle service as needed/bus passes for employees
- State and local tax revenues are higher for new construction – average over 20 years
- Discounts for residents with a city driver's license – 20% food & beverage/chair rentals
- Resident parking for storms after guest evacuation; emergency vehicles have priority
- Fire Marshall Kelly Intzes – guests evacuate when mandatory (Condition 38)
- Dunes seaward of the CCCL are maintained by FDEP following the restoration

Following the Q&A, modifications to conditions were distributed and reviewed; a copy is made part of the meeting record:

- #7 - Clarification from "sell" to fee simple title and with the exception of Coral Reef property
- #12 - Removing AAA food/dining rating (there is casual beach dining)
- #20 - Phase 1 pool deck closed to guests at 9pm.
- #25 - Dune crossovers will be elevated with the exception of those at grade crossings already permitted by the FDEP.
- #26 - Phase 1 beach walkover relocation would be reviewed as part of site plan approval
- #29 - Previous surfaces in proposed pathways, open-air parking or non-traffic rated surfaces
- #35 - Modify water use reduction from 40 to 35% (applicant's error) per LEED
- #37 - Specifies green roofs on newly constructed buildings
- #38 - Provides applicant notice of violations and a 90-day cure period

The modified conditions were submitted to the record.

Public Comment

The following individuals spoke in favor of the Tradewinds CUP:
Robert Fisher, 4780 Brittany Drive S.
Dale Schueneman, GM Coral Reef Resort
Emily Schmoll, (resident) Director of Marketing on behalf of Blue Green Vacations
Victor Ortiz, 111 60th Ave.
Joseph Jenio, 5445 Gulf Blvd.

Robin Miller, President & CEO Tampa Bay Beaches Chamber of Commerce on behalf of its members
Season Wales, resident and employee of Tradewinds

The following individuals spoke against the Tradewinds CUP:
Deb Schechner, 710 Boca Ciega Isle Drive
John Kurzman, Bahia Honda Way
Dana Richardson, 5830 Bahama Way S.

Terri Grocott, 2841 Alton Drive asked for a more comprehensive traffic study
Lisa Reich, 78th Ave. spoke on behalf of sea turtles and asked who is going to enforce the sea turtle lighting ordinance

There being no further comments, Chair Premer closed the public hearing portion of the meeting.

Attorney Batsel provided rebuttal comments regarding the traffic study; it contemplated every single trip, and the numbers are under capacity. Additionally, the applicant has committed to doing a new traffic study at the beginning of each phase.

Joe Smith provided rebuttal regarding sea turtles. The applicant works with Sea Turtle Trackers and the City; they have replaced parking lot lights following their Turtle Trackers advice and are always working on improvements. The wood chairs will be replaced at a cost of up to $2million to be done in phases, and they are tinting windows. Mr. Smith spoke about their intent to upgrade the port cochere at the Alden.

Chair Premer commented on heavy traffic, individuals looking for parking, and opined that the project is too large for the beach. He would prefer a CUP for each phase of the project.

Member Hubbard asked questions regarding jaywalking and the collection of traffic data. Traffic expert Dave Muntean explained using actual data on existing room counts and Institute of Traffic Engineers (ITE) data for proposed rooms. Member Hubbard expressed concerns on using ITE data. Mr. Muntean answered questions of traffic level of service (LOS) on Gulf Blvd. Concurrency requirements are a burden of the developer for future phases.

Vice Chair DeYampert opined that St. Pete Beach is a resort community and the beach has changed. Developers want to enhance the beach, increasing property values - 600 rooms over a 20-year period is inconsequential based on growth in Pinellas County.

Member Secka opined that Gulf Blvd. is a thoroughfare to the more northern beaches, not just local.

Member Hubbard inquired about what would happen if Gulf Blvd. reached LOS Level D. Ms. Batsel explained that the LDC has a proportionate share mitigation payment that would go to the City to make improvements to the transportation network.

Motion: Member Secka moved and Vice Chair DeYampert seconded to recommend approval of Resolution 2023-27 with amended conditions, contingent upon recommendation of approval of the companion development agreement, to the City Commission. The motion carried 5-0.

Applicant Attorney Kevin Reali asked to ensure clarification on traffic counts for future traffic studies for the Development Agreement. Mr. Berry explained that the use of the existing level of service data from Forward Pinellas might not include Corey Landings or Sirata. Performing new traffic counts for each subsequent concurrency certificate might be appropriate – language may be changed in Section 4, H. ii. to reflect updated volumes based on Forward Pinellas data or actual data counts, as determined by the City Manager.

b. Development Agreement: City of St. Pete Beach and TRADEWINDS SPB DEVELOPER, LLC - Companion item to Agenda Item 4.a.

Motion: Member Secka moved, and Chair Premer seconded to approve the development agreement to the City Commission with the amendment to Item H. in the agreement to ensure that current data is used, which will come from Forward Pinellas data or actual data counts as determined by the City Manager (language to be defined by City Attorney and Staff). The motion carried 5-0.

Chair Premer adjourned the meeting as the LPA and reopened as the Planning Board at 8:17 PM.

Conditional Use Permit #23033 (Resolution 2023-27) will be heard before the City Commission on April 15, 2024 at 4:00 PM in Commission Chambers.

5. Discussion Items – None.

6. Adjournment –

There being no further business, Chair Premer adjourned the meeting at 8:18 PM.

These minutes will be considered for approval at the June 17, 2024 meeting of the Planning Board.

DRAFT PLANNING BOARD MEETING MINUTES

May 20, 2024 4:00PM

MEMBERS PRESENT:	Tom DeYampert, Vice Chair Sam Angelides, Jr., Member David Hubbard, Member Tiffany Secka, Member
EXCUSED:	Susan Konczal, Member
STAFF PRESENT:	Matthew McConnell, Assistant City Attorney Jennifer McMahon, Chief Operating Officer Amber LaRowe, City Clerk Brandon Berry, Senior Planner

Vice Chair DeYampert called the meeting to order at 4:00 PM, followed by the Pledge of Allegiance.

1. Approval of the Agenda –

Motion: Member Secka moved, and Member Hubbard seconded to approve the May 20, 2024 agenda as presented: the motion passed unanimously.

2. Audience Comments –

None.

3. Approval of Minutes – March 4th and 18th, 2024

Due to some discussion about the March 18th minutes, those will be sent back to the City Clerk for review and interpretation.

Motion: Member Secka moved, and Member Hubbard seconded, to approve the March 4, 2024, minutes as presented: the motion passed unanimously.

4. Action Items –

a. **Election of Officers 2024-25**

Motion: Vice Chair DeYampert moved, and Member Hubbard seconded to appoint Tiffany Secka as the Board Chair for 2024-2025; the motion passed unanimously.

Motion: Member Hubbard moved, and Chair Secka seconded to appoint Tom DeYampert as the Board Vice Chair for 2024-2025; the motion passed unanimously.

5. Discussion Items –

a. **Comprehensive Plan Services Scope**

Brandon Berry, Senior Planner, made a presentation to the Board; a copy of his presentation is made a part of the record. Topics discussed included:

- Area of Focus
    - Town Center (TC-1)
    - Town Center (TC-2)
    - Large Resort District (LR)
- Phase 1
    - Input, data collection, and analysis
    - Listening session with the City Commission and a staff kickoff meeting to discuss public engagement opportunities
- Phase 2
    - Draft
    - Present revisions
    - Additional public meetings
- Phase 3
    - Meeting with City Commission
- Phase 4
    - Adopt amendments

It is estimated to be at least a year-long process.

The Planning Board would like the contractor to work with Pinellas County early in the process.

b. Comprehensive Plan Services – Planning Board Engagement

Mr. Berry asked how the Planning Board wanted to be involved in this process. Member Hubbard volunteered to represent the Planning Board at public engagements and at City Commission hearings; workshops between the City Commission and Planning Board will also be scheduled.

c. Conditional Use Permit Application Modifications

Mr. Berry gave a presentation to the Board regarding staff recommendations; a copy of the presentation is made a part of the record. Topics discussed included:

- Conditional Use Permit requirements
- Minimum documents necessary
- Proposed amendments for all applications
- Proposed amendments for new buildings/additions applications
- Proposed amendments for new lodging projects/expansion applications
- City Clerk recommendations

The Board discussed increasing the fee for filing these applications as the staff time involved is extensive; staff will review this and make recommendations.

Member DeYampert suggested that the applications could have more details describing which project requires which items.

The Board continued discussing staff time, the number of staff needed, building permits versus permit review, and conditional uses.

d. Right-of-Way Application for Marine Contractors & Commercial Operators

Mr. Berry discussed the right-of-way permits. Staff researched other municipalities and their fees; based on that, the City recommends a fee of $100/year for commercial businesses located in the City and $250/year for commercial businesses not located in the City.

Member Hubbard mentioned the difference between marine contractors versus commercial businesses profiting off the boat ramp and would prefer a more tiered approach to the fee structure. Staff will look at a tiered fee structure based on the level of service.

This will be added to the fee schedule in the City Code along with the Conditional Use Permit fee increase (no amount established yet) as discussed earlier tonight.

6. Adjournment –

There being no further business, Vice Chair DeYampert adjourned the meeting at 5:09 PM.

These minutes will be considered for approval at the June 2024 meeting of the Planning Board.

PLANNING BOARD MEETING
CITY OF ST. PETE BEACH
COMMISSION CHAMBERS

Agenda Report

Action Request:

Strategic Objective:

Date: July 15, 2024

Prepared By: Brandon Berry, Senior Planner

Through: Kristin Coman, Community Development Director

Summary of Issue: Staff will be conducting a Strengths, Opportunities, Weaknesses and Threats (SWOT) analysis with the Planning Board to identify internal and external factors related to coastal resiliency, particularly as it relates to flood hazards and stormwater retention and detention.

Included with this item are articles providing a background on the SWOT analysis, Pinellas County's vulnerability assessment, and Clearwater's $100 million dollar plan to address flooding in North Beach. Staff has also selected pages from the County's recently-completed resiliency plan that pertain to local coastal issues. The entire plan can be accessed here: https://pinellas.gov/projects/resilient-pinellas/

Funding: N/A - for discussion purposes.

Attachments:

1. Supporting Articles
2. St. Pete Beach Vulnerability Report - 2023
3. 2023 Resilient Pinellas Action Plan - Selected Pages

Supporting Articles – SWOT Analysis

Below are three resources with background information on the topic we will be discussing at the Planning Board meeting. The first link provides detail and an example of how a SWOT analysis is performed. The second link provides information on Pinellas County's vulnerability assessment, which preceded their resiliency plan. The third link provides an article of a location in Pinellas County facing similar threats from flooding as St. Pete Beach.

University of Kansas – Community Tool Box

Section 14. SWOT Analysis: Strengths, Weaknesses, Opportunities, and Threats

Link: https://ctb.ku.edu/en/table-of-contents/assessment/assessing-community-needs-and-resources/swot-analysis/main

Pinellas County Sea Level Rise & Storm Surge Vulnerability Assessment

Link: https://pinellas.gov/projects/vulnerability-assessment/

Article Link

Clearwater has $100m plan to keep North Beach from flooding (Jack Prator, Tampa Bay Times, July 1, 2024)

Link: https://www.tbnweekly.com/clearwater_beacon/article_d970901c-37d1-11ef-9036-6f175a25888e.html

CITY OF ST. PETE BEACH
UPDATE TO PHASE II VULNERABILITY ASSESSMENT

DEP AGREEMENT #22PLN92

Prepared For:

City of St. Pete Beach
155 Corey Avenue
St Pete Beach, FL 33706

Prepared by:

Kimley»Horn
Kimley-Horn and Associates, Inc.
200 Central Avenue
Suite 600
St. Petersburg, FL 33701

City of St. Pete Beach
Update to Phase II Vulnerability Assessment
DEP Agreement #22PLN92

Prepared for:

The City of St. Pete Beach
155 Corey Avenue
St. Pete Beach, FL 33706

Prepared by:

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St. Petersburg, Florida
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Executive Summary

The City of St. Pete Beach was awarded a Florida Resilient Coastlines Program (FRCP) Grant from the Florida Department of Environmental Protection (FDEP) to complete an update to the previously completed Phase II Vulnerability Assessment. The previous assessment evaluated the impacts of rainfall, hurricane, and tidal effects on the City's infrastructure and identified adaptation strategies to reduce those impacts. This update brings the previous assessment into compliance with s.380.093, F.S. per FRCP grant guidelines.

The impacts of rainfall, Sea Level Rise (SLR), storm surge, and tidal events on the City were identified using bathtub and rapid inundation modelling. This modelling utilized a Digital Elevation Model (DEM), NOAA Atlas 14 rainfall data, tidal gauge data, sea level projections, and FEMA 1% storm surge data to simulate flood levels across the City. The flood exposure level and sensitivity of City-owned critical assets, as defined in s. 380.093, F.S., were identified in each event scenario modelled. The NOAA 2017 2040 and 2070 intermediate-low and intermediate-high SLR projections were combined with rainfall, high tides, and storm surge to generate projected flooding extents that were used as a baseline for future planning efforts.

Adaptive measures were identified and evaluated to help protect City assets and reduce vulnerability. A project plan was established to evaluate existing Capital Improvement Planning (CIP) projects and propose additional adaptive strategies to incorporate as future CIP projects. The existing CIP projects were planned in the City's FY 2020 Adopted Budget, thus this component of the project plan evaluated additional considerations to be incorporated into previously defined projects targeted at promoting resiliency. The additional adaptive strategies project plan includes projects that may not be listed in the current CIP that the City should consider implementing in the budget planning process. Adaptive strategies and CIP projects with recommendations to address resiliency can be found in **Table 21** on the next page. Various projects in the current CIP are not fully funded in the FY 2023 adopted budget and the adaptive strategies are not included in the City's budget. See **Section 5.2** for discussion on how these CIPs were assessed.

It is recommended that the City complete the following action items:

- Review the action plan to make the necessary appropriation to move forward with incorporating projects in budget planning processes.
- Disburse recommendations and flooding vulnerabilities to consultants and stakeholders involved in completing existing CIP projects to incorporate resiliency planning efforts in funded projects.
- Evaluate proposed adaptive strategies and the City's approach to addressing resiliency.
- Apply for additional grant funding to offset project costs when funding is required or not yet identified based on project priority, impact, and timeline.

This report was funded, in part, through a grant agreement from the Florida Department of Environmental Protection, Florida Resilient Coastlines Program, by a grant provided by the Florida Coastal Office. The views, statements, findings, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the State of Florida or any of its sub agencies.

Table 18: Adaptive Measure Evaluation Criteria

Category	Rating	
Ability to Increase Resiliency	**5**	Increase resiliency by hardening infrastructure against future 2050 Intermediate SLR and 100-year/24-hour event
	4	Increase resiliency by hardening infrastructure against existing conditions during 100-year/24-hour event
	3	Increase resiliency or reduce flooding by improving overall functionality of asset
	2	Maintain existing condition and integrity of asset for use or accessibility
	1	Minimal benefit to resiliency
Economic Feasibility	**2**	City has funding allocated
	1	City needs additional funding
Public Benefit	**3**	High Public Benefit
	2	Moderate Public Benefit
	1	Low Public Benefit

Table 20: CIP Status Update Legend

Status Updates Since Feb 2020 VA	
	Mentioned in both FY2021 Adopted and FY 2023 Proposed
	CIP projects that were funded in the FY2021 Adopted Budget
	CIP projects proposed in the FY2023 Proposed Budget
	CIP projects missing from both FY2023 an FY2021 Proposed and Adopted Budgets, but included in FY2020 adopted CIP

Table 21: Capital Improvement Plan Project Rankings

		Projects		Ability to Increase Resiliency	Economic Feasibility	Public Benefit	Overall Rating	Recommendation to Incorporate Resiliency Component for Future Planning Effort	FY and CIP version	Funding Status	Current CIP Project Status
		Name	Fiscal Year								
Capital Improvement Plan: Projects Impacting Resiliency	Planned Drainage Improvement	Hermosita Drive	Ongoing	4	1	3	8		FY 2023 Proposed CIP	Falls under "Stormwater -Drainage Improvements", which proposed funding for FY2024	Ongoing
		41st Ave /Bella Vista Drive	Ongoing	4	1	3	8				
		59th Ave	Ongoing	4	1	3	8				
		Boca Ciega Isle Drive	2020	4	1	3	8				
		45th Ave Vicinity	Ongoing	4	1	3	8				
		Vina Del Mar	Ongoing	4	1	3	8				
		Sunset Way Vicinity	Ongoing	4	1	3	8				
		44th Ave/Moody Street	Ongoing	4	1	3	8				
		3212 S De Bazan Ave/Don Jose St. Rain Garden	Ongoing	4	1	3	8				
		Casablanca Ave/E Maritana Drive	2020	4	1	3	8				
	Beach and Seawall Maintenance	Sand Dune and Beach Property Improvement Program	Ongoing	2	2	1	5		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2024	Ongoing
		Seawall Replacement Pass-a-Grille Way from 1st Ave to 12th Ave	2021	3	2	3	8	Evaluate implementation of ordinance for changes to seawall requirements for Public and Private property	FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY2021 CIP: Funded FY 2021, FY2023. FY2023: Proposed funding FY2023	Ongoing (2023)
		Seawall Maintenance Program	Ongoing	3	2	2	7		FY2021 Adopted CIP	Funded FY 2022-2025	Ongoing

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		Projects		Ability to Increase Resiliency	Economic Feasibility	Public Benefit	Overall Rating	Recommendation to Incorporate Resiliency Component for Future Planning Effort	FY and CIP version	Funding Status	Current CIP Project Status
		Name	Fiscal Year								
	Stormwater Management	Tidal Influence Intersection Improvements	Ongoing	2	2	3	7	Evaluate intersection elevations and drainage components	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2021	2021
		System Repair and Replacement	Ongoing	2	2	3	7		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2024	Ongoing
		Blind Pass Stormwater Basin Connections	2023	4	1	2	7		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2022-FY2024	Ongoing
		Local Street Flooding Migration Specific Projects	Ongoing	4	1	3	8		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020, FY2021, and FY2023	Ongoing (2023)
		Stormwater Master Plan Update	2020	3	2	2	7	Master plan should be updated to include groundwater modelling. Model updates should consider the NOAA Atlas 14 Point Precipitation Frequency Estimates to capture the rainfall intensity changes that occurred during storm events	FY2023 Proposed CIP	Proposed funding FY2024	Ongoing
		City Asset Management Program	2020	2	2	2	6		FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY2021 CIP: Funded FY2021-FY2025, FY2023 CIP: Proposed funding FY 2023 & 2024	Ongoing
	Street Maintenance	Boca Ciega Drive Complete Streets Reconstruction	2023	3	1	3	7	Evaluate roadway elevation and stormwater improvements to improve resiliency and accessibility on future planning horizon	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2021 and FY2023	Ongoing (2023)
		Gulf Winds Drive Complete Streets Reconstruction	After 2024	3	1	3	7		FY 2023 Proposed CIP	Proposed funding FY2023	Ongoing (2023)
		Street Rehabilitation Program	Ongoing	1	2	2	5		FY 2023 Proposed CIP	Proposed funding FY2023-FY2027	Ongoing
		Vina del Mar and Boca Ciega Bridge Repairs	Ongoing	2	2	3	7		FY2021 Adopted CIP	Funded FY2021	2021
	Emergency Operations	Generator Power for City Facilities	2020	4	1	3	8	Locate generator above flood level elevations during the 100-year/24-hour rainfall event and future 2050 Intermediate SLR scenarios	FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY 2021 CIP: Funded FY2021-FY2025, FY 2023 CIP: Proposed funding FY2024-FY2026	Ongoing
	Planning	Stormwater Drainage Manual	2023	5	1	2	8		FY 2022 Adopted CIP	Funded FY 2022	Ongoing
		Comprehensive Plan Update	2023	5	1	2	8		FY 2021 Adopted CIP & FY 2023 Proposed CIP	Mentioned in FY 2021 and FY 2023 Budget	Ongoing
		Land Development Code Update	2023	5	1	2	8		FY 2021 Adopted CIP & FY 2023 Proposed CIP	Mentioned in FY 2021 and FY 2023 Budget	Ongoing
	Facilities Maintenance	Warren Webster Foundation Waterproofing	2020	2	2	3	7	Waterproofing of critical City facilities should be incorporated into the 2050 future planning horizon	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020	2020

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		Projects		Ability to Increase Resiliency	Economic Feasibility	Public Benefit	Overall Rating	Recommendation to Incorporate Resiliency Component for Future Planning Effort	FY and CIP version	Funding Status	Current CIP Project Status
		Name	Fiscal Year								
	Sanitary Sewer	Sewer Expansion	2022	2	2	3	7	Hotel district lift stations to incorporate minimum electrical control elevations for protection against flooding	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020	Completed
		Inflow and Infiltration Repairs Program	Ongoing	3	2	3	8		FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY 2021 CIP: Funded FY2021-FY2025, FY 2023 CIP: Proposed funding FY2023-FY2027	Ongoing
		Lift Station Design and Rehabilitations	2020	5	2	3	10	Electrical controls to be placed above the 2050 Intermediate SLR flood levels. Flood tight hatches to be installed to prevent inflow.	FY 2021 Adopted CIP	FY2021 Adopted CIP: Listed as "Lift station repair and replacement" funded for FY FY2021-FY2022. Mentioned in FY2020 Adopted budget for LS #7,17,4,10,11,15,8,6,16 (different FY's from 2020-2023).	Completed
		Lift Station Emergency Operations Power and Pumps	Ongoing	3	2	3	8		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2024	Ongoing

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Abbreviations

BFE	Base Flood Elevations
CIP	Capital Improvements Plan
CRP	Coastal Resiliency Plan
DEM	Digital Elevation Model
EOP	Edge of Pavement
FDEM	Florida Department of Emergency Management
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FRCP	Florida Resilient Coastlines Program
FFE	Finished Floor Elevation
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FRCP	Florida Resilient Coastlines Program
F.S.	Florida Statute
FY	Fiscal Year
GIS	Geographic Information System
IH	Intermediate-High
IL	Intermediate-Low
LDC	Land Development Code
LiDAR	Light Detection and Ranging
MHHW	Mean Higher High Water
MSL	Mean Sea Level
NAVD 88	North American Vertical Datum of 1988
NFIP	National Flood Insurance Program
NRCS	National Resources Conservation Service
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
SWFWMD	Southwest Florida Water Management District
SLR	Sea Level Rise
USACE	U.S. Army Corps of Engineers

Definitions

100-Year/24-Hour Rainfall Event: A rainfall event with the estimated probability of a 1% chance of happening in any given year.

25-Year/24-Hour Rainfall Event: A rainfall event with the estimated probability of a 4% chance of happening in any given year.

500-Year/24-Hour Rainfall Event: A rainfall event with the estimated probability of a 0.2% chance of happening in any given year.

Acute Shocks: Sudden and sharp events that threaten a community (i.e. hurricanes, floods, etc.)

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Adaptive Capacity: Ability to create flexibility that allows better adjustment to new contexts and changing conditions in terms of behavior, values, and orientations in order to effectively exist in a different environment without significant decline in critical function.

Adaptive Measures: A strategy, project, plan, or policy that aims to increase resilience to acute shocks or chronic stresses.

Asset Class: One of four critical asset categories defined in s. 380.093, F.S. The four asset classes include Transportation Assets and Evacuation Routes, Critical Infrastructure, Critical Community and Emergency Facilities, and Natural, Cultural, and Historic Resources.

Paired Asset-Threat Matrix: A table that identifies and defines the vulnerability level of a given asset relative to the water level associated with a given scenario.

Chronic Stresses: A threat that affects a community on a daily or cyclical basis (i.e. sea level rise, undersized infrastructure, etc.)

Coastal Communities: Communities adjacent to a body of tidally influenced water (i.e. ocean, gulf, etc.)

Coastal Flooding: Flooding that is caused or made worse by high water levels proximal to a given coastal community.

Criticality: The degree to which an asset is vulnerable to various threats. Criticality of asset classes is defined differently based on function of the asset.

Flood Level: The elevation of water on dry surfaces caused by an event.

King Tide: A predictable, especially high tide that occurs when the full or new moon is closest to the Earth in orbit; typically occur twice per year.

Mean Higher-High Water: An average of highest measured tidal water elevations in a given day, measured at a specific tidal gauge location.

Repetitive Loss Locations: Properties that have filed two or more flood damage insurance claims and has received more than $1,000 from the National Flood Insurance Program (NFIP) within any ten-year period.

Resiliency: Capacity of individuals, institutions, businesses, and systems within a community to survive, adapt, recover, and grow regardless of chronic stresses and acute shocks they experience.

Sea Level Rise: The increasing water level of the oceans over time.

Starting Stillwater Elevations: The elevation of a 1% annual chance flood caused by storm surge. Starting elevations do not consider flooding elevation caused by wave action.

Vulnerability: The predisposition for an asset to be adversely impacted.

Water Level: The elevation of water on or off land relative to the NAVD88 datum

Introduction

This report was funded, in part, through a grant agreement from the Florida Department of Environmental Protection, Florida Resilient Coastlines Program, by a grant provided by the Florida Coastal Office. The views, statements, findings, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the State of Florida or any of its sub agencies.

Kimley-Horn was retained under an Agreement for Continuing Professional Services for the Update to City of St. Pete Beach Phase II Vulnerability Assessment (SB1954) dated 2021. Pursuant to s.380.093, F.S., an update to the previously completed Vulnerability Assessment for critical infrastructure and community assets in the City of St. Pete Beach (herein referred to as "City") was performed. This vulnerability assessment update was completed to evaluate the risk of impacts from SLR and coastal flooding and ultimately identify and propose potential mitigation and adaptive strategies tailored to the City.

This assessment included the following:

- Identify regions of significant flooding and overlap with critical assets owned and/or maintained by the City
- Risk and consequence of failure of existing infrastructure
- Develop adaptation measures and mitigation strategies to target identified vulnerabilities.

This project was completed through utilizing grant funding provided by an FRCP grant agreement with FDEP. This report provides a summary of the Vulnerability Assessment study. The Vulnerability Assessment submitted to the FDEP includes 4 tasks under DEP Agreement # 22PLN92, described below.

Task #1: Kickoff Meeting

A kickoff meeting was held between the City and Kimley-Horn to develop an overall project management plan, address initial actions, and identify potential representatives to serve on the project steering committee. The Task 1 Kickoff Meeting Summary submittal can be found in **Appendix A**.

Task #2: Acquire Background Data

Pertinent data provided by the City was collected and reviewed for use in the evaluation and a letter summarizing all data references utilized was submitted. The submittal letter also included a list of any noted deficiencies in quantity and/or quality of the data and proposed means by which data gaps were to be remedied. The final submittal for Task 2 can be found in **Appendix B**.

Task #3: Exposure Analysis

Pursuant to s. 380.093, F.S., the depth of water caused by each scenario was identified including rainfall, SLR, current and future tidal flooding, current and future storm surge, and compound flooding. An inventory of critical assets was developed using the background data acquired in Task #2. The final submittal for this task includes GIS files and associated metadata compliant with the Resilient Florida Program's GIS Data Standards (Exhibit I).

Task #4: Sensitivity Analysis

The results from the exposure analysis were used to measure the impact of flooding on the critical assets in the inventory developed in Task #3. An evaluation of the impact of flooding on each asset type and at each flood severity was conducted and the results were compiled into a paired asset-threat matrix in which risk levels were assigned based on the degree to which the critical assets are impacted. The final submittal for this task includes a list of critical assets prioritized by area or immediate need and identifies which flood scenario impacts each asset.

Task #5: Final Vulnerability Assessment, Report, Maps, and Tables

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Pursuant to s. 380.093, F.S. and based on steering committee input, the Final Vulnerability Assessment Report contains the results and conclusions from Tasks #3 and #4 including illustrations via maps and tables. The final submittal for this task also includes all electronic mapping data used to illustrate flooding impacts packaged as GIS files with associated metadata compliant with the Resilient Florida Program's GIS Data Standards (Exhibit I).

Background

The City of St. Pete Beach is a barrier island located between the Gulf of Mexico and the mainland peninsula of Pinellas County. The City is comprised of residential, commercial, resort, and hotel/motel properties. The City is approximately 2.13 square miles, with topographic elevations ranging from approximately 2 to 6 feet NAVD88 per the 2019 hydro-enhanced Pinellas County DEM. The estimated population is 8,798 residents per the July 1, 2022 United States Census Bureau. The City's primary assets include City buildings, roadways, a reclaimed water system, a sanitary sewer system (3 master pump stations and 18 lift stations) and a stormwater system with over 200 outfall structures and 1 pump station.

Coastal proximity, low-lying topography and a high groundwater table make the City vulnerable to the impacts of SLR, storm surge, extreme weather, and other shocks and stressors. These impacts tax the City's built and natural environments and require a concerted approach to devise an actionable resilience plan that sustains the quality of life, aligns policies and programs, balances life-cycle costs, and ultimately adapts to change.

Task 1 – Kickoff Meeting

A kickoff meeting was held on March 21, 2023, with stakeholders from the City and Kimley-Horn to discuss the project scope, objectives, and schedule. The steering committee was defined, and identification of additional critical assets and scenarios needed to complete the update in compliance with s. 380.093, F.S. were identified. The Task 1 Kickoff Meeting Summary submittal can be found in **Appendix A**.

Task 2 - Data Collection and Review

Per s. 308.093, F.S., the following data was collected and evaluated for relevance and use in the vulnerability assessment:

- GIS asset data
- Critical assets
- As-built and survey information
- Repetitive loss locations
- 2019 Pinellas County DEM
- Rainfall data
- SLR Projections
- Tidal gauge data
- Storm surge data

All horizontal data referenced in this assessment is in relation to the NAD 1983 (2011) State Plane Florida West FIPS 0902 (US Feet) and all vertical elevation data is referenced to the NAVD 88 vertical datum.

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2.1 Critical Assets and GIS Files

GIS data containing critical assets as defined in s. 380.093, F.S. were provided by the City, downloaded from Pinellas County Enterprise GIS, or generated by Kimley-Horn. Critical asset data collected in Task #2 are summarized in Tables 1 and 2 of **Appendix B** – Task 2 Submittal Letter.

2.2 As-Built and Survey Information

The City provided limited as-built information on the following assets:

- Buildings: City Hall, Community Recreation Center, Pool Complex, Pavilion, Public Works Facility, Don Vista Community Center, Public Library, Upham Beach Park, Fire Station #23, Hurley Park Restrooms, and Warren Webster Community Building
- Sewer system as-builts
- Reclaimed water system as-builts
- Storm system as-builts
- Roadway as-builts

As part of an earlier phase of this project, Hyatt Survey Services, Inc. (Hyatt) was authorized to obtain FFEs for fifteen (15) City-owned buildings and ten (10) high water mark elevations throughout the City per the agreement included in **Appendix C**. The assets identified as critical were incorporated into the GIS data and the FFEs were used in a paired asset-threat matrix as critical elevations. **Table 1** summarizes the elevation data available from the Hyatt Survey.

Table 1: Hyatt Survey Finished Floor Elevations

Building Description	Address	Elevation Location	Elevation	Critical
Public Library	375 73rd Ave	S. Door	7.65'	X
Don Vista Center	3300 Gulf Blvd.	W. Door	5.57'	
Fire Department 22	1950 Pass A Grille	Bay	4.40'	X
	1950 Pass A Grille	Finish Floor	4.98'	
Community Center	1500 Pass A Grille	E. Door	3.84'	
Paradise Grille	900 Gulf Way	N. Door	7.74'	
Bathroom	9300 Blind Pass	Men's room	4.70'	
Upham Concessions	6850 Beach Plaza	S. Door	7.35'	
Bathroom/ Concessions	9101 Blind Pass	S. Door	4.57'	
City Hall	155 Corey Ave	Main Door	11.50'	X
Shuffleboard Building	101 9th Ave	E. Door	3.98'	
South Bathroom	7701 Boca Ciega Drive	S. Door	5.78'	
Pool Concessions	7701 Boca Ciega Drive	S. Door	5.01'	
Public Works	7701 Boca Ciega Drive	Bay Door	4.88'	X
	7701 Boca Ciega Drive	Finish Floor	14.38'	
Community Center	7701 Boca Ciega Drive	Lower W. Door	4.48'	X
	7701 Boca Ciega Drive	Finish Floor	18.24'	
Rec Center	7701 Boca Ciega Drive	Main Door	5.15'	
Fire Department 23	7301 Gulf Blvd.	Bay	7.15'	
	7301 Gulf Blvd.	Finish Floor	14.25'	

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Building Description	Address	Elevation Location	Elevation	Critical
	7301 Gulf Blvd.	S. Door	4.19'	X

2.3 Repetitive Loss Locations

The City provided a map of repetitive loss areas within the City. Initial evaluation of these areas identified 1,537 parcels listed as repetitive loss locations. Repetitive loss locations were used to aid in identifying specific areas of the City that are historically susceptible to flooding.

2.4 Digital Elevation Model

The 2019 hydro-enhanced Pinellas County DEM from the Southwest Florida Water Management District (SWFWMD) was utilized for flood modelling in this vulnerability assessment. Changes in topography due to new infrastructure or earthwork projects constructed after 2019 were not included in this analysis.

A map of the DEM used in this assessment can be found in **Appendix D**.

2.5 Rainfall Data

The following design storm data was collected and utilized in the vulnerability assessment:

- NOAA Atlas 14 Rainfall Projections/Distributions
  - 25-Year/24-Hour design storm
  - 100-Year/24-Hour design storm
  - 500-Year/24-Hour design storm

Rainfall distribution curves used for modelling design storms are based on the NRCS Type II Florida Modified rainfall distribution.

2.6 SLR Projections

The following SLR projection data was utilized in the vulnerability assessment:

- 2017 NOAA SLR projections
  - Intermediate-Low and Intermediate-High 2040
  - Intermediate-Low and Intermediate-High 2070

2.7 Tidal Gauge Data

The following tidal gauge data was utilized in the vulnerability assessment:

- NOAA Tides and Currents database
  - Station #8726724 - Clearwater Beach
  - Station #8726384 – Port Manatee
- U.S. Climate Resilience Toolkit Climate Explorer Version 3.1
  - Clearwater Beach, FL

The high tide data pulled from the gauges above was interpolated to define the current Mean Sea Level (MSL), Mean Higher-High Water (MHHW), and the tidal fluctuation used to assess future tidal flooding threats in the City.

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The projected high tide flooding days and flooding threshold were identified with the U.S. Climate Resilience Toolkit Climate Explorer.

2.8 Storm Surge Data

The following storm surge data was utilized in the vulnerability assessment:

- FEMA Flood Insurance Study (FIS); (August 2021)
    - Starting Stillwater Elevations (ft NAVD88), 1% Annual Chance

The starting still water elevations from each transect along the City were interpolated to define the storm surge elevation used in this assessment.

2.9 Miscellaneous Flood Data

The following flood data was utilized for reference purposes to aid in evaluating the outputs of Tasks 3 and 4:

- Pinellas County FIS Report (August 2009)
- FEMA Flood Insurance Rate Map (FIRM) Panels (Effective date: August 2021)
    - 12103C0194H
    - 12103C0213H
    - 12103C0257H
    - 12103C0276H
    - 12103C0278H
    - 12103C0286H

Task 3 – Exposure Analysis

The purpose of the exposure analysis was to identify the flood depths for various shocks and stressors including rainfall, SLR, current and future tidal flooding, current and future storm surge, and compound flooding. To identify the flooding vulnerabilities throughout the City, inundation mapping was used to show the impact of high-water levels generated by the scenarios in comparison to the critical asset locations throughout the City. The scenarios modelled in the exposure analysis include:

- 25-Year/24-Hour Rainfall Event
- 100-Year/24-Hour Rainfall Event
- 500-Year/24-Hour Rainfall Event
- 2040 and 2070 SLR Projections (Intermediate-Low and Intermediate-High)
- Compound Future Rainfall Events (2040 and 2070)
- Current High Tide Event
- Compound Future High Tide Events (2040 and 2070)
- Current Storm Surge Event
- Compound Future Storm Surge Events (2040 and 2070)

These storm scenarios and planning horizons were selected to comply with the requirements set forth in s. 380.093, F.S.

Maps showing the results of the exposure analysis can be found in **Appendix E**.

3.1 Modelling Methodology

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The following modelling methodologies were used to generate flood depth rasters for the exposure analysis:

- Bathtub Modelling
- Rapid Inundation Modelling
- Hybrid Modelling

Bathtub Modelling

Bathtub modelling was used to generate flood depths for scenarios with a static projected elevation. Scenarios that were modelled using this method include:

- 2040 and 2070 SLR Projections (Intermediate-Low and Intermediate-High)
- Current High Tide
- Future High Tide
- Current Storm Surge
- Future Storm Surge

Bathtub modelling works by submerging depressional land areas which lie below the elevation of future projected water elevation. This model assumes that all low-lying areas will be hydrologically connected and will, therefore, fill with water. This analysis does not consider stormwater infrastructure (i.e. pipes) or infiltration. Due to this, results as presented may be overstated.

Rapid Inundation Modelling

Rapid Inundation modelling was used to project flood depths for spatiotemporal events. Scenarios that were modelled using a rapid inundation model include:

- 25-Year/24-Hour Event
- 100-Year/24-Hour Event
- 500-Year/24-Hour Event

Rapid inundation modelling works by routing water over the terrain for the duration of a specified storm event using a set of rules based on water level response to topography and existing water levels. Similar to bathtub modelling, this method of analysis also does not consider stormwater infrastructure nor infiltration. Due to this, results as presented may be overstated. It is important to note that while all models used in this analysis show the extents of inundation due to low elevation, the rapid inundation model also identifies areas where standing water may occur due to *relatively* low elevation (areas bounded by ridges) in a given region.

Hybrid Modelling

Hybrid modelling was used to project flood depths for scenarios with both a static projected elevation and a spatiotemporal event. Scenarios modelled using a hybrid model of the bathtub and rapid inundation model include:

- Future Rainfall Events
    - Intermediate-Low 2040 and 100-Year/24-Hour Event
    - Intermediate-High 2040 and 100-Year/24-Hour Event
    - Intermediate-Low 2070 and 100-Year/24-Hour Event

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- Intermediate-High 2070 and 100-Year/24-Hour Event

Hybrid models used a bathtub modelling technique to set the static water elevation and a rapid inundation modelling technique to route water over the terrain for the duration of the specified storm event.

3.2 Modelling Scenarios

3.2.1 NOAA Atlas 14 Rainfall Scenarios

The 25-Year/24-Hour, 100-Year/24-Hour, and 500-Year/24-Hour events were simulated using rapid inundation analysis to evaluate potential rainfall-induced flooding within the study area. The rainfall totals were distributed over the 24-hour rainfall event period using the NRCS Florida Modified Type II rainfall distribution for each scenario.

Table 2 summarizes the rainfall design storm scenario data for the City of St. Pete Beach model runs. It should be noted that these values are reported as a *depth* compared to other scenarios in this analysis, which are reported as an *elevation*.

Table 2: Rainfall Induced Flooding Events

Rainfall Event	Precipitation Total (in)
25-Year/24-Hour	9.52
100-Year/24-Hour	13.60
500-Year/24-Hour	19.50

Maps E1-E3 in **Appendix E** show the results of rainfall-induced flooding in the City.

3.2.2 SLR Scenarios

SLR scenarios were simulated using bathtub analysis to evaluate potential flooding within the study area. The nearest 2017 NOAA SLR projections are based on data collected from the Clearwater Beach gauge, north of St. Pete Beach. Current MSL at this gauge is -0.32 feet NAVD.

The 2017 NOAA SLR projections for the City are displayed in **Figure 1** through the year 2100. These curves show the change relative to current MSL and were used to define the static MSL elevation condition for each SLR scenario relative to the NAVD88 datum.

Table 3 shows the projected MSL in NAVD88 for each SLR horizon evaluated in this analysis.

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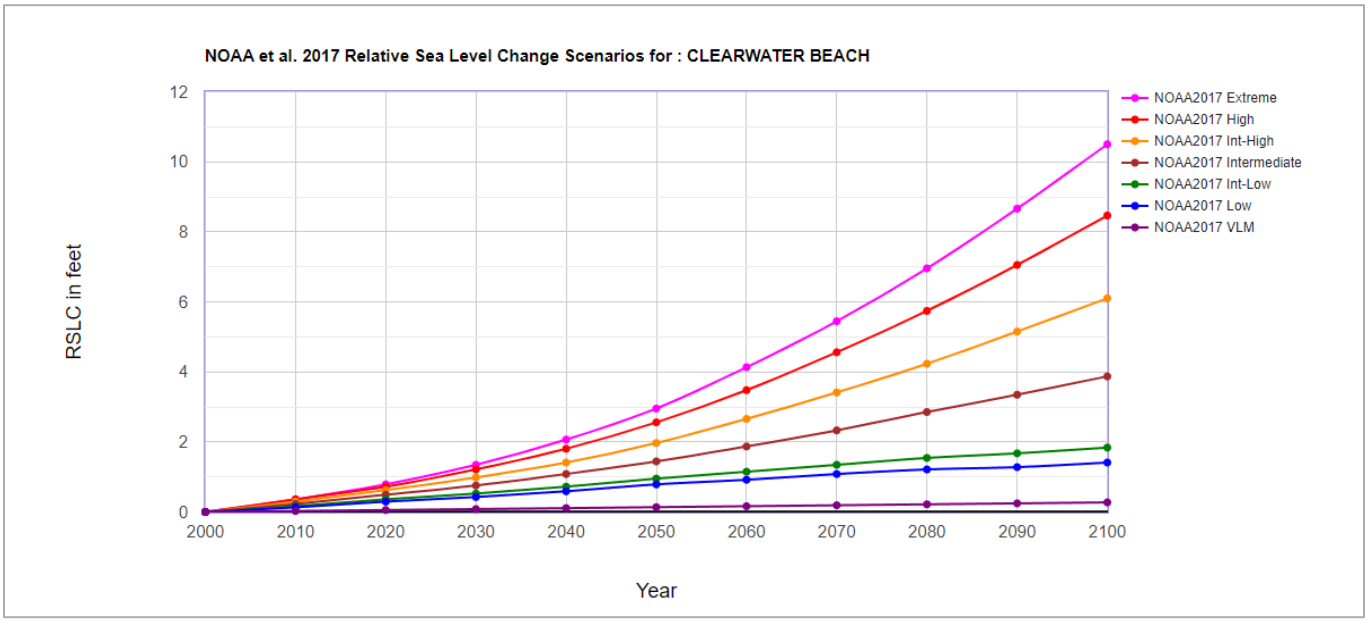

Figure 1: Future Sea Level Rise Projections

Table 3: NOAA SLR Projection Elevations

Scenario	Projected Elevation (NAVD88, ft)
Intermediate-Low 2040 (IL 2040)	0.40
Intermediate-High 2040 (IH 2040)	1.09
Intermediate-Low 2070 (IL 2070)	1.03
Intermediate-High 2070 (IH 2070)	3.09

Maps E4-E7 in **Appendix E** show the results of SLR flooding in the City.

3.2.3 Future Rainfall Scenarios

For future rainfall-induced flooding, hybrid modelling techniques were used to apply the SLR flooding elevation for each of the future projected scenarios and the distribute the rainfall event across the terrain. The parameters used in the future rainfall scenarios are outlined in **Table 4**.

Maps E5-E7 in **Appendix E** show the results of future rainfall-induced flooding in the City.

Table 4: Compound Future Rainfall Scenarios

Compound Scenario	Projected Elevation (NAVD88, ft)	Precipitation Total (in)
Intermediate-Low 2040 + 100Y24H Rainfall	0.40	13.60
Intermediate-High 2040 + 100Y24H Rainfall	1.09	13.60
Intermediate-Low 2070 + 100Y24H Rainfall	1.03	13.60
Intermediate-High 2070 + 100Y24H Rainfall	3.09	13.60

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3.2.4 Tidal Scenarios

High tide scenarios were modelled using bathtub analysis to evaluate potential flooding within the study area. High tide elevations were derived using interpolated MHHW between the two nearest local NOAA tidal gauges (Clearwater Beach and Port Manatee) and the flood threshold relative to the MHHW value reported by the U.S. Climate Resilience Toolkit Climate Explorer. According to NOAA, it is anticipated that high tide water levels, including high tides and king tides, will increase in future years along with SLR. For future tidal flooding, the high tide flooding elevation was compounded with the SLR elevation for each of the future projected scenarios outlined in **Table 5**.

Table 5: Projected Tidal Flooding Elevations

Scenario	Tidal Elevation (NAVD88, ft)
Current Tidal Flooding	0.93
Future Tidal Flooding, Intermediate-Low 2040	1.54
Future Tidal Flooding, Intermediate-High 2040	2.23
Future Tidal Flooding, Intermediate-Low 2070	2.17
Future Tidal Flooding, Intermediate-High 2070	4.23

Maps E8-E12 in **Appendix E** show the results of high tide flooding in the City.

The U.S. Climate Resilience Toolkit Climate Explorer provides data on past and projected climate conditions for locations across the United States. Historic data and modelled projections pulled from the Clearwater Beach gauge location were used to assess the expected number of tidal flooding days for each scenario.

Table 6 summarizes the projected tidal flooding days from the Climate Explorer tool for the City of St Pete Beach.

Table 6: Projected Tidal Flooding Days

Scenario	Projected Number of Tidal Flooding Days
Low Projection 2023 (Current)	2
High Projection 2023 (Current)	3
Low Projection 2040	5
High Projection 2040	20
Low Projection 2070	57
High Projection 2070	283

3.2.5 Storm Surge Scenarios

Storm surge scenarios were modelled using bathtub analysis to evaluate potential flooding within the study area. Storm surge elevations were derived using the average starting stillwater elevations for the 1% annual chance storm event across all coastal transects along the City. For future storm surge flooding, the surge elevation was compounded with the SLR elevation for each of the future projected scenarios outlined in **Table 7**.

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Table 7: Projected Storm Surge Elevations

Scenario	Surge Elevation (NAVD88, ft)
Current Storm Surge	9.00
Future Storm Surge, Intermediate-Low 2040	9.40
Future Storm Surge, Intermediate-High 2040	10.09
Future Storm Surge, Intermediate-Low 2070	10.03
Future Storm Surge, Intermediate-High 2070	12.09

Maps E13-E17 in **Appendix E** show the results of storm surge flooding in the City.

3.3 Exposure Analysis Results

All data and analysis of the modelling performed in the vulnerability assessment are referenced to models that were completed in May 2023. The results of the modelling scenarios are shown geographically in **Appendix E**.

Flood inundation extents were compared to the location of critical assets, repetitive loss information, and confirmed flood prone areas. The criteria and results of the exposure analysis in St. Pete Beach have been summarized in **Appendix F**.

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Task 4 – Sensitivity Analysis

The purpose of the sensitivity analysis was to assign a criticality risk level to all critical assets owned and/or maintained by the City for the various storm scenarios evaluated in the exposure analysis. To evaluate criticality throughout the City, critical elevations (or total inundated area) for each asset were identified and compared to the flooding elevation proximal to the asset.

The asset classes and subsequent critical assets in the sensitivity analysis include:

- Transportation Assets and Evacuation Routes
  - Major Roadways
  - Bridges
- Critical Infrastructure
  - Wastewater Lift Stations
  - Stormwater Treatment Facilities
  - Drinking Water Facilities
  - Electric Production and Supply Facilities
  - Disaster Debris Management Sites
- Critical Community and Emergency Facilities
  - Community Centers
  - Fire Stations
  - Local Government Facilities
  - Logistical Staging Areas
- Natural, Historical, and Historical Assets
  - Conservation Lands
  - Parks
  - Shorelines
  - Historical and Cultural Assets

4.1 Defining Critical Assets and Elevation

In the first phase of the sensitivity analysis, the most vulnerable element of each asset was identified and the critical elevation at these locations was defined. The critical elevation location varied based on the type of asset analyzed. The following sections outline the process of defining critical elevation for each asset type.

Any asset with “N/A” listed as the critical elevation did not have one definable critical elevation (i.e. Parks, Conservation Areas, etc.). The sensitivity of these assets was instead analyzed using a percent inundation by area analysis. Results of the percent inundated area analysis can be found in **Appendix G**.

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4.1.1 Transportation Assets and Evacuation Routes

Critical elevations were identified at two locations on major roads and bridges: the crest and shoulder elevation. These elevation values were estimated using the DEM.

The transportation assets and evacuation routes identified as critical assets within the City and their critical elevations are outlined in **Table 8**.

Table 8: Critical Elevations for Transportation Assets and Evacuation Routes

Asset Type	Asset Name	Crest Elevation (NAVD88, ft)	Shoulder Elevation (NAVD88, ft)
Major Roads	Blind Pass Rd & 71st Ave	5.19	4.23
	Blind Pass Rd & 75th Ave	6.22	3.84
	Blind Pass Rd & 80th Ave	4.00	2.35
	Blind Pass Rd & 87th Ave	3.92	2.23
	Blind Pass Rd & 93rd Ave	6.91	2.98
	Gulf Blvd & 37th Ave	4.25	2.99
	Gulf Blvd & 44th Ave	4.84	3.06
	Gulf Blvd & 46th Ave	3.88	2.53
	Gulf Blvd & 55th Ave	5.32	3.76
	Gulf Blvd & 59th Ave	6.28	5.10
	Gulf Blvd & 64th Ave	6.62	5.11
	Gulf Blvd & 71st Ave	5.03	3.82
	Gulf Blvd & 75th Ave	4.03	2.37
	Gulf Blvd & 80th Ave	4.45	3.28
	Gulf Blvd & 87th Ave	3.91	3.12
	Gulf Blvd & 93rd Ave	3.69	2.51
	Gulf Blvd & Pinellas Bayway	4.60	3.15
	Gulf Blvd & Punta Vista Dr	4.93	3.60
	Gulf Way & 10th Ave	6.54	5.47
	Gulf Way & 15th Ave	5.48	4.79
	Gulf Way & 5th Ave	5.79	5.14
	Pass A Grille Way & 10th Ave	3.72	2.12
	Pass A Grille Way & 15th Ave	3.11	2.29
	Pass A Grille Way & 21st Ave	3.59	2.97
	Pass A Grille Way & 25th Ave	3.45	2.81
	Pass A Grille Way & 30th Ave	3.46	2.92
	Pass A Grille Way & 5th Ave	3.26	2.14
Bridges	Blind Pass Rd WB	9.11	2.23
	Blind Pass Rd EB	10.43	3.68
	Pasadena Ave S NB	12.39	-0.74

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Asset Type	Asset Name	Crest Elevation (NAVD88, ft)	Shoulder Elevation (NAVD88, ft)
	Pasadena Ave S SB	13.88	-2.00
	Pinellas Bayway Rd NB	7.58	4.26
	Pinellas Bayway Rd SB	4.42	0.54
	21st Ave WB	11.12	7.27
	21st Ave EB	5.95	3.07

4.1.2 Critical Infrastructure

Critical elevations were identified at two locations on pump and lift stations: the wet well elevation and the electrical control panel elevation. All of these elevations were identified from survey and/or as-built data. All other critical infrastructure elevations were estimated from the DEM.

The critical infrastructure identified as critical assets within the City and their critical elevations are outlined in **Table 9**.

Table 9: Critical Elevations for Critical Infrastructure; Lift and Pump Stations

Asset Type	Asset Name	Wet Well Elevation (NAVD88, ft)	Control Panel Elevation (NAVD88, ft)	Flood Tight Lid
Wastewater Lift Stations	LS004	4.26	7.24	Y
	LS005	3.27	6.27	-
	LS006	5.52	8.52	-
	LS007	4.45	7.22	Y
	LS008	4.71	7.66	-
	LS009	3.55	6.55	-
	LS010	4.27	7.73	Y
	LS011	3.60	6.57	Y
	LS012	5.55	8.55	-
	LS013	4.23	7.23	Y
	LS014	3.73	6.73	Y
	LS015	3.70	6.64	Y
	LS016	5.88	7.68	-
	LS017	4.51	6.35	Y
	LS018	6.86	9.86	-
	LS019	6.65	9.65	-
	LS020	6.36	9.36	-
	LS021	5.51	8.51	-
	PS001	5.00	16.65	-
	PS002	5.50	15.5	-
	PS003	4.57	15.33	-

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Asset Type	Asset Name	Wet Well Elevation (NAVD88, ft)	Control Panel Elevation (NAVD88, ft)	Flood Tight Lid
Stormwater Treatment Pump Stations	PS0001	1.50	4.50	-

Critical elevations for all other identified critical infrastructure have been identified in **Table 10**.

Table 10: Critical Elevations for All Other Critical Infrastructure

Asset Type	Asset Name	Critical Elevation (NAVD88, ft)
Drinking Water Facilities	Potable Water Storage Tank	4.99
Electric Production and Supply Facilities	Duke Substation (at Public Works)	5.01
Disaster Debris Management Sites	Egan Park*	N/A

**See Asset Type "Parks" for sensitivity analysis of Egan Park*

4.1.3 Critical Community and Emergency Facilities

Critical elevations were identified at the finished floor elevation for assets identified as critical community and emergency facilities. These elevations were taken from the Hyatt survey.

The critical community and emergency facilities identified as critical assets within the City and their critical elevations are outlined in **Table 11**.

Table 11: Critical Elevations for Critical Community and Emergency Facilities

Asset Type	Asset Name	Critical Elevation (NAVD88, ft)
Community Centers	St Pete Beach Community Center (Lower W Door)	4.48
	St Pete Beach Community Center (Finish Floor)	18.24
Fire Stations	1950 Pass A Grille (Bay)	4.40
	1950 Pass A Grille (Finish Floor)	4.98
	7301 Gulf Blvd (Bay)	7.15
	7301 Gulf Blvd (Finish Floor)	14.25
	7301 Gulf Blvd (S. Door)	4.19
Local Government Facilities	St Pete Beach Library	7.65
	City Hall	11.50
	Public Works (Bay Door)	4.88
	Public Works (Finish Floor)	14.38
Logistical Staging Areas	Public Works (Bay Door)	4.88
	Public Works (Finish Floor)	14.38

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Asset Type	Asset Name	Critical Elevation (NAVD88, ft)
	Egan Park*	N/A

**See Asset Type "Parks" for sensitivity analysis of Egan Park*

4.1.4 Natural, Cultural, and Historic Resources

Critical elevations for shorelines were identified as the lowest point along the structure. These elevations were estimated by:

- Shorelines (Beach Access): Identifying the lowest elevation within a 10 ft buffer zone of the asset
- Shorelines (Seawalls): Identifying the lowest elevation at each station along the wall, selecting the station of lowest elevation and adding the wall height, as reported by the City

In lieu of critical elevations, total area is reported for the following asset types:

- Conservation Lands
- Parks
- Historic and Cultural Assets (Pass-a-Grille)

The critical elevation of the Don Cesar was identified as the FFE of the building. This value was estimated using the minimum elevation from the DEM and adding 1-ft to assume slab-on-grade elevation.

The natural, cultural, and historic resources identified as critical assets within the City are outlined in **Table 12** along with their respective critical elevations. Assets analyzed using the inundated area analysis method are listed in **Table 13** along with the total asset area.

Table 12: Critical Elevations for Natural, Cultural, and Historic Resources

Asset Type	Asset Name	Critical Elevation NAVD88, ft)
Shorelines (Beach Access)	BA01	7.17
	BA02	5.50
	BA03	5.63
	BA04	4.14
	BA05	3.49
	BA07	4.44
	BA08	4.56
	BA09	5.24
	BA10	5.21
	BA11	4.63
	BA12	5.90
	BA13	8.38
	BA14	5.54
	BA15	5.89

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Asset Type	Asset Name	Critical Elevation NAVD88, ft)
Shorelines (Beach Access)	BA16	5.90
	BA17	5.02
	BA18	5.65
	BA19	5.38
	BA20	5.11
	BA21	5.14
	BA22	5.24
	BA23	5.73
	BA24	6.01
	BA25	5.33
	BA26	5.99
	BA27	4.70
	BA28	5.25
	BA29	4.71
	BA30	5.61
	BA31	3.50
	BA32	2.10
	BA33	2.56
	BA34	2.89
	BA35	3.48
	BA36	2.30
	BA37	0.99
	BA38	2.41
	BA39	4.64
	BA40	4.79
	BA41	3.98
	BA42	4.74
	BA43	5.56
	BA46	3.58
	BA47	4.23
	BA48	6.10
	BA49	3.50
	BA50	3.88
	BA51	4.52
	BA52	4.49
Shorelines (Beach Access)	BA53	2.37

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Asset Type	Asset Name	Critical Elevation NAVD88, ft)
Shorelines (Sea Walls)	SW-1 Pass-a-Grille Way	4.60
	SW-10 26th Ave Terminus	5.24
	SW-11 27th Ave Terminus	4.25
	SW-12 28th Ave Terminus	3.81
	SW-13 29th Ave Terminus	3.16
	SW-14 30th Ave Terminus	3.23
	SW-15 W Debazan Ave	2.91
	SW-16 Maritana Dr Drainage**	1.70
	SW-17 SW Isle Dr Causeway	5.00
	SW-18 NE Isle Dr Causeway	5.06
	SW-19 Don Jose St*	1.48
	SW-2 14th Ave Terminus	4.98
	SW-20 Alfonso St Terminus**	1.21
	SW-21 Cabrillo Ave Bend	0.81
	SW-22 S Debazan Ave	4.77
	SW-23 Alhambra St Terminus**	0.46
	SW-24 Belle Vista Mini Park	-1.17
	SW-25 36th Ave Terminus	2.47
	SW-26 E Maritana Dr Drainage**	1.99
	SW-27 41st Ave Terminus	-1.25
	SW-28 City Parking Lot	4.11
	SW-29 Boca Ciega Isle Mini Park	0.45
	SW-3 15th Ave Terminus	2.61
	SW-30 50th Ave E	0.93
	SW-31 55th Ave East 1	4.40
	SW-32 55th Ave East 2	4.37
	SW-33 55th Ave E 3	3.94
	SW-34 55th Ave East 4	5.76
	SW-35 59th Ave Causeway South	3.02
	SW-36 59th Ave Causeway North	-0.50
	SW-37 70th Ave Terminus	3.61
	SW-38 Sunset Park	-0.67
	SW-39 Fisherman's Park	-1.00
	SW-4 16th Ave Terminus	3.58
	SW-40 Corey Ave Terminus	-1.00
	SW-41 75th Ave Terminus	-1.00

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Asset Type	Asset Name	Critical Elevation NAVD88, ft)
Shorelines (Sea Walls)	SW-42 Colonel Michael J Horan Park	0.00
	SW-43 Recreation Center	-1.25
	SW-44 Stan Cidlowski Park	0.00
	SW-45 77th Ave Terminus	-0.50
	SW-46 78th Ave West Terminus	0.00
	SW-47 78th Ave East Terminus	1.31
	SW-48 Mini Park	-0.33
	SW-49 79th Ave Terminus	1.68
	SW-5 17th Ave Terminus	2.89
	SW-50 80th Ave Terminus	2.89
	SW-51 Coquina Key Cul-De-Sac	-0.50
	SW-52 83rd Ave Terminus	1.23
	SW-53 Boca Ciega Dr R/W 1**	0.62
	SW-54 Boca Ciega Dr R/W 2	4.64
	SW-55 86th Ave Terminus Park	-1.17
	SW-56 87th Ave Terminus	1.76
	SW-57 Egan Park**	-1.00
	SW-58 Ron McKenney Park	-0.50
	SW-6 18th Ave Terminus	4.86
	SW-7 19th Ave Terminus	3.56
	SW-8 20th Ave Terminus	3.66
	SW-9 22nd Ave Terminus	3.90
Historical and Cultural Assets	The Don Cesar Hotel	4.42

***Assets did not have a reported wall height. An assumption of 1-ft was made.*

Table 13: Total Area for Natural, Cultural, and Historic Resources

Asset Type	Asset Name	Total Asset Area (Acres)
Conservation Lands	Preservation Area A	0.42
	Preservation Area B	27.69
	Preservation Area C	3.00
	Preservation Area D	13.18
	Preservation Area E	1.16
	Preservation Area F	0.52
Parks	Beach Access	5.17
	Blind Pass Park	1.84
	Colonel Michael J. Horan Park	6.42

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Asset Type	Asset Name	Total Asset Area (Acres)
	Egan Park	5.00
	Hurley Park	2.63
	Lazarillo Park	3.30
	Lido Park	0.50
	Pass A Grille Park	1.20
	Upham Beach	6.36
	Vina Del Mar Park	3.14
Historical and Cultural Assets	Pass-A-Grille	136.95

4.2 Paired Asset-Threat Matrices

In the second phase of the sensitivity analysis, the floodplains generated in the exposure analysis and the critical elevation of each asset were compared and a risk level was assigned to each asset for each flood scenario. These results indicate the degree to which flood scenarios are projected to impact an asset of interest. Results of the sensitivity analysis have been compiled into paired asset-threat matrices, organized by asset type.

Results of the sensitivity analysis for all critical assets can be found in the paired asset-threat matrices included in **Appendix H**.

4.2.1 Transportation Assets and Evacuation Routes

The sensitivity analysis results for the transportation assets and evacuation routes were obtained using the following methodology. **Table 14** outlines the criteria used to assess risk level for all transportation assets and evacuation routes.

Table 14: Criticality Criteria for Transportation and Evacuation Routes

Asset Type	Criticality Level		
	Low	Medium	High
Bridges	Above the shoulder of the roadway	Up to 6-inches above centerline of roadway	Greater than 6-inches above centerline of roadway
Major Roads	Above the shoulder of the roadway	Up to 6-inches above centerline of roadway	Greater than 6-inches above centerline of roadway

Roads

Shoulder and centerline elevations at 54 intersections were estimated from the DEM to collectively represent the critical elevation of major roadways. These elevations were compared to flood depths

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within the intersection footprint to determine the risk level (i.e. criticality) assigned in the paired asset-threat matrix.

Bridges

Shoulder and centerline elevations at eight (8) bridge landings were estimated from the DEM to collectively represent the critical elevation of bridges. These elevations were compared to flood depths within the footprint of the landing to determine the risk level assigned in the paired asset-threat matrix.

4.2.2 Critical Infrastructure

The sensitivity analysis results for critical infrastructure were obtained using the following methodology. **Table 15** outlines the criteria used to assess risk level for all critical infrastructure assets.

Table 15: Criticality Criteria for Critical Infrastructure

Asset Type	Criticality Level		
	Low	Medium	High
Wastewater Lift Stations	Above wet well top slab elevation	Less than 8-inches below station electrical controls	Exceeds station electrical controls
Stormwater Treatment Facilities	Above wet well top slab elevation	Less than 8-inches below station electrical controls	Exceeds station electrical controls
Drinking Water Facilities	6- to 12-inches from FFE	6-inches or less from FFE	Exceeds FFE
Electric Production and Supply Facilities	6- to 12-inches from FFE	6-inches or less from FFE	Exceeds FFE

Wastewater Lift Stations

Wet well and electrical panel elevations were pulled from as-builts to represent the critical elevations for wastewater lift stations. These elevations were compared to flood depths within the lift station footprint to determine the risk level assigned in the paired asset-threat matrix.

Wastewater Lift Station Basins

Wastewater lift station basin boundaries were defined using the sanitary manhole and gravity main shapefiles provided by the City. The risk level of the basins was defined using a percent inundation by area analysis. The basin area (in acres) was defined and the flooded area for each scenario was calculated. The degree to which each basin flooded was reported as a percentage (by area).

Stormwater Treatment Facilities

Wet well and electrical panel elevations were pulled from as-builts to represent the critical elevations for stormwater pump stations. These elevations were compared to flood depths within the pump station footprint to determine the risk level assigned in the paired asset-threat matrix.

Drinking Water Facilities

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The FFE for the Pinellas County potable water storage tank was estimated from the DEM to represent the critical elevation of the facility. This FFE was compared to flood depths within the storage tank footprint to determine the risk level assigned in the paired asset-threat matrix.

Electric Production and Supply Facilities

The FFE for the Duke Substation was estimated from the DEM to represent the critical elevation of the facility. This elevation was compared to flood depths within the substation footprint to determine the risk level assigned in the paired asset-threat matrix.

4.2.3 Critical Community and Emergency Facilities

The sensitivity analysis results for critical community and emergency facilities were obtained using the following methodology.

Table 16 outlines the criteria used to assess risk level for critical community and emergency facilities.

Table 16: Criticality Criteria for Critical Community and Emergency Facilities

Asset Type	Criticality Level		
	Low	Medium	High
Community Centers	6- to 12-inches from FFE	6-inches or less from FFE	Exceeds FFE
Fire Stations	6- to 12-inches from FFE	6-inches or less from FFE	Exceeds FFE
Local Government Facilities	6- to 12-inches from FFE	6-inches or less from FFE	Exceeds FFE

Critical Community and Emergency Facilities

The FFEs for all community and emergency facilities pulled from the Hyatt survey for the critical elevation of each facility. These elevations were compared to flood depths within the building footprint to determine the risk level assigned in the paired asset-threat matrix.

The public works building also serves the City as a logistical staging zone following severe storm events. Refer to **Section 4.2.4**, **Parks** for additional information assessing the criticality of disaster debris management sites and logistical staging areas.

4.2.4 Natural, Cultural, and Historical Resources

The sensitivity analysis results for natural, cultural, and historical resources were obtained using the following methodology.

Table 17 outlines the criteria used to assess risk level for natural, cultural, and historical resources.

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Table 17: Criticality Criteria for Natural, Cultural, and Historical Resources

Asset Type	Criticality Level		
	Low	Medium	High
Conservation Lands	Between 25%-50% inundation by area	From 51% – 75% inundated by area	Greater than 75% inundated by area
Parks	Between 25%-50% inundation by area	From 51% – 75% inundated by area	Greater than 75% inundated by area
Shorelines	Water level is 6- to 12-inches from critical elevation	Water level is 6-inches or less from critical elevation	Water level exceeds critical elevation
Historical and Cultural Assets (Don Cesar)	6- to 12-inches from FFE	6-inches or less from FFE	Exceeds FFE
Historical and Cultural Assets (Pass-A-Grille)	Between 25%-50% inundation by area	From 51% – 75% inundated by area	Greater than 75% inundated by area

Conservation Lands

The risk level of conservation lands was assessed using a percent inundation by area analysis. The asset area (in acres) was defined and the flooded area for each scenario was calculated. The degree to which each basin flooded was reported as a percentage (by area).

Parks

The risk level of parks was assessed using a percent inundation by area analysis.

It should be noted that Egan Park also serves the City as a disaster debris management site and a logistical staging zone following severe storm events.

Shorelines

The risk level for shorelines was identified by comparing the critical elevation to the maximum flood depth within a 10-ft buffer zone of the asset (for both beach access and seawalls).

Historical and Cultural Assets

The two assets identified under this asset type were assessed as follows:

- Don Cesar: The FFE for the Don Cesar was estimated from the DEM to represent the critical elevation of the facility. This elevation was compared to flood depths within the hotel footprint to determine the risk level assigned in the paired asset-threat matrix.
- Pass-A-Grille: The risk level of Pass-A-Grille was assessed using a percent inundation analysis.

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Task 5 - Final Vulnerability Report, Maps, and Tables

5.1 Geospatial Data Submittal

The final submittal for this task includes all GIS files and associated metadata compliant with the Resilient Florida Program's GIS Data Standards (Exhibit I). These files have been packaged based on their associated task.

The critical assets geodatabase (SPB_CritialAssets.gdb) is included in each task deliverables folder and is built upon in each subsequent task.

5.2 Recommendations and Completed Work

5.2.1 Peril of Flood Compliance

The City of St. Pete Beach is currently in the process of updating its Comprehensive Plan to address Peril of Flood compliance with paragraph 163.3178(2)(f), F.S.. On June 20, 2023, the Florida Department of Economic Opportunity (DEO) confirmed its receipt of the City's Evaluation and Appraisal Notification Letter and notified the City that they have until June 20, 2024 to submit their proposed Comprehensive Plan amendments. On August 21, 2023, the City presented its proposed amendments to its Local Planning Agency (LPA), which include amendments to its Coastal and Conservation Element in compliance with the Peril of Flood requirements. The LPA provided a recommendation to the City Commission to transmit the proposed amendments to DEO. It is anticipated that the City will hold its first public hearing where the City Commission will vote whether to transmit the proposed amendments on October 10, 2023. If the Commission votes to transmit the proposed amendments at that hearing, they will be subject to the State Coordinated Review Process as outlined in Sec. 163.3184(4), F.S.

The proposed amendments to the City's Comprehensive Plan have been summarized in strike through and underline format and are included in **Appendix I**.

5.2.2 Evaluation of Adaptive Measures

Adaptive measures may be defined as either CIP or adaptive strategies projects, plans, or policies that target the current and future threats to critical infrastructure due to coastal flooding. Such adaptive measures may implement green and/or gray infrastructure to increase resiliency. This assessment is based on a set of qualitative criteria utilized to identify projects that promote the City's current or future resiliency. A scale of quantitative rankings has been assigned to each criterion, whereby the criteria and rating system used to evaluate adaptive measures has been provided in **Table 18**.

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Table 18: Adaptive Measure Evaluation Criteria

Category	Rating	
Ability to Increase Resiliency	**5**	Increase resiliency by hardening infrastructure against future 2050 Intermediate SLR and 100-year/24-hour event
	4	Increase resiliency by hardening infrastructure against existing conditions during 100-year/24-hour event
	3	Increase resiliency or reduce flooding by improving overall functionality of asset
	2	Maintain existing condition and integrity of asset for use or accessibility
	1	Minimal benefit to resiliency
Economic Feasibility	**2**	City has funding allocated
	1	City needs additional funding
Public Benefit	**3**	High Public Benefit
	2	Moderate Public Benefit
	1	Low Public Benefit

5.2.3 Capital Improvement Plan Projects and Adaptation Strategies

The City's FY2020 Adopted Budget, FY2021 Adopted Budget, and FY2023 Proposed Budget were reviewed to update the list of CIP projects planned or in-progress for the 5-year period encompassed by each budget plan. **Table 18** was used to assign a numerical rating to each project based on the listed criteria and justification. The objective of this analysis was to evaluate the effectiveness of implementing each project and to propose preliminary adaptation measures for existing or ongoing CIP projects.

Additionally, adaptation strategies were developed for measures not previously included as part of the defined CIP projects. The aforementioned City budget plans were also used as guidance in developing adaptation strategies. Short-term and long-term adaptation strategies were defined to address the City's current and future concerns and are discussed below. The proposed short-term and long-term adaptation strategies and their respective ratings are shown in **Table 19**. An update to the adaptive measure ratings and recommended adaptation measures was conducted as outlined in **Table 20**. **Table 21** shows the current status of previously proposed CIPs and additional projects that have been incorporated since the previous version of this vulnerability assessment.

Short Term Adaptation Strategies:

Seawall Inspections and Study: A complete City study to analyze seawall conditions, ownership and property easements and provide the City with prioritization of repairs or modifications. This study should also include recommendations on raising seawalls and modifying the seawall ordinance.

City Outfalls Retrofitted with Inline Check Valves: Continue the installation of Wapro or Tideflex check valves throughout the City at outfalls determined to be in need of the valve. These valves will

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assist in keeping high tide from backflowing through the drainage system, impacting areas upstream of the outfall. This strategy would also involve the addition of annual to semi-annual maintenance of the valves to ensure proper operation. These valves will not keep areas from flooding during rainfall events but will aid in high tide situations.

Drainage Maintenance Program Update: Evaluate current drainage maintenance practices and adjust prioritize the cleaning, inspection, and repair of piping and structures. Keeping the drainage system clear will alleviate operational issues during rainfall or tidal events by moving water more efficiently to stormwater outfalls.

Land Development Code Update: Review and update the land development code for consistency with City requirements, Pinellas County Countywide Plan, and Florida State Statute regulatory requirements. This update should also identify opportunities to incorporate flood resistant design for future development and incentive programs for redevelopment. The land development code update is currently in progress and is expected to be completed in 2024 upon City approval. This update may include revisions to the City's approach for stormwater management for redevelopment. In addition to the land development code update, the City is developing a Stormwater Drainage Manual that is anticipated to be reviewed and adopted by the City in conjunction with the Land Development Code Update in 2024.

Comprehensive Plan Update: Review and update the Comprehensive Plan for consistency with adopted City requirements, Pinellas County Countywide Plan, and Florida State Statutes (FS Chapter 163.3177 and 163.3178) regulatory requirements. This update should also address the Florida Peril of Flood Act to ensure the Comprehensive Plan satisfies the regulatory requirements. The comprehensive plan update is currently in progress. Transmittal of the comprehensive plan updates is anticipated to be approved by Commission in October 2023. This update addresses the risk of peril of flood requirements and is included in **Appendix I**.

Deployable Flood Barriers: Portable flood barriers to be utilized before major predicted events, in areas such as in front of critical buildings or electrical control rooms.

Tide Gates: Gates to be installed at beach entry ways before major tidal events or predicted events to keep water from intruding through beach entry pathways where applicable.

Long Term Adaption Strategies:

Raising Seawalls: Increasing the height of sea walls above the combined 2050 Intermediate SLR and king tide level. Although this strategy is utilized to combat high tide and future sea level rise, the City would need to study drainage throughout the area to prevent additional flooding issues. These issues could arise if higher seawalls prevent stormwater runoff from draining to the surrounding water body.

Seawall Ordinance: City to consider a minimum seawall elevation policy following the Seawall study so that any seawall gaps, seawall repairs, or seawall updates after the policy is in place for a certain amount of time, must be brought up to a minimum standard elevation.

Raising Roadways: Increasing the elevation of roadways above the 100-Year/24-Hour rainfall event or 2050 Intermediate SLR. Although this strategy is utilized to combat major rainfall events or future sea level rise, the City would need to study drainage throughout the area to prevent additional flooding issues that new runoff could cause.

FFE Ordinance: City to increase the minimum FFE above the combined SLR scenarios so that any home, business or City building after the policy is in place, for a certain amount of time, must be brought up to a minimum standard elevation. This ordinance may be incorporated in the update to the LDC and Comprehensive Plan.

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Regional Stormwater Facility: Create a large regional stormwater facility for floodwater storage. This facility would require major planning and design efforts, as well as the acquisition of a large area displacing many individuals within the City.

Business Case Evaluation: An analysis performed to consider costs of an adaptation measure and other quantifiable information within the City such as, insurance rates, economy, and property values, to support or oppose an investment decision to implement a specific adaptation measure.

Living Shoreline: Stabilizing the shoreline with natural elements for hardening rather than typical rip-rap or bulkheads. These natural elements include green infrastructure using native vegetation, reefs, aquatic vegetation, and much more to protect the shore against tidal and wave impacts.

Public GIS Data Portal: Create a GIS public web portal for residents to view City information regarding items such as, ongoing resiliency projects, flood inundation information, and flood zones.

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Table 19: Adaptation Strategies Rankings

		Strategies Name	Ability to Increase Resiliency	Economic Feasibility	Public Benefit	Overall Rating
Adaptation Strategies	Short Term Strategies	Seawall Inspection & Study*	3	1	2	6
		City Outfalls Retrofitted with Inline Check Valves	3	1	3	7
		Drainage Maintenance Program Update	2	1	3	6
		Land Development Code Update*	5	1	2	8
		Comprehensive Plan Update*	5	1	2	8
		Deployable Flood Barriers	4	1	3	8
		Tide Gates	4	1	3	8
	Long Term Strategies	Raising Seawall	5	1	3	9
		Seawall Ordinance*	5	1	3	9
		Raising Roadways	5	1	3	9
		FFE Ordinance	5	1	3	9
		Regional Stormwater Facility	4	1	2	7
		Business Case Evaluation	3	1	2	6
		Living Shoreline	5	1	3	9
		Public GIS Data Portal	1	1	3	5

*Denotes update is in progress. See Section 5.2.3 for project status.

Table 20: CIP Status Update Legend

Status Updates Since Feb 2020 VA	
	Mentioned in both FY2021 Adopted and FY 2023 Proposed
	CIP projects that were funded in the FY2021 Adopted Budget
	CIP projects proposed in the FY2023 Proposed Budget
	CIP projects missing from both FY2023 an FY2021 Proposed and Adopted Budgets, but included in FY2020 adopted CIP

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Table 21: Capital Improvement Plan Project Rankings

		Projects		Ability to Increase Resiliency	Economic Feasibility	Public Benefit	Overall Rating	Recommendation to Incorporate Resiliency Component for Future Planning Effort	FY and CIP version	Funding Status	Current CIP Project Status
		Name	Fiscal Year								
Capital Improvement Plan: Projects impacting Resiliency	Planned Drainage Improvement	Hermosita Drive	Ongoing	4	1	3	8		FY 2023 Proposed CIP	Falls under "Stormwater -Drainage Improvements", which proposed funding for FY2024	Ongoing
		41st Ave /Bella Vista Drive	Ongoing	4	1	3	8				
		59th Ave	Ongoing	4	1	3	8				
		Boca Ciega Isle Drive	2020	4	1	3	8				
		45th Ave Vicinity	Ongoing	4	1	3	8				
		Vina Del Mar	Ongoing	4	1	3	8				
		Sunset Way Vicinity	Ongoing	4	1	3	8				
		44th Ave/Moody Street	Ongoing	4	1	3	8				
		3212 S De Bazan Ave/Don Jose St. Rain Garden	Ongoing	4	1	3	8				
		Casablanca Ave/E Maritana Drive	2020	4	1	3	8				
	Beach and Seawall Maintenance	Sand Dune and Beach Property Improvement Program	Ongoing	2	2	1	5		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2024	Ongoing
		Seawall Replacement Pass-a-Grille Way from 1st Ave to 12th Ave	2021	3	2	3	8	Evaluate implementation of ordinance for changes to seawall requirements for Public and Private property	FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY2021 CIP: Funded FY 2021, FY2023. FY2023: Proposed funding FY2023	Ongoing (2023)
		Seawall Maintenance Program	Ongoing	3	2	2	7		FY2021 Adopted CIP	Funded FY 2022-2025	Ongoing
	Stormwater Management	Tidal Influence Intersection Improvements	Ongoing	2	2	3	7	Evaluate intersection elevations and drainage components	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2021	2021
		System Repair and Replacement	Ongoing	2	2	3	7		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2024	Ongoing
		Blind Pass Stormwater Basin Connections	2023	4	1	2	7		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2022-FY2024	Ongoing
		Local Street Flooding Migration Specific Projects	Ongoing	4	1	3	8		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020, FY2021, and FY2023	Ongoing (2023)
		Stormwater Master Plan Update	2020	3	2	2	7	Master plan should be updated to include groundwater modelling. Model updates should consider the NOAA Atlas 14 Point Precipitation Frequency Estimates to capture the rainfall intensity changes that occurred during storm events	FY2023 Proposed CIP	Proposed funding FY2024	Ongoing
		City Asset Management Program	2020	2	2	2	6		FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY2021 CIP: Funded FY2021-FY2025, FY2023 CIP: Proposed funding FY 2023 & 2024	Ongoing

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		Projects		Ability to Increase Resiliency	Economic Feasibility	Public Benefit	Overall Rating	Recommendation to Incorporate Resiliency Component for Future Planning Effort	FY and CIP version	Funding Status	Current CIP Project Status
		Name	Fiscal Year								
	Street Maintenance	Boca Ciega Drive Complete Streets Reconstruction	2023	3	1	3	7	Evaluate roadway elevation and stormwater improvements to improve resiliency and accessibility on future planning horizon	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2021 and FY2023	Ongoing (2023)
		Gulf Winds Drive Complete Streets Reconstruction	After 2024	3	1	3	7		FY 2023 Proposed CIP	Proposed funding FY2023	Ongoing (2023)
		Street Rehabilitation Program	Ongoing	1	2	2	5		FY 2023 Proposed CIP	Proposed funding FY2023-FY2027	Ongoing
		Vina del Mar and Boca Ciega Bridge Repairs	Ongoing	2	2	3	7		FY2021 Adopted CIP	Funded FY2021	2021
	Emergency Operations	Generator Power for City Facilities	2020	4	1	3	8	Locate generator above flood level elevations during the 100-year/24-hour rainfall event and future 2050 Intermediate SLR scenarios	FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY 2021 CIP: Funded FY2021-FY2025, FY 2023 CIP: Proposed funding FY2024-FY2026	Ongoing
	Planning	Stormwater Drainage Manual	2023	5	1	2	8		FY 2022 Adopted CIP	Funded FY 2022	Ongoing
		Comprehensive Plan Update	2023	5	1	2	8		FY 2021 Adopted CIP & FY 2023 Proposed CIP	Mentioned in FY 2021 and FY 2023 Budget	Ongoing
		Land Development Code Update	2023	5	1	2	8		FY 2021 Adopted CIP & FY 2023 Proposed CIP	Mentioned in FY 2021 and FY 2023 Budget	Ongoing
	Facilities Maintenance	Warren Webster Foundation Waterproofing	2020	2	2	3	7	Waterproofing of critical City facilities should be incorporated into the 2050 future planning horizon	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020	2020
	Sanitary Sewer	Sewer Expansion	2022	2	2	3	7	Hotel district lift stations to incorporate minimum electrical control elevations for protection against flooding	FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020	Completed
		Inflow and Infiltration Repairs Program	Ongoing	3	2	3	8		FY 2021 Adopted CIP & FY 2023 Proposed CIP	FY 2021 CIP: Funded FY2021-FY2025, FY 2023 CIP: Proposed funding FY2023-FY2027	Ongoing
		Lift Station Design and Rehabilitations	2020	5	2	3	10	Electrical controls to be placed above the 2050 Intermediate SLR flood levels. Flood tight hatches to be installed to prevent inflow.	FY 2021 Adopted CIP	FY2021 Adopted CIP: Listed as "Lift station repair and replacement" funded for FY FY2021-FY2022. Mentioned in FY2020 Adopted budget for LS #7,17,4,10,11,15,8,6,16 (different FY's from 2020-2023).	Completed
		Lift Station Emergency Operations Power and Pumps	Ongoing	3	2	3	8		FY2020 Adopted CIP	Mentioned in FY2020 Adopted budget for FY2020-FY2024	Ongoing

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APPENDIX A

KICK-OFF MEETING SUMMARY

Vulnerability Assessment Update
Kick-off Meeting Summary
03/21/2023 11:00AM

AGENDA

1. Attendees

Name	Company	Phone Number	Email
Mike Clarke	City of St. Pete Beach	727-363-9243	mclarke@stpetebeach.org
Brett Warner, P.E.	City of St. Pete Beach	727-363-9254	bwarner@stpetebeach.org
Vincent Tenaglia	City of St. Pete Beach	727-363-9250	vtenaglia@stpetebeach.org
Shelby Hughes, P.E.	Kimley-Horn	727-360-5688	Shelby.hughes@kimley-horn.com
Brett Kamm	Kimley-Horn	727-537-0386	Brett.Kamm@kimley-horn.com
Erin Guby	Kimley-Horn	727-440-4578	Erin.Guby@kimley-horn.com
John Sutton	Kimley-Horn	727-268-7536	John.Sutton@kimley-horn.com

2. Project Background

The purpose of this project is to update the 2020 Vulnerability Assessment to meet new requirements outlined in Florida Statute 380.093 to qualify for funding from the Resilient Florida Grant Program.

F.S. 380.093 requires the following;

- Must use most recently available DEM (2019 Pinellas County DEM is now available)
- Must include all critical assets owned or maintained by the grant applicant (see Critical Asset Table provided)
    - Critical assets include regionally significant assets, owned or managed by the municipality or county
- Must include the following flood scenarios
    - NOAA Intermediate-Low 2040 SLR
    - NOAA Intermediate-High 2040 SLR
    - NOAA Intermediate-Low 2070 SLR
    - NOAA Intermediate-High 2070 SLR
    - 100Yr/24Hr and 500Yr/24Hr Rainfall Events
    - Storm surge (must equal or exceed 100Yr/24Hr)
    - Future tidal (MHHW + SLR)
    - Future storm surge (Surge + SLR)
    - Future rainfall (Rainfall +SLR)
    - Current Storm Surge (100Yr/24Hr Rainfall + storm surge)

3. Project Scope

The scope of this project is outlined in five (5) tasks, as approved in FDEP Grant Agreement Number: **22PLN92**. All tasks will require submittal to the City and FDEP, inclusive of task progress report cover sheets, by 03/31/2024.

Task 1 – Kick-off Meeting

- Discuss project goals, review tasks, review schedule
- *Deliverables – Draft list of steering committee members, KO meeting notes, draft email to potential steering committee requesting participation*

Task 2 – Acquire Background Data and Review

- Compile data needed based on the requirements of F.S. 380.093
    - Data Needs
        - Marinas
        - Drinking water facilities
        - Disaster Debris Management Sites
        - Schools
        - Correctional Facilities
        - Disaster Recovery Centers
        - Emergency Medical Service Facilities
        - Health Care Facilities
        - Law Enforcement Facilities
        - Logistical Staging Areas
        - Risk Shelter Inventory
        - Conservation Lands
        - Parks
        - Shorelines
        - Surface Waters
        - Wetlands
        - Historical and Cultural Assets

- *Deliverables - Data Gap Analysis Tech Memo and GIS files with appropriate metadata*

Task 3 – Exposure Analysis

- Identify the depth of water caused by flood scenarios
- *Deliverables - Draft VA report with findings from exposure analysis and GIS files with results of exposure analysis for each flood scenario*

Task 4 – Sensitivity Analysis

- Measure the impact of flooding on assets

- Assign a risk level based on percentages of the land area inundated and the number of critical assets affected
- *Deliverables - Draft VA report with findings from exposure analysis, sensitivity analysis, and visual representation of the data. An initial list of critical and regionally significant assets that are impacted by flooding*

Task 5 – Final Vulnerability Assessment

- Final VA Report will include
  - Results from exposure analysis
  - Results from sensitivity analysis
  - Summary of identified risks and assigned focus areas
  - List of critical and regionally significant assets that are impacted by flooding and SLR (specify by what event)
  - GIS and associated metadata (must adhere to Resilient Florida Programs GIS Data Standards)
- *Deliverables - Final VA report, list of critical and regionally significant assets that are impacted by flooding, electronic mapping data used to illustrate flooding and SLR impacts identified in VA, signed VA compliance Checklist Certification*

4. Critical Asset Identification

The table below outlines the City's approach to the identification of critical assets:

	Green = Include in Assessment	Grey = Not applicable to SPB	
Asset Category	**Asset Class**	**Collected?**	**Notes**
Transportation Assets and Evacuation Routes	Airports	N/A	None
	Bridges	✓	Use critical roadways to determine bridges to be included
	Bus Terminals	N/A	None
	Ports	N/A	None
	Major Roadways	✓	Only include FDOT roads and Pass-A-Grille way as critical asset under Major Roadways category
	Marinas	N/A	No marinas are maintained by the City
	Rail Facilities	N/A	None
	Railroad Bridges	N/A	None

Asset Category	Asset Class	Collected?	Notes
Critical Infrastructure	Wastewater Treatment Facilities	N/A	None
	Wastewater Lift Stations	✓	Use electrical panel elevation as critical elevation
	Stormwater Treatment Facilities	✓	Stormwater treatment pump stations will be included
	Potable Pump Stations	N/A	None
	Drinking Water Facilities	✓	Pinellas County Potable Water Storage Tank will be included
	Water Utility Conveyance Systems	✓	Sewer conveyance to be included
	Electric Production and Supply Facilities	✓	One (1) Duke substation on the island (located by Public Works) will be included as a critical asset
	Solid & Hazardous Waste Facilities	N/A	None
	Military Installations	N/A	None
	Communications Facilities	N/A	None
	Disaster Debris Management Sites	✓	Disaster Debris Management Site was identified as Egon Park
Critical Community Emergency Facilities	Schools	N/A	There is one (1) public school on the island and it will NOT be used as an emergency facility so the school will not be included
	Colleges	N/A	None
	Universities	N/A	None
	Community Centers	✓	FFE from 2019 Hyatt Survey
	Correctional Facilities	N/A	None
	Disaster Recovery Centers	N/A	None
	Emergency Medical Service Facilities	N/A	None
	Emergency Operation Centers	N/A	None
	Fire Stations	✓	FFE from 2019 Hyatt Survey
	Health Care Facilities	N/A	None
	Hospitals	N/A	None
	Law Enforcement Facilities	N/A	None
	Local Government Facilities	✓	Included in City Buildings, FFE from 2019 Hyatt Survey

Asset Category	Asset Class	Collected?	Notes
Critical Community Emergency Facilities	Logistical Staging Areas	✓	Logistical Staging Areas were identified as Public Works and Egon Park
	Affordable Public Housing	N/A	None
	Risk Shelter Inventory	N/A	None
	State Government Facilities	N/A	None
Natural, Cultural, and Historical Assets	Conservation Lands	✓	Conservation Lands were identified as lands denoted as preserved
	Parks	✓	Use parcel boundary to identify all parks
	Shorelines	✓	Use beach access points and seawalls for shorelines
	Surface Waters	N/A	Not applicable, barrier island
	Wetlands	N/A	None
	Historical and Cultural Assets	✓	Historical Places identified by the National Registry of Historical will be deemed critical. This includes the Don Cesar and Pass-A-Grille

Below is a summary of the review of the City Buildings Asset Table and those determined to be a critical asset based on the criteria outlined above

Building Description	Address	Critical Asset
Public Library	375 73rd Ave	X
Don Vista Center	3300 Gulf Blvd.	
Fire Department	1950 Pass A Grille	X
Community Center	1500 Pass A Grille	
Paradise Grille	900 Gulf Way	
Bathroom	9300 Blind Pass	
Upham Concessions	6850 Beach Plaza	
Bathroom/ Concessions	9101 Blind Pass	
City Hall	155 Corey Ave	X
Shuffleboard Building	101 9th Ave	
South Bathroom	7701 Boca Ciega Drive	
Pool Concessions	7701 Boca Ciega Drive	
Public Works	7701 Boca Ciega Drive	X
Community Center	7701 Boca Ciega Drive	X
Rec Center	7701 Boca Ciega Drive	
Fire Department	7301 Gulf Blvd.	X

5. Project Schedule

- Review meetings will be scheduled after each deliverable is submitted
- Updated project schedule is attached

6. Steering Committee

Steering Committee Members have been identified as the following:

Name	Title	Phone Number	Email
Alex Rey	City Manager	727-363-9213	reya@stpetebeach.org
Vincent Tenaglia	Finance Director & Assistant City Manager	727-363-9250	vtenaglia@stpetebeach.org
Mike Clarke	Public Works Director	727-363-9243	mclarke@stpetebeach.org
Brett Warner, P.E.	City Engineer	727-363-9254	bwarner@stpetebeach.org
Michelle Gonzalez	Community Developer Director	727-363-9213	mgonzalez@stpetebeach.org
Jim Kilpatrick	Fire Chief	727-363-9207	J.kilpatrick@stpetebeach.org
Jennifer McMahon	Chief Operating Officer	727-363-9274	rddirector@stpetebeach.org

ACTION ITEMS

- Kimley-Horn to send Kick-Off Meeting summary and Task 1 under grant agreement

St. Pete Beach Vulnerability Assessment - Update

Deliverable Meeting City Review

Task Description	February				March				April				May					June				July					August				September			
First Monday of Month	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18	25
Task 1: Project Kick-Off and Coordination																																		
Project Kick-Off																																		
Bi-Weekly Project Calls																																		
Task 2: Aquire Background Data																																		
Data Collection and Data Gap Analysis Tech Memo																																		
Summary Report to Address Identified Data Gaps																																		
GIS files w/ metadata																																		
Task 3: Exposure Analysis																																		
Draft VA Report																																		
GIS files w/ metadata																																		
Task 4: Sensitivity Analysis																																		
Draft VA Report																																		
Initial list of critical and regionally significant assets that are impacted by flooding																																		
Task 5: Final Vulnerability Assessment Report, Maps, and Tables																																		
Final VA Report																																		
Final List of Critical and regionally significant assets																																		
All electronic mapping data used to illustrate flooding and SLR impacts, including all geospatial data in an electronic file format and GIS metadada																																		
Signed VA Compliance Checklist Certification																																		
Project Close Out																																		

APPENDIX B

TASK 2 SUBMITTAL LETTER

April 11, 2023

Brett Warner
City Engineer
City of St. Pete Beach
155 Corey Avenue
St. Pete Beach, FL 33706

Subject: ***Vulnerability Assessment Update - City of St. Pete Beach***
Background Data Acquisition and Review

Mr. Warner,

Kimley-Horn and Associates, Inc. (Kimley-Horn) was authorized by the City of St. Pete Beach (City) on September 28, 2022 to provide general engineering services to complete a comprehensive update to the St. Pete Beach Phase II Vulnerability Assessment, as outlined in Florida Department of Environmental Protection (FDEP) Grant Agreement No. 22PLN92. This technical memorandum is the deliverable for Task 2 outlined in the grant. Task 2 is defined as a summary of background data acquisition and review.

The following data sources were evaluated for inclusion in the vulnerability assessment:

1. Geographic Information System (GIS) asset data
2. Critical Assets
3. Pinellas County Digital Elevation Maps (DEMs)
4. Sea Level Rise Projection Data
5. Design Storm Data
6. Tidal Data
7. Storm Surge Data

The sections below outline the data collected and provide action items for further inclusion in this evaluation.

1. GIS Files

The GIS data summarized in Table 1 below was provided by the City, downloaded from Pinellas County Enterprise GIS, or generated by Kimley-Horn (KH). All horizontal data will be referenced to Florida State Plane Coordinates – NAD 83/11 datum – Florida West Zone. All elevation data obtained during the data collection phase and later used in this study will be referenced to the North American Vertical Datum 1988 (NAVD88).

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Table 1 - GIS Asset Data

System	Owner	Component/Assets	Attributes	Deficiencies/ Missing Data	GIS Data Revision Date
Transportation Assets and Evacuation Routes	County	Road_Centerline	Full name, Critical, Length	-	4/26/2019
	KH / City	Road_Intersections	Intersection, Critical	-	2/27/2020
Critical Infrastructure-General	County	AssetParcels_POLY	Parcel ID	-	3/29/2023
	KH	PotableStorageTank	Description	Critical elevation	3/29/2023
	KH	PotableStorageTank_POLY	Description	Critical elevation	1/7/2021
	KH	Substation	Name, Description, Elevation, Critical	Critical elevation	3/29/2023
	KH	Substtion_POLY	Name, Description, Elevation, Critical	Critical elevation	3/29/2023
	KH	DistasterDebrisManagementSite_Poly	Description	-	1/7/2021
	KH	Building_Footprint_Poly	Description, elevation	-	3/29/2023
Critical Infrastructure - Stormwater	City	Discharge_Point	Diameter, Basin ID, Temp Material	-	12/1/2022
	City	Control_Valve	Notes	-	12/1/2022
	City	Clean_Out	Access Diameter, Access Type, Cleanout Type	-	12/1/2022
	City	Manhole	Basin ID, Manhole Type	-	12/1/2022
	City	Storm_Gravity_Mains	Diameter	-	12/1/2022
	City	Stormwater_PumpStation_POINT	Structure Type	-	12/1/2022
Critical Infrastructure - Sanitary Critical Infrastructure - Sanitary	City	Manholes	Invert Elevation, Rim Elevation, Wall Material, Lined, Diameter, Notes, Cone Material, Liner Type	-	3/1/2023
	City	SanitaryGravityPipes	Material, Diameter, Down Invert, Up Invert, Notes, Inspection, Lined	-	3/1/2023
	City	ConflictStructure	Number	-	3/1/2023
	City	Control_Valves	Install Date, Asset Name Description, Asset Size, Lifecycle Status	-	3/1/2023
	City	Force_Main	Install Date, Material, Diameter, Notes, Discharge Manhole, Lifecycle Status, Parent Life Station	-	3/1/2023
	City	Clean_Outs	Notes, Elevation Rim, Elevation Invert, Lifecycle Status	-	3/1/2023
	City	Lift Stations	Ground elevation, Elevation Initial, Elevation Base, Elevation Minimum, Date Last Rehab, Nearest Address, Wetwell Diameter, Wetwell Depth, Wetwell Material, Number of Pumps, Property Detail, Wetwell Liner	-	3/1/2023
Critical Community Emergency Facilities	KH	LogisticalStagingArea_POLY	Description	-	1/7/2021
	KH	HistoricalArea_POLY	Description	Critical Elevation	3/29/2023
Natural, Cultural, and Historical Assets	City	BeachAccess	Name, Access Type	-	12/14/2022
Natural, Cultural, and Historical Assets	City	PreservationAreas_POLY	Acres	-	3/29/2023
	City	Seawalls	Name, Length	-	3/30/2023
	City	Seawall_Stations	Name, Wall_Material, Wall_Type, Cap_Material, Width, Height, Wall_Exposed_Hgt, Observed_Water_Depth, Deficiencies, Rating, Anchors, Comments	-	3/30/2023

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2. Critical Assets

Criticality designations were established by the City and Kimley-Horn on March 21, 2023, during the Kick-Off Meeting. Table 2 denotes which assets will be included in this Vulnerability Assessment. A geographical exhibit of the City's critical assets is included as an attachment.

Table 2 - Critical Assets

Include in Assessment	Not applicable to SPB

Asset Category	Asset Class	Data Collected?	Notes
Transportation Assets and Evacuation Routes	Airports	N/A	None
	Bridges	✓	Use roadways
	Bus Terminals	N/A	None
	Ports	N/A	None
	Major Roadways	✓	Only include FDOT roads and Pass-A-Grille way as critical asset under Major Roadways category
	Marinas	N/A	No City maintained marinas
	Rail Facilities	N/A	None
	Railroad Bridges	N/A	None
Critical Infrastructure	Wastewater Treatment Facilities	N/A	None
	Wastewater Lift Stations	✓	Use electrical panel elevation as critical elevation
	Stormwater Treatment Facilities	✓	Stormwater treatment pump stations will be included
	Potable Pump Stations	N/A	None
	Drinking Water Facilities	✓	Pinellas County Potable Water Storage Tank will be included
	Water Utility Conveyance Systems	✓	Sewer conveyance to be included
	Electric Production and Supply Facilities	✓	One (1) Duke substation on the island (located by Public Works) will be included as a critical asset
	Solid & Hazardous Waste Facilities	N/A	None
	Military Installations	N/A	None
	Communications Facilities	N/A	None
	Disaster Debris Management Sites	✓	Disaster Debris Management Site was identified as Egon Park

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Asset Category	Asset Class	Collected?	Notes
Critical Community Emergency Facilities	Schools	N/A	There is one (1) public school on the island and it will NOT be used as an emergency facility so the school will not be included
	Colleges	N/A	None
	Universities	N/A	None
	Community Centers	✓	FFE from 2019 Hyatt Survey
	Correctional Facilities	N/A	None
	Disaster Recovery Centers	N/A	None
Critical Community Emergency Facilities	Emergency Medical Service Facilities	N/A	None
	Emergency Operation Centers	N/A	None
	Fire Stations	✓	FFE from 2019 Hyatt Survey
	Health Care Facilities	N/A	None
	Hospitals	N/A	None
	Law Enforcement Facilities	N/A	None
	Local Government Facilities	✓	Included in City Buildings, FFE from 2019 Hyatt Survey
	Logistical Staging Areas	✓	Logistical Staging Areas were identified as Public Works and Egon Park
	Affordable Public Housing	N/A	None
	Risk Shelter Inventory	N/A	None
	State Government Facilities	N/A	None
Natural, Cultural, and Historical Assets	Conservation Lands	✓	Conservation Lands were identified as lands denoted as preserved
	Parks	✓	Use parcel boundary to identify all parks
	Shorelines	✓	Use beach access points and seawalls for shorelines
	Surface Waters	N/A	Not applicable, barrier island
	Wetlands	N/A	None
	Historical and Cultural Assets	✓	Historical Places identified by the National Registry of Historical will be deemed critical. This includes the Don Cesar and Pass-A-Grille

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3. As-Built and Survey Information

Finished Floor Elevations (FFE) were obtained by Hyatt Survey Services, Inc. (Hyatt) as part of the Phase II Vulnerability Assessment for fifteen (15) City-owned buildings. Table 3 below shows the FFEs collected by Hyatt.

Table 3 - Hyatt Survey Finished Floor Elevations

Building Description	Address	Elevation Location	Elevation	Critical
Public Library	375 73rd Ave	S. Door	7.65'	X
Don Vista Center	3300 Gulf Blvd.	W. Door	5.57'	
Fire Department	1950 Pass A Grille	Bay	4.40'	X
	1950 Pass A Grille	Finish Floor	4.98'	X
Community Center	1500 Pass A Grille	E. Door	3.84'	
Paradise Grille	900 Gulf Way	N. Door	7.74'	
Bathroom	9300 Blind Pass	Men's room	4.70'	
Upham Concessions	6850 Beach Plaza	S. Door	7.35'	
Bathroom/ Concessions	9101 Blind Pass	S. Door	4.57'	
City Hall	155 Corey Ave	Main Door	11.50'	X
Shuffleboard Building	101 9th Ave	E. Door	3.98'	
South Bathroom	7701 Boca Ciega Drive	S. Door	5.78'	
Pool Concessions	7701 Boca Ciega Drive	S. Door	5.01'	
Public Works	7701 Boca Ciega Drive	Bay Door	4.88'	X
Public Works	7701 Boca Ciega Drive	Finish Floor	14.38'	X
Community Center	7701 Boca Ciega Drive	Lower W. Door	4.48'	X
	7701 Boca Ciega Drive	Finish Floor	18.24'	X
Rec Center	7701 Boca Ciega Drive	Main Door	5.15'	
Fire Department	7301 Gulf Blvd.	Bay	7.15'	X
	7301 Gulf Blvd.	Finish Floor	14.25'	X
	7301 Gulf Blvd.	S. Door	4.19'	X

Action Item(s):

As-builts or finished floor elevations for the Pinellas County Potable Water Storage Tank, the Duke substation, and the Don Cesar are not included in the available GIS or surveyed data. It is requested that the City provides this data for inclusion in the assessment. If the City is unable to provide this data, critical elevations for these assets will be assigned using DEM data and an assumed FFE above grade.

4. High-Water Level Data

The following high-water level data will be utilized in the vulnerability assessment:

- United States Geological Survey (USGS) High Water Mark Data
- Surveyed high-water level marks provided by Hyatt referenced to the NAVD 88 Vertical datum

Additional MHWL data is available in the National Oceanic and Atmospheric Administration (NOAA) database online, however, no datasets are within the limits of St. Pete Beach. The nearest data collection sites are at John's Pass and Tierra Verde. This data may be used as a reference.

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5. Digital Elevation Models (DEMs)

The following DEM data has been evaluated for inclusion in the vulnerability assessment:

- Pinellas County 2019 Enhanced – Resolution of 2.5-feet

6. Sea Level Rise (SLR) Projection Data

The following SLR projection data will be utilized in the vulnerability assessment:

- 2017 NOAA SLR projections
  - 2040 Intermediate-Low
  - 2040 Intermediate-High
  - 2070 Intermediate-Low
  - 2070 Intermediate-High

7. Design Storm Data

The following design storm data will be evaluated and utilized in the vulnerability assessment:

- NOAA Atlas 14 Rainfall Projections/Distributions: 25-year/24-hour, 100-year/24-hour, and 500-year/24-hour design storms
  - NOAA's rainfall distribution is updated frequently to show changes in storm trends over time

The following data will be used to validate the design storm data from the NOAA Atlas

- Southwest Florida Water Management District (SWFWMD) Basis of Review: 25-year/24-hour and 100-year/24-hour design storm
  - Rainfall distribution is based on Natural Resources Conservation Service Type II Florida Modified

8. Tidal Data

The following tidal data will be evaluated and utilized in the vulnerability assessment:

- NOAA Tides and Currents
  - Clearwater Beach Gauge (Station 8726724) and Port Manatee Gauge (Station 8726384)
    - Mean Sea Level (MSL)
    - Mean High Water (MHW)
    - Mean Higher High Water (MHHW)
    - Flood threshold
- The Climate Explorer
  - Clearwater Beach Gauge (Station 8726724)
    - Current and Future Tidal Flooding Days

9. Storm Surge Data

The following storm surge data will be evaluated and utilized in the vulnerability assessment:

- FIS for Pinellas County Stillwater Elevation for the 1% Annual Chance

This information will be checked against USGS gauge data to verify reasonableness.

Summary and Conclusion

In summary, the additional data is requested to be provided by the City as follows:

1. As-builts for the Pinellas County Potable Water Storage Tank

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2. As-builts for the Duke substation by Public Works
3. As-builts for the Don Cesar or FFE

Kimley-Horn has collected and reviewed the data as required by Task 2 of the Vulnerability Assessment Update for the City of St. Pete Beach. The data sources documented above are intended to be utilized in the vulnerability assessment as outlined in the FDEP Grant Agreement No. 22PLN92. Please contact Shelby.hughes@kimley-horn.com should you have any questions or desire additional information.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.
Shelby N. Hughes, P.E.
Project Manager

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APPENDIX C

SURVEYED CITY BUILDING FINISHED FLOOR ELEVATIONS

Surveyor's Report

Survey #19-2430

Vulnerability Assessment, Phase II (FDEP Agreement R1927)

City of St. Pete Beach

Pinellas County, Florida

Requested By:
Kimley-Horn and Associates

Prepared By:
Hyatt Survey Services, Inc.
11007 8th Avenue East
Bradenton, Florida 34212
Phone #: (941) 748-4693
Licensed Business No. 7203

INTRODUCTION

This purpose of this project is to establish elevations on fifteen (15) finished floors and ten (10) field-derived high-water marks within the City of St. Pete Beach, Florida. This project was commissioned by the City of St. Pete Beach.
All field work was completed between November 13, 2019 and November 15, 2019. Data reduction in the office and compilation of final deliverables was completed on November 17, 2019.

Horizontal and Vertical Datum, Control Monumentation

The scope of work required all elevations to be referenced to the North American Vertical Datum 88. Horizontal positions are referenced to the North American Datum of 1983 (NAD83) 2011 adjustment, State Plane Coordinates, Florida West Zone (0902) and measured in US survey feet, also in Geographic Coordinates (latitude-longitude) via a handheld GPS receiver, as requested.

Hyatt Survey performed the closed-loop level runs with the NGS benchmarks listed in the table below:

DESIGNATION	PID	NAVD 88 ORTHOMETRIC HEIGHT
Blind F	AG0343	3.87'
Blind H	AG0345	3.78'
Blind B	AG0339	9.32'
Blind N	AG0350	3.76'
LKBP 3A	X	7.13'
NOAA	AG0740	6.82'
NOAA A	AG0741	6.94'
Blind P	AG0352	6.47'

METHODS AND PROCEDURES

Instrumentation: Level runs were performed with a Leica digital level model "DNA03" (Serial # 338631). Barcode fiberglass rods were used (Leica serial # 9119) and a Trimble R10.

Monumentation: eight (8) existing NGS benchmarks listed above

PROJECT NOTES

Delays: No delays were recorded on this project.

Rights of Entry: Rights of entry were granted and under FL Statute Title XXXII, Ch. 472, §472.029.

Project Issues: No issues were recorded on this project.

Below is a table of the new benchmarks with final elevations:

Parcel ID	Address	Building Description	Elevation Location	Elev.
363115779940540010	375 73rd Ave	Public Library	S. Door	7.65'
073216218520060080	3300 Gulf Blvd.	Don Vista Center	W. Door	5.57'
183216686340080250	1950 Pass A Grille	Fire Department	Bay	4.40'
			Finish Floor	4.98'
183216686340040000	1500 Pass A Grille	Community Center	E. Door	3.84'
193216000002100200	900 Gulf Way	Paradise Grille	N. Door	7.74'
253115783181140040	9300 Blind Pass	Bathroom	Men's room	4.70'
363115059400000010	6850 Beach Plaza	Upham Concessions	S. Door	7.35'
253115253570000010	9101 Blind Pass	Bathroom/ Concessions	S. Door	4.57'
363115306720630160	155 Corey Ave	City Hall	Main Door	11.50'
193216589320000010	101 9th Ave	Shuffleboard Building	E. Door	3.98'
363115779880000010	7701 Boca Ciega Drive	South Bathroom	S. Door	5.78'
		Pool Concessions	S. Door	5.01'
		Public Works	Bay Door	4.88'
			Finish Floor	14.38'
		Community Center	Lower W. Door	4.48'
			Finish Floor	18.24'
		Rec Center	Main Door	5.15'
363115779940550010	7301 Gulf Blvd.	Fire Department	Bay	7.15'
			Finish Floor	14.25'
			S. Door	4.19'
High Water Stain	Latitude NAD 83(2011)	Longitude NAD83(2011)	Elevation Location	Elev.
HWM 1	27°45'22.13"N	82°45'36.54"W	Seawall	2.2'
HWM 2	27°44'41.78"N	82°44'50.43"W	Seawall	2.03'
HWM 3	27°44'31.94"N	82°44'45.06"W	Dock	1.91'
HWM 4	27°44'20.88"N	82°45'12.75"W	Seawall	2.25'
HWM 5	27°43'59.56"N	82°44'34.00"W	Seawall	2.46'
HWM 6	27°43'16.08"N	82°44'3.59"W	Seawall	2.24'
HWM 7	27°42'30.20"N	82°43'49.31"W	Seawall	1.81'
HWM 8	27°42'21.55"N	82°43'43.86"W	Seawall	2.26'
HWM 9	27°41'49.49"N	82°44'4.16"W	Seawall	1.81'
HWM 10	27°41'6.05"N	82°44'9.99"W	Seawall	1.39'

CERTIFICATION

This is to certify that this report and survey have been performed in accordance with the "Standards of Practice" as set forth by the Florida Board of Surveyors and Mappers per Florida Administrative Code 5J-17. The map associated with this report is by reference made a part hereof and the map is not valid without this report and vice versa.

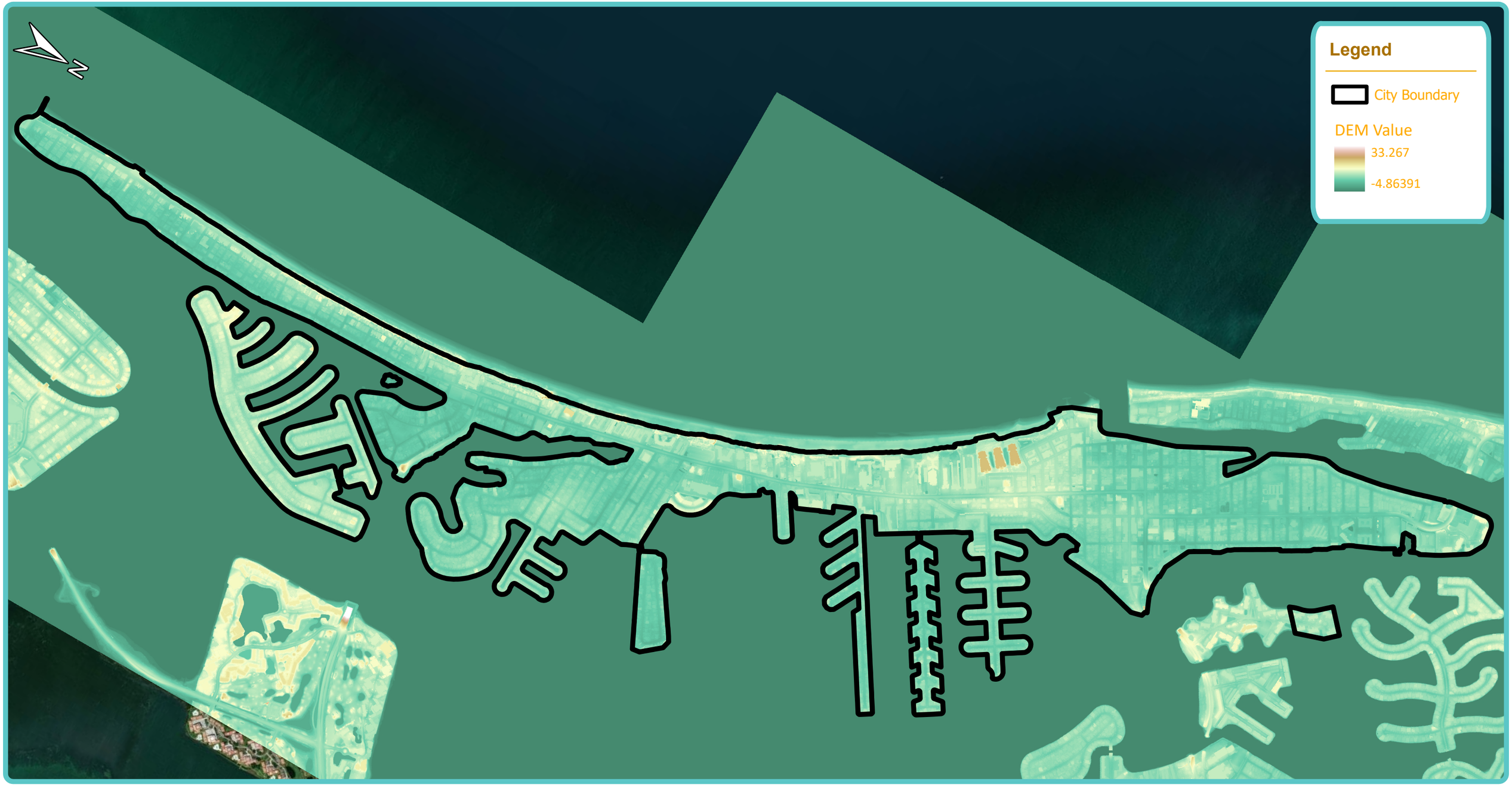
Signed _____ Date: _____

Russell Hyatt, P.S.M. No. 5303

Not valid unless signed and sealed by a Florida Licensed Surveyor and Mapper

APPENDIX D

DIGITAL ELEVATION MODEL



DIGITAL ELEVATION MODEL

VULNERABILITY ASSESMENT

SEPTEMBER 2023

St. Pete Beach
The Sunset Capital of Florida

0 500 1,000 2,000 3,000 4,000
Feet

Kimley»Horn

APPENDIX E

EXPOSURE ANALYSIS SCENARIO MAPS

25-Year, 24-Hour Rainfall

Rainfall Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

100-Year, 24-Hour Rainfall

Rainfall Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

Kimley»Horn

500-Year, 24-Hour Rainfall

Rainfall Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Legend

Transportation Assets & Evacuation Routes
- Critical Intersection
- Bridges

Critical Infrastructure
- Lift Station
- Manholes
- Pump Station
- Substation
- Potable Storage Tank
- Disaster Debris Management Site/Logistical Staging Area

Critical Community & Emergency Facilities
- City Facilities
- Logistical Staging
- Fire Stations

Natural, Cultural, and Historical Resources
- Historic Area
- Preservation Areas
- City Owned Seawall
- Seawall Stations
- Beach Access
- Parks

Sea Level Rise Intermediate-Low 2040 Flood Depth (ft)
- 2.4
- 0.0
- City Boundary

Sea Level Rise (Intermediate-Low 2040)

Sea Level Rise Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Sea Level Rise (Intermediate-High 2040)

Sea Level Rise Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

Kimley»Horn

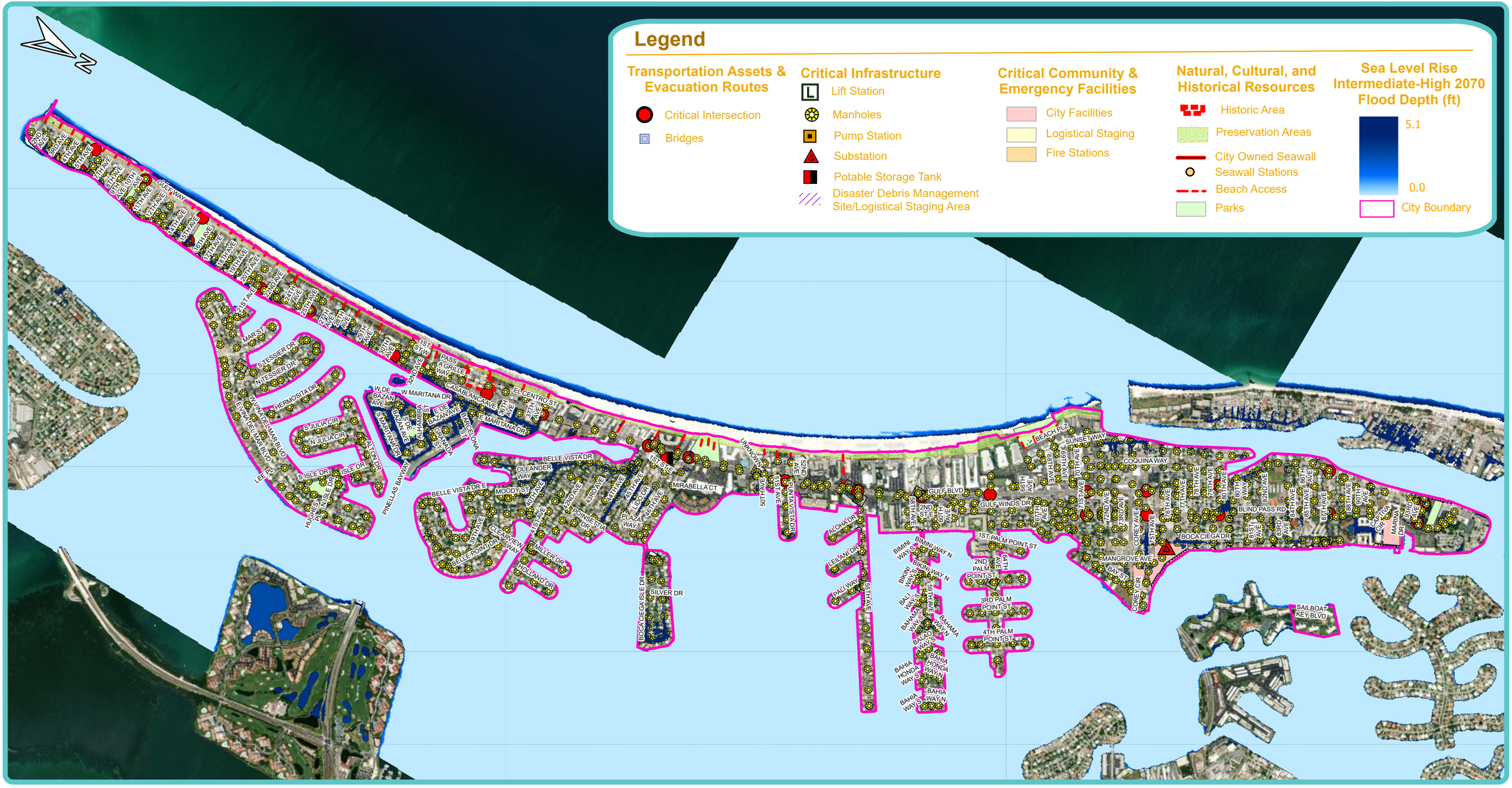
Sea Level Rise (Intermediate-Low 2070)

Sea Level Rise Flooding

VULNERABILITY ASSESMENT **AUGUST 2023**

St. Pete Beach
The Sunset Capital of Florida

Kimley»Horn



Sea Level Rise (Intermediate-High 2070)

Sea Level Rise Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Rainfall (Int-Low 2040)

Future Rainfall Induced Flooding

VULNERABILITY ASSESMENT **AUGUST 2023**

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Rainfall (Int-High 2040)

Future Rainfall Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Rainfall (Int-Low 2070)

Future Rainfall Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Rainfall (Int-High 2070)

Future Rainfall Induced Flooding

VULNERABILITY ASSESMENT **AUGUST 2023**

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Current Tidal

Tidal Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Tidal (Int-Low 2040)

Tidal Induced Flooding

VULNERABILITY ASSESMENT **AUGUST 2023**

Future Tidal (Int-High 2040)

Tidal Induced Flooding

VULNERABILITY ASSESMENT **AUGUST 2023**

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Tidal (Int-Low 2070)

Tidal Induced Flooding

VULNERABILITY ASSESMENT **AUGUST 2023**

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Legend

Transportation Assets & Evacuation Routes
- Critical Intersection
- Bridges

Critical Infrastructure
- Lift Station
- Manholes
- Pump Station
- Substation
- Potable Storage Tank
- Disaster Debris Management Site/Logistical Staging Area

Critical Community & Emergency Facilities
- City Facilities
- Logistical Staging
- Fire Stations

Natural, Cultural, and Historical Resources
- Historic Area
- Preservation Areas
- City Owned Seawall
- Seawall Stations
- Beach Access
- Parks

Future Tidal (Int-High 2070) Flood Depth (ft)
6.4

0.0

- City Boundary

Future Tidal (Int-High 2070)

Tidal Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Current Storm Surge

Storm Surge Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Storm Surge (Int-Low 2040)

Storm Surge Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

0 0.1 0.2 0.4 0.6 0.8 Miles

Kimley»Horn

Future Storm Surge (Int-High 2040)

Storm Surge Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

Kimley»Horn

Future Storm Surge (Int-Low 2070)

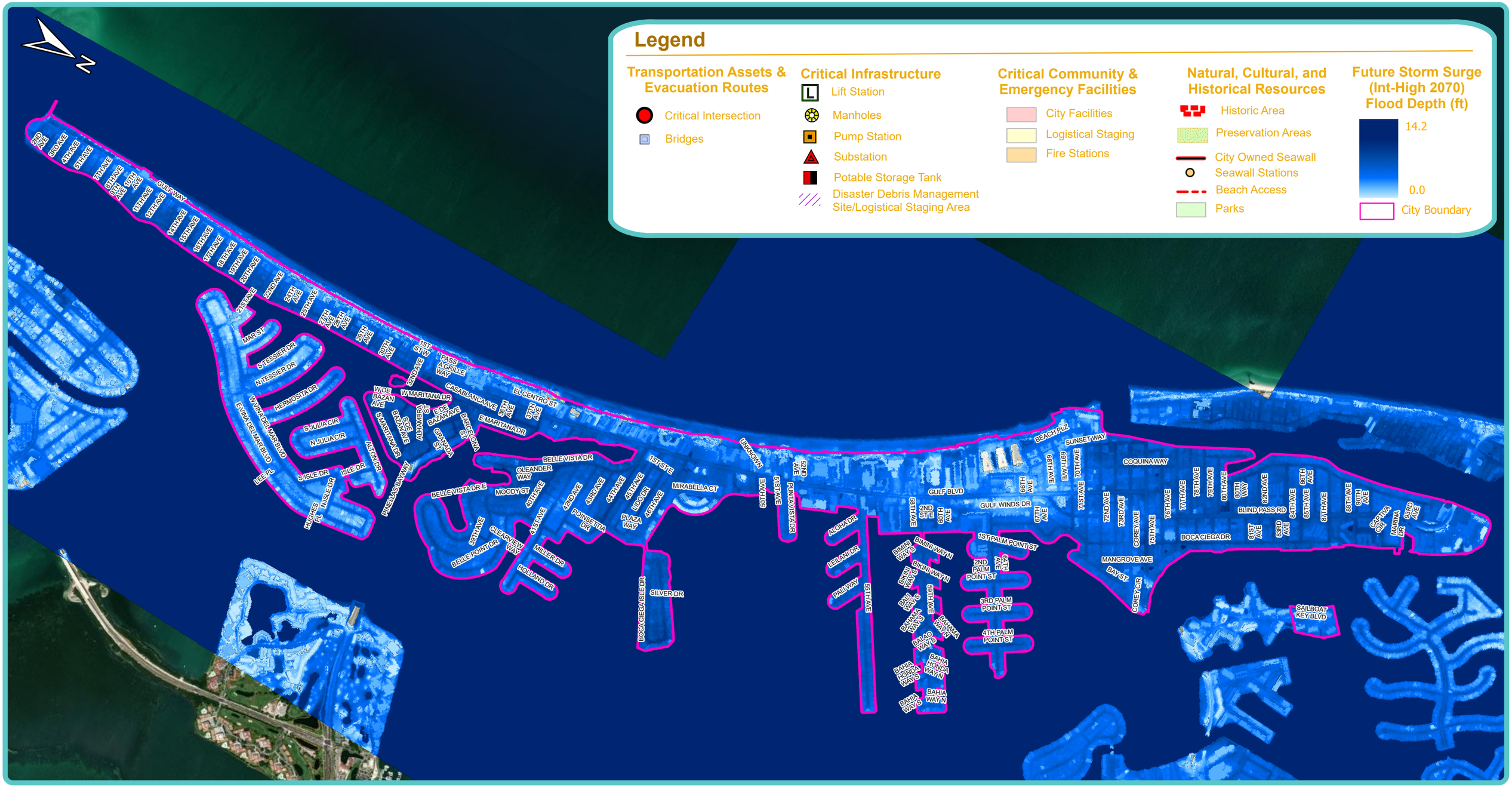
Storm Surge Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

Kimley»Horn



Future Storm Surge (Int-High 2070)

Storm Surge Induced Flooding

VULNERABILITY ASSESMENT

AUGUST 2023

St. Pete Beach
The Sunset Capital of Florida

Kimley»Horn

APPENDIX F

EXPOSURE ANALYSIS RESULTS TABLES

APPENDIX F – EXPOSURE ANALYSIS RESULTS TABLES

Legend	
No Flooding	No flooding identified in asset footprint
Low	Flood depths of 0.0' to 1.5'
Moderate	Flood depths of 1.5' to 3.0'
Extreme	Flood depths greater than 4.0'

Table F1:Exposure Analysis of Transportation Assets and Evacuation Routes

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset Name	**Asset Type**	**Flood Depth 25Y24H (ft)**	**Flood Depth 100Y24H (ft)**	**Flood Depth 500Y24H (ft)**	**Flood Depth Future Rainfall Int-Low 2040 (ft)**	**Flood Depth Future Rainfall Int-High 2040 (ft)**	**Flood Depth Future Rainfall Int-Low 2070 (ft)**	**Flood Depth Future Rainfall Int-High 2070 (ft)**	**Flood Depth Int-Low 2040 (ft)**	**Flood Depth Int-High 2040 (ft)**	**Flood Depth Int-Low 2070 (ft)**	**Flood Depth Int-High 2070 (ft)**	**Flood Depth Current Tidal (ft)**	**Flood Depth Future Tidal Int-Low 2040 (ft)**	**Flood Depth Future Tidal Int-High 2040 (ft)**	**Flood Depth Future Tidal Int-Low 2070 (ft)**	**Flood Depth Future Tidal Int-High 2070 (ft)**	**Flood Depth Current Storm Surge (ft)**	**Flood Depth Future Storm Surge Int-Low 2040 (ft)**	**Flood Depth Future Storm Surge Int-High 2040 (ft)**	**Flood Depth Future Storm Surge Int-Low 2070 (ft)**	**Flood Depth Future Storm Surge Int-High 2070 (ft)**
Gulf Blvd & 93rd Ave	MAJOR ROADS	0.99	0.99	0.99	0.99	0.99	0.99	1.68	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	1.68	6.45	6.85	7.54	7.48	9.54
Blind Pass Rd & 93rd Ave	MAJOR ROADS	0.32	0.33	0.33	0.33	0.33	0.33	1.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	5.42	5.82	6.51	6.45	9.06
Blind Pass Rd & 87th Ave	MAJOR ROADS	0.99	0.99	0.99	0.99	0.99	0.99	1.69	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00	1.93	6.37	6.77	7.46	7.40	9.79
Gulf Blvd & 87th Ave	MAJOR ROADS	0.03	0.03	0.03	0.03	0.03	0.03	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	5.70	6.10	6.79	6.73	8.96
Blind Pass Rd & 80th Ave	MAJOR ROADS	0.84	0.85	0.85	0.85	0.85	0.85	1.68	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.00	1.88	6.25	6.65	7.34	7.28	9.74
Gulf Blvd & 80th Ave	MAJOR ROADS	0.00	0.00	0.00	0.00	0.00	0.00	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.85	5.62	6.02	6.71	7.28	8.71
Blind Pass Rd & 75th Ave	MAJOR ROADS	0.37	0.37	0.37	0.37	0.37	0.37	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.39	5.16	5.56	6.25	6.19	8.25
Gulf Blvd & 75th Ave	MAJOR ROADS	1.23	1.23	1.23	1.23	1.23	1.23	1.68	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	1.88	6.27	6.67	7.36	7.30	9.74
Blind Pass Rd & 71st Ave	MAJOR ROADS	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.47	4.87	5.56	5.50	7.64
Gulf Blvd & 71st Ave	MAJOR ROADS	0.20	0.20	0.20	0.20	0.20	0.20	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	4.98	5.38	6.07	6.01	8.27
Gulf Blvd & 64th Ave	MAJOR ROADS	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.55	3.95	4.64	4.58	6.92
Gulf Blvd & 59th Ave	MAJOR ROADS	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76	4.16	4.85	4.79	6.97
Gulf Blvd & 55th Ave	MAJOR ROADS	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	5.24	5.63	6.33	6.27	8.33
Gulf Blvd & Punta Vista Dr	MAJOR ROADS	0.59	0.59	0.59	0.59	0.59	0.59	1.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.58	5.30	5.70	6.39	6.33	8.44
Gulf Blvd & 46th Ave	MAJOR ROADS	1.01	1.01	1.02	1.01	1.01	1.01	1.68	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.00	1.62	6.23	6.72	7.42	7.36	9.48
Gulf Blvd & 44th Ave	MAJOR ROADS	0.51	0.51	0.51	0.51	0.51	0.51	1.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	5.66	6.06	6.75	6.69	9.02
Gulf Blvd & 37th Ave	MAJOR ROADS	0.47	0.47	0.47	0.47	0.47	0.47	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	5.79	6.19	6.88	6.82	9.02
Gulf Blvd & Pinellas Bayway	MAJOR ROADS	0.44	0.44	0.44	0.44	0.40	0.44	1.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	5.72	6.12	6.81	6.75	8.91
Pass A Grille Way & 30th Ave	MAJOR ROADS	0.03	0.03	0.12	0.03	0.03	0.03	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.24	5.85	6.25	6.94	6.88	9.10
Pass A Grille Way & 25th Ave	MAJOR ROADS	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	5.97	6.37	7.06	7.00	9.27
Pass A Grille Way & 21st Ave	MAJOR ROADS	0.13	0.13	0.13	0.13	0.13	0.13	1.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	5.79	6.90	6.88	6.82	9.13
Pass A Grille Way & 15th Ave	MAJOR ROADS	0.30	0.30	0.30	0.30	0.51	0.45	1.69	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00	1.88	6.54	6.93	7.63	7.57	9.74
Gulf Way & 15th Ave	MAJOR ROADS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.05	4.45	5.14	5.08	7.26

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APPENDIX F – EXPOSURE ANALYSIS RESULTS TABLES

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset Name	Asset Type	Flood Depth 25Y24H (ft)	Flood Depth 100Y24H (ft)	Flood Depth 500Y24H (ft)	Flood Depth Future Rainfall Int-Low 2040 (ft)	Flood Depth Future Rainfall Int-High 2040 (ft)	Flood Depth Future Rainfall Int-Low 2070 (ft)	Flood Depth Future Rainfall Int-High 2070 (ft)	Flood Depth Int-Low 2040 (ft)	Flood Depth Int-High 2040 (ft)	Flood Depth Int-Low 2070 (ft)	Flood Depth Int-High 2070 (ft)	Flood Depth Current Tidal (ft)	Flood Depth Future Tidal Int-Low 2040 (ft)	Flood Depth Future Tidal Int-High 2040 (ft)	Flood Depth Future Tidal Int-Low 2070 (ft)	Flood Depth Future Tidal Int-High 2070 (ft)	Flood Depth Current Storm Surge (ft)	Flood Depth Future Storm Surge Int-Low 2040 (ft)	Flood Depth Future Storm Surge Int-High 2040 (ft)	Flood Depth Future Storm Surge Int-Low 2070 (ft)	Flood Depth Future Storm Surge Int-High 2070 (ft)
Pass A Grille Way & 10th Ave	MAJOR ROADS	0.95	0.95	0.95	0.95	0.95	0.95	1.69	0.00	0.00	0.00	0.35	0.00	0.00	0.00	0.00	2.07	6.26	6.66	7.35	7.29	9.93
Gulf Way & 10th Ave	MAJOR ROADS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.22	3.62	4.31	4.25	6.59
Pass A Grille Way & 5th Ave	MAJOR ROADS	0.55	0.55	0.55	0.60	0.64	0.61	1.69	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	2.09	6.64	7.04	7.73	7.67	9.95
Gulf Way & 5th Ave	MAJOR ROADS	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.65	4.05	4.74	4.68	6.92
Blind Pass Rd EB	BRIDGES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.96	6.58	6.98	7.67	7.61	9.82
Blind Pass Rd WB	BRIDGES	0.00	0.00	0.00	0.00	0.48	0.42	0.89	0.00	0.00	0.67	0.67	0.00	0.00	0.00	0.00	0.89	5.23	5.63	6.32	6.26	8.32
Pasadena Ave S NB	BRIDGES	0.00	0.00	0.02	1.49	1.80	1.79	1.69	0.30	0.99	2.99	2.99	0.44	1.05	1.74	1.68	1.69	8.90	9.30	9.99	9.93	11.60
Pasadena Ave S SB	BRIDGES	0.71	1.24	2.09	1.84	1.83	1.83	1.69	2.40	3.09	5.09	5.09	2.93	3.54	4.23	4.17	1.69	11.00	11.40	12.09	12.03	14.09
Pinellas Bayway Rd NB	BRIDGES	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	4.36	4.76	5.45	5.39	7.58
Pinellas Bayway Rd SB	BRIDGES	1.51	1.51	1.51	1.51	1.51	1.51	1.68	2.40	3.09	5.09	5.09	2.93	3.54	4.23	4.17	1.68	11.00	11.40	12.09	12.03	14.09
21st Ave WB	BRIDGES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.03	1.43	2.12	2.06	5.47
21st Ave EB	BRIDGES	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	4.74	5.14	5.83	5.77	8.87

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APPENDIX F – EXPOSURE ANALYSIS RESULTS TABLES

Table F2: Exposure Analysis of Critical Infrastructure

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset Name	**Asset Type**	**Flood Depth 25Y24H (ft)**	**Flood Depth 100Y24H (ft)**	**Flood Depth 500Y24H (ft)**	**Flood Depth Future Rainfall Int-Low 2040 (ft)**	**Flood Depth Future Rainfall Int-High 2040 (ft)**	**Flood Depth Future Rainfall Int-Low 2070 (ft)**	**Flood Depth Future Rainfall Int-High 2070 (ft)**	**Flood Depth Int-Low 2040 (ft)**	**Flood Depth Int-High 2040 (ft)**	**Flood Depth Int-Low 2070 (ft)**	**Flood Depth Int-High 2070 (ft)**	**Flood Depth Current Tidal (ft)**	**Flood Depth Future Tidal Int-Low 2040 (ft)**	**Flood Depth Future Tidal Int-High 2040 (ft)**	**Flood Depth Future Tidal Int-Low 2070 (ft)**	**Flood Depth Future Tidal Int-High 2070 (ft)**	**Flood Depth Current Storm Surge (ft)**	**Flood Depth Future Storm Surge Int-Low 2040 (ft)**	**Flood Depth Future Storm Surge Int-High 2040 (ft)**	**Flood Depth Future Storm Surge Int-Low 2070 (ft)**	**Flood Depth Future Storm Surge Int-High 2070 (ft)**
Egan Park	DISASTER DEBRIS MANAGEMENT SITES	1.78	1.78	2.72	1.84	1.83	1.83	1.69	2.40	3.10	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Potable Water Storage Tank	DRINKING WATER FACILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	4.51	4.91	5.60	5.54	8.06
Duke Substation	ELECTRIC PRODUCTION AND SUPPLY FACILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	4.86	5.26	5.95	5.89	8.08
PS0001	STORMWATER PUMP STATIONS	0.00	0.00	0.00	0.11	0.62	0.58	1.69	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00	1.33	6.43	6.83	7.52	7.46	9.19
LS004	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.68	5.08	5.77	5.71	7.92
LS005	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	1.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	0.00	0.00	0.00	0.00	9.17
LS006	WASTEWATER LIFT STATION	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.43
LS007	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.80
LS008	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.27	3.68	4.37	4.31	7.61
LS009	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LS010	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	5.20	5.60	6.29	6.23	8.40
LS011	WASTEWATER LIFT STATION	0.67	0.67	0.67	0.67	0.67	0.67	1.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.26	0.00	0.00	0.00	0.00	9.12
LS012	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.88
LS013	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56	5.25	5.65	6.34	6.28	8.42
LS014	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	5.37	5.77	6.47	6.40	8.07
LS015	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	1.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.00	8.85
LS016	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.53	3.93	4.62	4.56	6.44
LS017	WASTEWATER LIFT STATION	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.65	4.05	4.74	4.68	7.52
LS018	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.78
LS019	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.95	2.35	3.04	2.98	6.00
LS020	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47	2.87	3.56	3.50	6.15
LS021	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.40	3.80	4.49	4.43	6.92
PS001	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	5.19	5.59	6.28	6.22	8.36
PS002	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.47	4.87	5.56	5.50	7.73
PS003	WASTEWATER LIFT STATION	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	5.29	5.69	6.38	6.31	8.48

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APPENDIX F – EXPOSURE ANALYSIS RESULTS TABLES

Table F3: Exposure Analysis of Critical Community and Emergency Facilities

		Current and Future Rainfall							Sea Level Rise				Tidal					Current and Future Storm Surge				
Asset Name	**Asset Type**	**Flood Depth 25Y24H (ft)**	**Flood Depth 100Y24H (ft)**	**Flood Depth 500Y24H (ft)**	**Flood Depth Future Rainfall Int-Low 2040 (ft)**	**Flood Depth Future Rainfall Int-High 2040 (ft)**	**Flood Depth Future Rainfall Int-Low 2070 (ft)**	**Flood Depth Future Rainfall Int-High 2070 (ft)**	**Flood Depth Int-Low 2040 (ft)**	**Flood Depth Int-High 2040 (ft)**	**Flood Depth Int-Low 2070 (ft)**	**Flood Depth Int-High 2070 (ft)**	**Flood Depth Current Tidal (ft)**	**Flood Depth Future Tidal Int-Low 2040 (ft)**	**Flood Depth Future Tidal Int-High 2040 (ft)**	**Flood Depth Future Tidal Int-Low 2070 (ft)**	**Flood Depth Future Tidal Int-High 2070 (ft)**	**Flood Depth Current Storm Surge (ft)**	**Flood Depth Future Storm Surge Int-Low 2040 (ft)**	**Flood Depth Future Storm Surge Int-High 2040 (ft)**	**Flood Depth Future Storm Surge Int-Low 2070 (ft)**	**Flood Depth Future Storm Surge Int-High 2070 (ft)**
Warren Webster Community Center	COMMUNITY CENTER	0.09	0.09	0.09	0.09	0.09	0.09	1.31	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.90	5.50	5.90	6.59	6.53	8.76
St Pete Beach Community Center	COMMUNITY CENTER	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28	6.09	6.49	7.18	7.12	6.56
Fire Station 22	FIRE STATION	0.67	0.67	0.67	0.67	0.67	0.67	1.40	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	1.01	6.02	6.42	7.11	7.05	8.87
Fire Station 23	FIRE STATION	0.67	0.67	0.67	0.67	0.67	0.67	1.40	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	1.01	6.02	6.42	7.11	7.05	8.87
Public Works	LOCAL GOVERNMENT FACILITIES	3.88	3.88	3.88	3.51	2.82	2.87	1.69	2.40	3.10	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
City Hall	LOCAL GOVERNMENT FACILITIES	2.94	2.94	2.94	2.94	2.94	2.94	1.69	0.00	0.00	0.00	1.62	0.00	0.23	0.92	0.86	2.92	7.53	7.93	8.62	8.56	10.78
St. Pete Beach Public Library	LOCAL GOVERNMENT FACILITIES	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.52	4.92	5.61	5.55	7.50

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APPENDIX F – EXPOSURE ANALYSIS RESULTS TABLES

Table F4: Exposure Analysis of Natural, Cultural, and Historic Resources

		Current and Future Rainfall							Sea Level Rise				Tidal					Current and Future Storm Surge				
Asset Name	**Asset Type**	**Flood Depth 25Y24H (ft)**	**Flood Depth 100Y24H (ft)**	**Flood Depth 500Y24H (ft)**	**Flood Depth Future Rainfall Int-Low 2040 (ft)**	**Flood Depth Future Rainfall Int-High 2040 (ft)**	**Flood Depth Future Rainfall Int-Low 2070 (ft)**	**Flood Depth Future Rainfall Int-High 2070 (ft)**	**Flood Depth Int-Low 2040 (ft)**	**Flood Depth Int-High 2040 (ft)**	**Flood Depth Int-Low 2070 (ft)**	**Flood Depth Int-High 2070 (ft)**	**Flood Depth Current Tidal (ft)**	**Flood Depth Future Tidal Int-Low 2040 (ft)**	**Flood Depth Future Tidal Int-High 2040 (ft)**	**Flood Depth Future Tidal Int-Low 2070 (ft)**	**Flood Depth Future Tidal Int-High 2070 (ft)**	**Flood Depth Current Storm Surge (ft)**	**Flood Depth Future Storm Surge Int-Low 2040 (ft)**	**Flood Depth Future Storm Surge Int-High 2040 (ft)**	**Flood Depth Future Storm Surge Int-Low 2070 (ft)**	**Flood Depth Future Storm Surge Int-High 2070 (ft)**
Don Cesar	HISTORICAL AND CULTURAL ASSESTS	1.74	1.74	1.74	1.74	1.74	1.74	1.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76	5.17	5.58	6.27	6.21	8.62
Pass-A-Grille Historic District	HISTORICAL AND CULTURAL ASSESTS	3.15	3.15	3.15	2.72	2.72	2.72	2.59	2.40	2.72	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Beach Access	PARKS	2.10	2.10	2.10	2.10	2.10	2.10	1.74	0.00	0.00	0.00	1.62	0.00	0.12	0.81	0.75	2.81	7.52	5.04	8.61	8.55	10.67
Blind Pass Park	PARKS	1.11	1.11	1.38	1.84	1.83	1.83	1.69	2.40	3.10	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Colonel Michael J. Horan Park	PARKS	3.88	3.88	3.88	3.52	2.83	2.89	1.69	2.40	3.10	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Egan Park	PARKS	1.78	1.78	2.72	1.84	1.84	1.83	1.69	2.40	3.10	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Hurley Park	PARKS	0.33	0.33	0.33	0.33	0.33	0.33	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	5.89	6.29	9.98	6.92	9.43
Lazarillo Park	PARKS	0.37	0.37	0.37	0.37	0.52	0.46	1.69	0.00	0.00	0.00	0.66	0.00	0.00	0.00	0.00	1.92	6.57	6.97	7.66	7.60	9.78
Lido Park	PARKS	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.74	5.37	5.77	6.46	6.40	8.60
Pass A Grille Park	PARKS	0.27	0.27	0.27	0.27	0.27	0.27	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40	5.65	6.05	6.74	6.68	9.26
Upham Beach	PARKS	3.17	3.17	3.17	3.17	3.17	3.17	2.86	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.00	1.92	6.59	6.99	7.68	7.62	9.78
Vina Del Mar Park	PARKS	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.64	5.04	5.73	5.67	7.24
BA01	SHORELINES	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	1.19	1.88	1.82	4.85
BA02	SHORELINES	2.31	2.31	2.31	2.31	2.31	2.31	2.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.68	3.08	3.77	3.71	6.46
BA03	SHORELINES	0.43	0.43	0.42	0.43	0.43	0.43	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	2.48	3.17	3.11	6.39
BA04	SHORELINES	1.72	1.72	1.72	1.72	1.72	1.72	1.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.19	3.59	4.28	4.22	7.85
BA05	SHORELINES	0.39	0.39	0.39	0.39	0.39	0.39	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	5.14	5.54	6.23	6.17	8.34
BA07	SHORELINES	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	4.29	4.98	4.92	7.48
BA08	SHORELINES	1.21	1.21	1.21	1.21	1.21	1.21	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.26	4.66	5.35	5.29	7.35
BA09	SHORELINES	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30	2.70	3.39	3.33	6.60
BA10	SHORELINES	0.42	0.42	0.42	0.42	0.42	0.42	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50	3.90	4.59	4.53	6.83
BA11	SHORELINES	1.36	1.36	1.36	1.36	1.36	1.36	1.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.92	4.32	5.01	4.95	7.19
BA12	SHORELINES	1.81	1.81	1.81	1.81	1.81	1.81	1.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	2.11	2.80	2.74	6.04
BA13	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.78
BA14	SHORELINES	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.40	3.81	4.50	4.44	6.55
BA15	SHORELINES	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.12	2.52	3.21	3.15	6.55
BA16	SHORELINES	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.68	3.08	3.77	3.71	6.49

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APPENDIX F – EXPOSURE ANALYSIS RESULTS TABLES

		Current and Future Rainfall							Sea Level Rise				Tidal					Current and Future Storm Surge				
Asset Name	Asset Type	Flood Depth 25Y24H (ft)	Flood Depth 100Y24H (ft)	Flood Depth 500Y24H (ft)	Flood Depth Future Rainfall Int-Low 2040 (ft)	Flood Depth Future Rainfall Int-High 2040 (ft)	Flood Depth Future Rainfall Int-Low 2070 (ft)	Flood Depth Future Rainfall Int-High 2070 (ft)	Flood Depth Int-Low 2040 (ft)	Flood Depth Int-High 2040 (ft)	Flood Depth Int-Low 2070 (ft)	Flood Depth Int-High 2070 (ft)	Flood Depth Current Tidal (ft)	Flood Depth Future Tidal Int-Low 2040 (ft)	Flood Depth Future Tidal Int-High 2040 (ft)	Flood Depth Future Tidal Int-Low 2070 (ft)	Flood Depth Future Tidal Int-High 2070 (ft)	Flood Depth Current Storm Surge (ft)	Flood Depth Future Storm Surge Int-Low 2040 (ft)	Flood Depth Future Storm Surge Int-High 2040 (ft)	Flood Depth Future Storm Surge Int-Low 2070 (ft)	Flood Depth Future Storm Surge Int-High 2070 (ft)
BA17	SHORELINES	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.01
BA18	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.91	1.60	1.54	7.08
BA19	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	3.75	4.44	4.38	6.43
BA20	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	1.48	2.17	2.11	6.44
BA21	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	4.50	5.19	5.13	6.95
BA22	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	1.62	2.31	2.25	6.85
BA23	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.60	4.00	4.69	4.63	6.28
BA24	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10	2.50	3.19	3.13	6.31
BA25	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.79	3.19	3.88	3.82	6.44
BA26	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32	2.72	3.41	3.35	6.10
BA27	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.50	4.90	5.59	5.53	7.52
BA28	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.46	1.86	2.55	2.49	6.81
BA29	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.56
BA30	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.14	4.54	5.23	5.17	6.48
BA31	SHORELINES	1.11	1.11	1.11	1.11	1.11	1.11	1.10	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.00	0.68	6.63	7.04	7.73	7.67	8.54
BA32	SHORELINES	0.39	0.39	0.39	0.39	0.39	0.39	1.63	0.00	0.00	0.00	1.10	0.00	0.00	0.36	0.30	2.36	7.01	7.41	8.10	8.04	10.22
BA33	SHORELINES	1.16	1.16	1.16	1.16	1.16	1.16	1.68	0.00	0.00	0.00	1.04	0.00	0.00	0.00	0.00	1.91	6.95	7.35	8.04	7.98	9.77
BA34	SHORELINES	1.03	1.03	1.03	1.03	1.03	1.03	1.65	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	1.30	6.03	6.43	7.12	7.06	9.16
BA35	SHORELINES	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00	0.88	6.22	6.62	7.31	7.24	8.74
BA36	SHORELINES	2.57	2.57	2.57	2.57	2.57	2.57	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.12	5.70	6.10	6.79	6.73	9.74
BA37	SHORELINES	3.57	3.57	3.57	3.57	3.56	3.56	2.14	0.00	0.00	0.00	1.44	0.00	0.43	1.12	1.06	1.82	7.35	7.75	8.44	8.38	10.98
BA38	SHORELINES	2.43	2.43	2.43	2.43	2.43	2.43	2.34	0.00	0.00	0.00	0.68	0.00	0.00	0.00	0.00	0.00	6.59	7.00	7.68	7.62	9.68
BA39	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.73	4.13	4.82	4.76	7.32
BA40	SHORELINES	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.85	7.25	4.94	4.88	7.29
BA41	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.48	6.13	6.53	7.22	7.16	8.34
BA42	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.81	3.21	3.90	3.84	7.66
BA43	SHORELINES	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.97	3.37	4.06	4.00	6.52
BA46	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	3.57	3.97	4.66	4.60	8.32
BA47	SHORELINES	0.98	0.97	0.98	0.97	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.62	5.02	5.71	5.45	7.79
BA48	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	2.66	3.35	3.29	5.95

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APPENDIX F – EXPOSURE ANALYSIS RESULTS TABLES

		Current and Future Rainfall							Sea Level Rise				Tidal					Current and Future Storm Surge				
Asset Name	Asset Type	Flood Depth 25Y24H (ft)	Flood Depth 100Y24H (ft)	Flood Depth 500Y24H (ft)	Flood Depth Future Rainfall Int-Low 2040 (ft)	Flood Depth Future Rainfall Int-High 2040 (ft)	Flood Depth Future Rainfall Int-Low 2070 (ft)	Flood Depth Future Rainfall Int-High 2070 (ft)	Flood Depth Int-Low 2040 (ft)	Flood Depth Int-High 2040 (ft)	Flood Depth Int-Low 2070 (ft)	Flood Depth Int-High 2070 (ft)	Flood Depth Current Tidal (ft)	Flood Depth Future Tidal Int-Low 2040 (ft)	Flood Depth Future Tidal Int-High 2040 (ft)	Flood Depth Future Tidal Int-Low 2070 (ft)	Flood Depth Future Tidal Int-High 2070 (ft)	Flood Depth Current Storm Surge (ft)	Flood Depth Future Storm Surge Int-Low 2040 (ft)	Flood Depth Future Storm Surge Int-High 2040 (ft)	Flood Depth Future Storm Surge Int-Low 2070 (ft)	Flood Depth Future Storm Surge Int-High 2070 (ft)
BA49	SHORELINES	0.29	0.29	0.29	0.29	0.29	0.29	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.44	4.41	4.81	5.50	5.44	8.30
BA50	SHORELINES	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	4.14	4.54	5.23	5.17	8.21
BA51	SHORELINES	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.54	3.94	4.63	4.57	7.09
BA52	SHORELINES	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.21	4.61	5.30	5.24	7.49
BA53	SHORELINES	0.88	0.88	0.88	0.88	0.88	0.88	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.95	4.19	4.59	5.28	5.22	9.81
Preservation A	CONSERVATION LANDS	1.28	1.87	2.72	1.84	1.83	1.83	1.69	2.40	3.09	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Preservation B	CONSERVATION LANDS	2.71	2.71	2.71	2.71	2.71	2.71	2.45	0.46	1.15	1.09	3.15	1.13	1.84	2.53	2.47	4.53	9.06	9.46	10.15	10.09	12.39
Preservation C	CONSERVATION LANDS	0.94	0.94	0.94	1.33	1.67	1.62	1.69	2.40	3.09	3.00	5.09	1.21	1.82	2.51	2.45	4.51	11.00	11.40	12.09	12.03	12.37
Preservation D	CONSERVATION LANDS	2.72	2.72	2.72	2.72	2.72	2.72	2.59	2.40	3.09	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Preservation E	CONSERVATION LANDS	1.28	1.87	2.72	1.84	1.83	1.83	1.69	2.40	3.09	3.03	5.09	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
Preservation F	CONSERVATION LANDS	1.15	1.15	1.15	1.15	1.15	1.15	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.16	3.56	4.25	4.19	6.92
SW-1 Pass-a-Grille Way	SHORELINES	0.03	0.00	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19	11.00	11.40	12.09	12.03	9.05
SW-10 26th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.82	5.16	5.56	6.25	6.19	8.68
SW-11 27th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	5.89	6.29	6.98	6.92	8.92
SW-12 28th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	6.34	6.74	4.73	7.37	9.13
SW-13 29th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	7.16	7.56	8.25	8.19	9.77
SW-14 30th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.79	6.76	7.17	7.86	7.80	9.65
SW-15 W Debazan Ave	SHORELINES	0.20	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.13	0.82	0.76	2.82	6.37	6.77	7.46	7.40	10.68
SW-16 Maritana Dr Drainage	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	1.78	2.39	3.08	3.02	5.08	11.00	11.40	12.09	12.03	12.94
SW-17 SW Isle Dr Causeway	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	2.92	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-18 NE Isle Dr Causeway	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.80	4.20	4.89	4.83	7.07
SW-19 Don Jose St	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.83	1.44	2.13	2.07	4.13	8.34	8.75	9.44	9.38	11.99
SW-2 14th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	5.09	5.49	6.18	6.12	8.03

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		Current and Future Rainfall							Sea Level Rise				Tidal					Current and Future Storm Surge				
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SW-20 Alfonso St Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-21 Cabrillo Ave Bend	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.75	1.36	2.05	1.99	4.05	8.82	9.22	9.91	9.85	11.91
SW-22 S Debazan Ave	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	6.79	7.19	7.88	7.81	9.15
SW-23 Alhambra St Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-24 Belle Vista Mini Park	SHORELINES	0.94	0.00	0.00	0.00	0.00	0.00	1.66	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-25 36th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.56	1.25	1.19	3.25	7.83	8.23	8.92	8.86	11.11
SW-26 E Maritana Dr Drainage	SHORELINES	0.90	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.66	1.35	1.29	3.35	8.07	8.47	9.16	9.10	11.21
SW-27 41st Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-28 City Parking Lot	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	5.76	6.16	6.85	6.78	8.73
SW-29 Boca Ciega Isle Mini Park	SHORELINES	0.10	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	1.29	1.90	2.59	2.53	4.59	11.00	11.40	12.09	12.03	12.45
SW-3 15th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.48	2.54	5.69	6.09	6.78	6.71	10.40
SW-30 50th Ave E	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.66	0.00	0.00	0.00	0.00	0.00	0.52	1.21	1.15	3.21	6.14	6.54	7.23	7.17	11.07
SW-31 55th Ave East 1	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	5.12	5.52	6.21	6.15	8.47
SW-32 55th Ave East 2	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	5.16	5.55	6.25	6.19	8.61
SW-33 55th Ave E 3	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.39	5.76	6.16	6.84	6.79	9.25
SW-34 55th Ave East 4	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.08	5.71	6.11	6.79	6.74	8.94
SW-35 59th Ave Causeway South	SHORELINES	0.15	0.00	0.00	0.00	0.00	0.00	1.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16	5.88	6.28	6.97	6.91	9.02
SW-36 59th Ave Causeway North	SHORELINES	0.55	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-37 70th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.15	0.84	0.78	2.84	11.00	11.40	12.09	12.03	10.70
SW-38 Sunset Park	SHORELINES	1.28	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09

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		Current and Future Rainfall							Sea Level Rise				Tidal					Current and Future Storm Surge				
Asset Name	**Asset Type**	**Flood Depth 25Y24H (ft)**	**Flood Depth 100Y24H (ft)**	**Flood Depth 500Y24H (ft)**	**Flood Depth Future Rainfall Int-Low 2040 (ft)**	**Flood Depth Future Rainfall Int-High 2040 (ft)**	**Flood Depth Future Rainfall Int-Low 2070 (ft)**	**Flood Depth Future Rainfall Int-High 2070 (ft)**	**Flood Depth Int-Low 2040 (ft)**	**Flood Depth Int-High 2040 (ft)**	**Flood Depth Int-Low 2070 (ft)**	**Flood Depth Int-High 2070 (ft)**	**Flood Depth Current Tidal (ft)**	**Flood Depth Future Tidal Int-Low 2040 (ft)**	**Flood Depth Future Tidal Int-High 2040 (ft)**	**Flood Depth Future Tidal Int-Low 2070 (ft)**	**Flood Depth Future Tidal Int-High 2070 (ft)**	**Flood Depth Current Storm Surge (ft)**	**Flood Depth Future Storm Surge Int-Low 2040 (ft)**	**Flood Depth Future Storm Surge Int-High 2040 (ft)**	**Flood Depth Future Storm Surge Int-Low 2070 (ft)**	**Flood Depth Future Storm Surge Int-High 2070 (ft)**
SW-39 Fisherman's Park	SHORELINES	1.28	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-4 16th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.42	0.36	2.42	6.31	6.71	7.40	7.34	10.28
SW-40 Corey Ave Terminus	SHORELINES	1.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	9.19	9.59	10.28	10.22	14.09
SW-41 75th Ave Terminus	SHORELINES	1.28	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	9.63	10.03	10.72	10.66	14.09
SW-42 Colonel Michael J Horan Park	SHORELINES	0.74	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-43 Recreation Center	SHORELINES	1.21	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-44 Stan Cidlowski Park	SHORELINES	1.28	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	4.97	5.37	6.06	6.00	14.09
SW-45 77th Ave Terminus	SHORELINES	1.28	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-46 78th Ave West Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-47 78th Ave East Terminus	SHORELINES	0.08	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.69	1.38	1.32	3.38	6.12	6.52	7.21	7.15	11.24
SW-48 Mini Park	SHORELINES	0.93	0.00	0.00	0.00	0.00	0.00	1.66	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	5.76	6.16	6.85	6.79	14.09
SW-49 79th Ave Terminus	SHORELINES	0.30	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	1.00	1.61	2.30	2.23	4.29	7.11	7.52	8.21	8.15	12.16
SW-5 17th Ave Terminus	SHORELINES	0.16	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.13	2.18	6.87	7.27	7.96	7.90	10.05
SW-50 80th Ave Terminus	SHORELINES	0.37	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.51	1.12	1.10	1.75	3.81	11.00	11.40	12.09	12.03	11.67
SW-51 Coquina Key Cul-De-Sac	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	5.91	6.31	7.00	6.94	14.09
SW-52 83rd Ave Terminus	SHORELINES	0.37	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.94	1.55	2.24	2.18	4.24	9.29	9.70	10.39	10.33	12.10
SW-53 Boca Ciega Dr R/W 1	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	1.39	2.00	2.69	2.63	4.69	9.68	10.08	10.77	10.71	12.55
SW-54 Boca Ciega Dr R/W 2	SHORELINES	0.47	0.00	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.19	0.88	0.82	2.88	11.00	11.40	12.09	12.03	10.74
SW-55 86th Ave Terminus Park	SHORELINES	0.25	0.00	0.00	0.00	0.00	0.00	1.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	11.00	11.40	12.09	12.03	8.66
SW-56 87th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.68	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.47	2.52	6.80	7.20	7.89	7.83	10.39
SW-57 Egan Park	SHORELINES	1.28	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09

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		Current and Future Rainfall							Sea Level Rise				Tidal					Current and Future Storm Surge				
Asset Name	**Asset Type**	**Flood Depth 25Y24H (ft)**	**Flood Depth 100Y24H (ft)**	**Flood Depth 500Y24H (ft)**	**Flood Depth Future Rainfall Int-Low 2040 (ft)**	**Flood Depth Future Rainfall Int-High 2040 (ft)**	**Flood Depth Future Rainfall Int-Low 2070 (ft)**	**Flood Depth Future Rainfall Int-High 2070 (ft)**	**Flood Depth Int-Low 2040 (ft)**	**Flood Depth Int-High 2040 (ft)**	**Flood Depth Int-Low 2070 (ft)**	**Flood Depth Int-High 2070 (ft)**	**Flood Depth Current Tidal (ft)**	**Flood Depth Future Tidal Int-Low 2040 (ft)**	**Flood Depth Future Tidal Int-High 2040 (ft)**	**Flood Depth Future Tidal Int-Low 2070 (ft)**	**Flood Depth Future Tidal Int-High 2070 (ft)**	**Flood Depth Current Storm Surge (ft)**	**Flood Depth Future Storm Surge Int-Low 2040 (ft)**	**Flood Depth Future Storm Surge Int-High 2040 (ft)**	**Flood Depth Future Storm Surge Int-Low 2070 (ft)**	**Flood Depth Future Storm Surge Int-High 2070 (ft)**
SW-58 Ron McKenney Park	SHORELINES	0.22	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	2.93	3.54	4.23	4.17	6.23	11.00	11.40	12.09	12.03	14.09
SW-6 18th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	4.96	5.36	6.05	5.99	8.37
SW-7 19th Ave terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.14	2.20	6.95	7.35	8.04	7.98	10.06
SW-8 20th Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	6.97	7.37	8.06	8.00	9.94
SW-9 22nd Ave Terminus	SHORELINES	0.00	0.00	0.00	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.07	6.05	6.45	7.14	7.08	8.93

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APPENDIX G

PERCENT INUNDATION ANALYSIS

APPENDIX G – PERCENT INUNDATION ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Asset is inundated between 25%-50% by area
Medium	Asset is inundated between 51-75% by area
High	Asset is inundated more than 75% by area

Table G1: Percent Inundation Analysis – Wastewater Lift Basins

			Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Area (Acres)**	**Flood % 25Y24H**	**Flood % 100Y24H**	**Flood % 500Y24H**	**Flood % Future Rainfall Int-Low 2040**	**Flood % Future Rainfall Int-High 2040**	**Flood % Future Rainfall Int-Low 2070**	**Flood % Future Rainfall Int-High 2070**	**Flood % Int-Low 2040**	**Flood % Int-High 2040**	**Flood % Int-Low 2070**	**Flood % Int-High 2070**	**Flood % Current Tidal**	**Flood % Future Tidal Int-Low 2040**	**Flood % Future Tidal Int-High 2040**	**Flood % Future Tidal Int-Low 2070**	**Flood % Future Tidal Int-High 2070**	**Flood % Current Storm Surge**	**Flood % Future Storm Surge Int-Low 2040**	**Flood % Future Storm Surge Int-High 2040**	**Flood % Future Storm Surge Int-Low 2070**	**Flood % Future Storm Surge Int-High 2070**
LS004	WASTEWATER LIFT STATION	45.96	8.1%	8.1%	8.2%	8.6%	11.1%	10.7%	65.5%	0.0%	11.1%	0.0%	5.9%	0.0%	0.0%	0.2%	0.1%	47.8%	96.8%	97.4%	98.3%	98.3%	99.9%
LS005	WASTEWATER LIFT STATION	41.52	17.5%	17.6%	17.6%	18.1%	18.6%	18.4%	57.0%	0.0%	18.6%	0.0%	7.0%	0.0%	0.1%	0.3%	0.3%	35.2%	99.0%	99.3%	99.7%	99.7%	100.0%
LS006	WASTEWATER LIFT STATION	94.58	16.5%	16.5%	16.6%	16.8%	17.0%	17.0%	18.6%	0.9%	17.0%	1.0%	1.2%	0.2%	0.2%	0.2%	0.2%	1.2%	96.2%	97.7%	99.1%	98.9%	100.0%
LS007	WASTEWATER LIFT STATION	64.06	10.7%	10.8%	11.0%	11.3%	14.1%	13.4%	74.6%	2.1%	14.1%	2.1%	14.0%	1.8%	1.9%	2.9%	2.7%	52.4%	100.0%	100.0%	100.0%	100.0%	100.0%
LS008	WASTEWATER LIFT STATION	57.18	13.0%	13.0%	13.2%	13.4%	13.7%	13.7%	54.5%	0.9%	13.7%	0.9%	2.5%	0.4%	0.4%	0.5%	0.5%	29.1%	100.0%	100.0%	100.0%	100.0%	100.0%
LS009	WASTEWATER LIFT STATION	23.74	17.9%	18.2%	18.8%	19.7%	20.6%	20.5%	91.9%	2.1%	20.6%	2.3%	15.8%	2.3%	2.6%	5.1%	4.8%	71.1%	100.0%	100.0%	100.0%	100.0%	100.0%
LS010	WASTEWATER LIFT STATION	91.23	18.4%	18.3%	18.4%	18.4%	18.5%	18.4%	51.4%	0.3%	18.5%	0.3%	3.6%	0.2%	0.2%	0.3%	0.3%	29.7%	96.2%	96.3%	96.5%	96.4%	96.6%
LS011	WASTEWATER LIFT STATION	19.09	10.0%	10.1%	10.3%	10.6%	12.4%	11.9%	77.3%	2.4%	12.4%	2.4%	6.1%	2.4%	2.4%	2.5%	2.5%	48.4%	100.0%	100.0%	100.0%	100.0%	99.9%
LS012	WASTEWATER LIFT STATION	35.30	20.7%	20.8%	21.0%	21.4%	21.8%	21.8%	41.8%	0.6%	21.8%	0.7%	3.5%	0.5%	0.6%	0.9%	0.8%	13.7%	97.4%	98.8%	99.9%	98.9%	100.0%
LS013	WASTEWATER LIFT STATION	18.84	6.7%	6.7%	6.9%	7.6%	9.5%	9.3%	76.3%	2.6%	9.5%	2.7%	5.2%	0.2%	0.3%	0.6%	0.5%	37.6%	100.0%	100.0%	100.0%	100.0%	100.0%
LS014	WASTEWATER LIFT STATION	51.09	14.9%	14.9%	14.9%	15.2%	16.1%	5.7%	50.6%	1.5%	16.1%	0.2%	3.0%	0.1%	0.1%	0.2%	0.2%	23.1%	100.0%	100.0%	100.0%	100.0%	100.0%
LS015	WASTEWATER LIFT STATION	28.00	8.4%	8.5%	8.6%	9.0%	10.6%	10.4%	68.9%	2.9%	10.6%	2.9%	6.1%	0.4%	0.4%	0.4%	0.4%	46.6%	100.0%	100.0%	100.0%	100.0%	99.9%
LS016	WASTEWATER LIFT STATION	27.55	11.1%	11.1%	11.3%	11.7%	12.0%	12.0%	29.0%	0.5%	12.0%	0.5%	0.8%	0.0%	0.1%	0.1%	0.1%	17.3%	99.6%	99.6%	99.6%	99.6%	100.0%
LS017	WASTEWATER LIFT STATION	57.85	16.6%	16.6%	14.7%	16.7%	16.9%	16.8%	19.6%	1.5%	16.9%	1.6%	1.7%	0.1%	0.1%	0.2%	0.2%	3.6%	98.8%	99.2%	99.7%	99.7%	100.0%
LS018	WASTEWATER LIFT STATION	34.12	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.7%	0.0%	25.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	2.1%	96.1%	96.3%	96.4%	96.4%	96.5%
LS019	WASTEWATER LIFT STATION	25.22	26.8%	26.8%	26.8%	26.8%	26.8%	26.8%	27.4%	0.0%	26.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	98.9%	99.2%	99.9%	99.9%	100.0%

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APPENDIX G – PERCENT INUNDATION ANALYSIS TABLES

			Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	Asset Type	Area (Acres)	Flood % 25Y24H	Flood % 100Y24H	Flood % 500Y24H	Flood % Future Rainfall Int-Low 2040	Flood % Future Rainfall Int-High 2040	Flood % Future Rainfall Int-Low 2070	Flood % Future Rainfall Int-High 2070	Flood % Int-Low 2040	Flood % Int-High 2040	Flood % Int-Low 2070	Flood % Int-High 2070	Flood % Current Tidal	Flood % Future Tidal Int-Low 2040	Flood % Future Tidal Int-High 2040	Flood % Future Tidal Int-Low 2070	Flood % Future Tidal Int-High 2070	Flood % Current Storm Surge	Flood % Future Storm Surge Int-Low 2040	Flood % Future Storm Surge Int-High 2040	Flood % Future Storm Surge Int-Low 2070	Flood % Future Storm Surge Int-High 2070
LS020	WASTEWATER LIFT STATION	26.25	15.4%	15.4%	15.4%	15.4%	15.4%	15.4%	21.7%	0.0%	15.4%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	4.5%	95.7%	98.5%	99.3%	99.2%	99.9%
LS021	WASTEWATER LIFT STATION	9.25	28.3%	28.3%	28.3%	28.3%	28.3%	28.3%	40.8%	0.0%	28.3%	0.0%	1.2%	0.0%	0.0%	0.6%	0.5%	12.3%	93.6%	95.5%	97.1%	94.4%	100.0%
PS001	WASTEWATER LIFT STATION	242.43	16.8%	16.8%	16.9%	17.0%	17.1%	17.1%	57.3%	0.3%	17.1%	0.4%	4.5%	0.4%	0.5%	0.8%	0.8%	33.9%	99.3%	99.5%	99.8%	99.8%	100.0%
PS002	WASTEWATER LIFT STATION	169.07	13.0%	13.1%	13.1%	13.5%	14.0%	14.0%	49.0%	0.6%	14.0%	0.6%	2.7%	0.2%	0.2%	0.4%	0.4%	21.2%	98.2%	98.6%	99.1%	99.1%	99.6%
PS003	WASTEWATER LIFT STATION	127.00	11.8%	11.9%	12.1%	16.5%	25.0%	23.9%	74.4%	1.2%	25.0%	1.4%	20.5%	1.5%	2.0%	6.3%	5.7%	57.6%	97.2%	97.9%	98.8%	98.7%	99.8%

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APPENDIX G – PERCENT INUNDATION ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Asset is inundated between 25%-50% by area
Medium	Asset is inundated between 51-75% by area
High	Asset is inundated more than 75% by area

Table G2: Percent Inundation Analysis – Disaster Debris Management Sites

			Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Area (Acres)**	**Flood % 25Y24H (ft)**	**Flood % 100Y24H (ft)**	**Flood % 500Y24H (ft)**	**Flood % Future Rainfall Int-Low 2040 (ft)**	**Flood % Future Rainfall Int-High 2040 (ft)**	**Flood % Future Rainfall Int-Low 2070 (ft)**	**Flood % Future Rainfall Int-High 2070 (ft)**	**Flood % Int-Low 2040 (ft)**	**Flood % Int-High 2040 (ft)**	**Flood % Int-Low 2070 (ft)**	**Flood % Int-High 2070 (ft)**	**Flood % Current Tidal (ft)**	**Flood % Future Tidal Int-Low 2040 (ft)**	**Flood % Future Tidal Int-High 2040 (ft)**	**Flood % Future Tidal Int-Low 2070 (ft)**	**Flood % Future Tidal Int-High 2070 (ft)**	**Flood % Current Storm Surge (ft)**	**Flood % Future Storm Surge Int-Low 2040 (ft)**	**Flood % Future Storm Surge Int-High 2040 (ft)**	**Flood % Future Storm Surge Int-Low 2070 (ft)**	**Flood % Future Storm Surge Int-High 2070 (ft)**
Egan Park	DISASTER DEBRIS MANAGEMENT SITES	5.19	0.0%	22.2%	23.2%	24.7%	26.3%	26.3%	56.8%	17.4%	26.3%	18.9%	25.5%	19.1%	20.8%	22.6%	22.4%	38.2%	100%	100%	100%	100%	100%

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APPENDIX G – PERCENT INUNDATION ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Asset is inundated between 25%-50% by area
Medium	Asset is inundated between 51-75% by area
High	Asset is inundated more than 75% by area

Table G3: Percent Inundation Analysis – Conservation Areas

			Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Area (Acres)**	**Flood % 25Y24H**	**Flood % 100Y24H**	**Flood % 500Y24H**	**Flood % Future Rainfall Int-Low 2040**	**Flood % Future Rainfall Int-High 2040**	**Flood % Future Rainfall Int-Low 2070**	**Flood % Future Rainfall Int-High 2070**	**Flood % Int-Low 2040**	**Flood % Int-High 2040**	**Flood % Int-Low 2070**	**Flood % Int-High 2070**	**Flood % Current Tidal**	**Flood % Future Tidal Int-Low 2040**	**Flood % Future Tidal Int-High 2040**	**Flood % Future Tidal Int-Low 2070**	**Flood % Future Tidal Int-High 2070**	**Flood % Current Storm Surge**	**Flood % Future Storm Surge Int-Low 2040**	**Flood % Future Storm Surge Int-High 2040**	**Flood % Future Storm Surge Int-Low 2070**	**Flood % Future Storm Surge Int-High 2070**
Preservation A	SHORELINES	0.51	54.9%	60.8%	66.7%	84.3%	92.2%	92.2%	98.0%	58.8%	92.2%	62.7%	92.2%	64.7%	72.5%	86.3%	86.3%	98.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Preservation B	SHORELINES	31.40	24.9%	24.9%	25.0%	25.2%	25.4%	25.3%	29.0%	0.1%	25.4%	0.2%	1.1%	0.1%	0.2%	0.3%	0.3%	4.6%	90.4%	93.2%	96.1%	95.9%	100.0%
Preservation C	SHORELINES	3.18	19.8%	19.8%	19.8%	21.4%	23.0%	22.6%	30.8%	0.3%	23.0%	0.6%	4.4%	0.3%	0.6%	1.6%	1.6%	8.8%	99.4%	99.7%	100.0%	100.0%	99.4%
Preservation D	SHORELINES	15.29	32.4%	32.5%	32.5%	32.8%	32.9%	32.9%	33.1%	0.3%	32.9%	0.3%	1.2%	5.2%	0.6%	0.7%	0.7%	8.3%	75.7%	82.3%	90.2%	89.7%	100.0%
Preservation E	SHORELINES	1.18	35.6%	40.7%	61.0%	89.0%	100.0%	100.0%	100.8%	4.2%	100.0%	63.6%	99.2%	62.7%	73.7%	87.3%	86.4%	100.0%	99.2%	99.2%	99.2%	99.2%	100.0%
Preservation F	SHORELINES	0.63	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	0.0%	12.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	71.4%	82.5%	93.7%	93.7%	100.0%
Pass-A-Grille Historic District	HISTORICAL AND CULTURAL ASSESTS	137.20	12.8%	12.9%	13.0%	13.3%	14.7%	14.3%	60.2%	0.2%	14.7%	0.2%	5.7%	0.5%	0.5%	0.7%	0.6%	39.9%	96.7%	97.6%	98.7%	98.6%	100.0%

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APPENDIX G – PERCENT INUNDATION ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Asset is inundated between 25%-50% by area
Medium	Asset is inundated between 51-75% by area
High	Asset is inundated more than 75% by area

Table G4: Percent Inundation Analysis – Parks

			Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Area (Acres)**	**Flood % 25Y24H (ft)**	**Flood % 100Y24H (ft)**	**Flood % 500Y24H (ft)**	**Flood % Future Rainfall Int-Low 2040 (ft)**	**Flood % Future Rainfall Int-High 2040 (ft)**	**Flood % Future Rainfall Int-Low 2070 (ft)**	**Flood % Future Rainfall Int-High 2070 (ft)**	**Flood % Int-Low 2040 (ft)**	**Flood % Int-High 2040 (ft)**	**Flood % Int-Low 2070 (ft)**	**Flood % Int-High 2070 (ft)**	**Flood % Current Tidal (ft)**	**Flood % Future Tidal Int-Low 2040 (ft)**	**Flood % Future Tidal Int-High 2040 (ft)**	**Flood % Future Tidal Int-Low 2070 (ft)**	**Flood % Future Tidal Int-High 2070 (ft)**	**Flood % Current Storm Surge (ft)**	**Flood % Future Storm Surge Int-Low 2040 (ft)**	**Flood % Future Storm Surge Int-High 2040 (ft)**	**Flood % Future Storm Surge Int-Low 2070 (ft)**	**Flood % Future Storm Surge Int-High 2070 (ft)**
Beach Access	PARKS	5.22	15.3%	15.3%	15.3%	15.3%	15.3%	15.3%	27.4%	0.0%	15.3%	0.0%	2.1%	0.0%	0.0%	1.1%	1.0%	3.3%	91.8%	93.3%	95.2%	95.2%	100.0%
Blind Pass Park	PARKS	1.92	11.5%	12.0%	12.0%	12.0%	12.5%	12.5%	55.2%	1.6%	12.5%	1.6%	2.1%	0.5%	0.5%	0.5%	0.5%	15.1%	97.9%	99.0%	100.0%	100.0%	99.5%
Colonel Michael J. Horan Park	PARKS	6.54	14.7%	14.8%	14.8%	15.0%	15.6%	15.4%	72.2%	1.7%	15.6%	4.4%	7.8%	2.6%	3.4%	4.1%	4.0%	39.1%	99.8%	99.8%	99.8%	99.8%	100.0%
Egan Park	PARKS	5.19	21.4%	22.2%	23.1%	24.7%	26.2%	26.2%	56.6%	17.3%	26.2%	18.9%	25.4%	19.1%	20.8%	22.5%	22.4%	38.2%	99.8%	99.8%	99.8%	99.8%	100.0%
Hurley Park	PARKS	2.71	5.5%	5.5%	5.5%	5.5%	5.9%	5.9%	72.7%	0.0%	5.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	43.5%	100.0%	100.0%	100.0%	100.0%	100.0%
Lazarillo Park	PARKS	3.30	0.9%	0.9%	0.9%	0.9%	12.1%	9.1%	99.1%	0.0%	12.1%	0.0%	17.9%	0.0%	0.0%	0.0%	0.0%	97.6%	99.1%	99.1%	99.1%	99.1%	98.8%
Lido Park	PARKS	0.52	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	36.5%	100.0%	100.0%	100.0%	100.0%	100.0%
Pass A Grille Park	PARKS	1.27	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	52.8%	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	42.5%	100.0%	100.0%	100.0%	100.0%	100.0%
Upham Beach	PARKS	6.48	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%	39.2%	0.0%	24.4%	0.0%	0.9%	0.0%	0.0%	0.0%	0.0%	9.0%	100.0%	84.6%	100.0%	100.0%	99.7%
Vina Del Mar Park	PARKS	3.21	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	100.0%	100.0%	99.4%

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APPENDIX H

SENSITIVITY ANALYSIS PAIRED ASSET-THREAT MATRICES

APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level above shoulder elevation
Medium	Water level 0.01-ft to 0.5-ft above crest elevation
High	Water level more than 0.5-ft above crest elevation

Table H1: Paired Asset Threat Matrix - Roads

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Blind Pass Rd & 71st Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Blind Pass Rd & 75th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H	H	H
Blind Pass Rd & 80th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Blind Pass Rd & 87th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Blind Pass Rd & 93rd Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	M	M	H
Gulf Blvd & 37th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Blvd & 44th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H
Gulf Blvd & 46th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Blvd & 55th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	M	M	H
Gulf Blvd & 59th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	H
Gulf Blvd & 64th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
Gulf Blvd & 71st Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	H
Gulf Blvd & 75th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Blvd & 80th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Blvd & 87th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Blvd & 93rd Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Blvd & Pinellas Bayway	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Blvd & Punta Vista Dr	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Gulf Way & 10th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	M	M	H
Gulf Way & 15th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H
Gulf Way & 5th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	H	H	H	H
Pass A Grille Way & 10th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Pass A Grille Way & 15th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Pass A Grille Way & 21st Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Pass A Grille Way & 25th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	M	H	H	H
Pass A Grille Way & 30th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Pass A Grille Way & 5th Ave	MAJOR ROADWAYS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level above shoulder elevation
Medium	Water level 0.01-ft to 0.5-ft above crest elevation
High	Water level more than 0.5-ft above crest elevation

Table H2: Paired Asset Threat Matrix – Bridges

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Blind Pass Rd WB	BRIDGES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	H
Blind Pass Rd EB	BRIDGES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	L
Pasadena Ave S NB	BRIDGES	-	-	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Pasadena Ave S SB	BRIDGES	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M
Pinellas Bayway Rd NB	BRIDGES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	L
Pinellas Bayway Rd SB	BRIDGES	L	L	L	L	L	L	L	L	L	H	H	L	L	L	L	L	H	H	H	H	H
21st Ave WB	BRIDGES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21st Ave EB	BRIDGES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level above wet well elevation
Medium	Water level 0.01-ft to 0.67-ft from control panel
High	Water level breaches control panel elevation

Table H3: Paired Asset Threat Matrix – Wastewater Lift Stations

			Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Flood tight lid (Y/N?)**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
LS004	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	H
LS005	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
LS006	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L
LS007	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
LS008	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L
LS009	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS010	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	H
LS011	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
LS012	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L
LS013	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	H
LS014	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	H
LS015	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
LS016	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
LS017	WASTEWATER LIFT STATION	Y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H
LS018	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS019	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS020	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LS021	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L
PS001	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	L
PS002	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	-	L
PS003	WASTEWATER LIFT STATION	N	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	L	L	L

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level above wet well elevation
Medium	Water level 0.01-ft to 0.67-ft from control panel
High	Water level breaches control panel elevation

Table H4: Paired Asset Threat Matrix – Stormwater Pump Stations

			Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Flood tight lid (Y/N?)**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
PS0001	STORMWATER PUMP STATIONS	N	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level is 0.5-ft to 1-ft from FFE
Medium	Water level is 0.5-ft or less from FFE
High	Water level breaches FFE

Table H5: Paired Asset Threat Matrix – Drinking Water Facilities

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Potable Water Storage Tank	DRINKING WATER FACILITIES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	M	M	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level is 0.5-ft to 1-ft from FFE
Medium	Water level is 0.5-ft or less from FFE
High	Water level breaches FFE

Table H6: Paired Asset Threat Matrix – Electric Production and Supply Facilities

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Duke Substation	ELECTRIC PRODUCTION AND SUPPLY FACILITIES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	M	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Asset is inundated between 25%-50% by area
Medium	Asset is inundated between 51-75% by area
High	Asset is inundated more than 75% by area

Table H7: Paired Asset Threat Matrix – Disaster Debris Management Sites

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Egan Park	DISASTER DEBRIS MANAGEMENT SITES	-	-	-	L	L	L	M	-	L	-	L	-	-	-	-	L	H	H	H	H	H

Table G9:

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level is 0.5-ft to 1-ft from FFE
Medium	Water level is 0.5-ft or less from FFE
High	Water level breaches FFE

Table H8: Paired Asset Threat Matrix – Fire Stations

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Fire Station 22	FIRE STATION	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Fire Station 23	FIRE STATION	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level is 0.5-ft to 1-ft from FFE
Medium	Water level is 0.5-ft or less from FFE
High	Water level breaches FFE

Table 9: Paired Asset Threat Matrix – Community Centers

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Warren Webster Community Center	COMMUNITY CENTER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
St Pete Beach Community Center	COMMUNITY CENTER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level is 0.5-ft to 1-ft from FFE
Medium	Water level is 0.5-ft or less from FFE
High	Water level breaches FFE

Table H10: Paired Asset Threat Matrix – Local Government Facilities

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Public Works (Bay Door)	LOCAL GOVERNMENT FACILITIES	L	L	L	-	-	-	-	-	-	-	M	-	-	L	L	H	H	H	H	H	H
City Hall	LOCAL GOVERNMENT FACILITIES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L
Public Library	LOCAL GOVERNMENT FACILITIES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L
Don Cesar	HISTORICAL AND CULTURAL ASSESTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Asset is inundated between 25%-50% by area
Medium	Asset is inundated between 51-75% by area
High	Asset is inundated more than 75% by area

Table 11: Paired Asset Threat Matrix – Conservation Areas

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Preservation A	SHORELINES	M	M	H	H	H	H	H	M	H	H	H	H	H	H	H	H	H	H	H	H	H
Preservation B	SHORELINES	L	L	L	L	L	L	L	-	L	-	-	-	-	-	-	-	H	H	H	H	H
Preservation C	SHORELINES	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Preservation D	SHORELINES	L	L	L	L	L	L	L	-	L	-	-	-	-	-	-	-	H	H	H	H	H
Preservation E	SHORELINES	L	L	M	H	H	H	H	-	H	M	H	M	M	H	H	H	H	H	H	H	H
Preservation F	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Pass-A-Grille Historic District	HISTORICAL AND CULTURAL ASSESTS	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	L	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Asset is inundated between 25%-50% by area
Medium	Asset is inundated between 51-75% by area
High	Asset is inundated more than 75% by area

Table H12: Paired Asset Threat Matrix – Parks

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
Beach Access	PARKS	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Blind Pass Park	PARKS	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Colonel Michael J. Horan Park	PARKS	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	L	H	H	H	H	H
Egan Park	PARKS	-	-	-	L	L	L	M	-	L	-	L	-	-	-	-	L	H	H	H	H	H
Hurley Park	PARKS	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	L	H	H	H	H	H
Lazarillo Park	PARKS	-	-	-	-	-	-	H	-	-	-	-	-	-	-	-	H	H	H	H	H	H
Lido Park	PARKS	-	-	-	-	-	-	H	-	-	-	-	-	-	-	-	L	H	H	H	H	H
Pass A Grille Park	PARKS	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	L	H	H	H	H	H
Upham Beach	PARKS	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	-	H	H	H	H	H
Vina Del Mar Park	PARKS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level is 0.5-ft to 1-ft from critical elevation
Medium	Water level is 0.5-ft or less from critical elevation
High	Water level breaches critical elevation

Table H13: Paired Asset Threat Matrix – Shorelines (Beach Access)

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
BA01	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BA02	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA03	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA04	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H	H	H
BA05	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA07	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	M	H	H	H
BA08	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H
BA09	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA10	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H
BA11	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	M	H	H	H
BA12	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA13	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BA14	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA15	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA16	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA17	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA18	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA19	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H
BA20	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA21	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	H	M	H
BA22	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA23	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA24	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA25	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA26	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA27	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	Asset Type	Criticality 25Y24H	Criticality 100Y24H	Criticality 500Y24H	Criticality Future Rainfall Int-Low 2040	Criticality Future Rainfall Int-High 2040	Criticality Future Rainfall Int-Low 2070	Criticality Future Rainfall Int-High 2070	Criticality Int-Low 2040	Criticality Int-High 2040	Criticality Int-Low 2070	Criticality Int-High 2070	Criticality Current Tidal	Criticality Future Tidal Int-Low 2040	Criticality Future Tidal Int-High 2040	Criticality Future Tidal Int-Low 2070	Criticality Future Tidal Int-High 2070	Criticality Current Storm Surge	Criticality Future Storm Surge Int-Low 2040	Criticality Future Storm Surge Int-High 2040	Criticality Future Storm Surge Int-Low 2070	Criticality Future Storm Surge Int-High 2070
BA28	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA29	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA30	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	M	H
BA31	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA32	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H	H
BA33	SHORELINES	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	L	H	H	H	H	H
BA34	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA35	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA36	SHORELINES	H	H	H	H	H	H	H	-	-	-	-	-	-	-	-	H	H	H	H	H	H
BA37	SHORELINES	H	H	H	H	H	H	H	-	-	-	H	-	L	H	H	H	H	H	H	H	H
BA38	SHORELINES	H	H	H	H	H	H	M	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA39	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H	H	H
BA40	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	H	H	H	H
BA41	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA42	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H
BA43	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H
BA46	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H
BA47	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA48	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M
BA49	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA50	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
BA51	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H	H	H
BA52	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H
BA53	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

Legend	
Criticality	**Definition**
Low	Water level is 0.5-ft to 1-ft from critical elevation
Medium	Water level is 0.5-ft or less from critical elevation
High	Water level breaches critical elevation

Table 14: Paired Asset Threat Matrix – Shorelines (Seawalls)

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	**Asset Type**	**Criticality 25Y24H**	**Criticality 100Y24H**	**Criticality 500Y24H**	**Criticality Future Rainfall Int-Low 2040**	**Criticality Future Rainfall Int-High 2040**	**Criticality Future Rainfall Int-Low 2070**	**Criticality Future Rainfall Int-High 2070**	**Criticality Int-Low 2040**	**Criticality Int-High 2040**	**Criticality Int-Low 2070**	**Criticality Int-High 2070**	**Criticality Current Tidal**	**Criticality Future Tidal Int-Low 2040**	**Criticality Future Tidal Int-High 2040**	**Criticality Future Tidal Int-Low 2070**	**Criticality Future Tidal Int-High 2070**	**Criticality Current Storm Surge**	**Criticality Future Storm Surge Int-Low 2040**	**Criticality Future Storm Surge Int-High 2040**	**Criticality Future Storm Surge Int-Low 2070**	**Criticality Future Storm Surge Int-High 2070**
SW-1 Pass-a-Grille Way	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-10 26th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H
SW-11 27th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-12 28th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-13 29th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-14 30th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-15 W Debazan Ave	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H	H
SW-16 Maritana Dr Drainage	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-17 SW Isle Dr Causeway	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	L	L	H	H	H	H	H	H
SW-18 NE Isle Dr Causeway	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	M	M	H
SW-19 Don Jose St	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	L	M	H	H	H	H	H	H	H	H
SW-2 14th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-20 Alfonso St Terminus	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-21 Cabrillo Ave Bend	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	M	H	H	H	H	H	H	H	H	H
SW-22 S Debazan Ave	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-23 Alhambra St Terminus	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-24 Belle Vista Mini Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-25 36th Ave Terminus	SHORELINES	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	H	H	H	H	H	H
SW-26 E Maritana Dr Drainage	SHORELINES	-	-	-	-	-	-	M	-	-	-	-	-	-	L	L	H	H	H	H	H	H
SW-27 41st Ave Terminus	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-28 City Parking Lot	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-29 Boca Ciega Isle Mini Park	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-3 15th Ave Terminus	SHORELINES	-	-	-	-	-	-	L	-	-	-	-	-	-	-	-	H	H	H	H	H	H
SW-30 50th Ave E	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	-	M	H	H	H	H	H	H	H	H
SW-31 55th Ave East 1	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-32 55th Ave East 2	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX H – SENSITIVITY ANALYSIS TABLES

		Current and Future Rainfall							Sea Level Rise				Current and Future Tidal					Current and Future Storm Surge				
Asset	Asset Type	Criticality 25Y24H	Criticality 100Y24H	Criticality 500Y24H	Criticality Future Rainfall Int-Low 2040	Criticality Future Rainfall Int-High 2040	Criticality Future Rainfall Int-Low 2070	Criticality Future Rainfall Int-High 2070	Criticality Int-Low 2040	Criticality Int-High 2040	Criticality Int-Low 2070	Criticality Int-High 2070	Criticality Current Tidal	Criticality Future Tidal Int-Low 2040	Criticality Future Tidal Int-High 2040	Criticality Future Tidal Int-Low 2070	Criticality Future Tidal Int-High 2070	Criticality Current Storm Surge	Criticality Future Storm Surge Int-Low 2040	Criticality Future Storm Surge Int-High 2040	Criticality Future Storm Surge Int-Low 2070	Criticality Future Storm Surge Int-High 2070
SW-33 55th Ave E 3	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-34 55th Ave East 4	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M	H	H	H	H
SW-35 59th Ave Causeway South	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-36 59th Ave Causeway North	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-37 70th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	L	H	H	H	H	H
SW-38 Sunset Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-39 Fisherman's Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-4 16th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-40 Corey Ave Terminus	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-41 75th Ave Terminus	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-42 Colonel Michael J Horan Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-43 Recreation Center	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-44 Stan Cidlowski Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-45 77th Ave Terminus	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-46 78th Ave West Terminus	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-47 78th Ave East Terminus	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	-	L	H	H	H	H	H	H	H	H
SW-48 Mini Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-49 79th Ave Terminus	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	L	M	H	H	H	H	H	H	H	H
SW-5 17th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H	H
SW-50 80th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H	H
SW-51 Coquina Key Cul-De-Sac	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-52 83rd Ave Terminus	SHORELINES	L	-	-	-	-	-	H	-	-	-	-	M	H	H	H	H	H	H	H	H	H
SW-53 Boca Ciega Dr R/W 1	SHORELINES	-	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-54 Boca Ciega Dr R/W 2	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-55 86th Ave Terminus Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	-	-	-	-	H	H	H	H	H	H
SW-56 87th Ave Terminus	SHORELINES	-	-	-	-	-	-	M	-	-	-	-	-	-	-	-	H	H	H	H	H	H
SW-57 Egan Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-58 Ron McKenney Park	SHORELINES	H	-	-	-	-	-	H	-	-	-	-	H	H	H	H	H	H	H	H	H	H
SW-6 18th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-7 19th Ave terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-8 20th Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H
SW-9 22nd Ave Terminus	SHORELINES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	H	H	H	H	H

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APPENDIX I

PROPOSED COMPREHENSIVE PLAN UPDATES

FOR

PERIL OF FLOOD COMPLIANCE

VI. Coastal and Conservation

GOAL 1:

~~To ensure the highest environmental quality possible, the City of St. Pete Beach shall c~~Conserve, protect, ~~and~~ appropriately manage, and, where appropriate, restore, or enhance ~~its~~the City's ~~the~~ natural resources (aquatic, wetland, air, and terrestrial) to ensure the highest environmental quality possible.

Objective 1.1

~~In accordance with this Comprehensive Plan the City shall continue to protect the quality and quantity of surface and groundwater.~~ The City shall continue to conserve, appropriately use, and protect the quality and quantity of current waters that flow into estuarine waters or oceanic waters and protect from activities and land uses known to adversely affect the quality and quantity of identified water sources.

Policy 1.1.1

The City shall promote water conservation as an integral part of water management programs, rules, and plans and promote the use of reclaimed water for irrigation. Reclaimed water for irrigation shall not be utilized in excess and shall be implemented to prevent runoff into stormwater systems and ultimately surrounding water bodies. Reclaimed water availability shall be coordinated with Pinellas County and conservation efforts shall be utilized as necessary.

Policy 1.1.2

The City shall continue to cooperate with the Southwest Florida Water Management District (SWFWMD), Pinellas County, and Tampa Bay Water (TBW) to conduct water conservation programs. In the event a water shortage is declared, the City shall support the SWFWMD, Pinellas County, and TBW's~~, Pinellas County and the SWFWMD's~~ Water Shortage Mitigation Plan in accordance with Chapter 40D-21, Florida Administrative Code (F.A.C.). ~~and develop an emergency water conservation plan.~~

Policy 1.1.3

The City shall continue to support and implement the standards and regulations set forth in the ~~Pinellas Aquatic Preserve Management Plan~~ Pinellas County and Boca Ciega Bay Aquatic Preserve Management Plan (FDEP, 2018) or most current management plan to protect and enhance the water quality of Boca Ciega Bay.

Policy 1.1.4

The City shall require all new development and redevelopment comply with the requirements maintained within the Land Development Code to maintain or improve water quality within Boca Ciega Bay and the Gulf of Mexico. ~~The City shall require all new development and redevelopment to provide onsite retention of storm water runoff to assist in the upgrading of water quality within Boca Ciega Bay and the Gulf of Mexico.~~

Policy 1.1.5

The City shall cooperate with the Tampa Bay ~~National~~ Estuary Program in its implementation of the Comprehensive Conservation ~~and~~ Management Plan as a means to conserve and protect marine wetlands and aquatic resources.

~~Measure: Surface and groundwater quality and quantity~~

Objective 1.2

Regulations for development within the 100-year flood plain, as defined by the Federal Emergency Management Agency (FEMA), shall be strictly enforced and maintained within the Land Development Code.

Policy 1.2.1

New development or redevelopment approvals shall require that post-development run-off rates, volumes and pollutant loads do not exceed predevelopment conditions, as maintained within the Land Development Code.

Policy 1.2.2

Recognizing that the community is located within the 100-year flood plain, the City shall adopt and strictly enforce all appropriate federal, state, and regional coastal construction codes and coastal setback regulations, as maintained within the Land Development Code.

Policy 1.2.3

The City shall ~~protect~~ encourage the natural functions of the 100-year flood plain so that the flood-carrying and flood storage capacity are maintained.

Policy 1.2.4

The City shall support and encourage the preservation of ~~the development of a strict flood plain management program by state and local governments to preserve~~ hydrologically significant wetlands and other natural flood plain features.

Policy 1.2.5

The City shall minimize the amount of impervious surface ~~in order~~ to promote groundwater infiltration, minimize runoff and stabilize water quality.

~~Measure: Continued implementation of flood plain management regulations~~

Policy 1.2.6

The City will cooperate with FEMA to regularly update the 100-year flood plain and continue to enforce FEMA regulations.

Policy 1.2.7

Development is encouraged to design structures to minimize damage from coastal erosion, 100-year flood events, tidal surges from hurricanes and coastal storms and projected sea level rise. An analysis is encouraged for development projects located on a shoreline in order to demonstrate that the development will remain fully functional for its intended use based on the most current and credible sea level rise projections and expected lifespan of the project. Businesses are encouraged to take sea level rise into consideration in their investment decisions and to take mitigation steps to future vulnerabilities.

Objective 1.3

~~As an ongoing objective, the~~ The City shall conserve and ~~or~~ improve wetlands, aquatic resources, and wildlife population and habitat to maintain their environmental and recreational value.

Policy 1.3.1

~~In accordance with this Comprehensive Plan, upon identification in the City, areas such as mangroves and marsh areas shall be identified on the Future Land Use Map as conservation areas.~~ The City shall identify ~~conservation~~ preservation areas within the Future Land Use Element map series.

Policy 1.3.2

~~Conservation~~ Preservation areas, including mangrove and marsh areas, shall be maintained in accordance with Pinellas County and State regulatory requirements.

Policy ~~1.3.2~~ 1.3.3

Projects (e.g., marinas, causeways and dredging) which could inhibit tidal circulation shall include measures to maintain or improve tidal circulation and flushing, as required and maintained by regulatory agencies.

Policy ~~1.3.3~~ 1.3.4

Any project which ~~produces changes in~~ could impact tidal circulation patterns shall ~~be approved~~ require review and approval by the City and regulatory agencies only after sufficient hydrographic information is available to allow an accurate evaluation on the net environmental impacts of the project.

Policy ~~1.3.4~~ 1.3.5

The City shall preserve the mangrove island, known as 'Fuller Island,' located in Little McPherson Bayou in its natural state.

~~Measure: Implementation of land regulations which protect environmental systems~~

Objective 1.4

The City shall conserve, appropriately use and protect native vegetation.

Policy 1.4.1

The City shall require that all new development preserve ~~at a minimum 25 percent of the~~ native vegetation on site when applicable, as maintained in the Land Development Code. This should not be interpreted to allow development in wetland, or protected areas.

Policy 1.4.2

~~Native vegetation shall receive priority in the landscaping~~.

All new development and redevelopment shall incorporate Florida-Friendly Landscaping (FFL) principles.

Policy 1.4.3

The City shall encourage shorelines lacking wetland vegetation to be planted with native vegetation in order to minimize potential flood damage, stabilize the shoreline and trap sediments and other non-point source pollutants, and provide additional habitat for fish and wildlife.

Policy 1.4.4

The City shall encourage the removal of exotic invasive plants, as listed by Florida's Exotic Pest Plants Council, ~~including, but not limited to the Australian Pine (Casaurina spp.), Chinese Tallow (Aleurites spp.), Carrotwood (Cupianopsis anacardioides), Punk (cajeput) tree (Malaleuca~~

~~leucodendron), and Brazilian Pepper (also known as the Florida Holly) (Schinus terebinthefolius),~~ requiring removal at the time of development or redevelopment of a property having such vegetation.

Policy 1.4.5

The City shall consider soil conditions and vegetation classifications when designating land use categories in order to measure their suitability.

Policy 1.4.6

Fill shall not be used to elevate structures in ~~native vegetation conservation~~ preservation areas, as identified in the Future Land Use Element.

Policy 1.4.7

~~Although limited natural resources remain in the City of St. Pete Beach, every effort shall be taken to protect these resources as follows:~~ The City shall protect natural resources as follows:

a. ~~•~~ Recreational development shall be compatible with the surrounding environment;

b. ~~•~~ The clearing of trees and wetland vegetation shall be prohibited, unless a mitigation plan is submitted and approved by the City, the objective being no net loss of wetlands and trees; and

c. ~~•~~ All applications for site development approval shall be subject to site plan review in accordance with the Land Development Code ~~land development regulations~~.

~~Measure: Greater use of native vegetation within new projects and the continued protection of existing shorelines~~

Objective 1.5

~~In accordance with this Comprehensive Plan, the~~ The City shall protect, to the maximum extent possible, species with special status from adverse impacts due to loss of natural foraging, feeding, nesting, and brooding habitats.

Policy 1.5.1

The City shall assist in the application of and compliance with all state and federal regulations pertaining to species of special status. ~~(e.g., endangered, rare, species of special concern and threatened).~~

Policy 1.5.2

By working with agencies following state and federal guidelines, beach ~~Beach~~ re-nourishment projects shall protect sea turtle nesting areas by limiting construction in such areas to winter and spring months~~, or by working with agencies following state and federal guidelines~~.

~~**Policy 1.5.3**~~

~~The City shall establish a public information program calling for the protection of those sea turtle nesting areas located within the community.~~

~~**Policy 1.5.4**~~

~~All spoil islands shall be designated bird sanctuaries.~~

Policy ~~1.5.5~~ 1.5.3

The City shall work in cooperation with the Florida Department of Environmental Protection (FDEP), U. S Fish and Wildlife Service, Pinellas County Coastal Management and other state and federal agencies to develop and enforce an area-specific sea turtle and manatee protection plan in order to ensure long-range sea turtle, manatee, and habitat protection.

Policy ~~1.5.6~~ 1.5.4

Manatees shall be protected from injury and disturbance resulting from aquatic commercial and recreational activities. Habitat of special significance to manatees, including additions to publicly owned preserves and refuges, shall be protected.

~~**Policy 1.5.7**~~

~~Habitat of special significance to manatees, including additions to publicly owned preserves and refuges, shall be protected.~~

~~Measure: Implementation of protective measures~~

Objective 1.6

The City ~~of St. Pete Beach~~ shall ~~increase~~ maintain its involvement in monitoring and enforcing the proper handling, treatment and disposal of hazardous waste within its jurisdiction.

Policy 1.6.1

The City shall work with the ~~Florida Department of Environmental Protection~~FDEP, the Tampa Bay Regional Planning Council, and Pinellas County in developing an emergency response plan to handle accidents involving hazardous waste.

Policy 1.6.2

A program shall be developed to regulate and monitor small generators of hazardous wastes to protect natural resources and public health.

Policy 1.6.3

Recycling of hazardous waste products such as oils, solvents and paints shall be promoted by the City.

Policy 1.6.4

The City~~ of St. Pete Beach~~, in conjunction with the Tampa Bay Regional Planning Council, Pinellas County and neighboring municipalities, shall support an ongoing educational program to inform the City's residents of effective methods to safely store and dispose of household and commercial hazardous material.

~~Measure: Continued participation in hazardous waste management efforts~~

Policy 1.6.5

The City shall support the monitoring of hazardous waste-producing sites for potential environmental impacts by the appropriate regulatory agency or the owner/operator of the site.

Objective 1.7

The City shall continue efforts to ~~comply with~~ meet or exceed all state and federal standards for air quality.

Policy 1.7.1

The City shall work, in cooperation with other agencies, to reduce the potential for automobile emissions pollution by the following measures:

a. ~~•~~ Require vegetative buffer strips between roadways and residential development~~;~~ when feasible

b. ~~• Promote efficient alternative transportation modes such as car pooling, pedestrian and bicycle paths;~~ Reduce the dependence on single-occupant vehicle trips, and encourage the use of bicycle, pedestrian and transit modes as a means of commuting and recreational mobility

c. ~~• Assure continued operation of roadways at acceptable levels of service.~~ Encourage the use of electric vehicles by providing charging stations when feasible

~~Measure: Improved air quality~~

Policy 1.7.2

The City shall require compliance with Pinellas County requirements for vapor control systems for all new and reconstructed gasoline stations.

Objective 1.8

As an ongoing objective, the City shall make efforts to ~~assure~~ ensure that Boca Ciega Bay maintains the Outstanding Florida Waters designation as outlined in Chapter 62-302.700, F.A.C.

Policy 1.8.1

No new point sources shall be permitted to discharge from the City of St. Pete Beach into Boca Ciega Bay or into ditches or canals that flow into the bay.

Policy 1.8.2

In order to reduce non-point source pollutant loading, ~~a stormwater management plan~~ the Watershed Management Master Plan (WMMP) shall follow the regulations set out in ~~Chapter 17-25, FAC~~ Chapter 62-330, FA.C.

Policy 1.8.3

In order to reduce non-point source pollutant loading and improve the functioning of the City's drainage system, dumping of debris of any kind (e.g., yard clippings and trimmings), into drainage ditches, canals and storm water control structures shall be prohibited.

Policy 1.8.4

~~Through the~~ The City shall coordinate with neighboring municipalities, Pinellas County, ~~Planning Council~~ and the Tampa Bay Regional Planning Council, ~~the City shall coordinate with neighboring municipalities and the County~~ to protect estuaries which are within the jurisdiction of more than one local government~~;~~. This may include ~~including methods for~~ coordinating with other local governments to ensure adequate sites for water-dependent uses, preventing estuarine pollution, controlling surface water runoff, protecting living marine resources, reducing exposure to natural hazards, and ensuring public access.

Policy 1.8.5

The City shall~~, and require others to, utilize~~ require that construction and maintenance methods ~~that~~ do not adversely affect water quality or water flow.

Policy 1.8.6

No dredging will be allowed ~~within the corporate limits~~ without consent of the City and all other applicable regulatory agencies.

~~Measure: Continued designation of Boca Ciega Bay as Outstanding Florida Waters~~

Policy 1.8.7

Alterations and improvements to the drainage system shall preserve, to the maximum extent possible, natural drainage characteristics (such as wetlands), existing vegetation and trees, and natural topography.

Objective 1.9

~~In accordance with this Comprehensive Plan, the~~ The City ~~of St. Pete Beach~~ shall protect and restore its beaches, dunes and natural system, protect its recreational and commercial working waterfronts, and establish construction standards which minimize the impacts of man-made structures on these systems maintained in the Land Development Code ~~the land development regulations~~.

Policy 1.9.1

Construction seaward of the Coastal Construction Control Line shall be subject to the permitting procedures pursuant to Chapter 161, Part 1 of the Florida Statutes.

Policy 1.9.2

Where existing waterways are not sea-walled, native marine vegetation shall be used for shoreline stabilization where ~~technically~~ feasible.

Policy 1.9.3

Dune preservation regulations shall be ~~required by development regulations~~ maintained in the Land Development Code to protect the primary dunes, and ~~which~~ shall address prohibitions on excavations, destruction of native vegetation, and other activities which affect the natural fluctuation of the dunes.

Policy 1.9.4

The City shall continue a program for the restoration and maintenance of the coastal dune system. The program shall include:

a. Stabilization projects utilizing native vegetation;

b. Develop an educational program emphasizing the need to protect the coastline; and

c. Construction of dune walkover structures.

Policy 1.9.5~~6~~

The City shall limit shoreline development that will adversely impact marine fisheries habitats.

~~**Policy 1.9.7**~~

~~Recreational and commercial working waterfronts are defined as a parcel or parcels of real property that provide access for water-dependent commercial activities or provide access for the public to the navigable waters of the state. Recreational and commercial working waterfronts require direct access to or a location on, over, or adjacent to a navigable body of water. The term includes water-dependent facilities that are open to the public and offer public access by vessels to the waters of the state or that are support facilities for recreational, commercial, research, or~~

~~governmental vessels. These facilities include docks, wharfs, lifts, wet and dry marinas, boat ramps, boat hauling and repair facilities, commercial fishing facilities, boat construction facilities, and other support structures over the water.~~

Policy 1.9.6~~8~~

The City shall protect and encourage the development of recreational and commercial working waterfronts as feasible. ~~The City shall protect its recreational and commercial working waterfronts by considering the following strategies:~~

- ~~Investigating the feasibility of investing directly in property preservation through land acquisition;~~
- ~~Applying for grants to improve or develop City-owned waterfront recreational facilities, including parks, boat ramps, boardwalks, and marinas;~~
- ~~Amending the Land Development Code to provide design standards for marinas;~~
- ~~Coordinating with Pinellas County to implement the Working Waterfront Tax Deferral Program.~~

~~Measure: Continued enforcement of beach management and coastal construction regulations~~

~~Objective 1.10~~

~~The City shall participate in an intergovernmental coordination process to protect coastal resources which shall address natural systems on a system-wide basis, in accordance with the Intergovernmental Coordination Element. regardless of political boundaries~~.

~~Policy 1.10.1~~

~~The City shall participate with the U. S. Army Corps of Engineers and the Pinellas County in addressing the environmental issues associated with the maintenance of navigational channels.~~

~~Policy 1.10.2~~

~~The City shall participate with the City of Treasure Island, Pinellas County and appropriate neighboring communities, state and federal agencies in the implementation of coastal management efforts.~~

~~Measure: Establishment of intergovernmental coordination mechanism to manage coastal resources~~

Objective 1.~~11~~10

~~In accordance with this Comprehensive Plan the~~ The City will periodically assess its public beach access needs.

Policy 1.~~11~~10.1

The City shall continue providing adequate public access to beaches and shorelines.

~~Measure: Assurance of adequate beach access~~

GOAL 2:

~~The City shall m~~Maintain provisions in the Land Development Code ~~provide a set of guidelines for development~~ that strive to protect~~s~~ the lives and property of its residents from the effects of natural disasters and sea level rise.

Objective 2.1

The City shall~~, to the extent practical,~~ limit public expenditures that subsidize development within the Coastal High Hazard Area (CHHA) consistent with the Future Land Use Map as adopted.

Policy 2.1.1

The City shall not support or finance new local transportation corridors which lie within the ~~Coastal High Hazard Area~~CHHA, although existing corridors may be maintained or improved as necessary to protect the health, safety and welfare of existing residents.

Policy 2.1.2

The City shall not support or finance sewer ~~and water~~ line extensions or expansions within the ~~Coastal High Hazard Area~~CHHA ~~which will encourage~~ solely to accommodate future growth beyond the density identified within the Future Land Use Element. ~~/higher densities in those vulnerable areas.~~

Policy 2.1.3

The City shall continue to plan and fund infrastructure and services consistent with the level of service adopted herein and shall ensure that permits for development and redevelopment activities are issued only if public facilities necessary to meet the level of service standards adopted pursuant to this Comprehensive Plan are available concurrent with the impacts of the development.

~~Measure: Nature of public expenditures in the Coastal High Hazard Area~~

Objective 2.2

Because a majority of the community is located within the~~ Coastal High Hazard Area~~CHHA~~, defined as the area below the elevation line of the category one storm surge line as established by the~~a Sea, Lake and Overland Surges from Hurricanes (SLOSH) model~~, the City shall require appropriate development and construction standards to mitigate the adverse effects of coastal hazards.

Policy 2.2.1

The City~~ of St. Pete Beach, acknowledging its particular vulnerability to coastal hazards as a barrier island community~~, recognizes its particular vulnerability to coastal hazards as a barrier island community ~~the entire City~~ within the ~~Coastal High Hazard Area~~CHHA ~~and~~ the first geographic area to be evacuated in the event of a hurricane threat.

Policy 2.2.2

The City shall maintain allowable densities in the ~~Coastal High Hazard Area~~CHHA consistent with the Future Land Use Map ~~of this Comprehensive Plan.~~

~~Measure: No new developments or structures which do not meet coastal hazard mitigation standards~~

Objective 2.3

The City shall, with regional authorities, maintain or reduce hurricane evacuation times.

Policy 2.3.1

The City shall coordinate with state, regional and county agencies to ensure that major evacuation routes are adequately maintained and, when necessary, improved to facilitate an efficient and safe evacuation.

Policy 2.3.2

The City, ~~in cooperation~~ shall cooperate with local, state, and federal agencies ~~the Pinellas County Department of Emergency Management Services and the South Pinellas County Chapter of the American Red Cross shall sponsor annual hurricane preparedness seminars~~ to increase hurricane awareness.

Policy 2.3.3

City emergency response personnel ~~and volunteers~~ shall coordinate with county and state emergency response agencies in emergency planning, including communications, traffic control and warning operations, to conduct ~~effect~~ a safe and efficient evacuation of the City, in compliance with a Hurricane Preparedness Plan.

- ~~The adopted level of service standard for out-of-county hurricane evacuation clearance time for a category five storm event as measured on the Saffir-Simpson Scale shall be 16 hours.~~

  ~~Measure: Maintenance of adequate hurricane evacuation clearance times~~

Policy 2.3.4

The City, in coordination with other agencies, shall continue to maintain a Hurricane Preparedness Plan that identifies evacuation routes and the level of service standard for out-of-county hurricane evacuation clearance times.

Objective 2.4

The City shall continue to try to reduce the risk of exposure of human life and public and private property to natural disasters through preparedness planning and implementation of hazard mitigation measures.

Policy 2.4.1

The City, in coordination with other agencies, shall continue to maintain and update its local Hurricane Preparedness Plan and identify hazard mitigation efforts.

Policy 2.4.2

The ~~e~~Emergency ~~m~~Management ~~c~~Coordinator, as designated by the City, shall oversee the maintenance and ongoing updates of the hurricane plan; act as a liaison between state, regional, county and city emergency response and planning agencies; and ensure coordination between emergency management and development activities in the City.

Policy 2.4.3

The City shall periodically review ~~existing~~ coastal construction ~~building codes~~ best practices and implement changes to the ~~standards~~ Land Development Code as are found to be appropriate and useful.

Policy 2.4.4

Recognizing the ~~entire~~ majority of the community is located within the ~~Coastal High Hazard Area~~CHHA and the 100-year flood plain, the City shall adopt and strictly enforce all appropriate

federal, state, and local coastal construction codes, and coastal setback requirements~~, as amended~~.

Policy 2.4.5

~~Special care facilities shall be permitted with the City provided that verification is provided that~~ The City will continue to coordinate with local and state agencies to maintain adequate provisions for safe and efficient evacuation for vulnerable populations. ~~and sheltering are assured~~.

Policy 2.4.6

The City shall continue to participate, through available programs, with other federal, state and local agencies in seeking, developing, improving and implementing hazard mitigation strategies.

~~Measure: Improved hazard mitigation and community preparedness~~

Objective 2.5:

The City shall incorporate adaptation strategies and principles into City processes and plans to allow for consistent implementation of resiliency efforts in all City functions.

Policy 2.5.1

The City shall integrate adaptation and resiliency goals, principles and strategies into existing and future City processes and city-wide plans and documents.

Policy 2.5.2

The City shall collaborate and coordinate with appropriate local, regional, state, and national governmental agencies, to the extent possible, toward the implementation of adaptation strategies and to identify risks, vulnerabilities and opportunities associated with coastal hazards and the impacts from sea level rise.

Policy 2.5.3

The City shall collaborate with neighborhood associations, civic groups, and local service providers to identify and address neighborhood-specific needs within neighborhood and commercial areas.

Policy 2.5.4

The City shall continue routinely review and update resiliency information as available.

GOAL 3:

~~The City shall d~~Develop and maintain a post-disaster redevelopment plan that, while ensuring recognition of the private property rights of its citizens, will seek to reduce or eliminate the exposure of human life and public and private property to natural hazards where feasible.

Objective 3.1

The City shall incorporate all appropriate recommendations from interagency hazard mitigation reports together with the requirements of the ~~Federal Emergency Management Agency (~~FEMA~~)~~ regarding construction in the flood zone in developing its post-disaster recovery plans.

Policy 3.1.1

The City shall continue to be a participant in intergovernmental cooperative efforts to establish regionally significant post-disaster recovery plans.

Policy 3.1.2

The City's plans shall ensure that, in as much as possible, hazard mitigation measures are included in the planning for:

a. ~~•~~ Post-disaster building construction;

b. ~~•~~ Repair and replacement of infrastructure ~~elements:~~

c. ~~•~~ Repair and replacement of storm water management systems and facilities; and

d. ~~•~~ Beach and dune restoration.

Policy 3.1.3

The City's post-disaster planning shall, at a minimum, include consideration of interagency hazard mitigation reports, established coastal construction control lines, FEMA requirements and other appropriate coastal construction requirements such as those necessary in V-Zones.

~~**Policy 3.1.4**~~

~~All post-disaster redevelopment and reconstruction shall be governed under Policy 1.8.2, Objective 4.1 and its associated policies in the Future Land Use Element of this plan.~~

~~Measure: Having a post-disaster redevelopment and recovery plan that includes appropriate hazard mitigation measures~~

Policy 3.1.4

The City shall establish a set of reconstruction permitting procedures to be maintained in the post-disaster redevelopment plan.

Objective 3.2

The City shall have a Recovery Task Force to provide preliminary damage assessments and direct post-disaster recovery and redevelopment activities.

Policy 3.2.1

The Recovery Task Force shall consist of the City Emergency Management Coordinator, the Building and Inspection Department and other members as appointed by the City Commission.

Policy 3.2.2

The Recovery Task Force shall fulfill the following responsibilities, as well as others deemed necessary:

a. ~~•~~ Assess preliminary damage reports;

b. ~~•~~ Take necessary steps to seek financial assistance from the appropriate state and federal agencies;

c. ~~•~~ Authorize immediate clean-up and repairs necessary to protect the public health, safety and welfare;

d. ~~•~~ Identify areas within the community where minor, moderate and major damage has occurred;

e. ~~•~~ Recommend to the City Commission appropriate hazard mitigation policies that should be implemented in response to the disaster; and

f. • Prepare a report evaluating post-disaster redevelopment response and make recommendations for necessary changes to this Comprehensive Plan.

~~Measure: Having a workable disaster recovery plan~~

~~Objective 3.3~~

~~In order to effectively manage the timing and sequence of reconstruction, the City will establish, in advance, a set of reconstruction permitting procedures shall continue to review key reconstruction and redevelopment strategies, including those from interagency hazard mitigation reports, which will be considered to promote hazard mitigation.~~

~~Policy 3.3.1~~

~~Following a major hurricane event, the City Council will adopt a temporary post-disaster building moratorium to allow sufficient time for immediate damage assessment, the identification of redevelopment opportunities, and hazard mitigation policy implementation. The time period and type of moratorium will be decided by the City Commission.~~

~~Policy 3.3.2~~

~~The City shall adopt a post-disaster procedure which will expedite permitting for minor repairs. The procedure shall include development plan review, engineering approval and building permitting and shall provide that all permitting is coordinated with the appropriate agencies and consistent with the objectives of this Comprehensive Plan.~~

~~Measure: Establishment of reconstruction permitting procedures~~

Objective ~~3.4~~ 3.3

The City shall enact key reconstruction and redevelopment strategies which will promote hazard mitigation in the event of storm events or sea level rise. ~~applicable to St. Pete Beach.~~

~~Policy 3.4.1~~

~~Where feasible, property which has received recurring major hurricane damage from storm surge should be publicly acquired or designated conservation on the Future Land Use Map to prevent redevelopment of the property to its pre-hurricane land use.~~

~~Policy 3.4.2~~

~~The City shall consider one or more of the following strategies in those areas which receive major or moderate damage:~~

~~• Relocation further inland (away from the coast); and~~

~~• Reconstruction according to more stringent building and construction standards.~~

Policy ~~3.4.3~~ 3.3.1

The City shall interrelate hazard and non-hazard mitigation goals during reconstruction decision-making including the following objectives:

a. • Enhancement of local recreational and open space opportunities;

b. • Enhancement of local public beach access;

c. • Enhancement and restoration of local natural ecosystems;

d. • Reduction of traffic congestion, noise, and other transportation related problems; and

e. ~~•~~ Enhancement of the long-term economic vitality of the local commercial base.

Policy ~~3.4.4~~ 3.3.2

The City shall establish performance standards which allow for the redevelopment of sensitive historic resources providing some portion of the said resource is still existing and can safely be returned to its natural pre-hurricane state.

Policy ~~3.4.5~~ 3.3.3

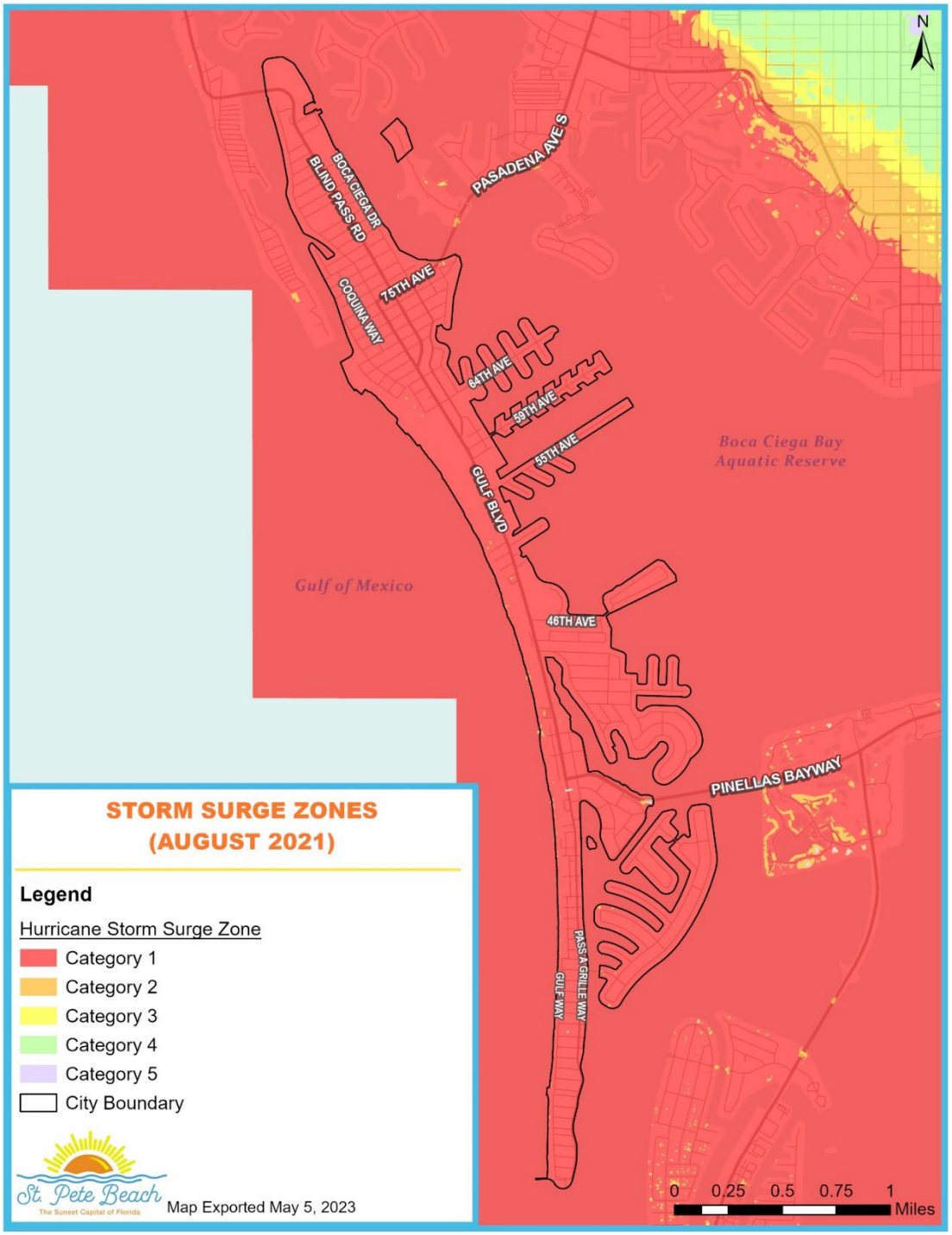
The City ~~of St. Pete Beach~~, working in cooperation with local, regional and state agencies, shall ensure that all post-disaster reconstruction activities shall ~~be required to~~ follow the appropriate hazard mitigation measures and regulations.

~~Measure: Implementation of hazard mitigation policies during reconstruction recovery plan~~

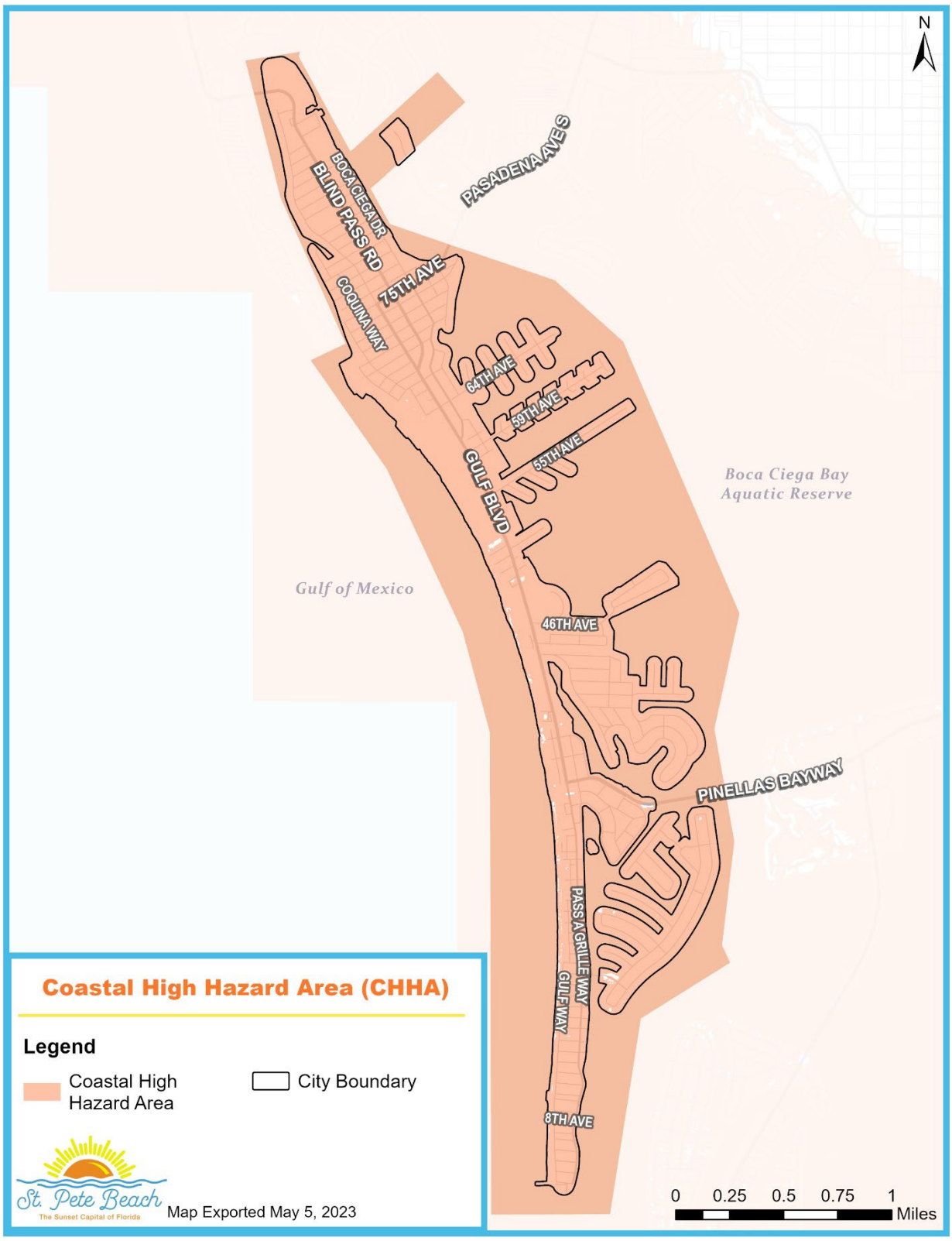
~~Map 10. Coastal High Hazard Area - Storm Surge for Category 1 (2007), St. Pete Beach, FL~~

Source: ~~Pinellas County Planning Department, March 6, 2007~~

Map 6-1. Hurricane Storm Surge Zones (2021), St. Pete Beach, FL
Source: Florida Department of Emergency Management, August 2021



Map 6-2. Coastal High Hazard Area (CHHA), St. Pete Beach, FL
Source: Forward Pinellas, December 2022



APPENDIX J

FDEP VULNERABILITY ASSESSMENT

CHECKLIST

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
RESILIENT FLORIDA GRANT PROGRAM
VULNERABILITY ASSESSMENT COMPLIANCE CHECKLIST CERTIFICATION

Exhibit I

Required for all planning grant agreements.

DEP Agreement Number: 22PLN92

Project Title: Update to St. Pete Beach Phase II Vulnerability Assessment

Grantee: City of St. Pete Beach

In accordance with subsection 380.093(3), F.S., the following components, scenarios, data, and information are required for a comprehensive Vulnerability Assessment (VA). The checklist must be completed and submitted with the final VA Report deliverable, pursuant to Attachment 3, Grant Work Plan. The Grantee must abide by the Department's GIS Data Standards found on the Resilient Florida Program webpage at the link below:

https://floridadep.gov/rcp/resilient-florida-program/documents/resilient-florida-program-gis-data-standards

Part 1 – Subparagraph 380.093(3)(c)2., F.S.

Item ID	Check if Included	Item Description	Page Reference in VA Report (if applicable)
a	☑	Final Vulnerability Assessment Report that provides details on the results and conclusions, including illustrations via maps and tables.	N/A
All electronic mapping data used to illustrate flooding and sea level rise impacts that are identified in the VA must be provided in the format consistent with the Department's GIS Data Standards and include the following three (3) items:			
b	☒	Geospatial data in an electronic file format.	N/A
c	☑	GIS metadata.	N/A
d	☑	List of critical assets for each jurisdiction, including regionally significant assets, that are impacted by flooding and sea level rise. The list must be prioritized by area or immediate need and must identify which flood scenario(s) impacts each asset	Appendix H

Part 2 – Subparagraphs 380.093(3)(d)1. and 380.093(3)(d)2., F.S.

Item ID	Check if Included	Item Description	Page Reference in VA Report (if applicable)
e	☑	Peril of Flood Compliance Plan amendments developed that address paragraph 163.3178(2)(f), F.S., if applicable.	Appendix I

		☐ Not applicable ☐ Already in compliance	
f	☑	Depth of tidal flooding, including future high tide flooding, using thresholds published and provided by the Department.	Appendix F
g	☑	To the extent practicable, analysis geographically displays the number of tidal flood days expected for each scenario and planning horizon. *(optional)*	Pg. 17 Maps in Appendix E
h	☑	Depth of current and future storm surge flooding using publicly available NOAA or FEMA storm surge data. (*check one*) ☐ NOAA data ■ FEMA data	Pg. 17
i	☑	Initial storm surge event equals or exceeds current 100-year flood event.	Pg. 17
j	☐	Higher frequency storm analyzed for exposure of a critical asset. *(optional, but must provide additional detail if included)*	N/A
k	☑	To the extent practicable, rainfall-induced flooding was considered using spatiotemporal analysis or existing hydrologic and hydraulic modeling results. *(required if item e is not applicable)*	Pg. 14
l	☐	Future boundary conditions have been modified to consider sea level rise and high tide conditions. *(optional)*	N/A
m	☑	Depth of rainfall-induced flooding for 100-year storm and 500-year storm event. *(required if item e is not applicable)*	Pg. 14
n	☑	To the extent practicable, compound flooding or the combination of tidal, storm surge, and rainfall-induced flooding. *(optional)*	Pg. 15

Part 3 – Subparagraph 380.093(3)(d)3., F.S.

Item ID	Check if Included	Item Description	Page Reference in VA Report (if applicable)
o	☑	All analyses performed in North American Vertical Datum of 1988.	
p	☑	Includes at least two local sea level rise scenarios, which must include the 2017 NOAA intermediate-low and intermediate-high sea level rise projections.	Pg. 14
q	☑	Includes at least two planning horizons, which must include years 2040 and 2070.	Pg. 14
r	☑	Utilizes local sea level data that has been interpolated between the two closest NOAA tide gauges.	Pg. 14
s	☐	Local, publicly available, sea level data was taken from one of the two closest NOAA tide gauges, which must be the gauge with the highest mean sea level *(if so, provide Department approval)*.	N/A

Identify all counties and municipalities that are included in this Vulnerability Assessment:

City of St. Pete Beach	

I certify that, to the Grantee's knowledge, all information contained in this completed Vulnerability Assessment Compliance Checklist is true and accurate as of the date of the signature below.

Grantee's Grant Manager Signature

Print Name

Date

RESILIENT PINELLAS

Action Plan

2023

Resilient Pinellas was made in coordination with the Sustainability and Resiliency Action Plan (SRAP) Project Team, consisting of Pinellas County staff and the consultant team as a part of the Scope of Services outlined in RFP Contract No. 190-0128-NC (SS), SRAP.

Credits

Resilient Pinellas was created through the guidance of a diverse and dedicated group of individuals, whose local knowledge, strategic insight and research have proven invaluable to the development and success of Resilient Pinellas.

Board of County Commissioners

Commissioner Janet Long, District 1, 2023 Chair

Commissioner Brian Scott, District 2

Commissioner Charlie Justice, District 3

Commissioner Dave Eggers, District 4

Commissioner Chris Latvala, District 5

Commissioner Kathleen Peters, District 6

Commissioner Rene Flowers, District 7

Pat Gerard, former District 2 Commissioner

Karen Seel, former District 5 Commissioner

County Administration

Barry A. Burton, County Administrator

Jill Silverboard, Deputy County Administrator

Tom Almonte, Assistant County Administrator

Kevin Knutson, Assistant County Administrator

Lourdes Benedict, Assistant County Administrator

Departmental Staff

Hank Hodde, Resilience and Asset Management

Brian Lowack, Assistant to County Administrator

Nancy McKibben, Assistant to County Administrator

Christopher D. Moore, Assistant to County Administrator

Smita Ambadi, Housing & Community Development

Josie Benwell, Public Works

Libby Bolling, Communications

Joe Borries, Emergency Management

Libby Carnahan, Pinellas County IFAS

Marq Caughell, Public Works

Carolyn Cheatham Rhodes, Public Works

David Connor, Communications

Paul Cozzie, Parks and Conservation Resources

Brian Derr, Communications

Natasha Dickrell, Environmental Management

Lisa Foster, Public Works

Lyle Fower, Parks and Conservation Resources

Kelsey Grentzer, Communications

Barbra Hernandez, Communications

Joe Lauro, Administrative Services

Kelli Levy, Public Works

Blake Lyon, Building & Development Review Services

Dr. Cynthia Johnson, Economic Development

Ramona Madhosingh-Hector, Pinellas County IFAS

Mike Meidel, Economic Development

Robert Mills, Solid Waste

Karim Molina-Oyola, Resilience and Asset Management

Don Moore, Administrative Services

Cathie Perkins, Emergency Management

Aubrey Phillips, Management & Budget

Gabriella Placido, Resilience and Asset Management

Megan Ross, Utilities

Paul Sacco, Solid Waste

Carol Stricklin, Housing & Community Development

Doug Templeton, Human Services

Dr. Maria Vega-Rodriguez, Utilities

Jeremy Waugh, Resilience & Asset Management

Karen B. Yatchum, Human Services

Bryan Zumwalt, Technology & Innovation

Project Team

Hank Hodde, Resilience & Asset Management

Katie Shannon, VHB

Ben Siwinski, VHB

Carol Lurie, VHB

Donny Goris-Kolb, VHB

Neale Stralow, VHB

Andrew Buck, VHB

Jared Jones, VHB

Jose Lopez, VHB

Emily Porter, VHB

Roberta Fennessey, VHB

Curt Ostrodka, VHB

Tammy Vrana, Vrana Consulting

Taylor Ralph, REAL Building Consulting

Sean Baraoidan, REAL Building Consulting

Nick Charnas, Applied Sciences

Brian Cook, Applied Sciences

Eugene Henry, Applied Sciences

External Stakeholders

Dr. Tirusew Asefa, Tampa Bay Water

Keesha Benson, PhD, Foundation for a Healthy St. Petersburg

Cassandra Borchers, Pinellas Suncoast Transit Authority (PSTA)

Maya Burke, Tampa Bay Estuary Program

Frances Cato, Pinellas County Urban League

Rodney Chapman, Forward Pinellas

Neil Coffman, Florida Engineering Society, Tampa Chapter

Devan Deal, Pinellas Suncoast Transit Authority (PSTA)

Michelle Diller, Enterprise Community Partners

Juniper Duffin, Building Owners and Managers Association of Greater Tampa Bay

Nicole Dufva, Pinellas Suncoast Transit Authority (PSTA)

Joe Farrell, Pinellas Realtor Organization

Yaridis Garcia, Juvenile Welfare Board (JWB)

Erica Hall, Suncoast Sierra Club, Florida Food Policy Council (FFPC), USGBC Tampa Bay

Rev. Watson Haynes, Pinellas County Urban League

Jeremy Heath, Lealman Community Redevelopment Area

Alan Holderith, Pinellas County Contractors Licensing Board

Richard Jacobs, Johnson Pope Bokor Ruppel & Burns, LLP

Dr. Gary Mitchum, USF College of Marine Science

Rudy Prouty, Duke Energy Florida

CJ Reynolds, Tampa Bay Regional Planning Council

Julie Rocco, Foundation for a Healthy St. Petersburg

Brian Smith, Planning Expert; Florida Greenways & Trails Foundation (FGTF)

Dave Sobush, Tampa Bay Partnership

Barbara St. Clair, Creative Pinellas

Whitney Stevens, American Council of Engineering Companies of Florida

Jeff Waite, Private Energy Consultant

Tamara Waldemann, Duke Energy Florida

VISION STATEMENT

Pinellas County sets the standard for sustainability and resiliency practice by integrating its resources, embracing innovation and setting prudent policy to support future generations.

MISSION STATEMENT

Pinellas County is committed to enacting effective sustainability and resiliency policy, implementing best practices to cost-effectively reduce energy and water use, and responsibly manage environmental and public resources to meet the needs of future generations.

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Letter from Leadership

I'm proud to present the Resilient Pinellas Action Plan, the first-ever comprehensive action plan to help make Pinellas County more resilient and sustainable. Developed over two and a half years, the plan combined input from community members, local businesses and government leaders to identify and meet the needs and priorities of Pinellas County.

The plan covers a range of important topics, such as reducing greenhouse gas emissions, strengthening our infrastructure to withstand extreme weather events, and ensuring equitable access to resources and services for all residents.

The plan's 56 initiatives are organized into six focus areas: Empowered Citizens, Economic Vitality, Resilient Infrastructure, Healthy Ecosystems, Vibrant Neighborhoods, and Safe and Secure Communities. We lay out diverse tools for getting the work done, including a Clean Energy Roadmap, vulnerability assessment, external engagement strategy and more.

By engaging with residents and other stakeholders, promoting sustainable business practices, protecting critical infrastructure, preserving the environment and enhancing community safety, Pinellas County aims to be a leader in sustainability and resiliency solutions.

Thank you for your interest in the Resilient Pinellas Action Plan. We are committed to implementing prudent sustainability and resiliency policy and best practices to meet the needs of future generations. Whether you're a business owner, community leader or concerned citizen, there are many ways to get involved and make a difference.

Sincerely,

Hank Hodde, CFM, ENV SP

Sustainability & Resiliency Administrator

OVERARCHING GOALS

The **four overarching goals** represent important performance outcomes for Pinellas County and align with the County's Strategic Plan to provide long-term guidance to meet the mission and vision of the County.

1. We will promote practices that improve resiliency in recovering from natural disasters and responding to sea level rise and climate stresses.

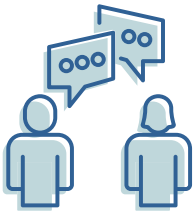
2. We will implement best practices and strategies to reduce our energy use and protect the natural environment.

3. We will foster a culture of fairness, engagement and empowerment for all.

4. We will seek sustainable and resilient outcomes through proactive innovation, resource management and decision-making.

GUIDING PRINCIPLES

The **guiding principles** helped to guide the development of Resilient Pinellas and are an expression of Pinellas County's sustainability and resiliency values.



COLLABORATIVE

Encourages transparency and participation with other organizations, municipalities, community stakeholders, regional partners and the people of Pinellas County.

ACTIONABLE

Includes steps to achieve a realistic implementation timeline and defines responsibilities to put sustainability and resiliency into practice.

FUTURE-FOCUSED

Thinks about future conditions and increases our ability to improve our quality of life without damaging or depleting natural resources for present and future generations.

DATA-DRIVEN

Identifies steps to use sound science and quality, evidence-based data in the decision-making process and track measurable outcomes.

COMMUNITY-CENTERED

Promotes fairness and inclusion, putting people and our communities first.

SUSTAINABILITY AND RESILIENCY

Pinellas County's approach to sustainability and resiliency follows a triple bottom line approach, providing a holistic analysis common in sustainability practice that looks at potential return on investment based on three criteria: Economic Prosperity, or Profit; Social Responsibility, or People; and Environmental Stewardship, or Planet. As seen in the image below, each of the six Focus Areas adopted as a part of this plan align with the three criteria, providing a comprehensive means to support the County's residents and visitors, improve and protect the environment, and sustain a thriving economy.

Empowered Citizens

Empowerment is important to community sustainability and resiliency. When residents are informed, engaged and feel that they can make a difference, they will be more motivated to help solve problems and achieve community goals. Empowered residents are a necessary condition for the implementation of this plan to address community vulnerabilities influenced by climate change. By engaging with residents and other Pinellas County stakeholders about our collective challenges and opportunities, the County aspires to align thinking and behaviors with the realities of the social, economic and environmental systems upon which our society depends.

Goal 1

We will provide residents with resources to help them live sustainably and address future adversity in a coastal Florida community.

Goal 2

We will provide opportunities for leadership and participation in Pinellas County's sustainability and resiliency work.

EC Goal 01

We will provide residents with resources to help them live sustainably and address future adversity in a coastal Florida community.

EC 1 | Analyze publicly accessible health data and trends to inform policy, projects and programs that address the health and well-being of county residents in need of assistance

EC 2 | Enhance the flood information portal application to incorporate cumulative impacts from sea level rise within current flood-prone areas to support community conversations

EC 3 | Increase resilience and capacity of existing and future emergency shelters

EC 4 | Transition the Lealman Exchange into a Neighborhood Resilience Hub to provide community-serving facilities that coordinate disaster, social and revitalization programs

EC 5 | Provide awareness of incentives to private property owners for resilient, green building and/or low-impact development

EC 6 | Continue to provide updates to the Post Disaster Redevelopment Plan and regional collaboration toward identifying recovery and redevelopment needs

Ready Pinellas, an Emergency Planning Mobile Application

Ready Pinellas is designed to help residents prepare themselves and their families before, during and after a storm. It is available for free download on the Apple App Store and Google Play store.

The app features helpful information and checklists to make sure residents are prepared. App users can use emergency supply checklist, home inventory and emergency contacts tools to build a personal emergency plan. As a storm approaches, the app provides real-time updates to help keep residents safe. It also provides resources to stay informed year-round and during a disaster.

Pinellas County Ready-Set-Protect Webinar Series

In 2023, Pinellas County Emergency Management and affiliated community partners will host a webinar series to discuss preparation, evacuation zones, emergency shelter options, special needs and insurance considerations, providing information and resources to assist the community in best preparing for hurricane season.

EC 1 Analyze publicly accessible health data and trends to inform policy, projects and programs that address the health and well-being of county residents in need of assistance

The County will continue its work with regional public health providers to expand and share health data that can be applied in decision-making processes and support community health and well-being. This would build off the County's work developed through the Community Health Improvement Plan (CHIP), Health in All Policies Initiative (HiAP), and the Behavior Health Coordinated Access Model, providing a regional collaborative approach to improving the health of all people. An important part in each of these programs is the continued tracking of data aimed at improving outcomes for the County's residents. As an example, the County's Behavioral Health System of Care program is grounded on a Minimum Data Set (MDS), which is a valuable performance management tool that tracks and reports on the most important behavioral health indicators to promote evidence-based decision-making and future-state system planning. Continued analyses of community health indicators and trends are fundamental to identifying new projects and programs across the County's departments to support comprehensive community resilience solutions.

TIMELINE & BUDGET

Medium | $$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	n	v	v

DEPARTMENT CHAMPION

Human Services

STRATEGIC PARTNERS

Forward Pinellas, Florida Department of Health, Healthy St. Pete, Tampa Bay Regional Planning Council

IMPLEMENTATION ELEMENTS

External Engagement Strategy, GHG Emissions Inventory

COMMUNITY CONNECTIONS

The County's Sustainability and Resiliency Story Map shares a series of data prepared by the Centers for Disease Control (CDC), called the Social Vulnerability Index (SVI). This dataset was designed to assist communities and provide a more accurate assessment of those populations that may be more vulnerable to the negative outcomes of a natural disasters and social challenges., both of which are of high concern to residents of Pinellas County. The inclusion of socioeconomic data and specific vulnerability indicators is important to develop new strategies or enhance existing strategies that lead to equitable outcomes for the residents of Pinellas County.

Pinellas Project:
Health in All Policies (HiAP)

Health in All Policies (HiAP) offers a regional, collaborative approach to improving the health of all people by incorporating health considerations into decision-making across sectors and policy. HiAP aims to improve the health of all Pinellas residents by increasing cross-sector collaboration around mutually shared goals and incorporating health considerations into decision-making processes and policy. Trained in the HiAP approach, health planners in Pinellas Park, Pinellas County, and St. Petersburg help guide decision-makers to implement policies and programs could potentially impact the health of all communities. The group serves to recommend changes to maximize community health benefits and minimize the health risks. Through HiAP, the places where people are born, live, learn, work, play and age can be reshaped to encourage healthy choices, which would grant all Pinellas residents an equal opportunity to live a long and healthy life.

EC 2 Enhance the flood information portal application to incorporate cumulative impacts from sea level rise within current flood-prone areas to support community conversations

The County will continue to update and provide awareness of the County's detailed flood information mapping application, which provides homeowners, business owners, and interested parties with an overview of flood risks and flood insurance requirements in an interactive platform.

Future steps the County may take includes the continued assessment of the projected impacts from sea level rise and storm surge, updates to the web portal to include an interactive map of projected impacts and continued outreach with the community to discuss these updates and concerns.

TIMELINE & BUDGET

Short | $

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
✓	✓	✓	✓

DEPARTMENT CHAMPION

Public Works

STRATEGIC PARTNERS

Tampa Bay Regional Planning Council, FEMA, Local Municipalities

IMPLEMENTATION ELEMENTS

External Engagement Strategy, GHG Emissions Inventory, Sea Level Rise and Storm Surge Vulnerability Assessment, Sustainability and Resiliency Story Map

COMMUNITY CONNECTIONS

Currently, unincorporated Pinellas County is rated a Class 3 in the National Flood Insurance Program (NFIP). As of October 2021, eligible residents and businesses within the unincorporated areas of Pinellas County will receive a 35 percent discount on their flood insurance premiums, saving residents almost $8,000,000 annually. As flood insurance premiums are a recognized financial burden for some homeowners, it will be important for the County to continue to track insurance cost reductions and share the value in implementing resiliency measures.

> *Resilience may be our greatest challenge, since we have already built so much infrastructure on vulnerable coastlines. Flood insurance is a good example of how we allow our politics to interfere with sustainable and resilient coastlines.*

Pinellas Project: National Flood Insurance Program's (NFIP) Community Rating System (CRS) program

Involvement in the NFIP CRS program will continue to have positive outcomes for property owners in Pinellas County. Through its great work to reduce the potential impacts of flooding and rising costs of flood insurance through their involvement in FEMA's CRS program, the County provides tremendous value back to the community it serves. CRS gives local communities credit for actions taken to reduce flood risk, through direct reductions in federal flood insurance premiums when mitigation actions are taken. In 2021, the County was able to attain a Class 3 rating (from its previous Class 5 rating), which will have significant financial benefits to homeowners in Pinellas County, as this will increase the insurance discount from 25 percent with a "5" to 35 percent with the score of a "3".

Economic Vitality

Sustainability and resiliency run deeper than environmental health and productivity. A truly sustainable and resilient community must have a thriving economy that is sustainable and resilient. This is tied directly to quality of life and cost of living, which can be greatly impacted by public policy, programs and projects. Economic vitality can be better achieved by encouraging and supporting sustainable business practices, affordable and diverse housing options, and high-quality jobs and wages, community-wide.

Goal 1

We will encourage and engage residents and businesses to adopt proactive sustainable and resilient practices.

Goal 2

We will promote a sustainable housing market, increasing access to stable, attainable, resilient housing.

Goal 3

We will promote and advance a green economy that provides good jobs with a living wage.

EV Goal 01

We will encourage and engage residents and businesses to adopt proactive sustainable and resilient practices.

EV 1 | Create an incentive program for resilient and green building, low-impact design, environmental preservation, and/or implementation of hazard mitigation strategies

EV 2 | Expand the County's Home Repair Loan Program to include a broader suite of weatherization and mitigation retrofits and improvements

EV 3 | Create a business educational and technical assistance campaign that offers local business owners the opportunity to learn about the County's sustainability and resiliency work

Florida-Friendly Landscaping Incentives Program

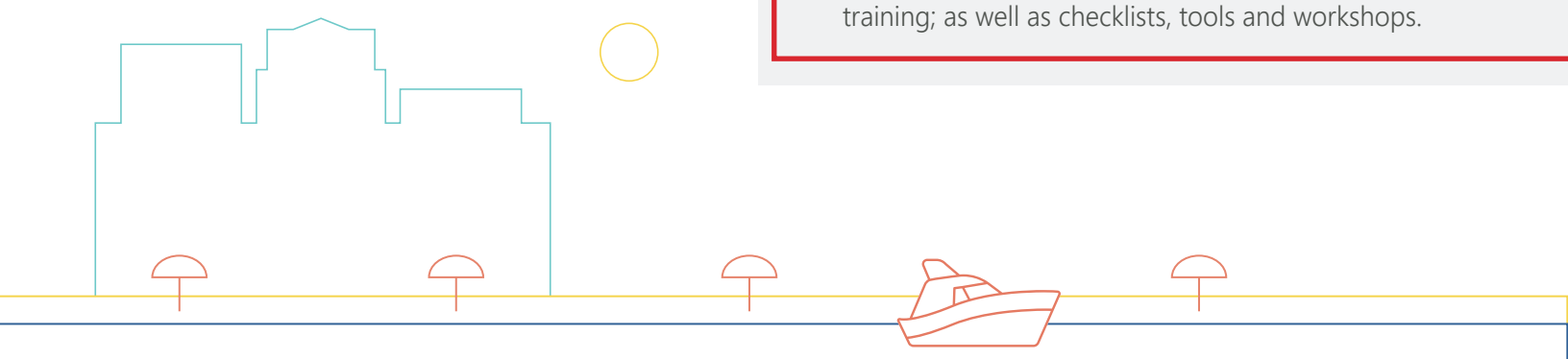
The Florida-Friendly Landscaping Incentive Program (FLIP) is a program designed to reduce the amount of water and fertilizer Pinellas County residents and businesses use on their landscapes. Property owners are eligible for a 50 percent rebate up to $2,000 for installation of Florida-friendly landscaping after completing educational classes.

Watershed Protection Education & Outreach

Pinellas County has implemented countywide community outreach activities, including public festivals, events, HOA presentations and school presentations to share the importance of watershed preservation. A variety of information pamphlets are available online and in County offices to encourage best management practices.

Florida Small Business Development Center

The Florida Small Business Development Center (FSBDC) is located in the Office of Small Business and Supplier Diversity at Pinellas County Economic Development. FSBDC is designed to help existing and beginning businesses achieve their goals. The center offers confidential, free consulting; low-cost training; as well as checklists, tools and workshops.



EV 1 Create an incentive program for resilient and green building, low-impact design, environmental preservation, and/or implementation of hazard mitigation strategies

The County looks forward to working with private partners to reduce overall energy and water demand toward establishing more resilient and sustainable communities. Through continued collaboration to increase clean, renewable energy options, and practice resource conservation, the County can better ensure needed utility services and healthy ecosystems.

In particular, the County may continue to share its design templates for green infrastructure development and low-impact design features for use in County easements and rights-of-way (tree wells, green gutters, pervious pavement, and exfiltration trenches), the County will adopt incentives for private developers to incorporate the same in their site plans. This would require the adoption of new land development code that outlines optional incentives for developers to implement green building practices (i.e., incentives that reduce the time to obtain building permits and/or reduce site costs such as minimum required parking reductions).

TIMELINE & BUDGET

Short $

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
✓	✓	✓	✓

DEPARTMENT CHAMPION

Building and Development Review Services

STRATEGIC PARTNERS

Tampa Bay Regional Planning Council, Florida Housing Coalition

IMPLEMENTATION ELEMENTS

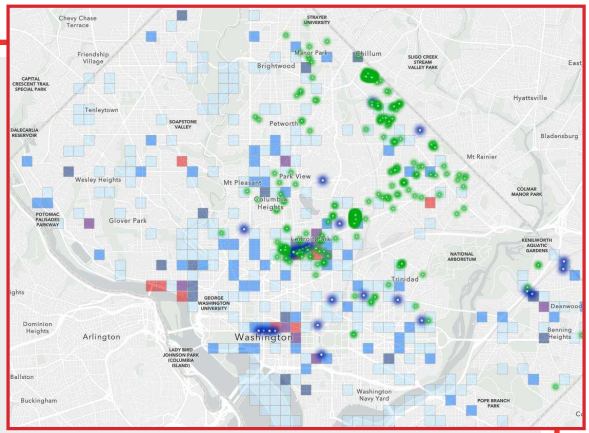
External Engagement Strategy

COMMUNITY CONNECTIONS

Studies that show people prefer to live, work, and play in buildings and neighborhoods with sustainability and health-focused design strategies. Natural spaces improve air quality, help to mitigate flooding and promote natural function, all while providing accessibility to active recreation. Extending these natural spaces into the built environment will play an important role in building active, healthy, and safe communities for years to come.

Case Study:
DC FloodSmart Homes Resilience Upgrades

In 2023, the City of Washington DC's Department of Energy & Environment released a gran opportunity provide eligible entities with funding to help reduce the loss of life, damage to property, and harm to natural resources from flooding. Grant recipients will receive funds to install upgrades to homes in flood-prone areas throughout the District, including sealing HVAC ducts, installing sump pumps, installing flood vents in crawlspaces, etc. Funds can also be utilized to support emergency assistance needs for anticipated flood events (e.g., sand-bag deployment).



Source: City of Washington DC Department of Energy and Environment FloodSmart Homes Pre-proposal Conference presentation

Healthy Ecosystems

Sustainability and resilience are dependent on healthy ecological communities. These systems provide clean water, coastal protection, habitats, and places for relaxation and enjoyment. Protection of the environment will help ensure these and other amenities exist for future generations. Pinellas County is fortunate to host one of the most productive estuaries and to be bound by one of the most beautiful coastlines in the country. As caretakers of the environment, we will consider the impacts of growth and development on local communities. As climate stresses increase, adaptation processes must be instilled to make sure ecosystems are sustained into the future.

Goal 1

We will preserve and increase environmental lands, beaches, parks and waterways.

Goal 2

We will restore and sustain thriving, connected native plant and wildlife habitats.

Goal 3

We will manage natural resources for the benefit of current and future generations.

HE Goal 01

We will preserve and increase environmental lands, beaches, parks and waterways.

HE 1 | Continue a robust land acquisition program, with updates to include land use regulations and/or vulnerability assessment results

HE 2 | Continue conservation of rights-of-way to implement green infrastructure or preserve areas serving natural-beneficial functions

HE 3 | Develop an updated Recreation, Open Space and Cultural Systems Master Plan

Pinellas County Aquatic Preserve: Seagrass and Water Quality Protection

Pinellas County regulates activity in its Aquatic Preserve to prevent seagrass scaring, permanent damage, and water quality violations. Seagrass beds are important to estuarine productivity, providing a protective nursery area for juvenile fish, shrimp, crabs, and other invertebrates by providing natural growing beds for needed food for fish, crustaceans and manatees feed directly on seagrasses. Seagrass roots also bind soils and reduce erosion and turbidity during strong tidal currents or storms, fostering the protection of coastal habitats, property and people.

Wall Springs Park Coastal Addition

Pinellas County recently expanded Palm Harbor's Wall Springs Park with an additional 125 acres of coastal lands added to the existing 84-acre park. The park expansion gives visitors more recreational options and a considerable amount of natural land to enjoy with more amenities. The project earned Pinellas County a 2019/2020 Project of the Year award from the American Public Works Association's (APWA) West Coast Branch in the category of Historic Preservation, Environment and Safety. Because of its location on the Gulf of Mexico, the addition to Wall Springs Park protects a variety of native habitats and associated plant and animal life, including 18 species of fish, 148 species of plants and 127 species of birds.

HE 1 Continue a robust land acquisition program, with updates to include land use regulations and/or vulnerability assessment results

Since 1990, the County has acquired over 4,000 acres of land and is actively looking at 60 additional opportunities. The County has established a working group that evaluates potential property purchases for their ability to improve natural functions, offer floodplain protection, serve underserved communities or provide species protection.

TIMELINE & BUDGET

Short | $$$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	v	b	v

DEPARTMENT CHAMPION

Parks and Conservation Resources

STRATEGIC PARTNERS

Tampa Bay Estuary Program, Tampa Bay Regional Planning Council, Local Municipalities

IMPLEMENTATION ELEMENTS

GHG Emissions Inventory, External Engagement Strategy, Sea Level Rise and Storm Surge Vulnerability Assessment

COMMUNITY CONNECTIONS

Environmental conservation and the protection of local ecosystems was the top topic chosen in the public survey responses for inclusion in Resilient Pinellas with 73.8 percent of survey respondents making this selection. Additionally, the responsible management of and respect for the natural environment was selected by the County's external advisory committee as the top characteristic that would help make Pinellas County more sustainable and resilient.

Pinellas Project:
Land Acquisition and Parks and Environmental Land Scoring Template

The County monitors and assesses opportunities of available lands for acquisition to be used for public use and/or serve as environmental preservation. To acquire land, the County has established a working group that evaluates the potential benefits of the property to improve natural functions, offer floodplain protection, serve underserved communities or offer species protection, etc. The Baypointe Regional Stormwater Park and Wall Springs Park Coastal Addition, shown to the right, are two good examples of the program at work to support environmental stewardship, as well as development and community needs.

HE 2 Continue conservation of rights-of-way to implement green infrastructure or preserve areas serving natural-beneficial functions

The continued conservation of right-of-way space offers opportunities to implement low impact design and green infrastructure. This would also provide opportunities for innovative technologies such as solar harvesting and other demonstration projects. These are highly visible locations and would connect the community to implemented sustainability and resiliency measures.

> *I would like to see more trees in parking lots, sidewalks, and walkways.*

TIMELINE & BUDGET

Medium | $$$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
b	b	b	v

DEPARTMENT CHAMPION

Public Works

STRATEGIC PARTNERS

Florida Department of Transportation, Forward Pinellas, Local Municipalities

IMPLEMENTATION ELEMENTS

External Engagement Strategy, GHG Emissions Inventory

COMMUNITY CONNECTIONS

The County currently manages over 2,600 lane miles of paved roads and 1,066 miles of sidewalks in unincorporated Pinellas County. With continued growth in the amount of pedestrian connections and the improvement of existing sidewalks or trails, there is ample opportunity to increase green space that bolster natural functions.

Case Study:
59th Street Blue / Green Infrastructure, City of Miami Beach, FL

As a vital part of its commitment to supply more resilient infrastructure, the City of Miami Beach continues to integrate natural resources into local streets. One example is West 59th street, located in the La Gorce neighborhood, which has had historical flooding issues. The bioswale project was placed within the right-of-way of West 59th street, improving stormwater runoff water quality by filtering pollutants through natural root systems and soil. The project provides on-site retention for lawns, driveways and roads within a historically significant residential neighborhood.

Source: City of Miami Beach "Evaluating Blue-Green Infrastructure" presentation

HE 3 Develop an updated Recreation, Open Space and Cultural Systems Master Plan

The County's Parks and Conservation Resources department is currently conducting their Level of Service analysis to determine future needs for parks and open space, including a survey of recreational, cultural and environmental needs. The last Master Plan was adopted in 2005. This update will allow for extensive community engagement with a focus on equity and will support other strategic County initiatives such as the Health in All Policies (HiaP) initiative and the Comprehensive Plan update, PLANPinellas.

> *We like the arts, in all forms, from street to live performances. We love our music ... our walks on the beach ...our sports.*

TIMELINE & BUDGET

Long | $$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
b	v	v	v

DEPARTMENT CHAMPION

Parks and Conservation Resources

STRATEGIC PARTNERS

Tampa Bay Estuary Program, Creative Pinellas, Local Municipalities

IMPLEMENTATION ELEMENTS

External Engagement Strategy

COMMUNITY CONNECTIONS

In 2015, the arts and cultural sector generated over **$241 million** in direct annual expenditures in Pinellas County, **created over 7,200 jobs** and produced **$29.8 million** in state and tax revenue.

Pinellas Project: Creative Pinellas

Creative Pinellas works in alignment with the Pinellas County Strategic Plan to foster economic vitality, preserve and support cultural and historical assets, and provide opportunities to build the arts and cultural communities. Established in partnership between the Board of County Commissioners and Visit St. Petersburg/Clearwater, Creative Pinellas is the Local Arts Agency that provides cultural resources for all residents and visitors to Pinellas County. With a mission to foster and sustain a vibrant, inclusive and collaborative arts community, the agency provides support, connection and opportunities to artists, organizations, and the public in order to grow and sustain the arts in Pinellas County. The arts offer creative opportunities to showcase the sustainability and resiliency mission of Pinellas County. In partnership with Creative Pinellas, the County may pursue eco-conscious art installations throughout its sustainability and resiliency work.

HE Goal 02

We will restore and sustain thriving, connected native plant and wildlife habitats.

HE 4 | Align with the Tampa Bay Estuary Program (TBEP) Habitat Master Plan to support habitat migration corridors

HE 5 | Use County-owned park and recreation spaces as living laboratories for sustainability and resilience initiatives

HE 6 | Encourage wider implementation of Florida-friendly landscaping on properties throughout the county

Philippe Park Living Shorelines

Pinellas County has been working on a large-scale living shoreline project at Philippe Park in Safety Harbor. The project includes installation of oyster reefs and native vegetation as well as natural enhancements along the existing seawall. Approximately 800 oyster bags and 1,000 marsh grasses were installed along the south end of the park's shoreline in October 2021, and more features are scheduled to be installed in 2022 and 2023.

Sea Turtle Program

In 2019, Pinellas County marked a record high of 669 sea turtle nests! As the numbers of sea turtles are in decline, every nest is important to grow the population. All seven species of sea turtles are either endangered or threatened. The loggerhead is the most common sea turtle found in Pinellas County, where nesting and hatching occur from May through October. Twelve out of thirteen Pinellas County barrier island municipalities have light ordinances in place to assist our hatchlings in finding their way to the water.

Manatee Protection

Pinellas County recognizes the importance of manatee protection and has policies in place to protect seagrass beds and other habitats for endangered and threatened species. Pinellas County's Comprehensive Plan supports such measures as enforcing no-wake zones, establishing seagrass protection areas and providing manatee caution signage.

HE 6 Encourage wider implementation of Florida-friendly landscaping on properties throughout the county

The County will continue to work with partners like UF IFAS to implement native or Florida-friendly landscaping and provide supplemental educational materials to the community. Public Works has created a list of plant species that are known for being highly drought tolerant and/or flood tolerant, with the added benefits of reducing potential runoff and absorbing pollutants. The continued distribution of these materials may increase the use of more drought-tolerant, native plant species on private property.

The County's Stormwater Manual outlines opportunities to receive stormwater credits for implementing best practices in Florida-friendly landscape design, such as retaining large native trees, protecting landscape through conservation easements, and other site standards.

TIMELINE & BUDGET

Medium | $$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	v	b	b

DEPARTMENT CHAMPION

Parks and Conservation Resources

STRATEGIC PARTNERS

UF/IFAS Extension Pinellas County, Tampa Bay Estuary Program, Keep Pinellas Beautiful

IMPLEMENTATION ELEMENTS

External Engagement Strategy

COMMUNITY CONNECTIONS

Survey responses received through the public engagement period reveal that many residents in the county already follow Florida-friendly planting guidelines and see the value in further implementation of this strategy. Several quotes are reflected below.

Community insight on the importance of Florida-friendly landscaping

"Maintaining natural native plants and animals keeps our ecosystem in balance. Using our natural resources efficiently and conservatively also promotes innovation and healthy living."

"Resilience means creating more green space and designated areas for native trees."

"Resilience means creating more green space and designated areas for native trees."

Case Study: Mead Botanical Gardens, Winter Park, FL

The Mead Botanical Garden actively implements projects to improve the quality of its park using native plant species. The Lake Lillian forested wetlands revitalization project has proven successful in increasing biodiversity and improving the aquatic habitat. The improvement of the natural wetland included the removal of invasive plant species from the 12 acre wetland. Following the removal, nearly 4,300 native plants and trees were installed and its boardwalk was rebuilt, providing education opportunities of the wetland.

Restoration of the Lake Lillian wetland has been a public-private collaborative effort involving the City of Winter Park, Mead Botanical Garden Inc., US Congressman John Mica and Florida Fish and Wildlife Conservation Commission (FFWCC) leaders and staff and many experts. At least three years of research and project planning preceded the start of construction.

HE Goal 03

We will manage natural resources for the benefit of current and future generations.

HE 7 | Align the enterprise asset management system with mitigation measures that support habitat function (living shorelines, oyster boxes, etc.)

HE 8 | Provide broader, more systematic implementation of green infrastructure and nature-based solutions to reduce natural hazard exposure, especially through the use of design guidelines in capital planning

HE 9 | Continue to implement the Integrated Vegetative Management Program throughout County-owned lands

Pinellas County Mangrove Ordinance

Mangroves are protected by the State's Mangrove Trimming and Preservation Act and cannot be trimmed unless you qualify for an exemption or obtain a permit. Pinellas County biologists and arborists work closely with homeowners and trimmers to ensure all trimming meets the requirements of the County's ordinance for Mangrove Trimming and Preservation.

Walsingham Equestrian Park

The County is evaluating the potential benefits of integrating stormwater management ponds within the park that would provide new aquatic habitat while enhancing the park and trail riding experience. Filtering stormwater through ponds, wetlands and other media would improve the quality of the water that discharges to McKay Creek and the intracoastal waterway. Other improvements could include removal of exotic and invasive vegetation and replanting with more desirable species while maintaining shady trails and a forested backyard aesthetic.

Weedon Island Preserve and Education Center on

Weedon Island Preserve is an expansive 3,190-acre natural area located on Tampa Bay. This coastal system, made up of aquatic and upland ecosystems, is home to numerous species of native plants and animals, an educational facility and a rich cultural history. Indigenous peoples occupied this site for thousands of years. Today, the preserve protects this wide diversity of natural and cultural resources for current and future generations. Weedon Island Preserve is also a well-known birding and fishing site.

HE 7 Align the enterprise asset management system with mitigation measures that support habitat function (living shorelines, oyster boxes, etc.)

The County uses an asset management system to improve operational performance, cross-disciplinary collaboration, decision-making and services provided to County residents and visitors. This system will be updated to include a means of tracking the implementation of resilience measures and adaptation strategies, to improve habitat function and coastal resilience.

The system offers cross-departmental guidance to identify specific objectives across six subject areas: strategy and planning; asset management decision-making, asset information, life-cycle delivery, organization, and people; and risk and review. Each of these subject areas offer important performance tracking options to improve sustainability and resiliency across the County's operational footprint.

TIMELINE & BUDGET

Short | $$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	b	b	v

DEPARTMENT CHAMPION

Office of Resilience and Asset Management

STRATEGIC PARTNERS

Tampa Bay Estuary Program

IMPLEMENTATION ELEMENTS

GHG Emissions Inventory, Sea Level Rise and Storm Surge Vulnerability Assessment, Clean Energy Roadmap

COMMUNITY CONNECTIONS

The integration of data related to local coastal resilience and mitigation efforts into the County's Enterprise Asset Management System will prove vital in facilitating the responsible management of and respect for natural environments. The continued review of data was the top characteristic identified by both the public and the SRAC to help make the County more sustainable and resilient, as reflected in the quotes to the right.

> *We must get reliable, repeatable, meaningful data; then adapt and improve.*
>
> *Resilience means constantly learning and collecting new data and information.*

Pinellas Project:
Ozona Living Shoreline and Seawall Restoration

In 2020, Pinellas County staff and volunteers installed elements of a living shoreline along an existing seawall in Ozona. The goal was to strengthen and extend the life of the seawall while improving water quality and providing habitat for wading birds, fish and other marine species. The project is located at the corner of Bayshore Dr. and Bay Street in Ozona.

HE 8 Provide broader, more systematic implementation of green infrastructure and nature-based solutions to reduce natural hazard exposure, especially through the use of design guidelines in capital planning

The County will establish a cross-departmental working group to identify new opportunities to implement the County's design templates for green infrastructure development and low-impact design features (tree wells, green gutters, pervious pavement, and exfiltration trenches) across all County facilities and public utilities. The County will also continue to develop educational materials and tools to encourage green infrastructure and nature-based solutions in private development.

TIMELINE & BUDGET

Short | $$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	v	b	v

DEPARTMENT CHAMPION

Public Works

STRATEGIC PARTNERS

Tampa Bay Estuary Program, Southwest Florida Water Management District, Tampa Bay Regional Planning Council, Local Municipalities

IMPLEMENTATION ELEMENTS

GHG Emissions Inventory, Sea Level Rise and Storm Surge Vulnerability Assessment

COMMUNITY CONNECTIONS

Algal blooms such as red tide were identified as the top shock in the public survey, with 75.6 percent of survey participants selecting it as a major concern. Comparatively the County's Sustainability and Resiliency Advisory Committee (SRAC) identified it as the fourth shock of most concern, following hurricanes, coastal hazards, severe storms and rainfall. The continued application of green infrastructure across the County's projects will have lasting effects in improving surface water quality and reducing the potential for algal blooms.

> *I'm particularly interested in stormwater management, including (a) promoting or requiring onsite infiltration of stormwater in order to mitigate the flood risk and (b) restricting use of stormwater management systems that are minimally effective at removing nitrogen and/or phosphorus and thereby exacerbate algae blooms.*

Pinellas Project:
Lake Seminole Sediment Removal Project

The Lake Seminole Sediment Removal Project aims to improve water quality by reducing internal nutrient recycling through the removal of organic sediments. The removal of the organic sediments, based on pre-construction sediment analysis, is expected to eliminate 54 tons of total phosphorus and 311 tons of total nitrogen from the lake and reduce nitrogen loads by an estimated 56 percent to Long Bayou and Boca Ciega Bay, which will decrease the likelihood of harmful algal blooms.

HE 9 Continue to implement the Integrated Vegetative Management Program throughout County-owned lands

The County controls invasive and nuisance weeds in stormwater, retention, and mitigation ponds, and in lakes, ditches and other sensitive areas. The Plan provides guidance for anywhere vegetation management is needed, including preserves, coastlines and public rights-of-way. The management plan includes site assessments, recommendations on how to control vegetation, evaluations of the program progress and continued maintenance. The plan also includes selections of native vegetation, which improve wildlife habitats as well as drainage and water quality.

TIMELINE & BUDGET

Short | $$$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	v	b	v

DEPARTMENT CHAMPION

Parks and Conservation Resources

STRATEGIC PARTNERS

UF/IFAS Extension Pinellas County, Tampa Bay Estuary Program, Keep Pinellas Beautiful

IMPLEMENTATION ELEMENTS

GHG Emissions Inventory, Sea Level Rise and Storm Surge Vulnerability Assessment, External Engagement Strategy

COMMUNITY CONNECTIONS

The Pinellas County community is committed to helping with local cleanups and the restoration of local habitats.. In 2021 alone, through events hosted by Keep Pinellas Beautiful, volunteers attended 1,260 community projects, removed 166,580 pounds of litter and removed 73,158 pounds of invasive plants. Each event offers residents the opportunity to not only give back to nature and the community, but also learn about conservation needs.

Pinellas Spotlight:
Keep Pinellas Beautiful

Established in 1992, nonprofit organization Keep Pinellas Beautiful provides opportunities for meaningful service to bay area residents of all ages. The organization advances partnerships with local governments such as Pinellas County Government, businesses, schools, nonprofits and neighborhood organizations to transform public spaces into beautiful places while learning more about the communities they serve. These volunteer opportunities help to foster unity and strengthen community bonds, building a sense of responsibility and ownership in Pinellas County's public spaces, parks, neighborhoods and shorelines. Working together to clean public spaces advances environmental stewardship, while improving the health and appearance of the valued environmental lands and habitats of Pinellas County.

Resilient Infrastructure

Communities are reliant on a system of services and infrastructure networks. This includes providing roadways, drinking water, stormwater management, energy distribution, garbage collection, sewer water processing and the many other utilities or infrastructure that cities and counties provide. Additionally, our homes, hospitals and schools are just as important, as are the roads and trails that connect them. Securing these assets is critical to protecting communities from future shocks and stresses to operating more effectively in the here and now.

Goal 1

We will appropriately manage stormwater, storm surge, sea level rise and future land uses to reduce flooding impacts.

Goal 2

We will protect and conserve drinking and surface water resources.

Goal 3

We will implement best practices to make critical service networks more resilient and environmentally friendly.

RI Goal 01

We will appropriately manage stormwater, storm surge, sea level rise and future land uses to reduce flooding impacts.

RI 1 | Adopt an internal policy to apply results of the Sea Level Rise and Storm Surge Vulnerability Assessment to all County-owned assets

RI 2 | Improve community resilience through future land use policy amendments, and other comprehensive plan policy, that reflect future climate impacts and stresses

RI 3 | Identify Adaptation Action Areas that experience coastal flooding and are more vulnerable to future climate impacts to prioritize funding for infrastructure needs and resiliency planning

RI 4 | Implement and provide updates to social and health-based factors within vulnerability assessments of unincorporated areas of Pinellas County

Gulf Beach and Isle of Capri Pump Station Upgrades

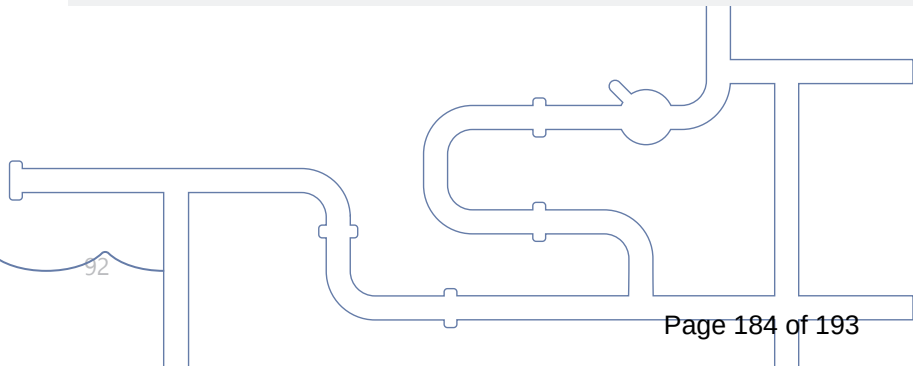
The purpose of the Gulf Beach and Isle of Capri Pump Station Upgrades capital improvement projects is to install new potable water pumps and associated equipment and the general redesign of the existing facilities to meet hurricane-hardened standards. The new stations have raised electrical and chemical feeds to mitigate for sea level rise, as well as backup power generation.

Joe's Creek Restoration and Greenway Trail

The Joe's Creek project is located in central Pinellas County within the Lealman Community Redevelopment Area (LCRA) and Kenneth City, along Joe's Creek. Joe's Creek is a 9.8 mile long creek, approximately 23 feet wide by 16 feet deep, which the county maintains for stormwater conveyance capacity and flood risk reduction. Joe's Creek Restoration and Greenway Trail projects are designed to reduce the risk of flooding and improving water quality, connect the community and enhance multi-use recreational opportunities.

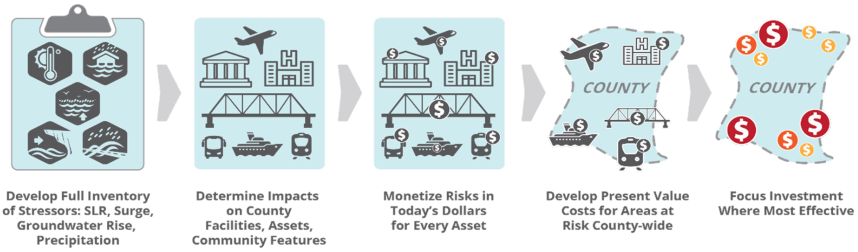
Tide Check Valve Project

Pinellas County has been installing tide check valves in key locations in order to reduce "blue-sky" flooding and prepare for future sea level rise. The valves allow stormwater to drain out under low tide conditions, but during high tide the valves prevent ocean water from backing up into the stormwater pipe network.



RI 1 Adopt an internal policy to apply results of the Sea Level Rise and Storm Surge Vulnerability Assessment to all County-owned assets

The Sea Level Rise and Storm Surge Vulnerability Assessment includes a detailed technical assessment of future climate conditions and provides a data-driven approach and implementation framework to make the county more resilient to coastal hazards. Where the initial study helped to identify areas of critical concern, such as U.S. Alternate 19 and Gulf Boulevard, continued risk analyses of all County assets will be needed. Findings from this study will be extremely useful in understanding effective policy options and mitigation measures needed to reduce risk and to better protect our communities against flooding and the effects of severe storms.



TIMELINE & BUDGET

Short | $

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	n	n	b

DEPARTMENT CHAMPION

Office of Resilience and Asset Management

STRATEGIC PARTNERS

Tampa Bay Regional Planning Council, Local Municipalities

IMPLEMENTATION ELEMENTS

Sea Level Rise and Storm Surge Vulnerability Assessment, Sustainability & Resiliency Story Map

COMMUNITY CONNECTIONS

Nearly 70 percent of survey respondents stated that climate change "concerned them a great deal." Additionally, the top five shocks identified to be of the most concern per the public survey results included 1) algal blooms, 2) hurricanes, 3) coastal hazards, 4) severe storms and rainfall, and 5) inland flooding. This reveals that Pinellas County residents are acutely aware of the potential impacts of water. Protecting the County's services and assets from future impacts will be crucial in keeping critical systems online in times of need.

Case Study:
Shimberg Flood Hazard + Housing Practitioner Information Network

The University of Florida's (UF) Shimberg Center for Housing Studies offers data and analysis to help guide Florida's affordable housing efforts. Through a recent National Science Foundation (NSF) Smart and Connected Communities (S&CC) grant, UF's researchers are studying the risk of coastal flooding and its effect on affordable housing. Through the project, UF will use new technology to assess the elevation of the structures with respect to past or projected flood depth levels. Innovative technologies will assess residential structures' lowest floor elevations (LFEs), collecting drone-based infrared imagery. The LFE research will create new methods to seamlessly gather, store and extract relevant physical attributes for flood hazard management. Through continued community engagement activities, the Shimberg team will evaluate how the data can be most useful in Florida coastal communities.

RI 2 Improve community resilience through future land use policy amendments, and other comprehensive plan policy, that reflect future climate impacts and stresses

There is a need to identify communities that are at most risk to climate impacts and to create policies that address future land uses in these at-risk areas, and to correlate data with future land uses and policies in the County's Comprehensive Plan, PLANPinellas. This may include designating Adaptation Action Areas, new or expanded Opportunity Zones, and other land use regulations that will support smart, resilient development.

TIMELINE & BUDGET

Medium | $

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	n	b	v

DEPARTMENT CHAMPION

Housing and Community Development

STRATEGIC PARTNERS

Tampa Bay Regional Planning Council, Forward Pinellas, Local Municipalities

IMPLEMENTATION ELEMENTS

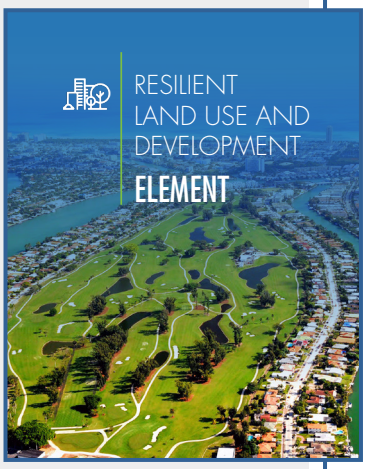
External Engagement Strategy, Sea Level Rise and Storm Surge Vulnerability Assessment

COMMUNITY CONNECTIONS

Balancing public infrastructure with development needs is a core function of Pinellas County Government. Through continued updates of land development code and future land use policies, the County will be better able to provide high quality services even when threatened by future climate impacts. Public survey results reveal that 35 percent of people in Pinellas County understand the importance of continued strong leadership and setting bold policy to build more resilient systems.

Case Study:
2040 Miami Beach Comprehensive Plan

The 2040 Miami Beach Comprehensive Plan includes two important elements that will guide the development of resilient communities and being better prepared to withstand future climate conditions. The Resilient Land Use and Development Element (RLU) serves as a guide for future land development and redevelopment in a manner consistent with the City's vision of a vibrant and resilient Miami Beach. And then the Resiliency and Sustainability Element consolidates the principles of sustainability and resiliency that were previously located in efforts completed by the City establishes a centralized set of objectives and policies regarding climate change and sea level rise. Together, these elements will help to ensure that growth is directed in a manner that is resilient, sustainable, supported by essential services and improves the quality of life of the City and its residents.



Source: City of Miami Beach

RI 3 Identify Adaptation Action Areas that experience coastal flooding and are more vulnerable to future climate impacts to prioritize funding for infrastructure needs and resiliency planning

In coordination with the Tampa Bay Regional Planning Council (TBRPC), the County will work towards identifying specific Adaptation Action Areas in addition to and/or overlaid with repetitive loss areas. Through this strategy, the County would create strategic plans for these areas for the implementation of mitigation strategies and identification of capital investments to combat the effects of climate change.

TIMELINE & BUDGET

Short | $

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
v	v	b	v

DEPARTMENT CHAMPION

Housing and Community Development

STRATEGIC PARTNERS

Tampa Bay Regional Planning Council, Local Municipalities

IMPLEMENTATION ELEMENTS

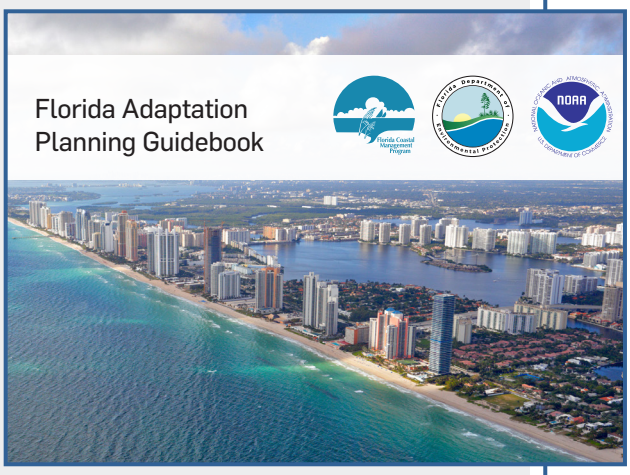
Sea Level Rise and Storm Surge Vulnerability Assessment, External Engagement Strategy, Sustainability & Resiliency Story Map

COMMUNITY CONNECTIONS

There are more than 1,500 repetitive loss properties in the county, which are defined as any insurable building with two or more claims of more than $1,000 paid by the National Flood Insurance Program (NFIP) within a ten-year-period.

Case Study:
Florida's Adaptation Action Areas

Adaptation Action Areas (AAA) can be approached in many different ways. For example, Jacksonville's Adaptation Action Areas Plan is defined by areas within the category 3 storm surge or within the 500-year flood plain. Miami-Dade County has the Little River AAA, that is susceptible to climate impacts and includes vulnerable populations. AA areas include the City of Miami, the Village of El Portal and two areas in the Unincorporated County. In Yankeetown, Florida, six Adaptation Action Areas were defined for the City. Each constitutes a unique set of attributes related to flooding and sea level rise specifically. At its essence, the AAA allows governments to identify a specific zone to implement policy and programs, and the boundaries can be based on individual preference.



Source: Florida Department of Environmental Protection

RI 4 Implement and provide updates to social and health-based factors within vulnerability assessments of unincorporated areas of Pinellas County

As stated in the 2020 Local Mitigation Strategy (LMS), "the main reason for understanding our vulnerability in advance of a disaster is to identify appropriate strategies that can help address the challenges and stresses that we might face during response, recovery or long-term redevelopment in the aftermath of a major disaster event. It is critical to develop a better understanding of our social vulnerability because a successful redevelopment following a major disaster will be extremely difficult if a large part of our population is struggling to recover."

During the development of Resilient Pinellas, the Consultant Team used census data to assess community vulnerability and equity considerations based on the parameters set by the CDC's Social Vulnerability Index. The County has also tracked important health and socioeconomic data through the development of other countywide planning efforts such as the updated LMS, PLANPinellas and Health in All Policies. These type of analyses should continue to be updated in a timely manner after new census data is released to keep equity considerations current.

TIMELINE & BUDGET

Medium | $

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
b	b	v	v

DEPARTMENT CHAMPION

Office of Resilience and Asset Management

STRATEGIC PARTNERS

Healthy St. Petersburg, Florida Department of Health, Local Municipalities

IMPLEMENTATION ELEMENTS

External Engagement Strategy, Sustainability & Resiliency Story Map

COMMUNITY CONNECTIONS:

In the public survey, nearly 35 percent of residents stated that lack of access to health care or high health care costs are a top stress to them. Below are a few quotes from survey respondents about how health might be improved.

Community ideas to improve community health

> **"Focus on low income populations; bring in access to healthy foods; bring in health and mental health care, and then partner with these communities and educate them as to why it is important to have sustainable programs."**

> **"Increase focus on health-related activities such as bike friendly lanes."**

> **"An efficient public transportation plan could reduce the cost and congestion of commuting and improve the air quality as well."**

Pinellas Project:
Pinellas County LMS Update

The purpose of the Local Mitigation Strategy (LMS) in Florida communities is to reduce death, injuries and property losses caused by natural hazards such as hurricanes. Hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan developed before disaster occurs. The 2020 Pinellas County update reviews the history of disasters within the county and outlines a set of goals, objectives, strategies and actions for reducing future losses. The continued implementation of planned and cost-effective mitigation measures not only helps to reduce losses to lives, property and the environment but also streamlines the disaster recovery process.

RI Goal 02

We will protect and conserve drinking and surface water resources.

RI 5 | Implement nature-based, green infrastructure demonstration projects in publicly accessible places

RI 6 | Increase adaptability of water and wastewater systems to withstand environmental threats and hazards

Adopt-A-Drain Pilot Program

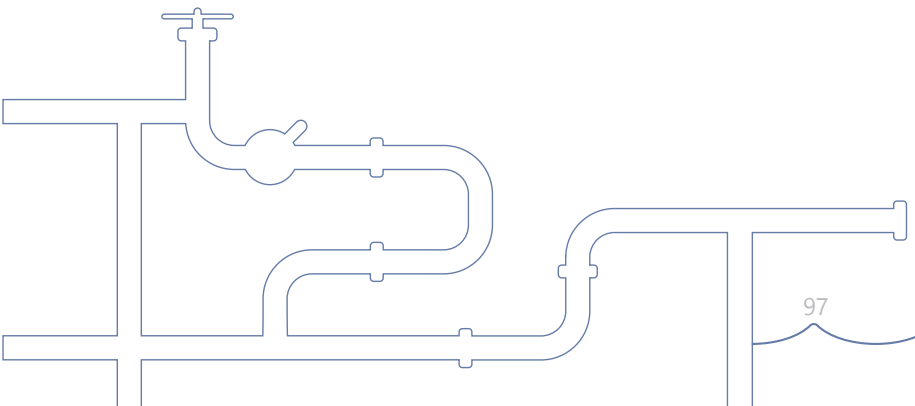
Pinellas County, in partnership with the UF/IFAS Extension, is offering the Adopt-A-Drain program to help reduce the amount of pollutants reaching our waterways. Adopt-A-Drain reduces the potential for flooding and improves water quality by ensuring storm drains are free and clear of debris. The program also helps prevent pollution by reporting illicit discharges, which can be a major source of pollutants and impact water quality.

Find and Fix Gravity Sewer Rehabilitation

Find and Fix provides a targeted reduction of inflow and infiltration (I&I) in Pinellas County Utilities' (PCU) wastewater collection system in selected neighborhoods where this approach is considered cost-effective. This program provides cost-effective, comprehensive rehabilitation and replacement of wastewater collection mains, manholes, and public and private laterals to build more resilient systems

Drinking and Surface Water Quality Monitoring Programs

Pinellas County monitors drinking and surface water quality to provide long-term assessments of water quality, measure success of management efforts and meet regulatory program requirements.



Thriving Communities

Fair access to places and commodities that meet our basic needs throughout a community including housing and employment helps people thrive. Characteristics of thriving communities include safe, affordable housing in stable neighborhoods; healthy ecosystems and access to nature; basic resources for health and freedom from hazards; meaningful work and good standards of living; opportunities for education and lifelong learning; reliable, safe, and accessible transportation; and, a sense of belonging and involvement within the community.

Goal 1

We will promote smart growth and development where jobs, housing and other basic community needs coexist.

Goal 2

We will provide fair access to safe, multimodal transportation options.

Goal 3

We will provide historically underserved areas with modern, healthy community amenities.

TC Goal 03

We will provide historically underserved areas with modern, healthy community amenities.

TC 7) Expand access to healthy foods for unincorporated areas of Pinellas County to foster better health outcomes and reduce food waste

TC 8) Implement a residential coastal habitat and tree canopy program to enhance quality of life and reduce stresses such as heat island effects, flooding impacts, and erosion

TC 9) Conduct Level of Service analyses to ensure fair access to services such as parks, bicycle infrastructure and educational and cultural centers

TC 10) Conduct a heat impact analysis and establish recommendations to reduce the effects of extreme heat to people and structures

Health Care for the Homeless Program

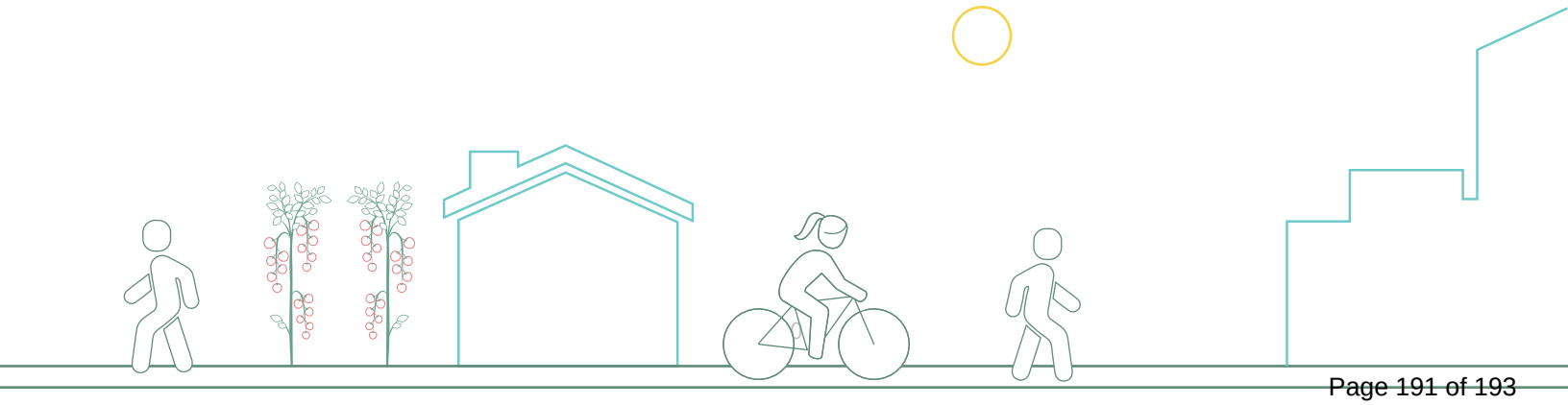
The Health Care for the Homeless (HCH) program provides medical services, otherwise known as primary care, which includes treatment of illness or injury as well as preventive care, education, limited prescription coverage and referrals for lab work, specialty care, dental assistance, behavioral-mental health assistance and substance abuse treatment.

Pinellas Mobile Medical Unit

The mobile unit is a medical office on wheels. It has provided basic care for more than 20 years. Pinellas County homeless can receive free basic health care on the mobile medical unit. Emergency services are not provided. The unit travels to multiple locations in Pinellas County to serve uninsured homeless residents.

Joe's Creek Greenway Project

The Joe's Creek Greenway project corridor is bordered by under-served low to medium income (LMI) communities with very limited transportation modes. The Joe's Creek Greenway project will provide an economic catalyst to support desired redevelopment and affordable housing in the low-income area and connect LMI-households to available public transit amenities and other points of service locations like schools, parks and public service agencies.



TC 8 Implement a residential coastal habitat and tree canopy program to enhance quality of life and reduce stresses such as heat island effects, flooding impacts, and erosion

The County will work to establish a program through which residents can purchase or receive free canopy trees to grow on private property. The program will be beneficial to many Resilient Pinellas goals including reduced heat island effect, energy consumption, and associated energy costs. The program should include the development of a listing of tree species that also serve to reduce the impacts of flooding and erosion.

Another important benefit of canopy trees is shade, which makes walking and biking more comfortable during our hotter months. Residents would be offered canopy tree species selected by a certified arborist or urban forester for hardiness, drought-tolerance and wildlife benefits.

TIMELINE & BUDGET

Short | $$$

IMPLEMENTATION PATHWAYS

OVERARCHING GOALS ANALYSIS

GOAL 1	GOAL 2	GOAL 3	GOAL 4
✓	✓	✓	✓

DEPARTMENT CHAMPION

Public Works

STRATEGIC PARTNERS

UF/IFAS Extension Pinellas County, Tampa Bay Estuary Program, Keep Pinellas Beautiful

IMPLEMENTATION ELEMENTS

External Engagement Strategy, Sea Level Rise and Storm Surge Vulnerability Assessment, GHG Emissions Inventory, Clean Energy Roadmap

COMMUNITY CONNECTIONS

As part of the Community-wide GHG emissions inventory completed for 2019, the consultant team used the United States Department of Agriculture (USDA) Forest Service's online model i-Tree to calculate potential annual carbon sequestration due to Pinellas County's trees. Using this tool, the project team was able to estimate that in 2019, the estimated total carbon sequestered within the unincorporated areas of Pinellas County amounted to 200,320 MT CO_2e. That means that nearly 17 percent of the total metric tons of CO_2 is due to stationary energy use in the unincorporated area. On top of this, the community shared their thoughts on the other benefits of trees:

Community thoughts on the importance of trees:

"Resilience means creating more green space and designated areas for native trees. Community involvement in conservation areas is critical to their maintenance and preservation."

"Trees need to be incorporated into design."

"Increase the planting of trees to encourage walking/biking by providing shade."

"Canopy trees would reduce exposure to heat and high temperatures in these areas, improve air quality and increase property value for these vulnerable communities."

Trees play a valuable role by capturing carbon as they mature. Carefully positioned trees can also save 25 to 30 percent of a household's energy use.

PLANNING BOARD MEETING
CITY OF ST. PETE BEACH
COMMISSION CHAMBERS

Agenda Report

Action Request: N/A - For informational purposes.

Strategic Objective:

Date: July 15, 2024

Prepared By: Brandon Berry, Senior Planner

Through: Jennifer McMahon, Chief Operating Officer

Summary of Issue: Providing an update on expected cost for the permit discussed at the May 2024 meeting.

Funding:

Attachments: