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City of Pompano Beach
Vulnerability Assessment

City of Pompano Beach Vulnerability Assessment

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City of Pompano Beach, Florida

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direction of the City of Pompano Beach

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March, 2025

Table of Contents

List of Tables

List of Figures

Glossary of Terms

Adaptation: Adjustment in natural or human systems in response to actual or expected stimuli or their effects, which moderates harm or exploits beneficial opportunities.

Adaptation Action Area (AAA): Areas designated in a local government's comprehensive plan as being vulnerable to sea level rise and other climate change impacts, for prioritizing funding and adaptation planning efforts.

Adaptive Capacity: The ability of an asset or system to adjust to flooding impacts and reduce potential consequences through protective measures.

Base Flood Elevation (BFE): Defined by FEMA as the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.

Compound Flooding: Occurs when two or more flooding sources (e.g. rainfall, storm surge, high tides) happen simultaneously or in short sequence, exacerbating flood impacts.

Disadvantaged Community: Based on the Justice40 methodology, a community that meets certain thresholds for environmental, climate, socioeconomic or other burdens.

Emergency Operations Center (EOC): A central facility from which officials coordinate emergency preparedness, response and recovery efforts.

Environmental Protection Agency (EPA): A United States federal government agency whose mission is to protect human and environmental health.

Exfiltration Trench: A type of stormwater best management practice that uses a trench filled with gravel/rock to temporarily store runoff and allow it to slowly infiltrate into the soil.

Exposure Analysis: An assessment of what assets, infrastructure, populations etc. are located in areas that could potentially be impacted by a hazard like flooding.

Federal Emergency Management Agency (FEMA): Federal agency responsible for leading the Nation's efforts to prepare for, protect and mitigate against, respond to, and recover from the impacts of natural disasters and man-made incidents or terrorist events.

Geographic Information System (GIS): A computer system for capturing, storing, checking, integrating, manipulating, analyzing and displaying data related to positions on the Earth's surface.

Groundwater: Water found underground in the cracks and spaces in soil, sand and rock. It is stored in and moves slowly through geologic formations of soil, sand and rocks called aquifers.

Intergovernmental Panel on Climate Change (IPCC): United Nations body that assesses climate science.

Justice40: A federal initiative aiming to deliver 40% of benefits from certain federal investments to disadvantaged communities disproportionately affected by environmental burdens.

LiDAR: Light detection and ranging, a remote sensing technology that uses laser light to map topography and elevations precisely.

Maximum Envelope of Water (MEOW): An output from the SLOSH model representing the maximum height that water reaches at any point during a hurricane storm surge simulation.

Maximum of Maximum Envelopes of Water (MOM): The maximum value of all the MEOW data for a particular hurricane category and forward speed.

Mean Sea Level (MSL): The average height of the surface of the sea at a particular location over a 19-year period.

North American Vertical Datum (NAVD): The vertical datum used for heights and elevations by surveyors and professionals in the United States and Canada.

National Oceanic and Atmospheric Administration (NOAA): A U.S. federal agency that studies the oceans, atmosphere, and coastal areas.

Recurrence Interval: Estimate of time between cases of a particular precipitation magnitude for a specified duration and at a given location. The recurrence interval is a measure of how often an event is expected to occur based on the probability of exceeding a given threshold.

Representative Concentration Pathways (RCPs): Greenhouse gas concentration trajectories used by the IPCC for modeling and research of climate change impacts.

Resilience: The ability to prepare for, adapt to and recover from hazards, shocks or stresses in a timely and efficient manner.

Sea, Lake and Overland Surges from Hurricanes (SLOSH): Computerized model run by the National Hurricane Center to estimate storm surge heights and winds from historical, hypothetical, or predicted hurricanes.

Sea Level Rise (SLR): An observed increase in the average local sea level or global sea level trend.

Sea Level Rise Projections: Scenarios modeled representing potential future sea level rise based on greenhouse gas emissions pathways. The NOAA "intermediate" levels are between the highest and lowest projected levels.

Sensitivity Analysis: An evaluation of whether and how an exposed asset or population may be impacted or damaged by a particular flooding scenario based on factors like elevation, flood depth, etc.

Storm Surge: Temporary rise in sea level caused by storm winds and low pressure, leading to coastal flooding.

Storm Water Management Model (SWMM): A software application developed by EPA and used to model urban drainage systems and analyze flooding from various sources.

Southeast Florida Regional Climate Change Compact (SEFLCC): A partnership between counties in southeast Florida working on climate mitigation and adaptation.

United States Geological Survey (USGS): A scientific agency of the United States government that studies the landscape, natural resources, and natural hazards of the country.

Vulnerability Assessment (VA): Systematic process to identify and measure the vulnerability of infrastructure and populations to hazards like flooding.

Vulnerability Score: A rating quantifying how susceptible a particular asset or area is to impacts from flooding, based on its exposure, sensitivity, and adaptive capacity.

1 Summary

This Vulnerability Assessment (VA), which is grant funded by the Florida Resilient Coastlines Program, evaluates the City of Pompano Beach's (Pompano Beach, City) exposure and sensitivity to flood impacts related to climate change. It includes an update to the City's Stormwater Model that examines how the City's stormwater system would respond to sea level rise (SLR) and related impacts to groundwater elevations, as well as extreme precipitation events and storm surge. Pursuant to Section 380.093, Florida Statutes (F.S.), the assessment looks at the NOAA 2017 Intermediate-low and Intermediate-high SLR projections for 2040 and 2070.

The VA uses nine flood scenarios to assess risk and vulnerability for the City's critical assets, regional assets, neighborhoods, business districts, and transportation system. It also evaluates flood exposure to Justice40 areas to analyze social vulnerabilities and consider the potential impacts of climate-related flooding on vulnerable communities within the City's population. Several of the flood scenarios consider compound flood impacts, where sea level rise or storm surge occur in conjunction with an extreme precipitation event. The study seeks to answer two questions: what assets are exposed to flooding under each flood scenario, and what assets are sensitive, or vulnerable, to flooding (i.e., how the exposed assets would be affected by flooding if it did occur).

As part of the study, a GIS-based online tool was developed for City staff to review flood scenarios and critical assets when making regulatory and planning decisions.

The results of the analysis show that the City has widespread exposure to flood risk under every scenario, with nearly 40% of parcels exposed to risk under Scenario 1, a rainfall event with a 5-year return period and 24-hour duration. Sea level rise projections through 2040 do not significantly increase this risk, however Scenario 5 (a 5-year, 24-hour rainfall event plus intermediate high SLR in 2070) shows 54% of parcels exposed to flood risk.

Like many coastal regions of Florida, Pompano Beach is vulnerable to severe but relatively low-probability flooding events, such as a hurricane that brings storm surge and extreme rainfall (Scenarios 7 and 9). Though catastrophic in its impacts, Scenario 7 is based on a 100-year storm surge with a 1% annual probability of occurrence, occurring in conjunction with the 1% annual probability maximum rainfall projected to occur in a 72-hour period. Scenario 9 models a 500-year storm surge with 0.2% annual probability, with the 0.2% probability rainfall. Both scenarios would result in more than 75% of the parcels in the City exposed to flood risk. These scenarios should be considered through the lens of disaster and recovery planning.

The sensitivity of the City's critical assets to the various flood scenarios was evaluated through a process that developed a vulnerability score for each exposed asset, considering its criticality, and adaptive capacity, the likelihood of the scenario occurring, and the level of confidence in underlying scientific projections. Regional assets and the vulnerability of the City's road network were also evaluated, using a similar methodology.

This document includes initial, high-level recommendations for adaptation actions that the City may consider to reduce the identified flood risks and vulnerabilities. The primary action that the City should take is to complete an Adaptation Action Plan to identify and prioritize resilience initiatives. The Adaptation Action Plan should include cost/benefit analysis for the included initiatives, identify potential funding sources, and provide an implementation plan. Completion of this VA as well as the development of an Adaptation Plan will position the City to receive grant funding for adaptation projects from the Resilient Florida Program and other sources.

2 Introduction

The City of Pompano Beach developed this Vulnerability Assessment, funded through the Resilient Florida Program and pursuant to Section 380.093, Florida Statutes (F.S.). It explores the exposure, sensitivity, and adaptive capacity of assets within the City to identify flood vulnerabilities and lay the groundwork for a comprehensive adaptation plan. Exposure is the degree to which an asset could be subjected to inundation under a given flood scenario. Sensitivity describes how the asset could be impacted by the flood scenario. Adaptive capacity is the ability of that asset or resource to adjust or cope with the potential impact. By understanding these factors, the City will be able to effectively plan adaptation actions and efficiently allocate resources to provide the greatest resilience benefits.

This report evaluates how facilities, critical infrastructure, roadways, and neighborhoods could be exposed to flooding under nine flood scenarios that incorporate several combinations of future sea level rise, extreme precipitation events, and groundwater table changes. The flood scenarios used were derived from an update to the City's Stormwater Model, which was revised to include analyses of sea level rise flooding impacts.

This report also includes a sensitivity analysis to measure the impact of flooding on assets and vulnerable populations, prioritized lists of critical and regional assets, documentation of community outreach conducted during the planning process, and recommendations for designating Adaptation Action Areas (AAAs) and initial adaptation actions.

3 Guide to the Document

This document is organized into the following sections:

- Section 1: Summary provides a one-page overview of the vulnerability assessment and its findings.
- Section 2: Introduction introduces the project and how it was conducted.
- Section 3: Guide to the Document explains how this document is organized.
- Section 4: Background explores climate scenarios at a global and regional level, highlighting existing policies.
- Section 5: Climate Change Shocks and Stressors examines climate change related threats to the City, including sea level rise, precipitation, storm surge, and groundwater table changes.
- Section 6: Flood Modeling summarizes the update to the City's stormwater model (Appendix A) and describes the methodology employed in the development of flood scenarios.
- Section 7: Exposure Analysis summarizes the exposure of City parcels, transportation networks, neighborhoods, business districts, and critical and regional assets to each flood scenario.
- Section 8: Sensitivity Analysis summarizes the sensitive critical and regional assets and the city's transportation network under each flood scenario.
- Section 9: Adaptation Recommendations provides recommendations for next steps, including developing an Adaptation Action Plan and designating an Adaptation Action Area for the City.

The document also includes the following Appendices:

- Appendix A: Stormwater Model Update summarizes the results of the updated stormwater model for the City which is consistent with the sea level rise projections, planning horizons, and other requirement of the Resilient Florida Grant Program (Section 380.093, F.S.)
- Appendix B: Methodology contains details of the methodological approaches used to develop the flood extents and determine exposure of critical and regional assets.
- Appendix C: Exposure Analysis Results provides tables listing affected critical and regional assets under all nine flood scenarios.
- Appendix D: Prioritized Lists of Critical and Regional Assets provides tables listing sensitive critical regional assets under all seven flood scenarios.
- Appendix E: Supplemental Figures includes maps for the regional assets and city transportation network for Scenarios 2, 3, 5, 7, and 8.
- Appendix F: References includes sources for references used in the VA.

4 Background

Resilience planning in Pompano Beach does not happen in a vacuum, rather, it is informed by international, state-level, and regional efforts. This VA assimilates information, methodological approaches, and best practices from the following sources which are organized from the broadest to the most specific to the City.

4.1 International Climate Projections

In 2022 the Intergovernmental Panel on Climate Change (IPCC) released its sixth comprehensive assessment report on climate change[ii]. This report provides an evaluation of the scientific basis for climate change impacts and predictions as well as opportunities for adaptation and mitigation.

The report cites an increasing rate of sea level rise, increasing from 1.3 mm (0.05 inches) per year between 1901 and 1971 to 3.7 mm (0.15 inches) per year between 2006 and 2018. It also reports that continued global warming is expected to intensify the global water cycle, increasing its variability. Evidence of changes in extreme weather such as heavy precipitation and tropical cyclones has intensified since the fifth comprehensive report in 2014.

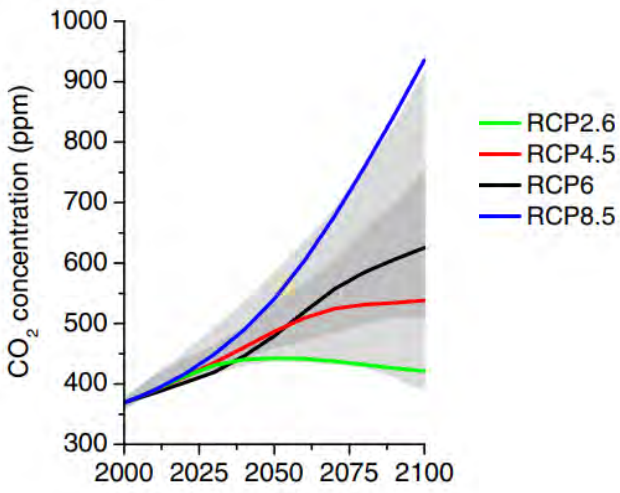

Figure 1: IPCC Representative Concentration Pathways[i]

The IPCC uses Representative Concentration Pathways (RCPs) to model potential future climate change predictions, which are related to expected rates of decarbonization. There are four RCP pathways, each modeled in **Figure 1**, which represent different concentrations of greenhouse gas equivalents in the atmosphere. This leads to uncertainty regarding SLR predictions, which are related to the levels of CO_2 in the atmosphere. Higher emissions scenarios lead to further atmospheric warming, which in turn leads to greater sea level rise. Predictions of future SLR are uncertain as they are correlated to carbon emissions and future decarbonization rates, which are not yet known. For planning purposes, it is best to assume higher rates of sea level rise to build a margin of safety into adaptation actions.

4.2 State and Regional Resilience Planning Efforts

Resilience planning for Pompano Beach takes place within the context of ongoing state, regional, and county level efforts. This study is informed by the work of the Resilient Florida Program, Southeast Florida Regional Climate Change Compact (SEFLCC), and Broward County, as well as prior resilience planning done for the City.

4.2.1 Resilient Florida Program

The State of Florida has comprehensive legislation to aid communities in evaluating risks and opportunities for resilience to intensified storms, sea level rise, and flooding. The Resilient Florida Program provides a selection of grants available to counties, municipalities, water management districts, flood control district, and regional resilience entities to increase resilience to flooding. Signed into law in 2021, the program represents the largest investment in Florida history for the purpose of sea level rise, storm, and flooding adaptation.

This VA is funded through a grant from the Resilient Florida Program and is designed to meet the program requirements[iii]. It is focused on flood risk and how vulnerability to flooding may change over time as a result of global climate change and its influence on sea level rise, precipitation patterns, and storms. It requires the use of the 2017 National Oceanic and Atmospheric Administration (NOAA) intermediate-high and intermediate-low sea level rise projections for 2040 and 2070, as well as storm surge data that equals or exceeds the 100-year return period (1% annual chance) flood event. Other potential climate impacts such as extreme heat, drought, and wildfires as well as secondary impacts such as economic disruption or migration of populations are outside the scope of this project. These impacts could be areas for further study by the City.

4.2.2 Southeast Florida Regional Climate Change Compact

The SEFLCC is a partnership founded in 2009 between Broward, Miami-Dade, Monroe, and Palm Beach Counties with the goal of accelerating climate mitigation and adaptation in the region. The SEFLCC provides resources to guide and align local climate action. SEFLCC developed the Regionally Unified Sea Level Rise Projection for Southeast Florida in 2011 and updated it in both 2015 and 2019. The projection is intended to inform adaptation planning and infrastructure development in Southeast Florida. Pompano Beach adopted a resolution to follow the SEFLCC's projection for long-term planning, which references measurements taken at the Key West tide gauge.

The 2019 SEFLCC sea level rise projection highlights three planning horizons[iv]:

1. Short Term: By 2040, sea level is projected to rise 10 to 17 inches above 2000 mean sea level.
2. Medium Term: By 2070, sea level is projected to rise 21 to 54 inches above 2000 mean sea level.
3. Long Term: By 2120, sea level is projected to rise 40 to 136 inches above 2000 mean sea level.

This puts the 2040 range between the IPCC median (10") projection and the NOAA 2017 intermediate-high (17") projection. SEFLCC recommends this range for planning projects with a short-term planning horizon, up to 2070. For non-critical infrastructure that will remain in service after 2070, SEFLCC recommends using the NOAA 2017 intermediate-high curve.

For 2070, the 2019 SEFLCC range is also between the IPCC median (21") and the NOAA 2017 intermediate-high (40") projection. SEFLCC recommends that the NOAA 2017 high curve should be used for critical, high-risk projects in service after 2070, including projects such as major roads and bridges, water and wastewater utilities, power plants, and major urban developments.

4.2.3 Broward County

Broward County has been engaged in resilience planning for many years. Currently, the county's Resilient Environment Department is leading a two-year regional resilience plan project that will develop resilience strategies for the county, with a primary focus on flooding and heat mitigation. While this plan is under development, some interim products have been released, including a hydrologic model viewer that allows comparison of model outputs across scenarios and location-specific estimates of flood depth under compound flood conditions. As one of the 31 municipalities within Broward County, Pompano Beach is working collaboratively with the county to support the resilience plan and identify vulnerabilities associated with climate change and sea level rise.

Broward County's Resilience Roadmap lists adaptation projects within the county. The Pompano Beach Pier is the only project currently listed within the City.

4.3 City of Pompano Beach

Pompano Beach has been working through a strategic process designed to improve its sustainability and resilience performance for several years. This VA represents a component of the Sustainability Workplan laid out in the City's Sustainability Strategy, adopted by the City Commission in September 2020. The City has already completed several other steps in the Workplan by establishing a quantitative sustainability baseline, completing a greenhouse gas inventory, setting sustainability goals, and developing a sustainability project portfolio and implementation plan.

This project builds on prior resilience planning efforts by the City. Completed in April 2014, the City of Pompano Beach Vulnerability to Sea Level Rise Assessment Report (2014 VA), evaluated the vulnerability of municipal infrastructure to one and two-foot sea level rise scenarios. The 2014 VA did not address extreme precipitation, storm surge, groundwater changes, the City's stormwater system, or compound flooding. The 2014 VA used 2007 LiDAR elevation data to assess the vulnerability of City assets to the sea level rise scenarios, including the Airpark, bridges and arterial roads, City Hall, City and regional parks, community redevelopment areas, evacuation routes, fire stations, law enforcement assets, schools, and infrastructure for potable water and wastewater treatment.

As sea level rise and storm event projections are constantly being updated as more information and research becomes available, it is prudent to periodically reevaluate risks to the City's critical infrastructure. While the 2014 VA provided valuable information at the time it was completed, it required an update for a variety of reasons, including new and additional City assets added since 2014, updated sea level rise projections, and the need for the City to have a current VA that meets the requirements of the Resilient Florida Program as described in Florida Statutes Section 380.093.

This VA facilitates the City's understanding of the exposure and sensitivity of its critical assets to current and future flood hazards. It also provides recommendations for designating an Adaptation Action Area and preliminary adaptation measures. It lays the groundwork for further adaptation planning to meet the challenges posed by global climate change.

5 Climate Change Shocks and Stressors

This VA's primary focus is on flood risk. It evaluates stressors including extreme precipitation events, sea level rise, and "sunny day" or "nuisance" flooding as well as storm surge shock. As a low-lying coastal community, Pompano Beach is at risk for flooding and infrastructure damage due to storms, extreme precipitation events, and sea level rise and its associated impacts, such as increasing groundwater elevations.

5.1 Sea Level Rise

Sea level rise is caused by two factors related to global warming: thermal expansion of ocean water and added water from melting glaciers, ice caps, or ice sheets[v]. Sea level rise is not evenly distributed throughout the globe – the movement of tectonic plates, ocean currents, and the earth's uneven gravity field distribute this rise unequally. **Figure 2** shows sea level rise along US coastlines as projected by the NOAA Sea Level Rise Technical Report, relative to the year 2000[vi]. Within the United States, the mid-Atlantic and the Gulf of Mexico will experience the highest increases in average sea level. While sea level rise happens gradually, it poses significant mid- and long-term risks to the residents, infrastructure, and natural environment of coastal cities.

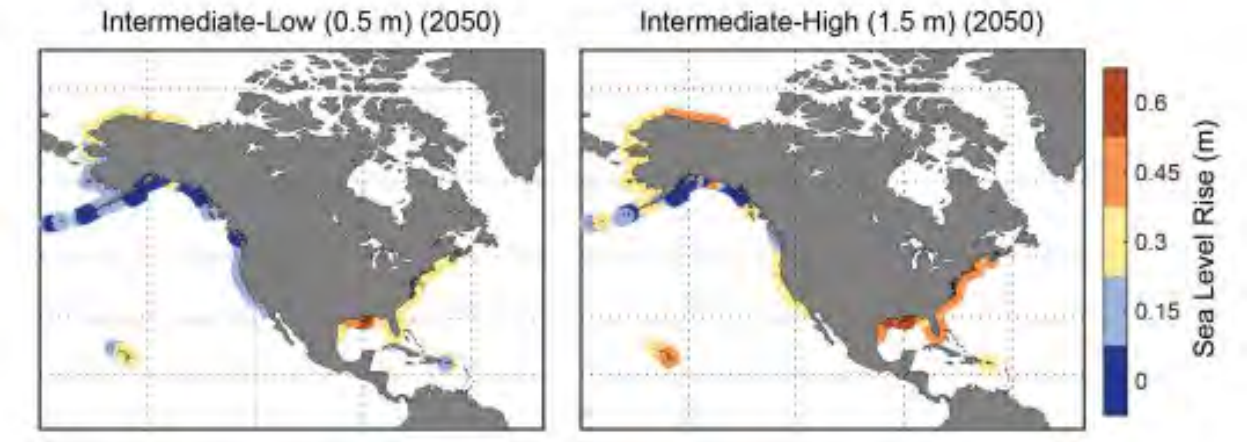

Figure 2: Relative SLR in 2050 for a) Intermediate-Low and b) Intermediate-High[vi]

5.1.1 Historical Rates of Sea Level Rise

The two NOAA tide gauges closest to Pompano Beach that collect current data are Lake Worth Pier and Virginia Key in Biscayne Bay, located approximately 30 miles north and 40 miles south of the City center, respectively.

Figure 3 shows mean sea level at Lake Worth Pier, FL using data from 1970 to 2023. Regular seasonal fluctuations due to temperature, salinity, wind, atmospheric pressure, and ocean current are shown as well as the long-term linear trend[vii]. Plotted values are relative to the most recent mean sea level (MSL) datum from NOAA. The historic MSL trend at Lake Worth Pier shows an average increase of 4.12 mm (0.16 inches) per year over the period from 1970 to 2023.

NOAA does not provide a sea level rise projection based on data taken from the Lake Worth Pier tide gauge, but historical data estimates a linear 1.35-foot rise over 100 years.

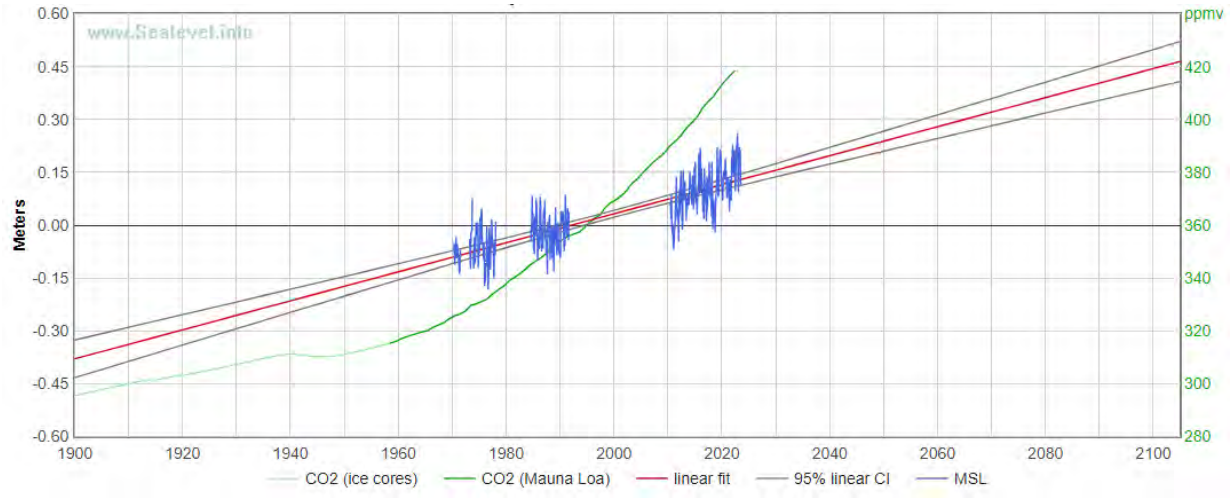

Figure 3: Mean Sea Level at Lake Worth Pier[viii]

5.1.2 Sea Level Rise Projections

In accordance with Resilient Florida Program requirements, this study uses the 2017 NOAA intermediate-low and intermediate-high sea level rise projections for all flood modeling and analysis, with planning horizons in 2040 and 2070.

NOAA's 2017 sea level rise projections for Broward County are based on the Miami Beach tide gauge[viii]. **Table 1** details sea level rise projections for intermediate-low and intermediate-high scenarios for the years 2040 and 2070.

Sea level rise projections need to be updated regularly to incorporate new data and the Federal Interagency Sea Level Rise and Coastal Flood Hazard and Tool Task Force recently released the 2022 Sea Level Rise Technical Report[ix]. The 2022 projections (shown in **Table 1**) consider the latest science and characterize ice sheet melting, which results in a more accurate projection of global mean sea level rise. The new projections show less acceleration in sea level rise until 2050, however, towards the end of the century they predict increased acceleration.

Though near-term predictions are lower, sea level rise is continuous and will continue to increase over time. The implication of these new projections is that communities in the US East and Gulf regions will have additional time to organize their adaptation plans to effectively build resilience against inevitable sea level rise impacts.

Table 1: NOAA 2017 and 2022 Sea Level Rise Projections (feet NAVD)

Projections	Intermediate-Low		Intermediate-High	
	2040	2070	2040	2070
NOAA 2017	0.76	1.31	1.48	3.35
NOAA 2022	0.85	1.54	1.02	2.69

5.1.3 Sunny Day or Tidal Flooding

Sea level rise can lead to an increase in frequency and severity of tidal flooding, also referred to as "high tide", "sunny day," or "nuisance" flooding. Eventually, sea level rise could lead to permanent inundation of low-lying areas.

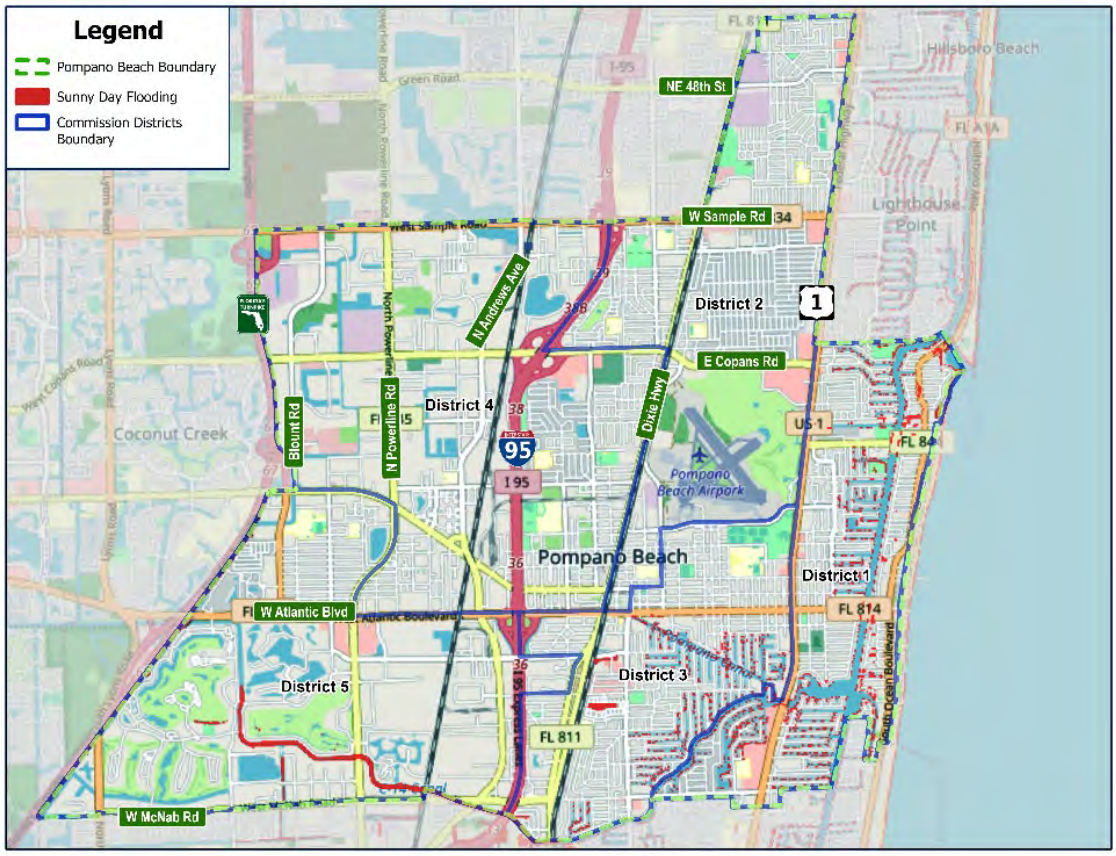

Figure 4: Current Sunny Day Flooding Map (RS&H)

NOAA provides an interactive mapping tool that allows visualization of how sea level rise will affect coastal communities. **Figure 4** displays areas that currently experience tidal flooding, shown in red, within Pompano Beach. Broward County currently operates an interactive tool that allows citizens to send in pictures of "sunny day" flooding occurring near them. This flooding will become increasingly prevalent in the future for South Florida, especially as the sea level continues to rise.

5.2 Precipitation

Precipitation patterns are expected to change as the climate changes. On a global scale, precipitation projections generally agree that rainfall will become more intense when it occurs. This pattern may lead to periods of drought interspersed with extreme precipitation and flooding.

Typically, extreme precipitation events are defined as those in the top 1% of all days with precipitation. The severity of a precipitation-related flood event depends on the amount and intensity of precipitation, soil moisture conditions, the extent of impervious surfaces, performance of stormwater systems, and tailwater conditions holding back discharges to receiving waters. Sea level rise may compound these effects as the water table rises and tailwater conditions increase. Sea level rise can also translate into a rise in groundwater elevations, reducing capacity to absorb stormwater runoff.

Long-term predictions of precipitation patterns are difficult and subject to uncertainty, with many trusted data sources reporting different findings. IPCC reports predict an increase in precipitation in South Florida[i], while NOAA predicts decreases in summer precipitation for South Florida[x]. Most sources agree that the effects of climate change will likely increase extreme rain events and drought, therefore the average level of precipitation per year may not the best indicator of future flood risk. **Figure 5** shows a graph of extreme precipitation events (defined as 4 inches or more of rainfall) between the years of 1900 and 2020[x]. Dots represent annual values while bars show averages over 5-year periods (the furthest right bar is a 6-year average). The horizontal black line represents the long-term (entire period) average of 0.5 days. A typical station experiences an extreme event about once every 2 years. The number of extreme precipitation days is variable, but the total has remained near or above average since 1995.

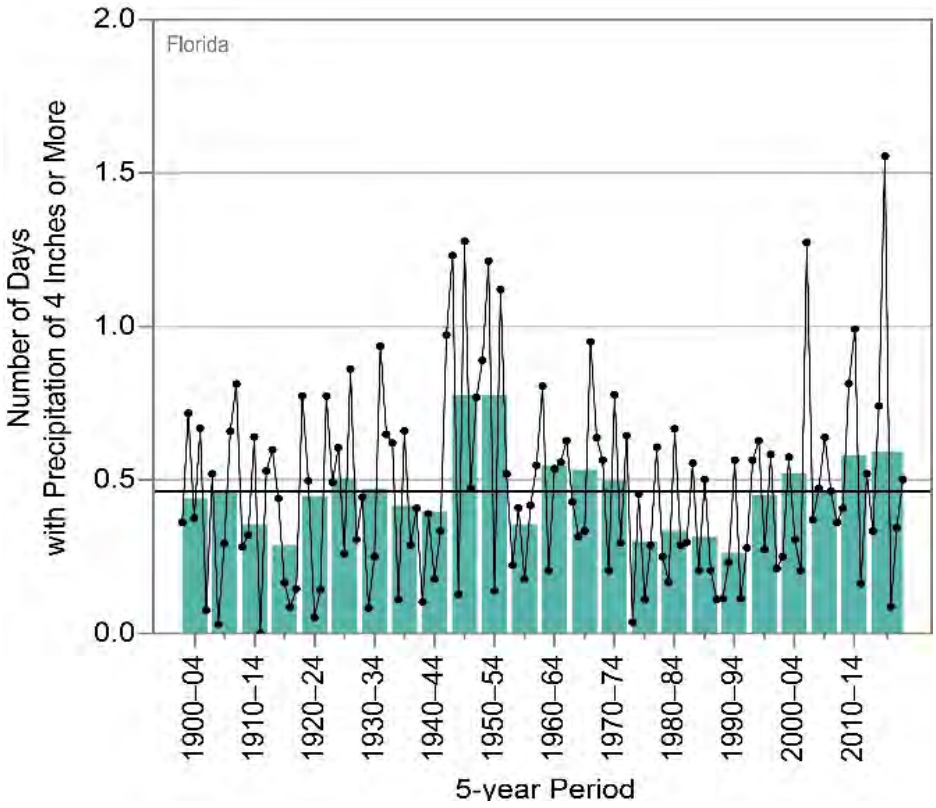

Figure 5: Observed Number of 4-in Precipitation Events[x]

As the climate warms, precipitation will continue to be affected as the two are closely linked. Higher temperatures increase evaporation and can contribute to drought in some cases. Additionally, as the air warms, it holds more water vapor. Air can hold about 7% more moisture for every one degree C increase in temperature[xi]. Precipitation may become more variable with longer dry periods, but rainfall events may be more extreme when they occur. In Florida, although the annual frequency of hurricanes has shown no predictable trends, the amount of rainfall expected when a hurricane does occur may increase as the climate continues to warm[xii]. Warmer ocean temperatures translate into more moisture taken up by the hurricanes, which is then released as rainfall. There is also evidence that hurricanes may be slowing down, leading them to dump more rain in a given area. A 2018 study published in Nature found that globally, the speed at which the storm is moving has slowed by an average of 10%, which can double their rainfall totals[xiii].

A study done by a combination of academic bodies and NOAA was completed to analyze observational and model-based trends of extreme precipitation in the US and to then create future projections[xiv]. The results showed steady increases in the likelihood of two-day, five-year storms in the Southeast region of the US. **Figure 6** shows the projections from the years 2011 to 2100 using lower scenario (green) and higher scenario (blue) RCPs.

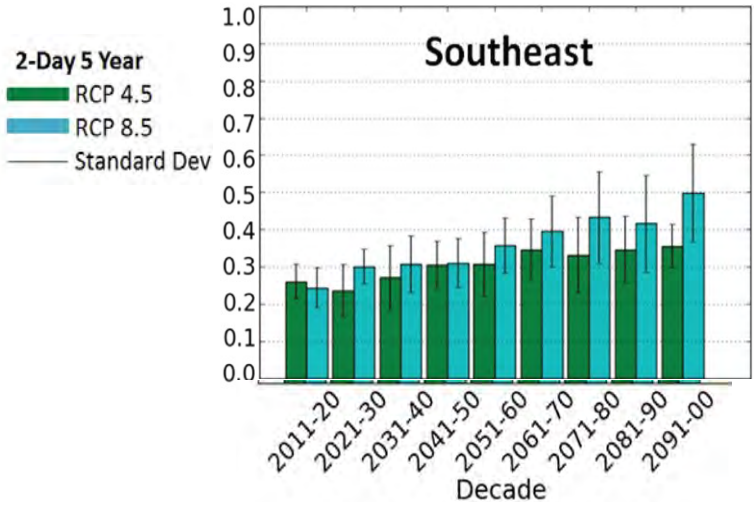

Figure 6: Regional Extreme Precipitation Event Frequency[xiv]

Another study, which was completed in 2022, was done by a group from the South Florida Water Management District, United States Geological Survey, and United States Army Corps of Engineers to analyze future extreme rainfall change factors for resiliency planning in South Florida[xv]. The study calculated precipitation "change factors" which are derived from the ratio of future rainfall depths to historic rainfall depths. The change factors are then applied to the NOAA precipitation frequency projections to determine future rainfall**.**

Figure 7 and Figure 8, from the South Florida Water Management District memorandum "Adoption of Future Extreme Rainfall Change Factors for Flood Resiliency Planning in South Florida" show Broward County change factors for the 1- and 3-day rainfall durations and 5-, 10-, 25-, 50-, 100-, and 200-year return frequencies, based on the 50% confidence interval (within the 25th and 75th percentile) for the ensemble of all model results and combined emissions

scenarios (RCP 4.5 and RCP 8.5). The black line represents the median change factors, while the shaded area represents the range of outcomes under differing model runs and emissions scenarios. Projections range from little increase in extreme rainfall change factors, to change factors up to 1.6 for the 200-year event under the RCP 8.5 emissions scenario.

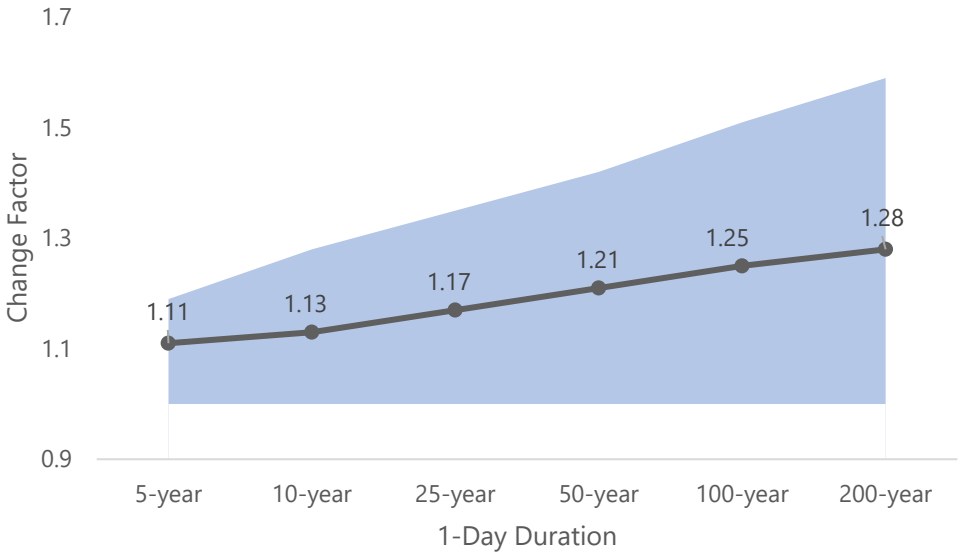

Figure 7: Broward County Future (50-year) Extreme Rainfall Change Factors (24-Hour Duration)[xv]

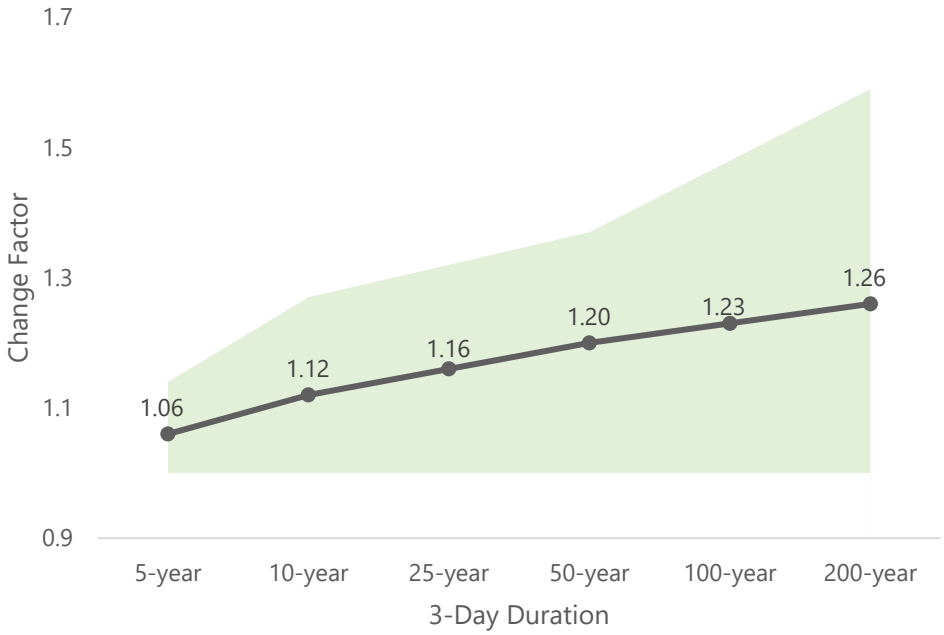

Figure 8: Broward County Future (50-year) Extreme Rainfall Change Factors (72-Hour Duration)[xv]

5.3 Storm Surge

Storm surge is a phenomenon that occurs during severe weather events when strong winds and low atmospheric pressure push ocean water towards the shore[xvi]. This causes the tide to rise significantly above the typical high tide line, leading to severe flooding. The frequency of storm surge events is related to several climate factors, including the frequency and intensity of severe storms and sea level rise. As sea level rises, the base tidal level will increase, resulting in higher storm surge elevations.

Storm surge levels can be difficult to predict because of the wide range of variables that contribute to their development. The Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model has been used for decades to estimate storm surge heights using historical, hypothetical, and predicted hurricanes[xvii]. The SLOSH model relies on a composite approach that computes Maximum Envelopes of Water (MEOWs) and the Maximum of MEOWs (MOMs) to determine storm surge vulnerability in an area. As such, SLOSH outputs should be regarded as near worst-case scenarios and do not represent the impacts of an individual storm in a given location, which would likely have more limited impact.

Figures 9, 10, and 11 model how storm surge would impact Pompano Beach**. Figure 9** models a Category 1 hurricane, **Figure 10** Category 3, and **Figure 11** Category 5, each utilizing data from the NOAA National Storm Surge Risk Maps[xviii]. As the intensity of storms increases, storm surge will increase the area of the City that is exposed to flooding impacts.

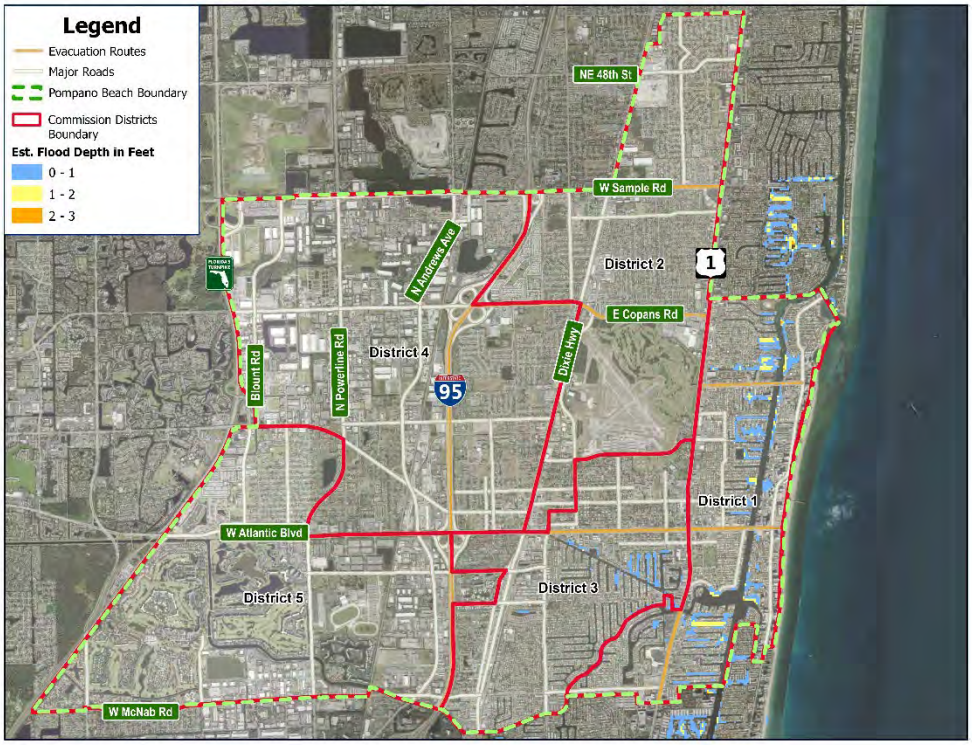

Figure 9: Category 1 Hurricane Storm Surge Map (RS&H)

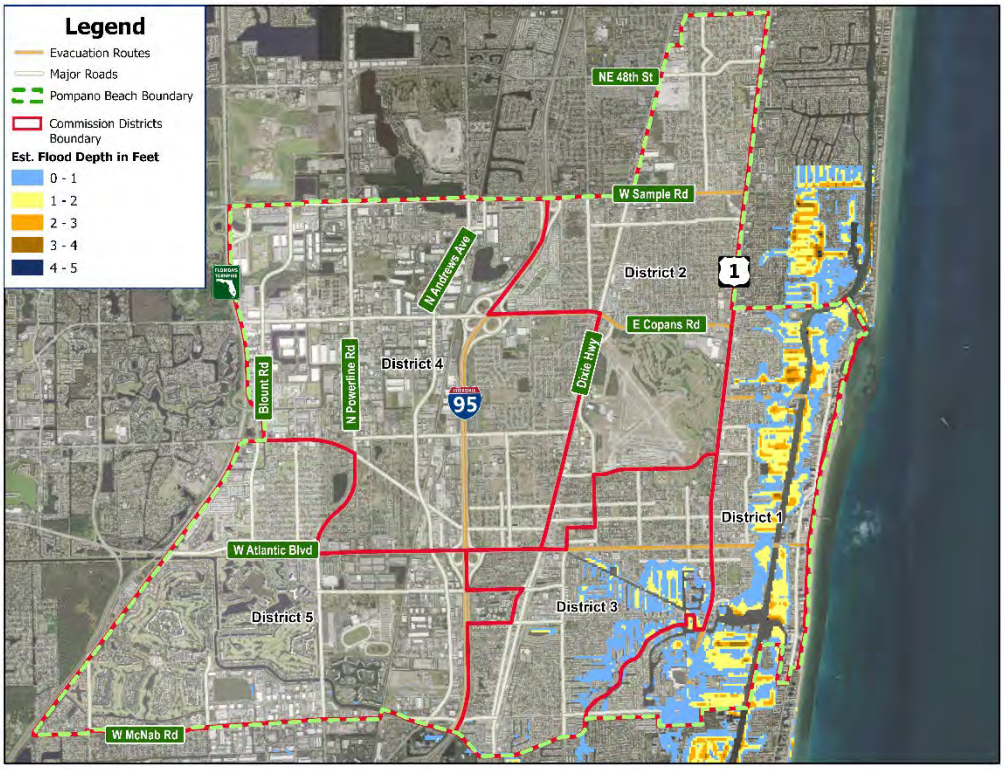

Figure 10: Category 3 Hurricane Storm Surge Map (RS&H)

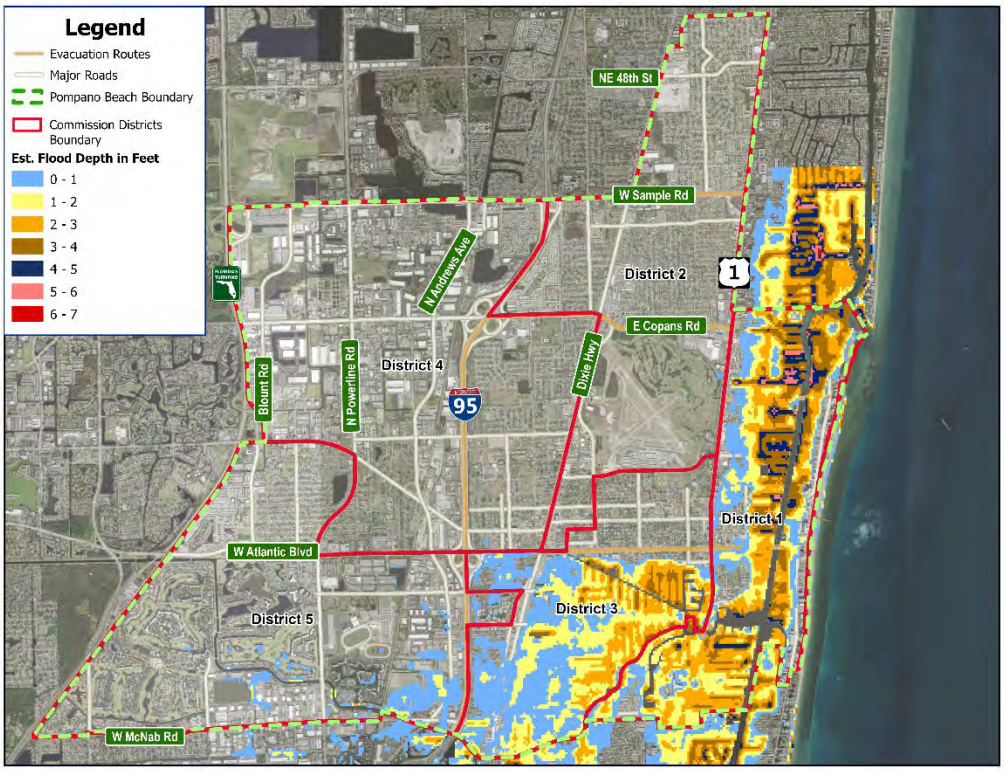

Figure 11: Category 5 Hurricane Storm Surge Map (RS&H)

5.4 Groundwater Projections and Impacts

Groundwater will be impacted by climate change as a consequence of sea level rise. The porous karst (limestone) topography underlying Florida's coast allows water to flow through it. This has two primary effects: it allows groundwater table levels to rise at approximately the same rate as sea level, and it leads to saltwater intrusion as sea water mixes with the groundwater. Although sea walls or other barriers could be constructed to hold back ocean waters, the permeable karst allows sea water to flow underneath the barrier.

As the groundwater table rises, it reduces the capacity of the land to hold excess stormwater and runoff, contributing to flooding. Higher sea levels will cause less gradient for gravity control of stormwater. This may necessitate pumping to maintain pressure and flow towards the ocean. Pumping increases energy use and introduces new vulnerabilities into the City's stormwater management system. The increase of energy use can cause a power outage, causing the pumps to fail. Mechanical failure may also occur due to an interruption in the energy supply.

Groundwater quality can also be compromised through exposure to contaminants which were previously isolated from the aquifer. As groundwater levels are elevated, soil and water contaminants on brownfield sites that were previously isolated may be exposed to groundwater. A higher water table can impact infrastructure such as underground tanks, pipes, electrical conduits, and building foundations.

Figure 12 shows the trend in depth to water below surface in monitoring well G-2147, located off North Federal Highway near Pompano Citi Centre[xix]. While there is annual variability, from the year 1977 to 2024, the depth to the water table has decreased from about nine feet below ground surface to just three feet at this location.

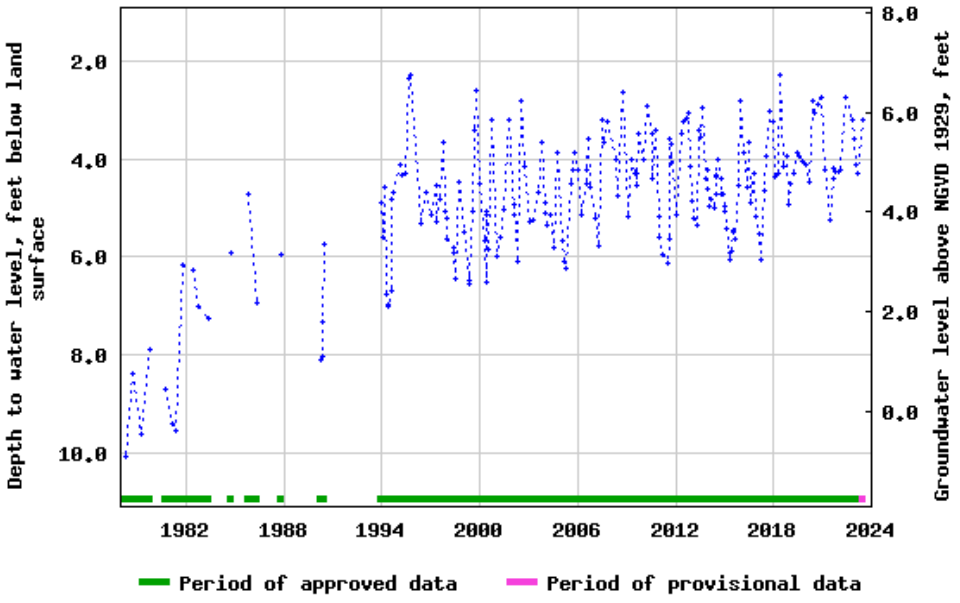

Figure 12: USGS Groundwater Monitoring Well G-2147[xix]

The lack of consistent data collection in the 1980s and 1990s was due to challenges faced in groundwater level monitoring in the United States due to fragmentation and reliance on existing local projects. USGS has been collecting water-level data for over a century, and many state and local agencies also have a long history of monitoring. However, the data collection process was often sparse, and the availability of comprehensive, systematic, and long-term water-level data was limited.

In 2017 Broward County developed a model of future groundwater table elevations, showing an average of two feet of rise for Pompano Beach area during the wet season by 2060[xx]. **Figure 13** below shows future projections of groundwater table elevation in the year 2060. Coastal areas in District 1 and District 3 may see groundwater elevations as high as up one foot below ground, while groundwater elevations in parts of District 4 are projected to be seven feet below the surface.

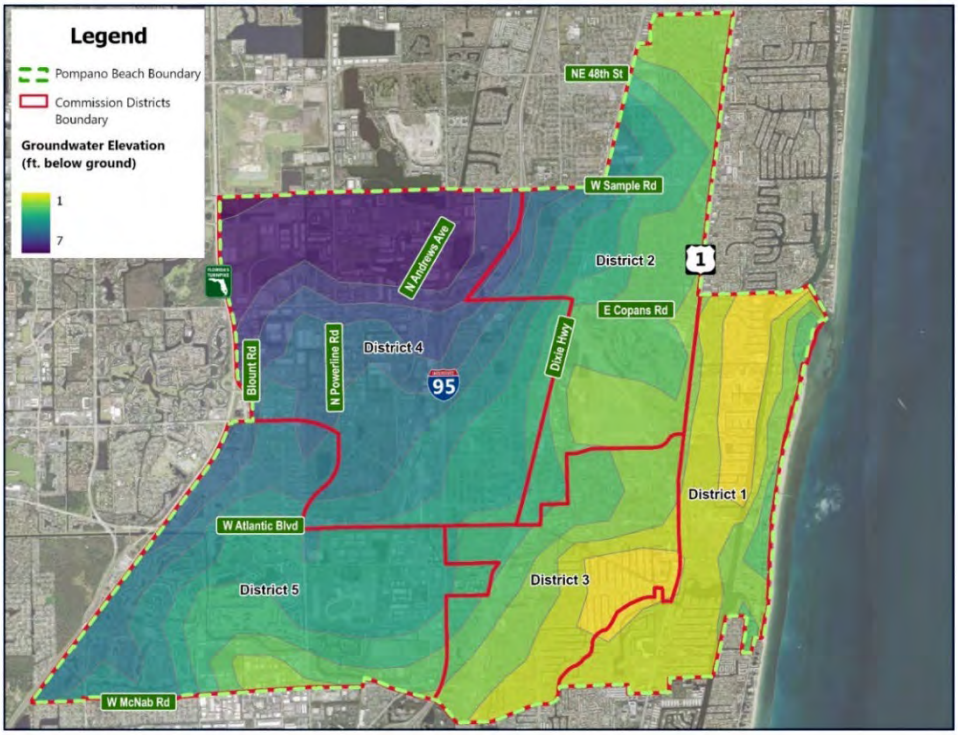

Figure 13: Future Groundwater Conditions Map[1] (RS&H)

[1] Broward County provides the following details regarding the future groundwater conditions map: "The map represents the expected future average wet season groundwater elevations for Broward County. The average is based on model outputs for the months of May through October over the period of 2060-2069. The models used are The Broward County Inundation Model and the Broward County Northern Variable Density model, both developed by the USGS and MODFLOW based. The future conditions that are modified in the models are both precipitation and sea level rise. The future precipitation pattern is based on the COAPS downscaled CCSM global model and represents an increase of 9.1% rainfall from the base case of 1990-1999 (53.4 in/yr to 58.2 in/yr). Sea level rise was based on the USACE NRC3 curve which equates to an increase of 26.6 to 33.9 inches to the future period from 1992 levels. Final results are presented in NAVD 88".

6 Flood Modeling

6.1 Stormwater Model Update

The Stormwater Model Update (**Appendix A**) conducted for this study relies on findings of the City's 2013 Stormwater Master Plan report. It includes EPA's Storm Water Management Model (SWMM) results for each Study Area, as well as the preferred alternative selected for analysis.

The SWMM model has been updated with new boundary conditions to align with the requirements of the Resilient Florida Grant Program. It uses sea level rise projections to change existing inland waterways and canals from a fixed stage to a tidal curve, reflecting the predicted rise in groundwater elevation due to sea level rise, and also models the effect of extreme precipitation and storm surge events. The stormwater model update includes estimates of flooding at the City's stormwater nodes (locations where stormwater infrastructure components meet the surface). This one-dimensional (point-based) flood model was used as the basis for the flood scenarios discussed below.

Appendix A also includes recommendations for improvements to the City's stormwater management system, focusing on infrastructure upgrades such as the installation of new exfiltration trenches, pipe size upgrades, pump stations, and drainage wells. The stormwater model update includes estimates of flooding at the City's stormwater nodes (locations where stormwater infrastructure components meet the surface). This one-dimensional (point-based) flood model was used as the basis for the flood scenarios discussed below.

6.2 Flood Scenarios

Using the results of the stormwater model update, GIS software was used to develop two-dimensional flood extents for nine flood scenarios that represent compound flooding that could occur from various combinations of sea level rise (SLR), precipitation events, and storm surge. They include:

- Scenario 1: 5-year, 24-hour rainfall event
- Scenario 2: 5-year, 24-hour rainfall event with NOAA Int-low SLR projection for 2040 (0.76 ft)
- Scenario 3: 5-year, 24-hour rainfall event with NOAA Int-high SLR projection for 2040 (1.48 ft)
- Scenario 4: 5-year, 24-hour rainfall event with NOAA Int-low SLR projection for 2070 (1.31 ft)
- Scenario 5: 5-year, 24-hour rainfall event with NOAA Int-high SLR projection for 2070 (3.35 ft)
- Scenario 6: 100-year, 72-hour rainfall event
- Scenario 7: 100-year, 72-hour rainfall event with 100-year storm surge event
- Scenario 8: 500-year, 72-hour rainfall event
- Scenario 9: 500-year, 72-hour rainfall event with 500-year storm surge event

Note that in the NOAA 2017 model, Scenario 3 (Intermediate-high for 2040) results in greater SLR than Scenario 4 (intermediate-low for 2070).

It is important to understand the limitations of flood risk modeling. Flood scenarios are intended for planning purposes and are not intended to accurately forecast future flood events. Flood model inputs are subject to uncertainties, including those associated with climate projections and mitigation efforts. Large scale SWMM models can have localized instabilities, meaning results may be inconsistent at specific locations. Interpolation of flood extents from the one-dimensional SWMM model results can introduce uncertainty, especially since stormwater nodes are not evenly distributed across the City. Because the flood extents are based on a SWMM model of the City's stormwater system, they may differ from other flood models that do not include stormwater infrastructure in their methodology. Results should be validated with site-specific studies before designing or implementing capital projects to respond to flood vulnerabilities identified through this report.

7 Exposure Analysis

An Exposure Analysis was conducted to determine the extent to which the City's land area, parcels, transportation networks, business districts, neighborhoods, and critical and regional assets could be exposed to flooding under each of the nine flood scenarios.

Pompano Beach's five commission districts are used to facilitate discussion of the various regions of the City (**Figure 14**). The districts are referred to as following:

1- East District
2- Northeast District
3- Southeast District
4- Northwest District
5- Southwest District

Figure 14: City of Pompano Beach District Division Lines

Table 2 summarizes exposure for each flood scenario by the number of parcels impacted, percentage of parcels impacted, total acres, and percent of total City area impacted (e.g., flooded). Pompano Beach contains a total of 54,511 land parcels. Scenario 9, a 500-year storm with storm surge has extremely high exposure, impacting close to 80% of the City's parcels. All flood scenarios result in exposure of almost 40% of the City's parcels, which is defined as the flood extent layer intersecting the parcel boundary. The percent exposure calculation includes parcels which contain existing water bodies. Note that exposure is defined as a flood extent touching a parcel, it does not necessarily mean significant or widespread flooding of that parcel.

Table 2: Exposure of City Parcels and Land Area Under Each Flood Scenario

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
Total Number of Parcels	54,511	54,511	54,511	54,511	54,511	54,511	54,511	54,511	54,511
Number of Parcels Impacted	21,656	21,960	22,898	22,344	29,635	33,591	41,869	34,206	42,980
% of Parcels Impacted	39.7%	40.3%	42.0%	41.0%	54.4%	61.6%	76.8%	62.8%	78.8%
Acres of City Impacted	2,593	2,624	2,736	2,792	4,706	6,471	9,813	6,816	10,481
% of City Area Impacted	16.5%	16.7%	17.4%	17.7%	29.9%	41.1%	62.3%	43.3%	66.6%

Exposure analysis was performed using GIS data for the City's regional and critical assets. Regional assets were developed using resources identified by the *Standardized Vulnerability Assessment: Scope of Work Guidance* and creating points using ArcGIS. Critical assets were developed from a list of assets provided by the City and represent the assets the City considers critical. See **Appendix B** for more details about the development of regional and critical assets. If any critical assets were also present in the regional layer, they were removed so each layer would be unique.

The exposure of the regional and critical assets to each flood scenario was evaluated at the parcel level. Assets are considered exposed if any portion of the parcel on which they are located is inundated under a flood scenario. This approach was chosen because flooding at the parcel level could result in loss of access and damage to utilities or site infrastructure, even if an asset structure on the parcel was not inundated. However, it does not necessarily indicate assets would be damaged or affected. The Sensitivity Analysis chapter evaluates whether critical and regional assets such as buildings, lift stations, etc. would be directly affected by each flood scenario.

7.1 Scenario 1

Figure 15 shows Scenario 1 flood extents, resulting from a rainfall event with a 5-year, 24-hour return period. Based on the median NOAA Atlas 14 distribution, the typical rainfall associated with this event is approximately 4.23 inches. This scenario could impact 21,656 parcels, or 39.7% of the total parcels within the City, the least exposure of the nine scenarios modeled. It would affect all five commission districts in the City, with District 2 experiencing the fewest impacts, but with some flooding near the Airpark.

Flooding in Districts 1 and 3 primarily occurs along the Intracoastal Waterway, with limited exposure in other areas. In District 3, flood depths up to three feet could occur in the northwest corner of Snug Harbor and Avondale

District 4 flooding extends into wooded areas of the Northwest Pompano neighborhood, as well as the northeast corner near Loch Lamond. District 5 would have minimal flooding with most impacts adjacent to existing water bodies. Flooding up to four feet in depth could occur in the Andrews Industrial District.

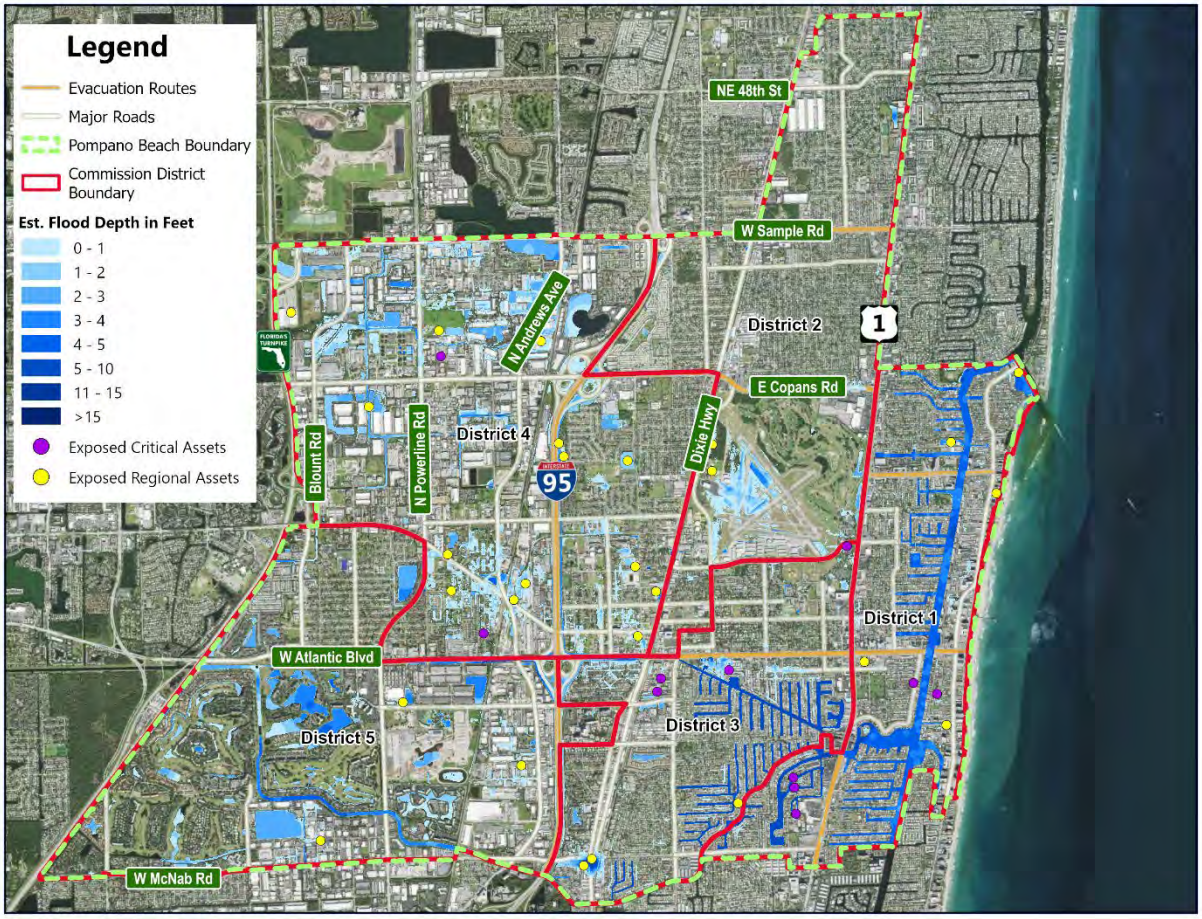

Figure 15: City Exposure under Scenario 1 (RS&H)

Table 3 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix B**.

Table 3: Assets Exposed by Scenario 1

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	9	Marinas	2
Schools	1	Stormwater Treatment Facilities	21
Bridges	1	Parks	5
Total	11	**Total**	28

7.2 Scenario 2

Scenario 2, shown in **Figure 16**, combines a 5-year, 24-hour storm event with the NOAA intermediate-low sea level rise projection for the year 2040. Under Scenario 2, 21,960 land parcels could experience flooding, or 40.3% of all parcels within the City.

Water level increases are expected along the Intracoastal and its outlets, as well as in existing water bodies throughout the City. Flood levels may increase up to six feet along the canal in the Santa Barbara Shores, Santa Barbara Estates, Harbor Village, Avalon Harbor, and Hillsboro Shores neighborhoods within District 1. A small number of parcels within District 1 could experience flooding around one foot on roadways. Water levels may increase up to seven feet along the Cypress Creek Canal, impacting District 3, leading to areas with up to three feet of flooding in the Garden Isles, Snug Harbor, and Cypress Lakes neighborhoods. A small number of parcels in District 3 could see significant flood depths in the west end of Snug Harbor, between the Pompano Canal and East Atlantic Boulevard.

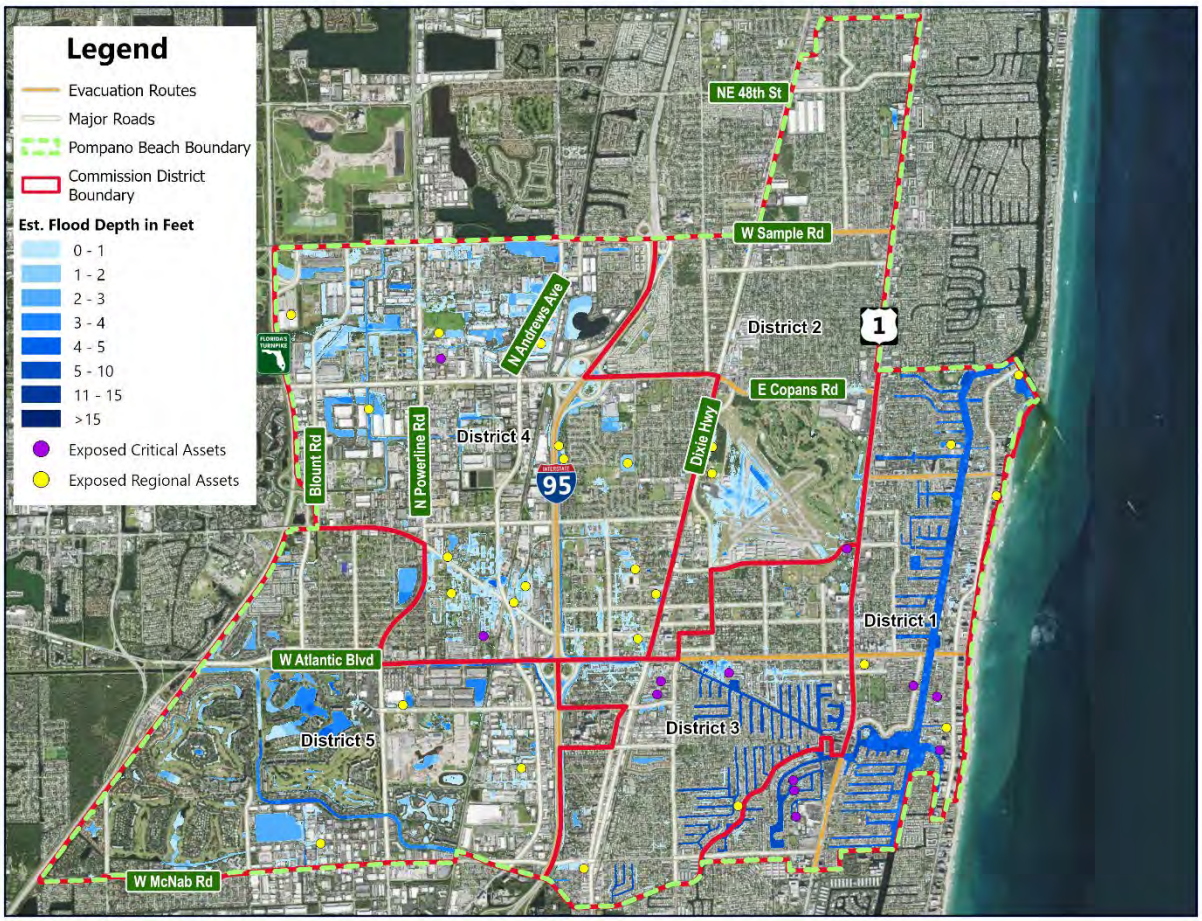

Figure 16: City Exposure under Scenario 2 (RS&H)

Cypress Creek Canal water levels may continue to rise into District 5, reaching up to four feet in the Cypress Bend neighborhood. Small areas of flooding throughout Districts 4 and 5 could occur, typically in areas near existing bodies of water or drainage canals, with up to three feet of

flooding along N Powerline Rd in District 4. District 2 experiences minimal flooding under this scenario, other than flooding at the Pompano Airpark.

Table 4 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix B**.

Table 4: Assets Exposed by Scenario 2

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	10	Marinas	2
Schools	1	Stormwater Treatment Facilities	20
Bridges	1	Parks	5
Total	12	**Total**	27

7.3 Scenario 3

Scenario 3, shown in **Figure 17,** includes a 5-year, 24-hour storm event combined with NOAA intermediate-high sea level rise predictions though 2040. It would likely primarily impact District 1 and 3, with small areas of flooding in District 4 and 5. In this projection, 22,898 land parcels could experience flooding, or 42.0% of the total parcels within the City. This scenario shows similar flooding areas as Scenario 2 predictions, however with slightly greater flood depths, leading to a 1.7% exposure increase.

Water level increases may be seen along the Intracoastal and its outlets, at levels averaging close to seven feet. Flooding along roadways in neighborhoods near the waterway may occur throughout Districts 1 and 3, typically at levels around one foot. Water level increases along the Cypress Creek Canal may impact District 5, with parcels in the surrounding neighborhoods experiencing flooding in low lying areas.

Certain areas within Districts 4 and 5 may experience one foot of flooding, typically in areas near existing bodies of water or drainage canals, with larger areas of flooding in the northwest corner and southern portion of the district. Flooding in District 2 remains limited to areas near the Airpark.

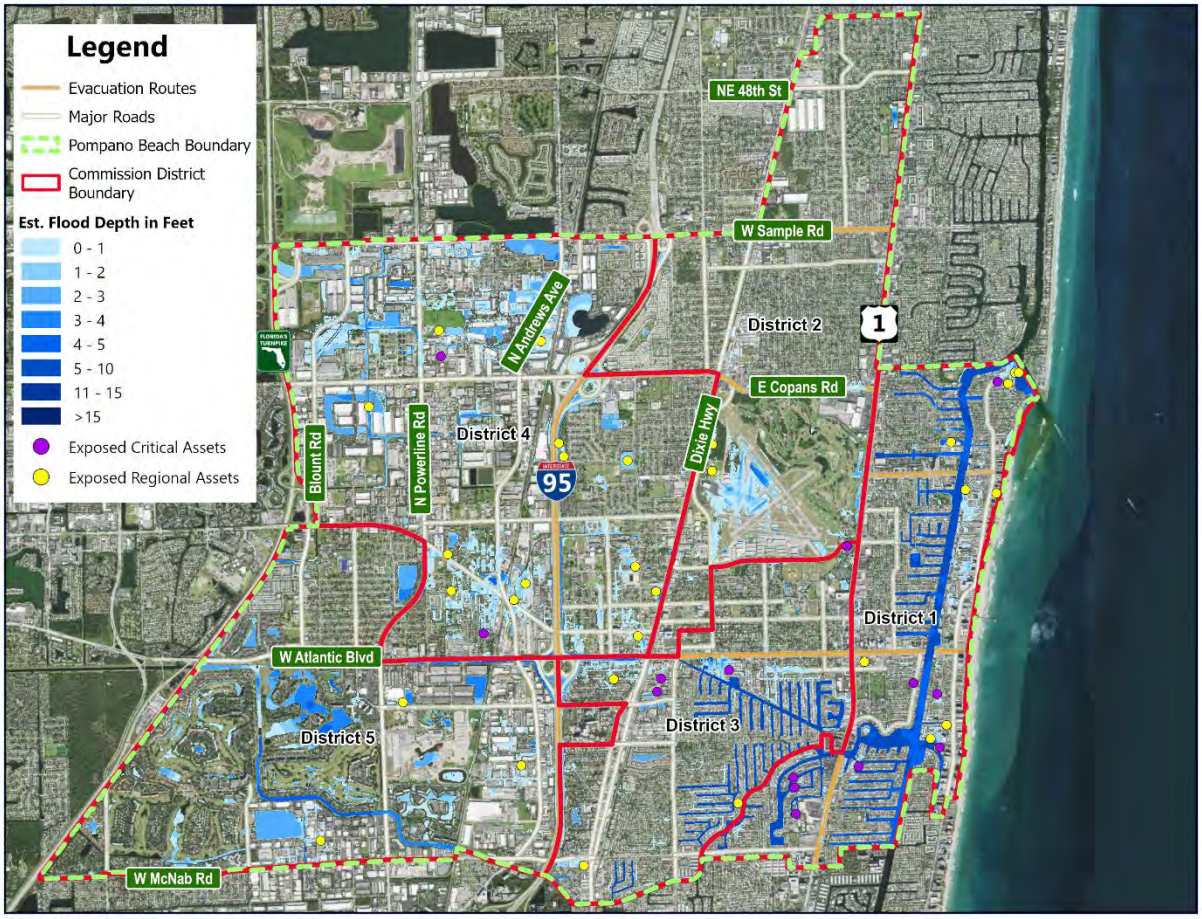

Figure 17: City Exposure under Scenario 3 (RS&H)

Table 5 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix B**.

Table 5: Assets Exposed by Scenario 3

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	12	Marinas	3
Schools	1	Stormwater Treatment Facilities	20
Bridges	1	Parks	8
		Correctional Facilities	1
Total	14	**Total**	32

7.4 Scenario 4

Scenario 4, shown in **Figure 18**, combines a 5-Year, 24-Hour Storm Event with the NOAA 2070 Intermediate-Low SLR projections. It would primarily impact District 1 and 3, with areas of flooding in District 4 and 5, and in District 2 near the Airpark. A total of 22,344 land parcels could experience flooding, or 41.0% of the total parcels within the City.

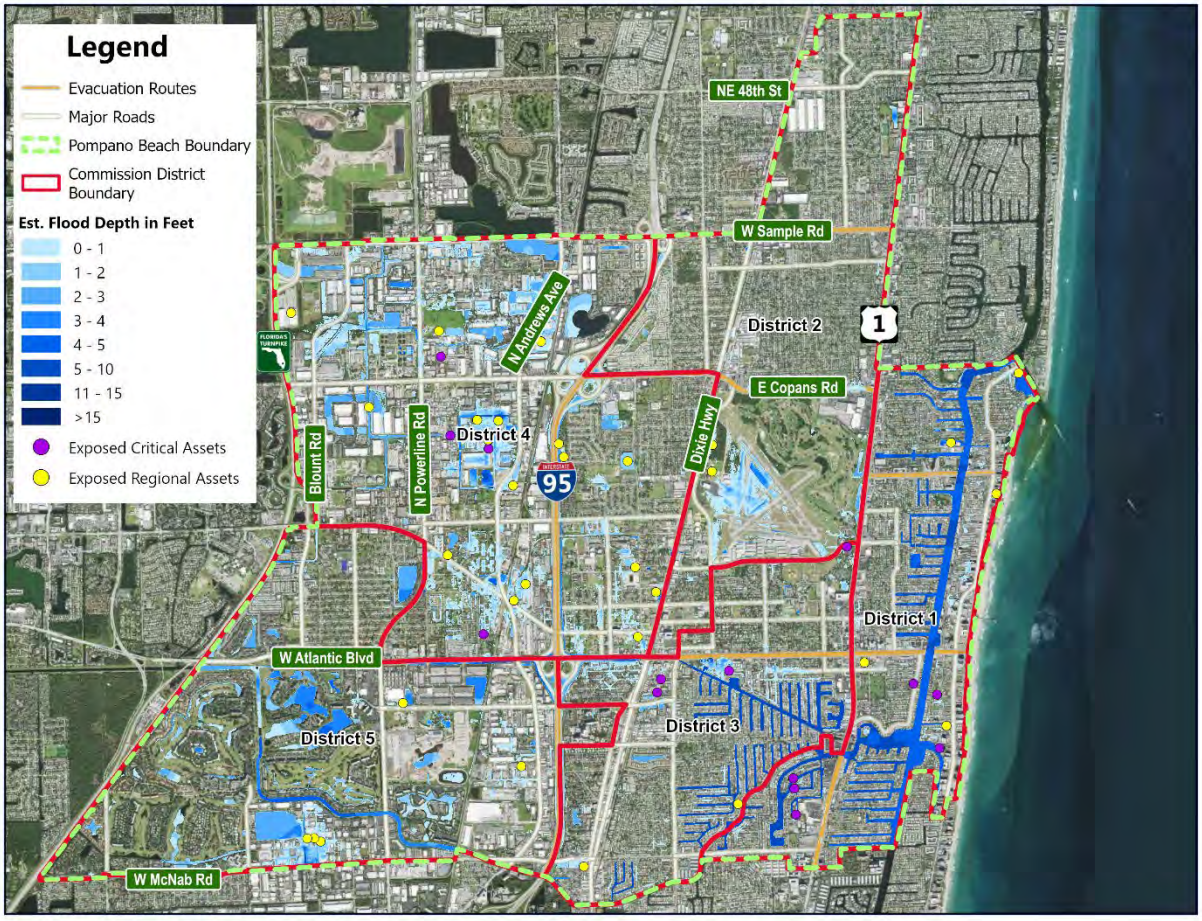

Figure 18: City Exposure under Scenario 4 (RS&H)

Similar to previous scenarios, the model predicts water level rise along the Intracoastal Waterway and its outlets within District 1, into the Santa Barbara Shores, Santa Barbara Estates, Harbor Village, Avalon Harbor, and Hillsboro Shores neighborhoods, at levels averaging close to six feet. Certain parcels throughout District 1 could experience two feet of flooding. Water level increases up to seven feet along the Cypress Creek Canal could impact District 3, with flood depths up to two feet along roadways within the Garden Isles, Snug Harbor, and Cypress Lakes neighborhoods.

The model predicts elevated water levels in the Cypress Creek Canal continuing into District 5, reaching depths up to four feet in the Cypress Bend neighborhood. Small areas of flooding in

parcels throughout District 4 and 5 up to two feet in depth could occur, specifically in the Andrews Industrial District, Old Collier, Northwest Pompano, and Blanche Fly neighborhoods.

Table 6 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix B**.

Table 6: Assets Exposed by Scenario 4

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	12	Marinas	2
Schools	1	Stormwater Treatment Facilities	26
Bridges	1	Parks	5
Total	14	**Total**	33

7.5 Scenario 5

Scenario 5, shown in **Figure 19**, combines a 5-year, 24-hour storm event with the NOAA intermediate-high sea level rise projection through 2070. It could significantly impact District 1 and 3, with moderate flooding in District 4 and 5 and flooding near the Airpark in District 2. Under this projection, 29,635 land parcels could experience flooding, or 54.4% of the total parcels within the City. Compared to the 2070 intermediate-low model, this scenario represents a 13.4% increase in exposure.

In this flood scenario, District 1 could be almost completely inundated under one foot of water, with certain portions of the Intracoastal Waterway experiencing up to ten feet of water level increase. Water levels along the Intracoastal Waterway and its outlets are predicted to increase significantly, leading to flooding in the Santa Barbara Shores, Santa Barbara Estates, Harbor Village, Avalon Harbor, and Hillsboro Shores neighborhoods, at levels averaging close to two feet on many properties. Water levels are predicted to increase up to ten feet along the Cypress Creek Canal, impacting District 3, particularly the Garden Isles, Snug Harbor, and Cypress Lakes neighborhoods. The southeast corner of the Cypress Lakes neighborhood could experience up to six feet of on-land flooding. Large areas of Lyons Park in District 3 could be inundated with one foot of water.

The model predicts water level increases along the Cypress Creek Canal to continue into District 5, reaching up to five feet depths in the Cypress Bend neighborhood. Small areas of flooding throughout District 4 and 5, around one foot in depth, could occur as well, typically in areas near existing bodies of water or drainage canals, with large areas of the Northwest Pompano, Old Collier, and Blanche Fly neighborhoods affected.

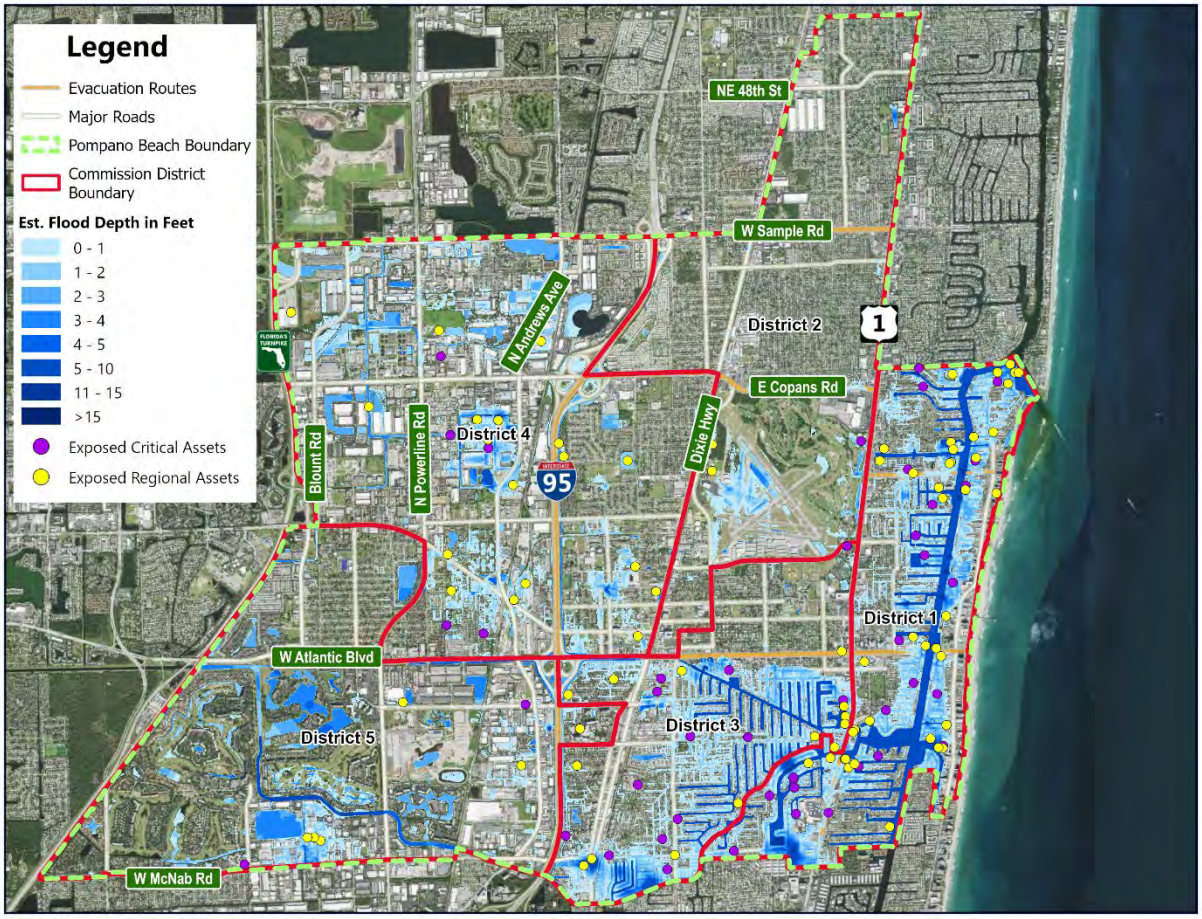

Figure 19: City Exposure under Scenario 5 (RS&H)

Table 7 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix B**.

Table 7: Assets Exposed by Scenario 5

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	38	Marinas	23
Health Care Facilities	3	Stormwater Treatment Facilities	41
Bridges	2	Parks	18
Schools	2	Correctional Facilities	1
Fire Stations	1		
Total	46	**Total**	83

7.6 Scenario 6

Scenario 6, shown in **Figure 20**, models a 100-year, 72-hour storm event at the present-day average sea level. It could significantly impact District 1 and 3, with major areas of inland flooding in District 4 and 5. Based on the median NOAA Atlas 14 distribution, the typical rainfall associated with this event is approximately 10.47 inches. This scenario shows how a severe extreme precipitation event could impact the City, without considering an increase in sea level. In this projection, 33,591 land parcels could experience flooding, which amounts to 61.6% of the total parcels within the City. This represents a significant increase from the 5-year, 24-hour event modeled in scenario 1, increasing the City's exposure by 21.9%.

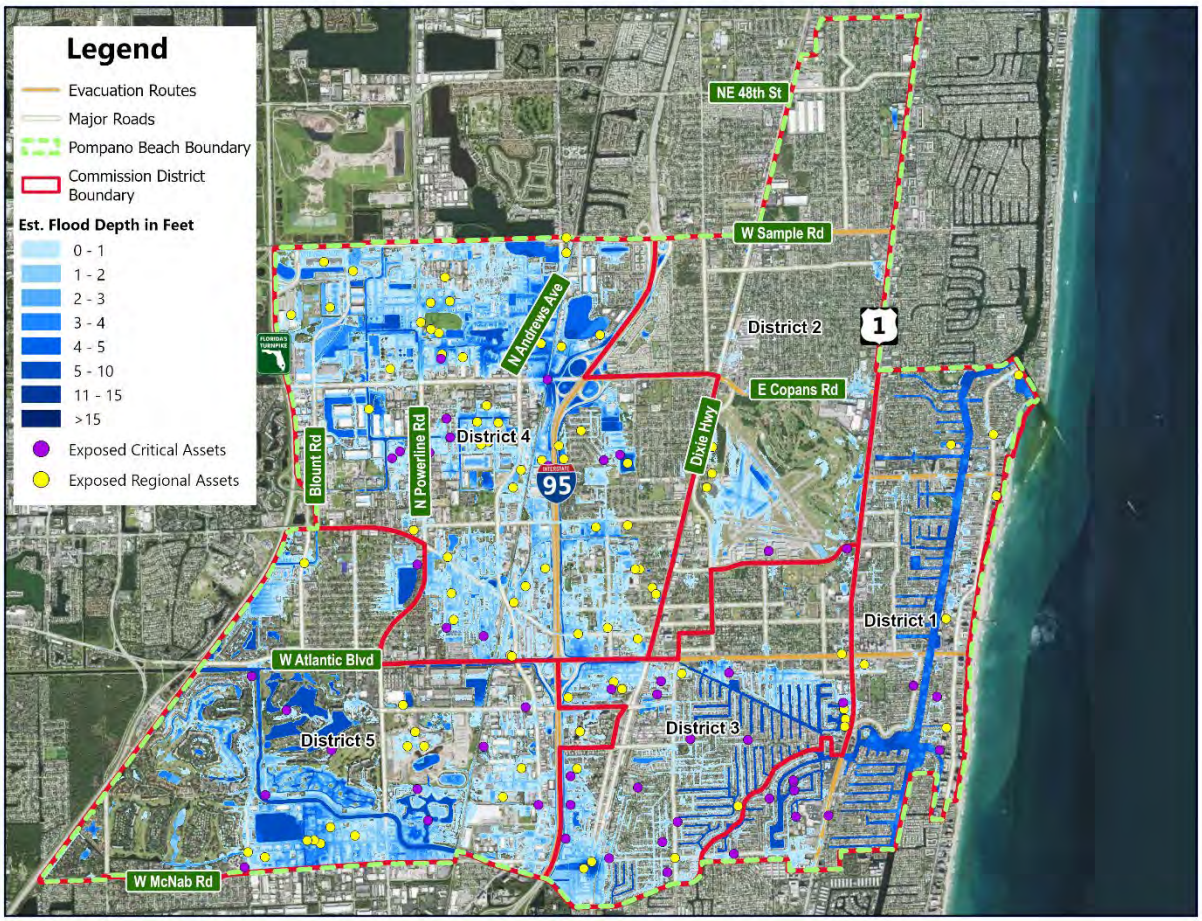

Figure 20: City Exposure under Scenario 6 (RS&H)

District 1 would primarily experience water level rise impacts along the Intracoastal Waterway and its outlets, with average increases around five feet, impacting Santa Barbara Shores, Santa Barbara Estates, Harbor Village, Avalon Harbor, and Hillsboro Shores neighborhoods. Minimal areas of three feet of flooding could be seen in neighborhoods throughout District 1. Water levels could increase up to eight feet along the Cypress Creek Canal, which could impact District 3, particularly the Snug Harbor, Garden Isles, and South Dixie neighborhoods. A small number of

parcels could reach up to five feet of flooding in the south end of the South Dixie neighborhood, with a larger number experiencing up to two feet of flood depth further east.

Cypress Creek Canal water level rise is modeled to increase up to nine feet into District 5, leading to up to five feet of flooding in the Cypress Bend neighborhood and the southern end of District 5. Large areas of inland flooding throughout District 4 are predicted to occur, reaching up to four feet in certain areas, typically in areas near existing bodies of water or drainage canals. The north end of Northwest Pompano could be almost completely inundated, while southern parts of District 4 could experience intermittent flooding of around 2 feet in depth. District 2 remains largely above water, with impacts seen at the Airpark and along the eastern edge.

Table 8 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix B**.

Table 8: Assets Exposed by Scenario 6

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	37	Marinas	5
Health Care Facilities	3	Stormwater Treatment Facilities	70
Schools	4	Parks	9
Bridges	2	Correctional Facilities	2
Fire Stations	1	Schools	2
Airports	1	Fire Stations	1
Communication Facilities	1	Stadiums	1
Rain Facilities	1		
Total	50	**Total**	90

7.7 Scenario 7

Scenario 7, shown in **Figure 21,** combines a 100-year, 72-hour storm event at current sea level with a 100-year storm surge event. This scenario involves severe rainfall that statistically occurs once every 100 years with a duration of 72 hours, as well as a 100-year recurrence interval storm surge, which is a temporary rise in sea level during a storm due to factors like low pressure and strong winds pushing water toward the shore. This event could significantly impact much of the City, with the least flooding in District 2. In this projection, 41,869 land parcels could experience flooding, which amounts to 76.8% of the total parcels within the City. The addition of storm surge to the 100-year, 72-hour storm event increases the City's exposure by 15.2% in comparison to the same storm event without storm surge.

In this scenario District 1 and the majority of the southern portion of District 3 could be completely inundated. Neighborhoods in District 1 could experience around six feet of flooding in most areas, with the exception of central areas of the Santa Barbara Estates neighborhood. Flooding along Intracoastal Waterway and its outlets could significantly impact adjacent communities in districts 1, 3 and 5, with flood depths decreasing with distance from the Intracoastal. Flooding along the Cypress Creek Canal could impact District 3, leading to the inundation of most District 3 neighborhoods except for the Old Pompano neighborhood.

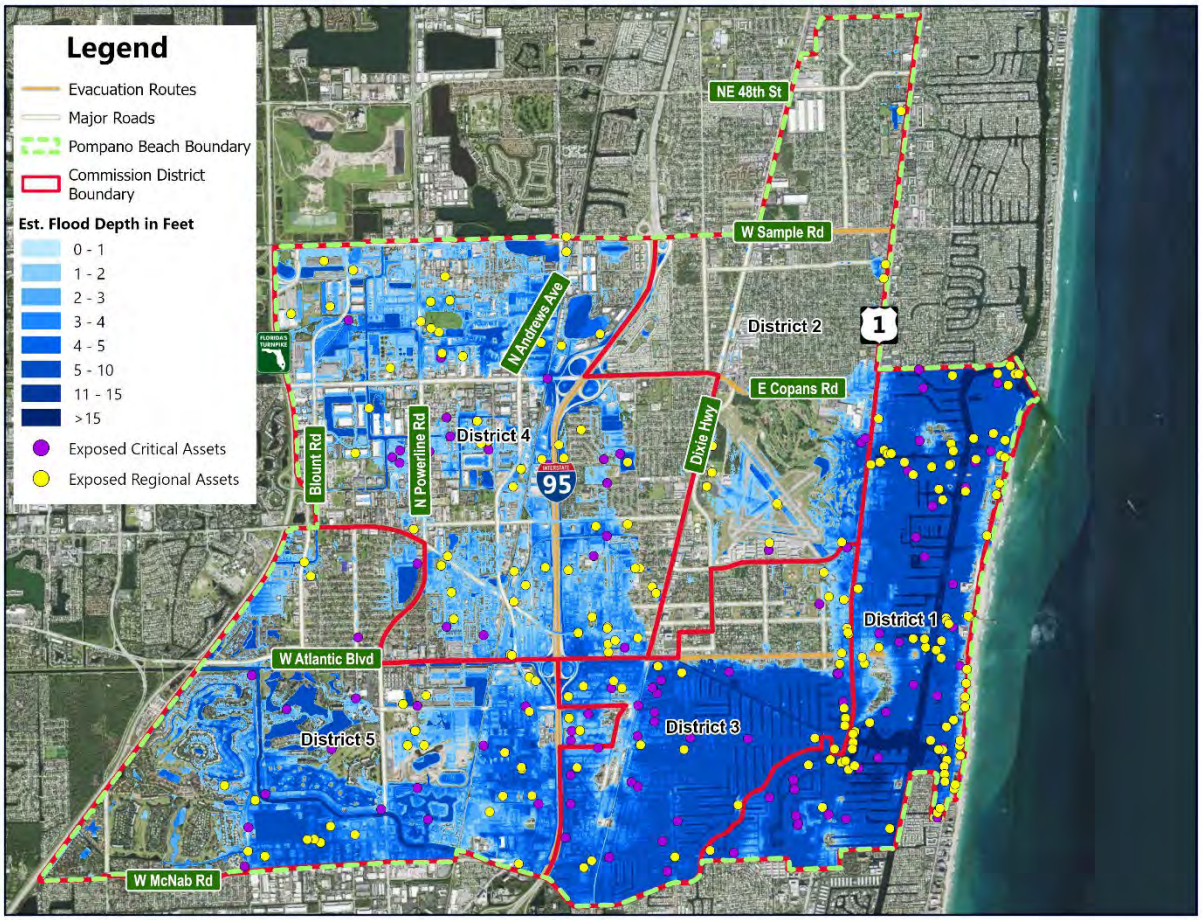

Figure 21: City Exposure under Scenario 7 (RS&H)

Water level increases in the Cypress Creek Canal could inundate large portions of District 5 and affect the Cypress Bend neighborhood. District 4 could also be significantly impacted, especially in the Northwest Pompano neighborhood. Most roads in the Hunter's Manor Park Area could experience two to three feet of flooding. Much of District 2 would remain above flood levels, except along its border with District 1 and near the Airpark. District 2 could experience transportation disruptions as some roadways near existing bodies of water or drainage canals could experience up to four feet of flooding.

Table 9 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix D**.

Table 9: Assets Exposed by Scenario 7

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	65	Stormwater Treatment Facilities	106
Health Care Facilities	13	Marinas	39
Schools	12	Schools	5
Fire Stations	4	Fire Stations	1
Bridges	2	Local Government Facilities	3
Communications Facilities	2	Historical and Cultural Assets	2
Local Government Facilities	1	Community Centers	4
Pompano High School Hurricane Shelter	1	Stadiums	3
Rail Facilities	3	Correctional Facilities	2
Law Enforcement Facilities	1	Airports	1
Airports	1	Health Care Facilities	1
		Parks	40
Total	105	**Total**	207

7.8 Scenario 8

Scenario 8, shown in **Figure 22**, models the result of a 500-year, 72-hour rainfall event in the present, with no consideration of storm surge or sea level rise. This event has a 0.2% chance of occurring in a given year. In this projection, 34,206 land parcels could experience flooding, which amounts to 62.8% of the total parcels within the City. This flood event results in significantly more exposure than the 5-year, 24-hour and 100-year, 72-hour precipitation events. However, this scenario sees less exposure than events coupled with storm surge (Scenarios 7 and 9).

As with other rainfall-only scenarios, inland areas of the City experience more extensive flooding than coastal areas. Districts 4 and 5 could experience widespread flooding to neighborhoods and roadways, while Districts 1 and 3 could experience increases in water levels along the Intracoastal Waterway with minimal flooding in adjacent neighborhoods. Flooding in District 4 could particularly impact industrial areas with high levels of impervious surface. In District 5, significant flooding could occur along the Cypress Creek Canal and extend into parcels on the east side of the district.

District 3 may experience flooding along the west edge of the district and in areas near existing water bodies. District 2 shows flood exposure at the Airpark and a small number of parcels along the east edge of the district.

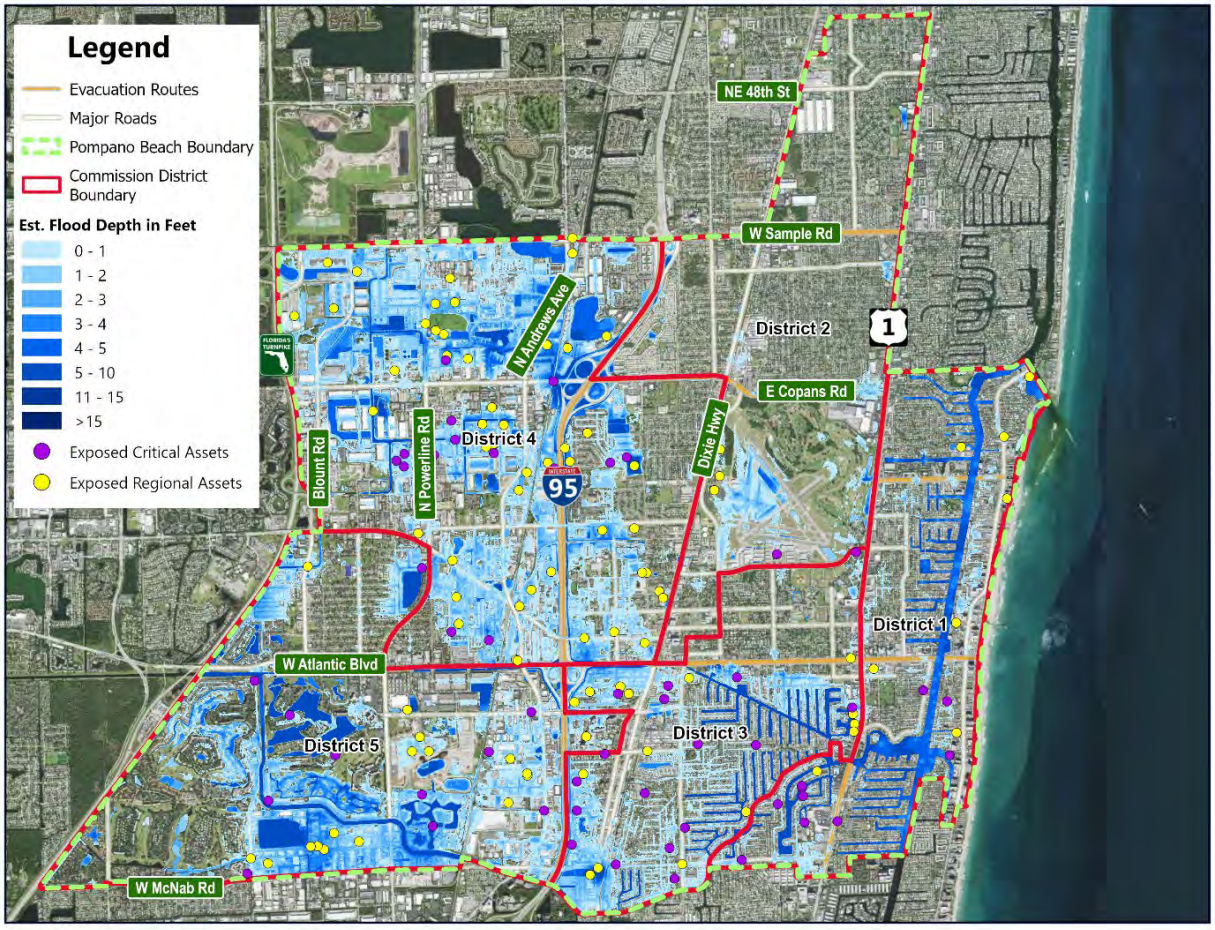

Figure 22: City Exposure under Scenario 8 (RS&H)

Table 10 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix D**.

Table 10: Assets Exposed by Scenario 8

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	39	Stormwater Treatment Facilities	74
Health Care Facilities	3	Marinas	6
Schools	5	Schools	2
Fire Stations	1	Fire Stations	1
Bridges	2	Stadiums	1
Communications Facilities	1	Correctional Facilities	2
Rail Facilities	1	Parks	9
Airports	1		
Total	53	**Total**	95

7.9 Scenario 9

Scenario 9, shown in **Figure 23**, models the result of a 500-year, 72-hour rainfall event in the present, with a 500-year recurrence interval storm surge event.

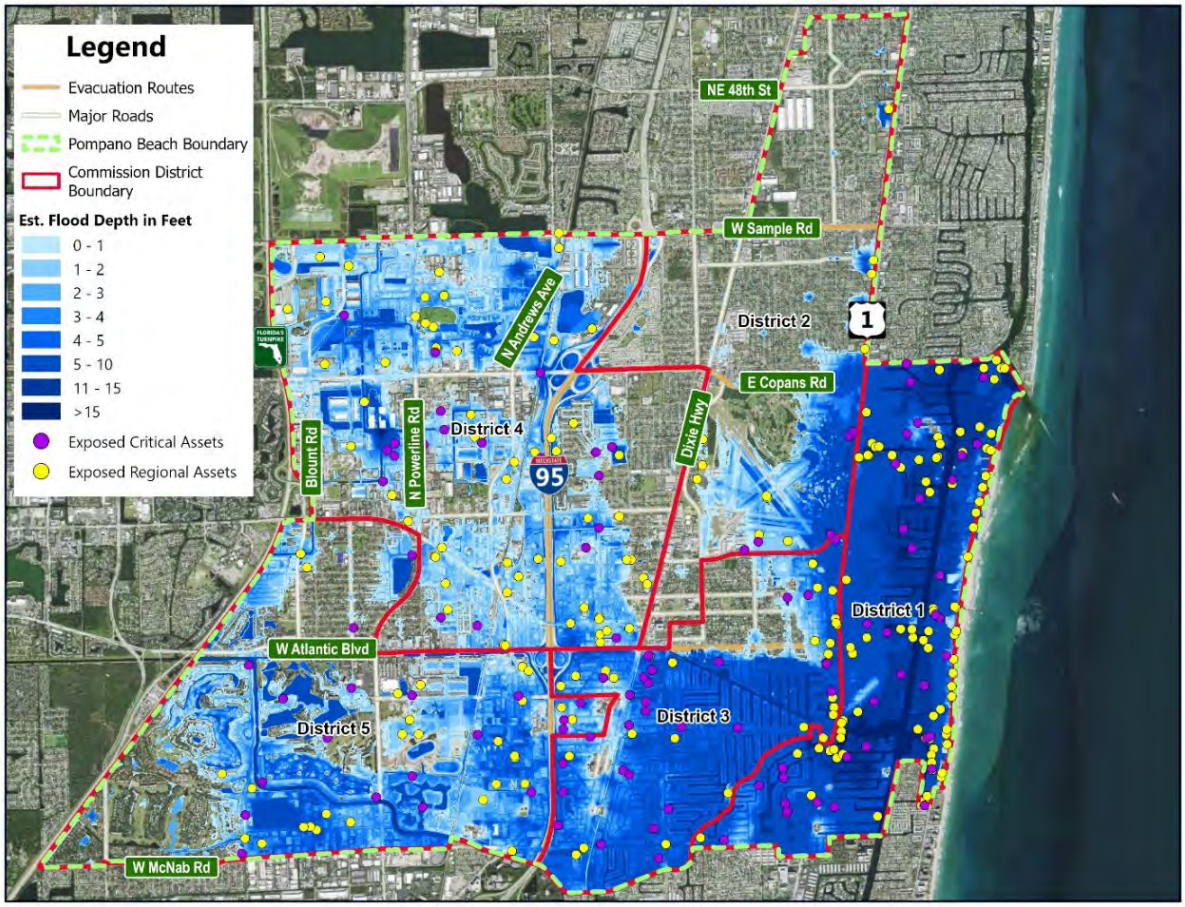

Figure 23: City Exposure under Scenario 9 (RS&H)

In this projection, 42,980 land parcels could experience flooding, which amounts to 78.8% of the total parcels within the City. This flood event results in the highest exposure out of all nine modeled.

In this scenario, Districts 1 and 3 are almost completely inundated under several feet of water. Complete disruptions to operations and mobility could occur in these areas, as well as potential for significant property damage. The model shows northern portions of District 3 escape inundation. Large portions of Districts 4 and 5 could experience flooding, particularly in areas near existing water bodies and in the northern and southern areas of District 4.

District 2 is modeled to experience significant flooding near the Pompano Airpark and along the southeast corner, closest to the coast. These parcels may see up to five feet of flooding in the most affected areas.

Table 11 provides an overview of the affected assets, categorized as critical or regional. For further details on specific assets impacted refer to **Appendix D**.

Table 11: Assets Exposed by Scenario 9

Critical Asset Type	Number Exposed	Regional Asset Type	Number Exposed
Wastewater Treatment Facilities and Lift Stations	67	Stormwater Treatment Facilities	111
Health Care Facilities	14	Marinas	39
Schools	13	Schools	5
Fire Stations	4	Fire Stations	1
Bridges	2	Local Government Facilities	3
Communications Facilities	2	Historical and Cultural Assets	2
Local Government Facilities	1	Community Centers	5
Pompano High School Hurricane Shelter	1	Stadiums	3
Rail Facilities	3	Correctional Facilities	2
Law Enforcement Facilities	1	Airports	1
Airports	1	Health Care Facilities	1
		Parks	44
Total	109	**Total**	217

7.10 Citywide Exposure Analysis Summary Statistics

Using GIS, the exposure of the City's land area, parcels, transportation network, and neighborhoods were evaluated and summarized for each flood scenario.

7.10.1.1 Citywide Transportation Network Exposure

Pompano Beach's transportation network was analyzed for exposure to all nine flood scenarios. Transportation networks are critical during storm events as they maintain connectivity and significantly impact community safety, including the ability to evacuate.

Figure 24 summarizes the exposure of all roadways within the City. Exposure percentages are given as a percentage of total road length within City boundaries. **Appendix C** individually analyzes impacts to City, private, Broward County and Florida Department of Transportation owned roads.

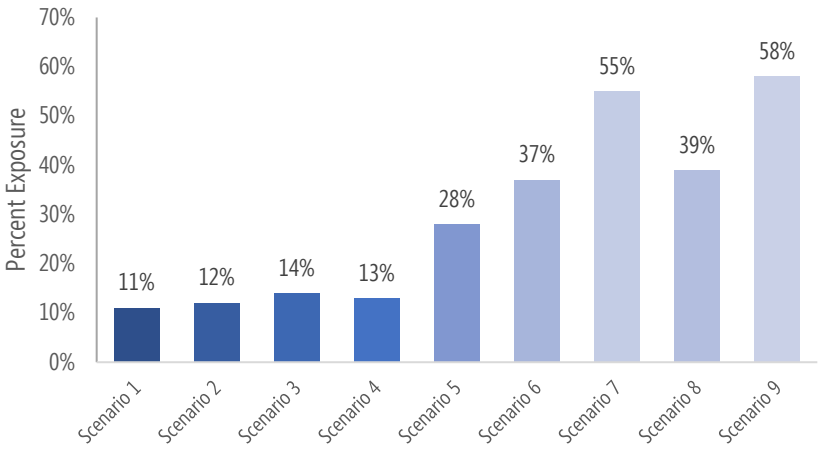

Figure 24: City Roadway Exposure (RS&H)

Figure 25 summarizes the exposure of the railway system to flooding impacts. Exposure percentages are given as a percentage of total railway length within City boundaries. **Appendix C** individually analyzes exposure for impacts to Florida East Coast, South Florida Rail Corridor, and CSX Transportation owned roads.

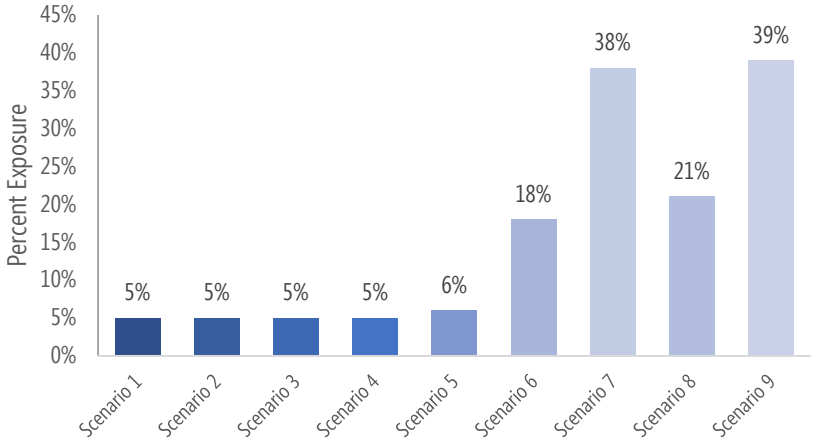

Figure 25: City Railway Exposure (RS&H)

Figure 26 summarizes the exposure of City evacuation routes to flooding. Understanding how flood scenarios impact evacuation routes is important as it allows for Scenarios 7 and 9 show the highest levels of transportation network exposure.

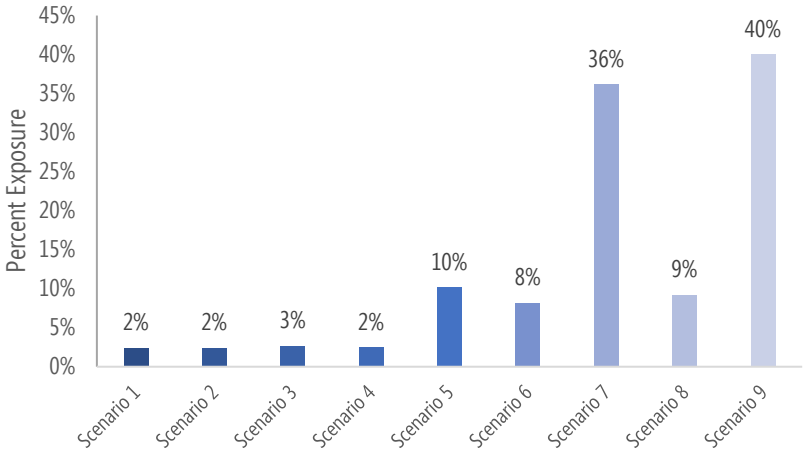

Figure 26: Evacuation Route Exposure (RS&H)

Figure 27, Figure 28, and **Figure 29** visualize the exposure of roads to flooding that is summarized above.

Figure 27 displays the road exposure for Scenario 4, which totals around 13%. The majority of roads exposed are City roads and more specifically, residential roads near the Intracoastal Waterway.

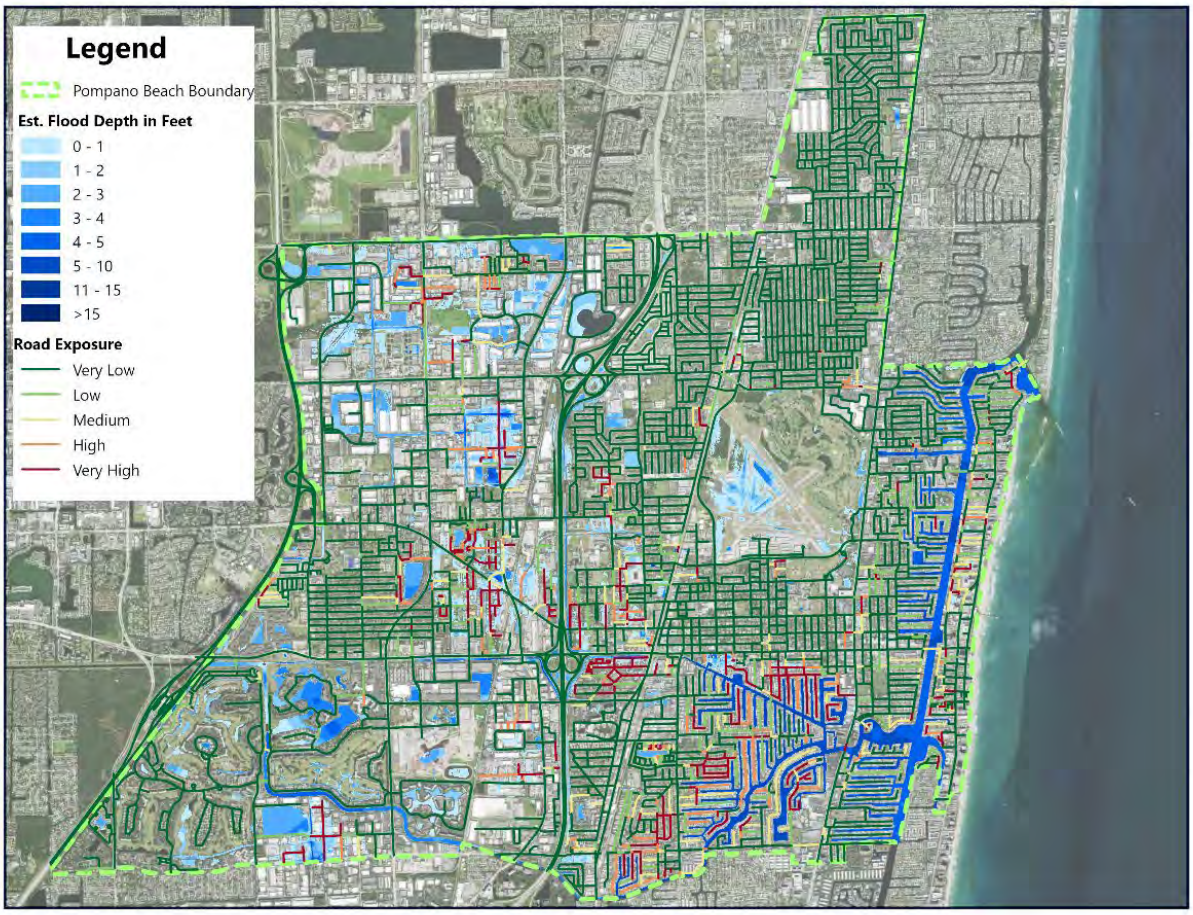

Figure 27: City Roadway Exposure under Scenario 4 (RS&H)

Figure 28 displays the road exposure for Scenario 6, where exposure is 37% for all roadways. In this scenario, there are more City roads and residential roads exposed as well as an increase in exposure to the City's evacuation routes.

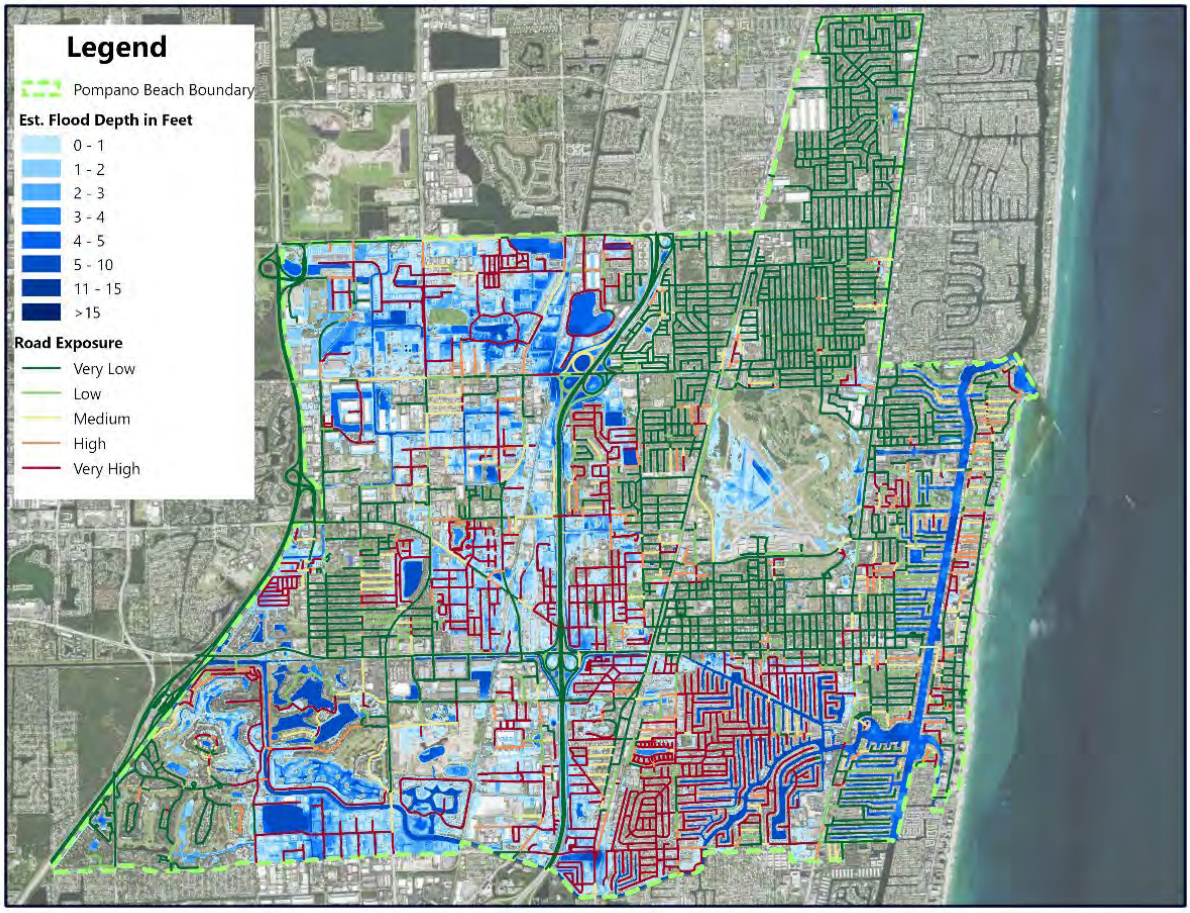

Figure 28: City Roadway Exposure under Scenario 6 (RS&H)

Figure 29 displays the road exposure for Scenario 9, where exposure is up to 58% for all roadways. In this scenario, the road exposure is primarily located along the Intracoastal Waterway, but spans further inland, exposing the majority of roads in District 1. There is also a significant increase in exposure (40%) to the City's evacuation routes.

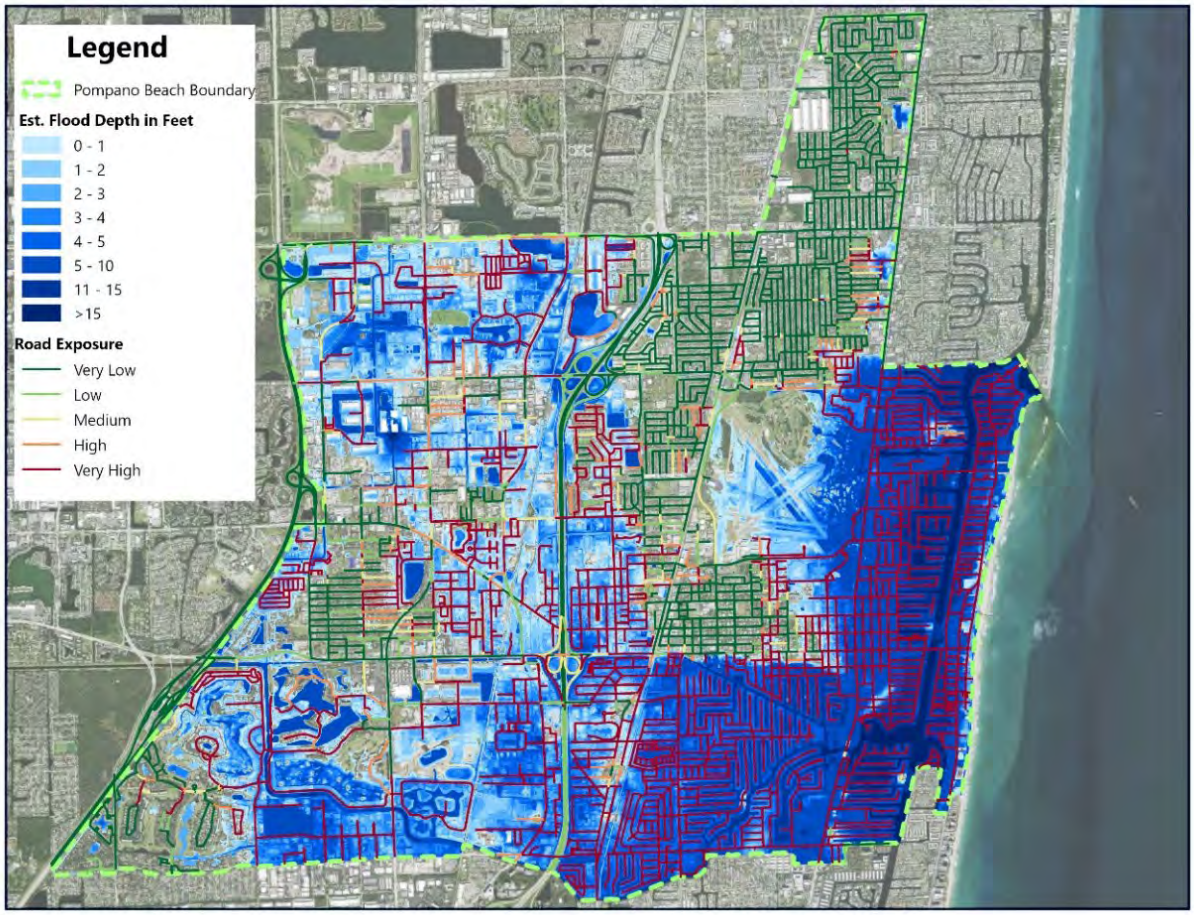

Figure 29: City Roadway Exposure under Scenario 9 (RS&H)

7.10.1.2 Neighborhood Exposure

Pompano Beach contains 37 individual neighborhoods. Each neighborhood was analyzed under all nine flood scenarios, with the percentage of neighborhood area exposed to flooding summarized in **Appendix C**. **Figure 30** shows the five neighborhoods that have the most exposure to flooding under each of the individual flooding scenarios.

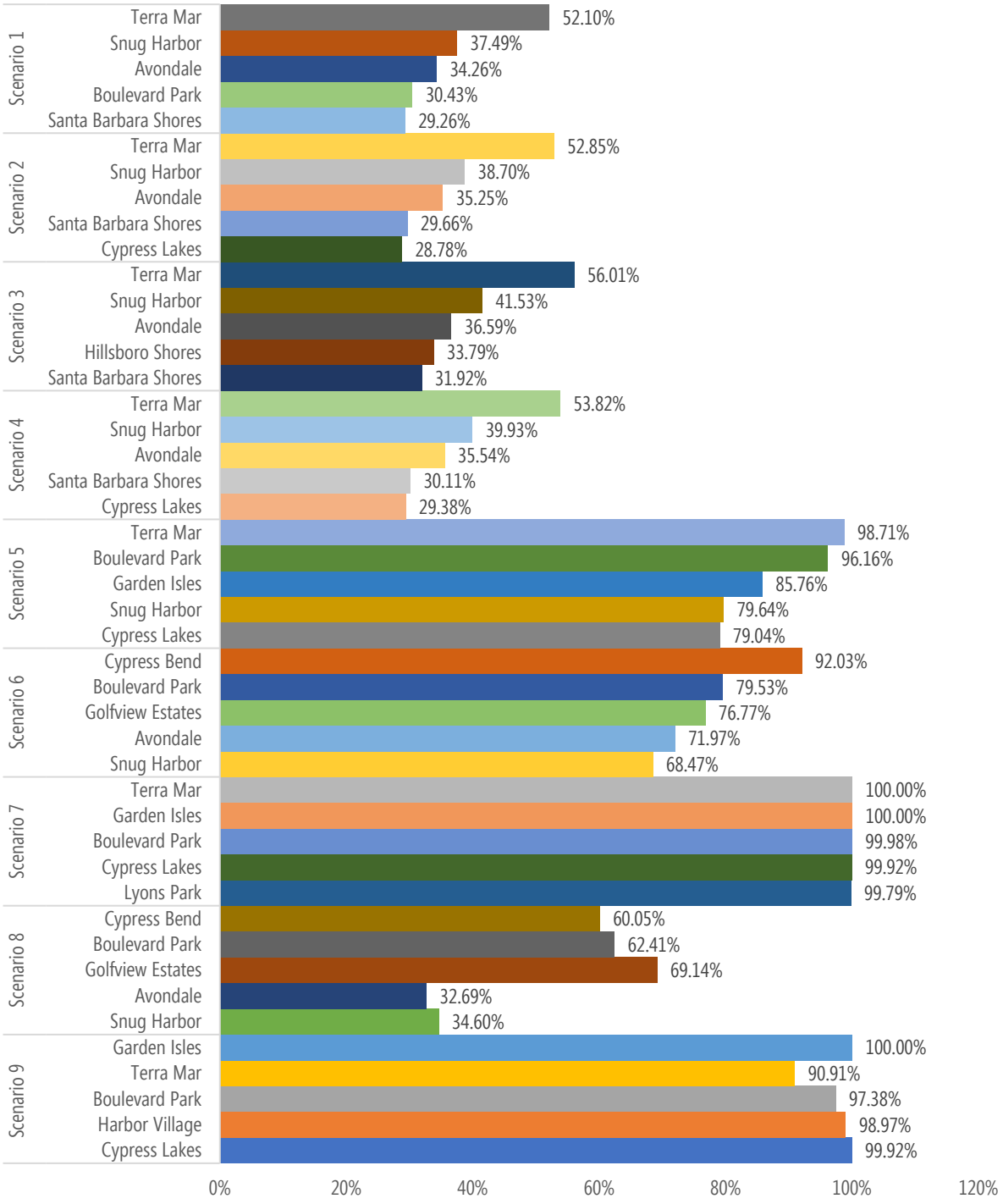

Figure 30: Top Five Exposed Neighborhoods Under Each Flood Scenario (RS&H)

Figure 31, Figure 32, and **Figure 33** visualize the percentage of neighborhood areas exposed to flooding summarized in **Appendix C** for all neighborhoods within the City. **Table 12** provides a key for identifying neighborhood names by the numbers shown in the figures.

Table 12: Neighborhood Map Key

Number Key	Neighborhood	Number Key	Neighborhood
1	Andrews Industrial District	20	Island Club
2	Arvida-Pompano Park	21	John Knox Village
3	Avalon Harbor	22	Kendall Green
4	Avondale	23	Kendall Lake
5	Beach	24	Leisureville
6	Blanche Ely	25	Loch Lomond
7	Boulevard Park	26	Lyons Park
8	Canal Point	27	Northwest Pompano
9	Civic Campus	28	Old Collier
10	Collier City	29	Old Pompano
11	Cresthaven	30	Palm Aire
12	Cypress Bend	31	Pompano Airpark
13	Cypress Lakes	32	Sanders Park
14	Downtown	33	Santa Barbara Estates
15	Garden Isles	34	Santa Barbara Shores
16	Gardens	35	Snug Harbor
17	Golfview Estates	36	South Dixie
18	Harbor Village	37	Terra Mar
19	Hillsboro Shores		

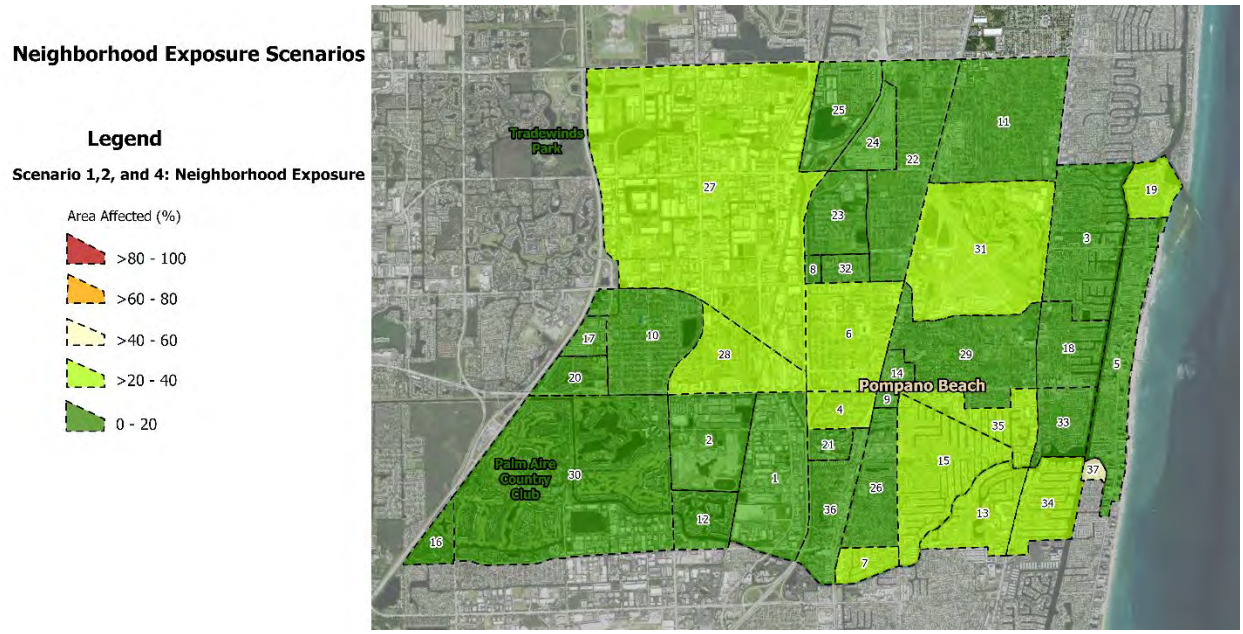

Figure 31: Percentage of Neighborhood Area Exposed under Scenario 1, 2, and 4 (RS&H)

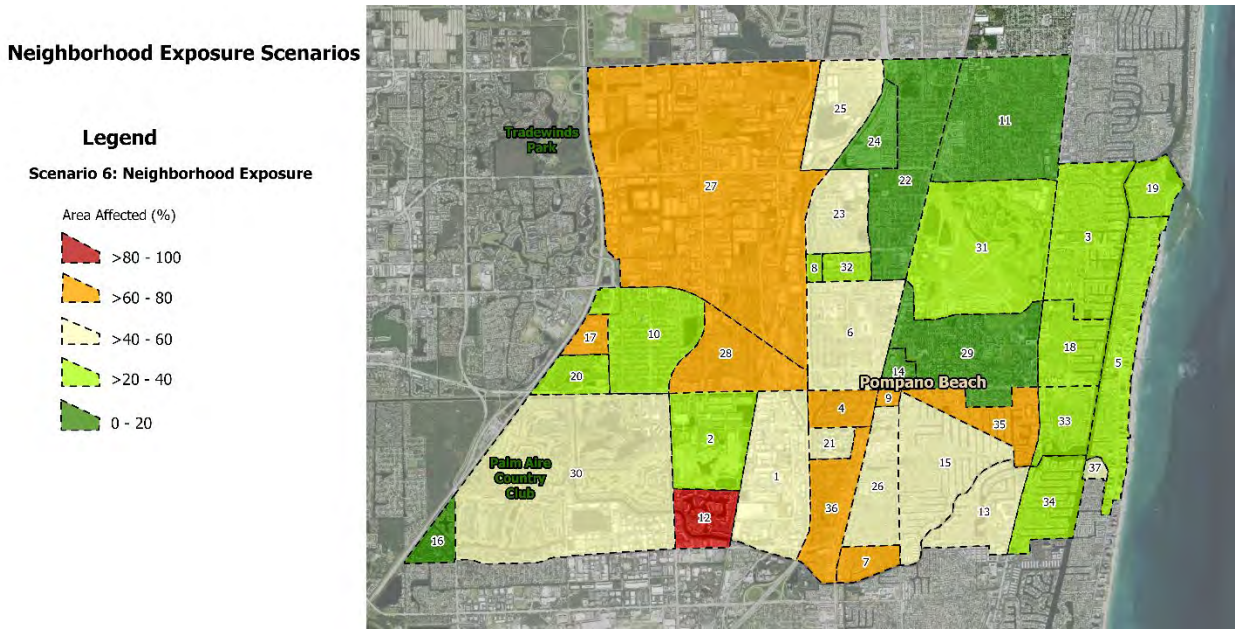

Figure 32: Percentage of Neighborhood Area Exposed under Scenario 6 (RS&H)

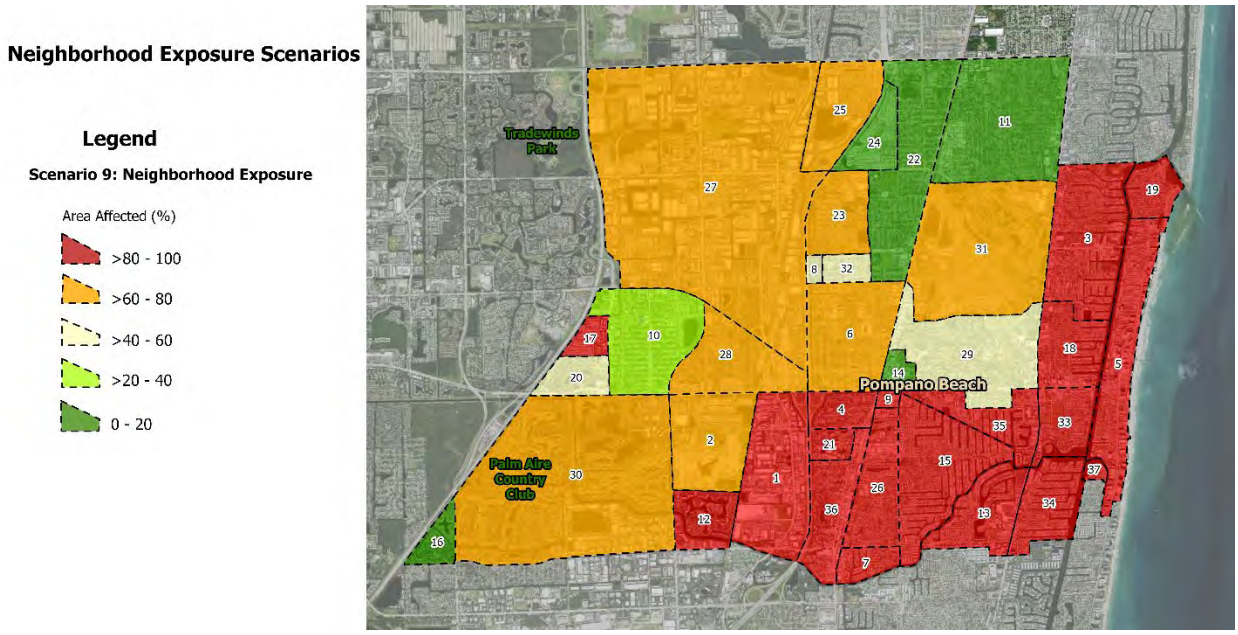

Figure 33: Percentage of Neighborhood Area Exposed under Scenario 9 (RS&H)

Neighborhood exposure is most prominent where the Intracoastal Waterway intersects the City and in the northwest corner around the industrial district. Scenario 9 sees over 80% exposure to the neighborhoods along the Intracoastal Waterway, forming a backwards "L" shape within the City boundary.

7.10.1.3 Justice40 Disadvantaged Communities Exposure

As a part of the exposure analysis, the City was analyzed using the Justice40 tool to identify communities that are considered disadvantaged. A community is considered disadvantaged if it falls in a census tract that is at or above the threshold for either environmental, climate or socioeconomic burdens. There are eight categories of burdens, including climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. Datasets used to identify burdens can be found in **Appendix B**.

In 2021, President Joe Biden signed Executive Order 14008 which recognizes that all Americans deserve to live in healthy, thriving communities. The Executive order included the Justice40 Initiative which aims to provide 40 percent of the overall benefits of Federal investments relating to climate change, clean energy, and other areas to disadvantaged communities who are marginalized, underserved, and overburdened by pollution.

The Justice 40 Initiative and investment in historically disadvantaged communities will help confront decades of underinvestment and bring critical resources to communities that are disproportionally affected by legacy pollution and environmental hazards.

Figure 34 shows the breakdown of Pompano Beach, outlining which neighborhoods or communities are considered disadvantaged according to the Justice40 methodology.

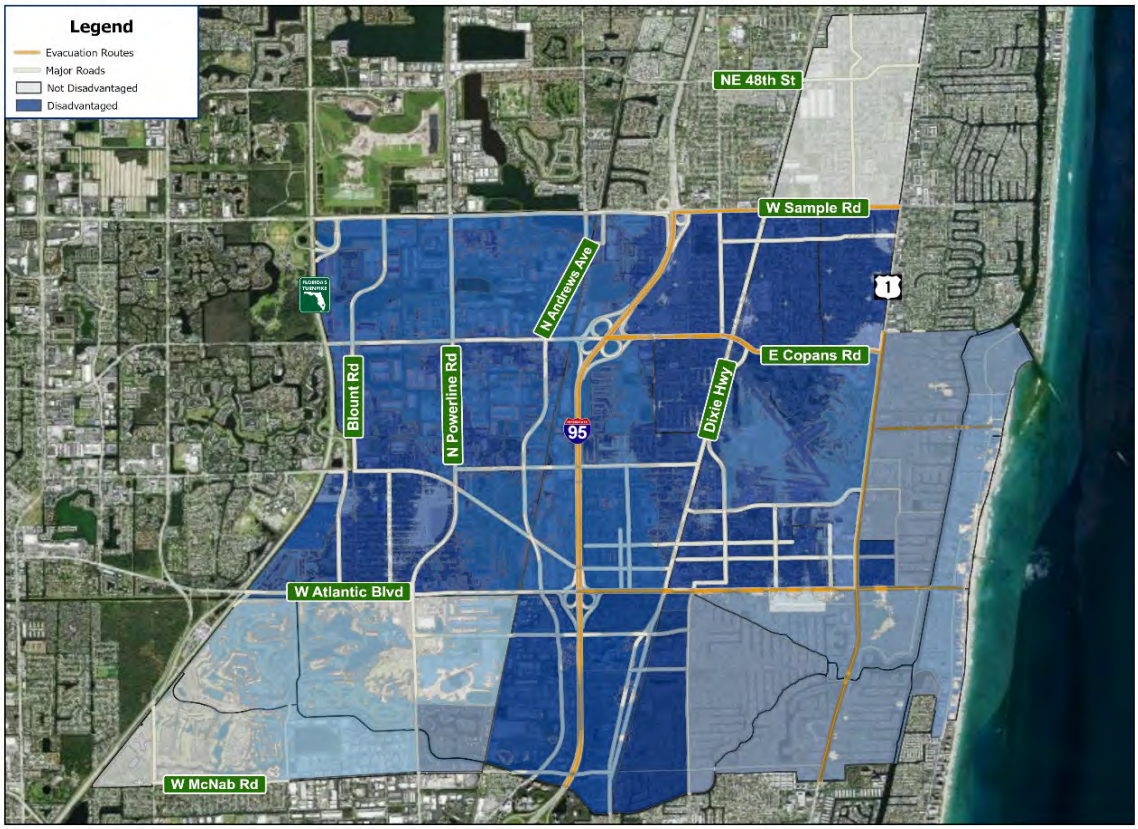

Figure 34: Map of Justice40 Disadvantaged Communities (RS&H)

Figure 35 shows the percentage of disadvantaged tracts affected by the 100-year, 72-hour flood (Scenario 6), without any consideration of storm surge. The northern central region, west of I-95 and the southern central region surrounding I-95 have the highest percentage affected, averaging around 60%.

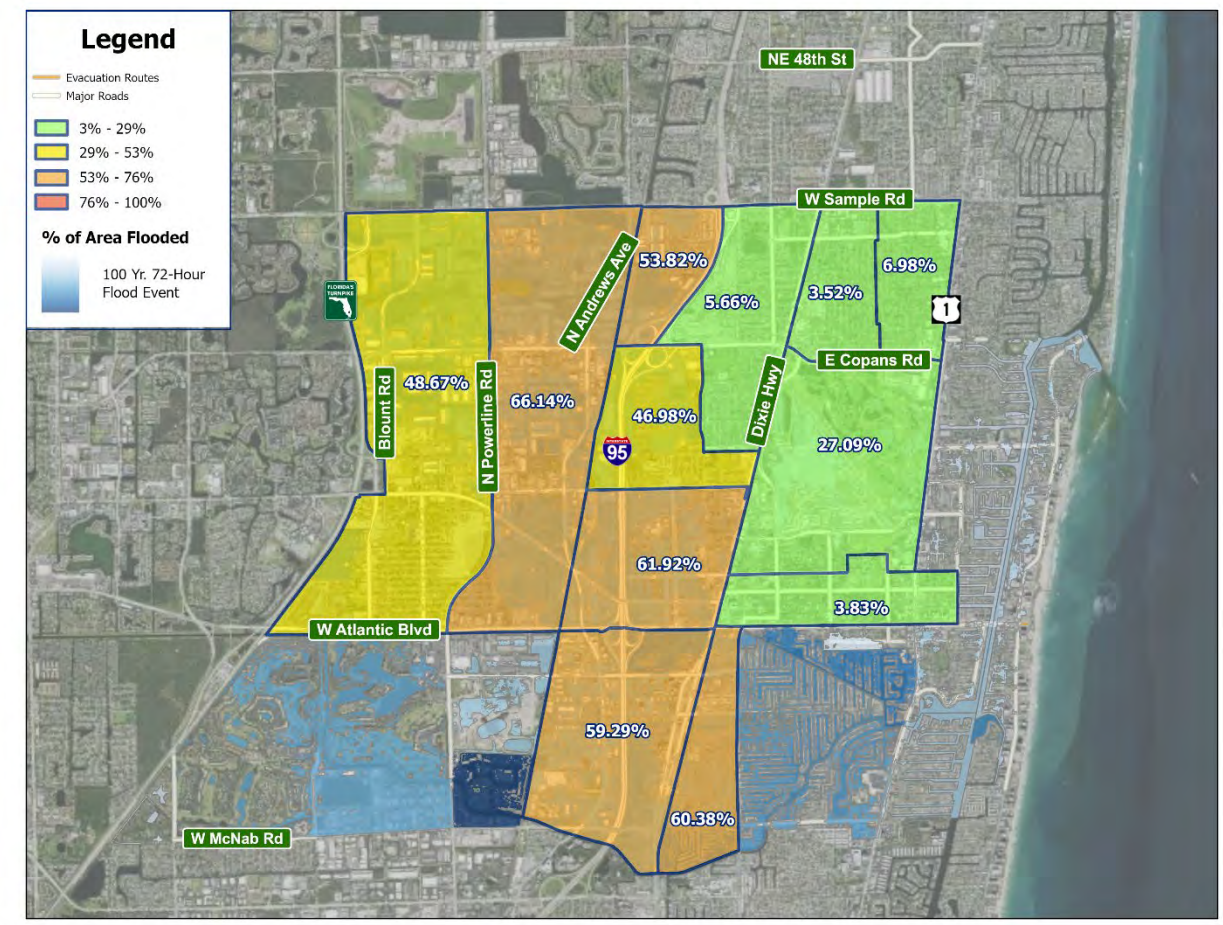

Figure 35: Disadvantaged Tracts Affected by Scenario 6 (RS&H)

Figure 36 shows the percentage of disadvantaged tracts affected by the 500-year, 72-hour event with storm surge added (Scenario 9). This scenario shows the central, southern area of the City (indicated by red polygons) significantly impacted by flooding, with 78-99% of the disadvantaged community being exposed to flooding impacts.

It is relevant to note that a large amount of flooding impacts occur in areas not categorized as disadvantaged. The eastern part of the City experiences the most exposure to flooding, however the majority of that area is not considered disadvantaged.

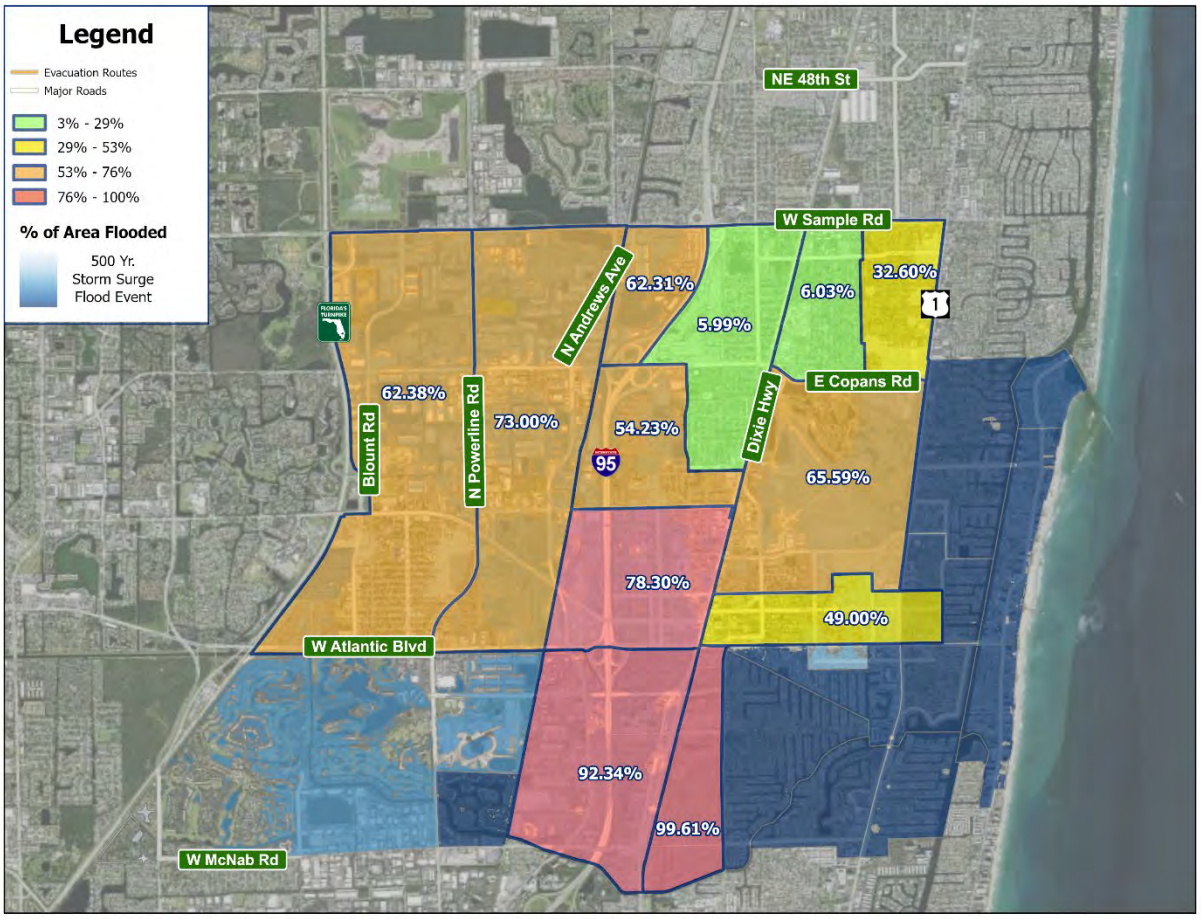

Figure 36: Disadvantaged Tracts Affected by Scenario 9 (RS&H)

8 Sensitivity Analysis

The vulnerability of key assets to each flood scenario was evaluated by assigning sensitivity ratings from "Very Low" to "Very High" based on impact, damage, and access loss. Risk scores were calculated using the likelihood of flooding, confidence in those predictions, criticality of the asset, and potential consequences of a flood impact. Once risk scores were determined, each asset's adaptive capacity was considered, leading to a final vulnerability score. Adaptive capacity was considered good if flood risk could be reduced with low effort/cost, and poor if high effort/cost would be needed. The vulnerable critical and regional assets were prioritized by considering factors such as the overall vulnerability score, the specific flood scenarios to which each asset was exposed, the depth of flooding anticipated under each scenario, the designated flood zone of each asset, and the asset's elevation relative to typical flood levels. **Figure 37** shows the prioritized critical assets affected by flooding, where vulnerability is shown for each flood scenario as not vulnerable or very low (black), low (green), medium (yellow) or high (red).

ID	AssetName	Address	Vulnerability	S1	S2	S3	S4	S5	S6	S7	S8	S9
12	COPB FIRE STATION 63	120 SW 3 STREET	HIGH									
13	COPB FIRE STATION 11	109 N OCEAN BLVD	HIGH									
15	COPB FIRE STATION 24	2001 NE 10 STREET	HIGH									
19	COPB FIRE STATION 114	1499 SW 36 AVENUE	HIGH									
29	CITY HALL	100 W ATLANTIC BLVD	HIGH									
30	SEAVIEW NURSING & REHABILITATION	2401 NE 2 ST	HIGH									
31	CHILDRENS COMPREHENSIVE CARE	200 SE 19 AVE	HIGH									
33	VIZCAYA BY THE SEA INC	1621 N OCEAN BL	HIGH									
34	SUNSET BY THE SEA	420 N RIVERSIDE DR NORTH	HIGH									
35	ATLANTIC SHORE RETIREMENT RESIDENCES	1500 N RIVERSIDE DR	HIGH									
248	WATER REUSE PLANT	1799 N FEDERAL HWY	HIGH									
40	FIVE STAR PREMIER RESIDENCES	1371 S OCEAN BL	HIGH									
41	WITH LOVE INC	1320 SW 1 TERRACE	HIGH									
47	GREEN LIFE ASSISTED LIVING FACILTY	840 SW 8 ST	HIGH									
49	BROWARD CHILDREN'S CENTER INC	207 SE 20TH AVE	HIGH									
69	BRIDGES (ELECTRICALLY OPERATED)	1000 SE 9TH AVE #BRIDGE	HIGH									
70	BRIDGES (ELECTRICALLY OPERATED)	1011 SE 9TH AVE #BRIDGE	HIGH									
176	HENDERSON BEHAVIORAL HEALTH, INC.	868 SW 10TH ST	HIGH									
177	IGLESIA BAUTISTA DE POMPANO BEACH INC.	101 SW 17TH ST	HIGH									
180	ST COLEMAN SCHOOL	2350 SE 12TH ST	HIGH									
192	SBBC #0841-1 MCNAB ELEMENTARY	1350 SE 9TH AVE	HIGH									
196	SBBC #9155-9 NORTH AREA BUS LOT	1751 NW 22ND AVE # A	HIGH									
200	SBBC #3651-5 DAVE THOMAS CENTER	190 SW 2ND ST	HIGH									
201	SBBC #9212-9 NORTH AREA PORTABLE	2201 NW 18TH ST	HIGH									
207	SBBC #9155-9 NORTH AREA MAINTENA	2800 NW 18TH TER # BUS PK	HIGH									
221	SBBC #1781-1 CYPRESS ELEM	851 SW 3RD AVE	HIGH									
250	SHELTERS (NON-SPECIAL NEEDS)	1700 NE 6TH ST	HIGH									
1	COPB AIR TRANSPORTATION FACILITIES (AIRPARK)	1001 NE 10TH ST	MEDIUM									
11	BSO POMPANO HEADQUARTERS	100 SW 3RD ST	MEDIUM									
46	GARDENS WEST - JOHN KNOX VILLA	700 SW 4TH ST	MEDIUM									
191	SBBC #0361-3 BLANCH ELY HIGH	1201 NW 6TH AVE AUDITORIUM	MEDIUM									
208	SBBC #2123-4 CYPRESS RUN ALTERNATIVE CNTR	2800 NW 30 AVE	MEDIUM									
218	SBBC #0751-1 POMPANO BEACH ELEM	700 NE 13TH AVE	MEDIUM									
228	RAILROAD CROSSINGS	SOUTH DIXIE HIGHWAY	MEDIUM									
251	TELECOM (NAP DATA CENTERS ISPS)	599 SW 16 TERRACE	MEDIUM									
261	RAILROAD CROSSINGS		MEDIUM									

Figure 37: Prioritized Critical Assets Affected by Flooding

For a detailed list of prioritized critical and regional assets, refer to **Appendix D: Prioritized Lists of Critical and Regional Assets.**

8.1 Critical Asset Vulnerability

Based on the results and discussions with the City Stormwater Supervisor and Emergency Manager of the sensitive critical assets exposed to varying flood scenarios, many critical assets were deemed vulnerable. Government-owned critical assets with "High" vulnerability under one or more scenarios included fire stations, City Hall, bridges at SE 9th Avenue, emergency shelters, schools, bus parking and maintenance lots, and the water reuse facility. Several City-owned assets with medium vulnerability were also prioritized, including two schools, the Airpark and the Broward Sheriff's Office (BSO) Pompano headquarters. Privately owned critical assets with "High" vulnerability include healthcare and assisted living facilities, private schools, railroad crossings, and telecommunications facilities

Several lift stations may be susceptible to flooding, but result in only "Low" vulnerability scores, in part because these facilities have greater adaptive capacity. Lift stations typically have some waterproofing, and repairs/upgrades would not be as costly as those for more substantial government facilities.

Fire Stations

Fire Stations (FS) 11, 24, 63 and 114 scored "High" vulnerability to a 500-year storm and storm surge in Scenario 9, and all but FS 24 scored high in Scenario 7. FS 114 also showed "Medium" vulnerability in Scenario 6 and 8, a 100-year and 500-year rainfall event. The city's fire stations exhibit a range of preparedness levels against flooding, primarily dictated by their construction standards and locations as shown in **Table 13**. Loss of access could be a concern in a severe flooding event even if the facilities themselves were not flooded.

Table 13: Pompano Beach Fire Stations

Fire Station	Construction Standards and Location
Fire Station 11	Located in a vulnerable area but is built to CAT 5 hurricane standards. Could have access issues with major flooding.
Fire Station 114	New fire station opened in 2023 and built to CAT 5 standards.
Fire Station 24	Brand new fire station and built to CAT 5 standards.
Fire Station 63	Old fire station but will be replaced with new Emergency Operations Center (EOC) which will be designed for CAT 5 hurricane standards.

Schools

McNabb Elementary, the Dave Thomas Education Center, and Cypress Elementary School show "High" vulnerability in storm surge Scenarios (7 and 9). Blanch Ely High School and Pompano

Beach Elementary show “Medium” vulnerability in Scenario 9. For private schools, Iglesia Bautista and St. Coleman both show high vulnerability in Scenarios 7 and 9, with Iglesia Bautista showing lower vulnerability in less severe scenarios as well.

Other Government Facilities

Larger government facilities in the City are mostly vulnerable in the storm surge scenarios. Pompano Beach City Hall is strategically elevated, but the presence of a subterranean canal on its parcel could lead to flooding that could cause access issues. It shows high vulnerability in storm surge Scenarios 7 and 9. The water reuse facility at 1799 N Federal Highway scored also “high” in Scenarios 7 and 9. The North Area bus lot and maintenance yards also scored “Medium” to “High” vulnerability for more severe scenarios, which could be a concern if vehicles or equipment were stored there during a storm surge event. The BSO headquarters scored “Medium” in Scenarios 7 and 9. Finally, the Airpark scored “Low” vulnerability in Scenarios 6 and 8 and “Medium” in Scenarios 7 and 9, with flood extents showing significant flooding, especially in the storm surge scenarios.

Healthcare Facilities

Numerous healthcare facilities offering assisted living, nursing, substance abuse, mental health care treatment and other services are scored as “High” vulnerability under storm surge Scenarios 7 and 9. These facilities range in size from large high-rise complexes to smaller facilities in residential neighborhoods. They include Green Life Assisted Living Facility, Henderson Behavioral Health, Inc., Seaview Nursing & Rehabilitation, and Vizcaya By The Sea Inc. Other residences such as Sunset By The Sea, Atlantic Shore Retirement Residences, and With Love Inc., show “High” vulnerability in storm surge scenarios as well as “Low” or “Medium” vulnerability in Scenarios 5 and 6.

Among the largest healthcare facilities are Five Star Premier Residences and John Knox Village Life Plan Community. While the 100-year and 500-year storm surge scenarios are worst-case scenarios modeling a direct hit with a major hurricane, flooding at these facilities would be a concern given their large population of vulnerable individuals. Flooding could severely impact access, affecting the ability to relocate or evacuate residents in case of a sustained power outage, fire or other disaster.

Lift Stations

Lift stations are integral to the city's wastewater management system. A total of 44 lift stations showed flood exposure, although all exposed lift stations did not score above “Low” vulnerability, since they are typically designed with waterproofing measures to mitigate flood damage. Lift stations are typically designed to the 100-year flood level. However, these protective measures have sometimes failed, leading to maintenance challenges due to water intrusion. For instance, Lift Station #20, located in a low-lying area with a high-water table, consistently battles water intrusion problems. Similarly, Lift Station #21 is vulnerable to flooding, especially during rainfall events when water breaches the sea wall.

8.2 Scenario Analysis

Figure 38, Figure 39, Figure 40, Figure 41, Figure 42, Figure 43, Figure 44, Figure 45, and **Figure 46** display the sensitivity for critical assets under Flood Scenarios 1-9 in Pompano Beach. For more information on the sensitive critical assets, visit the online tool at: City of Pompano Beach Vulnerability Mapping Tool (arcgis.com)

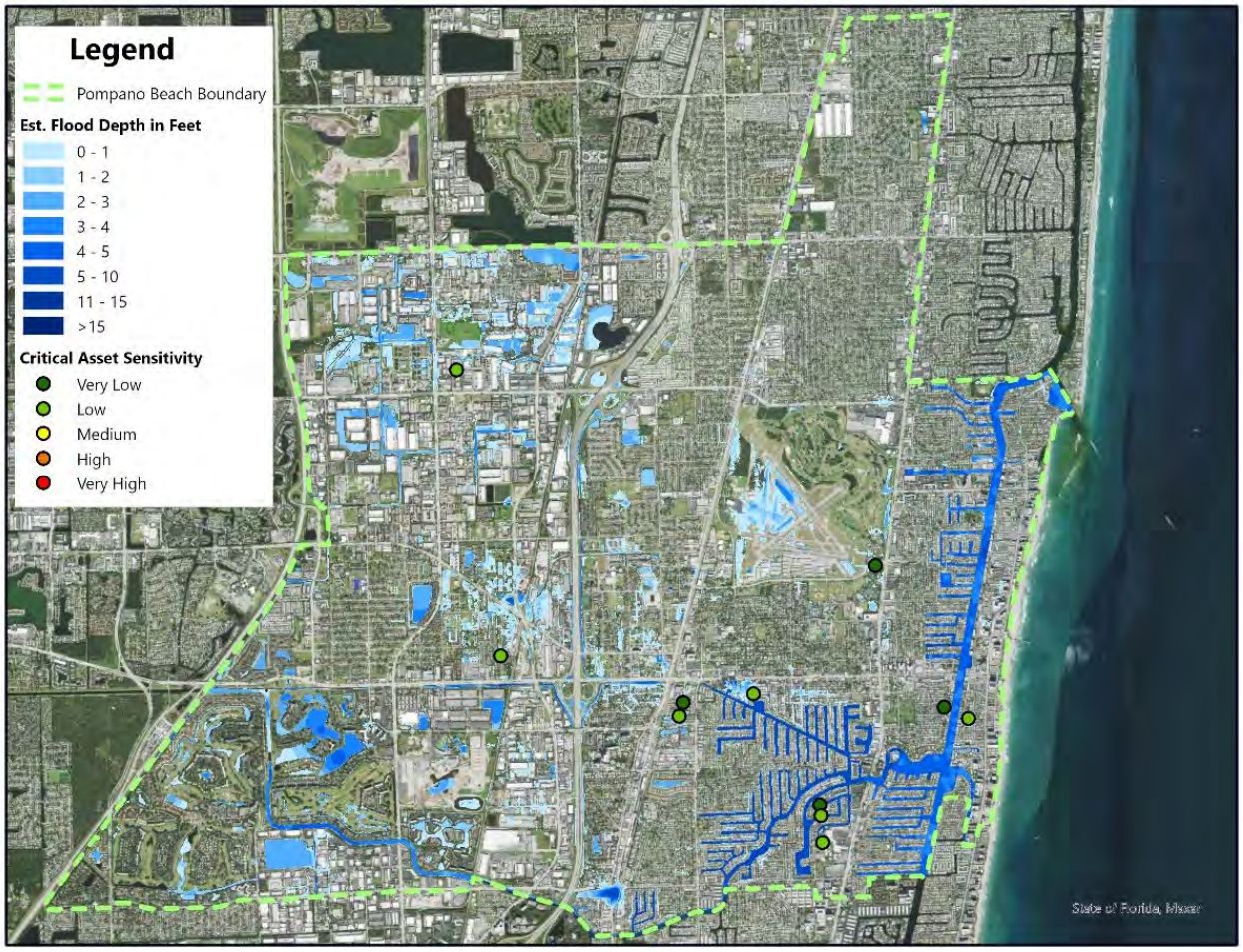

Figure 38: Sensitive Critical Assets under Scenario 1 (RS&H)

Table 14 shows asset types of sensitive critical assets in Scenario 1, classified into either very low, low, medium, and high categories.

Table 14: Asset Type of Sensitive Critical Assets under Scenario 1

Asset Type	Very Low	Low	Medium	High
Bridges	-	1	-	-
Schools	-	1	-	-
Wastewater Treatment Facilities and Lift Stations	4	5	-	-

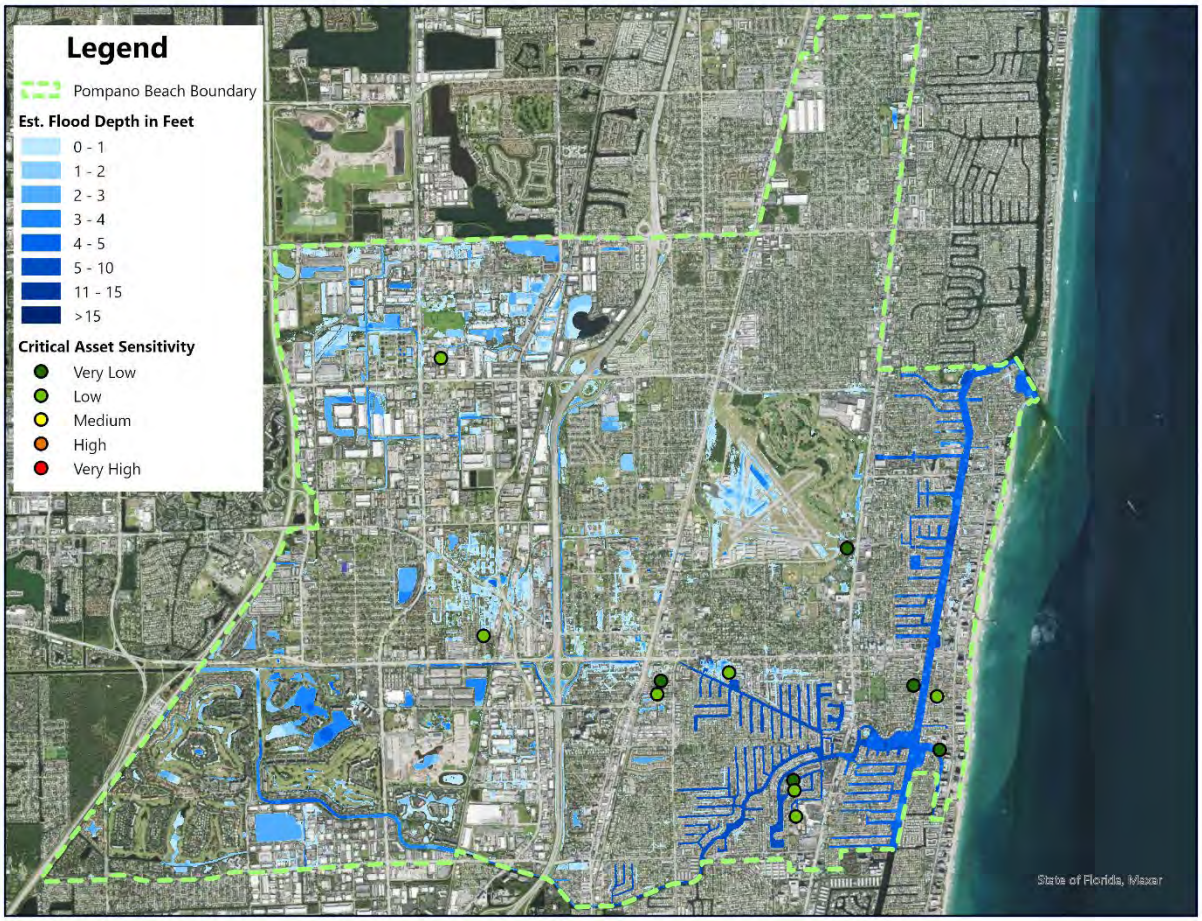

Figure 39: Sensitive Critical Assets under Scenario 2 (RS&H)

Table 15 shows asset types of sensitive critical assets in Scenario 2, classified into either very low, low, medium, and high categories.

Table 15: Asset Type of Sensitive Critical Assets under Scenario 2

Asset Type	Very Low	Low	Medium	High
Bridges	-	1	-	-
Schools	-	1	-	-
Wastewater Treatment Facilities and Lift Stations	5	5	-	-

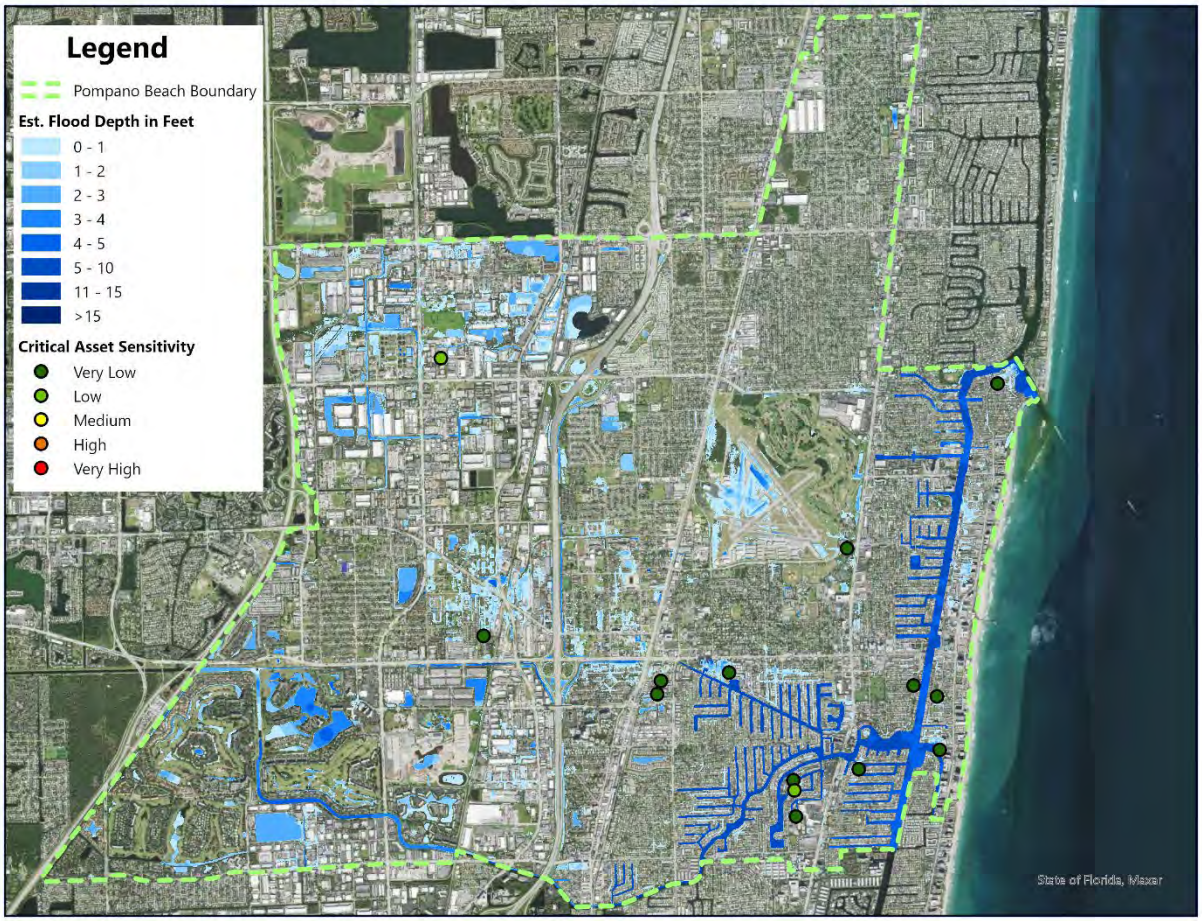

Figure 40: Sensitive Critical Assets under Scenario 3 (RS&H)

Table 16 shows asset types of sensitive critical assets in Scenario 3, classified into either very low, low, medium, and high categories.

Table 16: Asset Type of Sensitive Critical Assets under Scenario 3

Asset Type	Very Low	Low	Medium	High
Bridges	-	1	-	-
Schools	-	1	-	-
Wastewater Treatment Facilities and Lift Stations	12	-	-	-

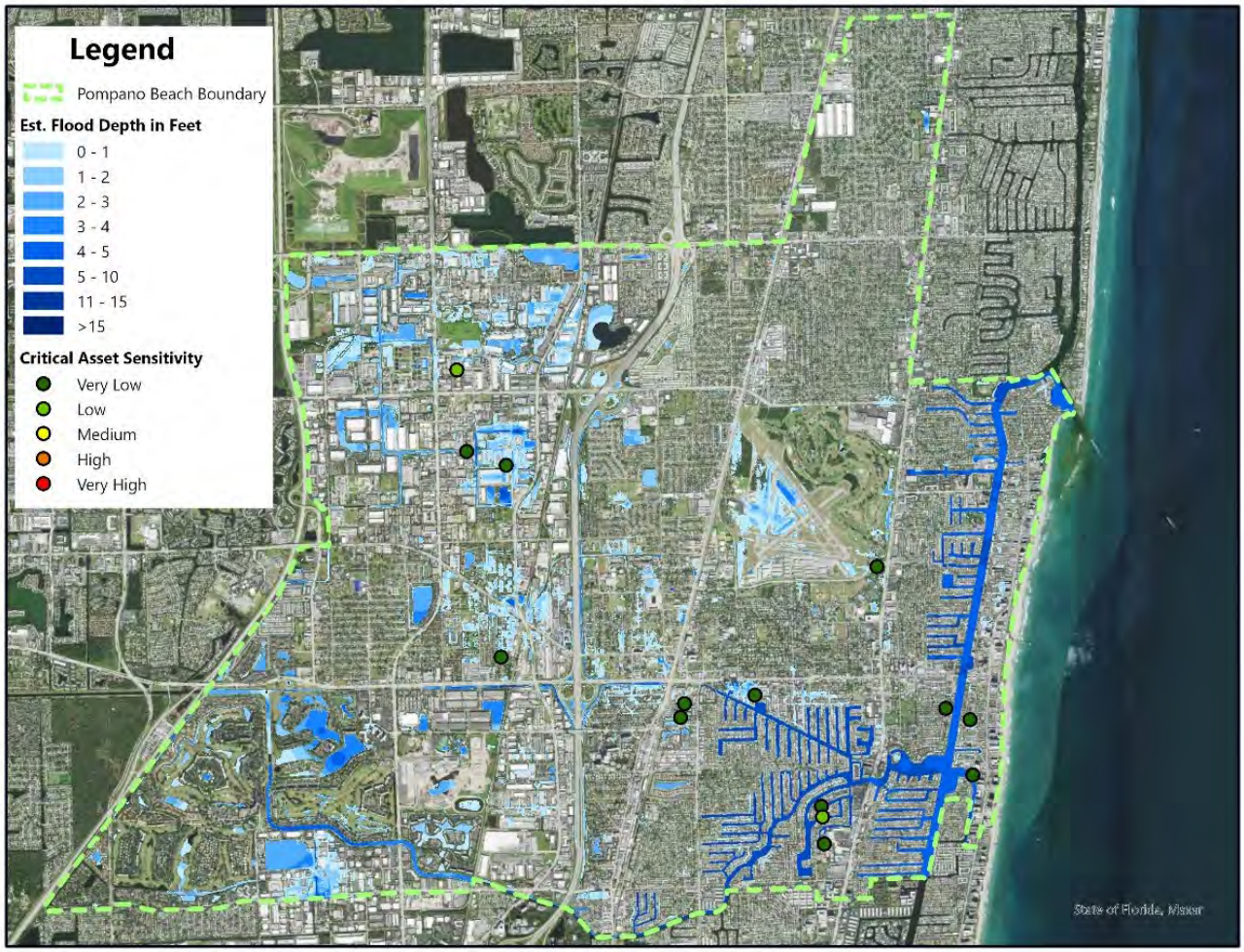

Figure 41: Sensitive Critical Assets under Scenario 4 (RS&H)

Table 17 shows asset types of sensitive critical assets in Scenario 4, classified into either very low, low, medium, and high categories.

Table 17: Asset Type of Sensitive Critical Assets under Scenario 4

Asset Type	Very Low	Low	Medium	High
Bridges	-	1	-	-
Schools	-	1	-	-
Wastewater Treatment Facilities and Lift Stations	12	-	-	-

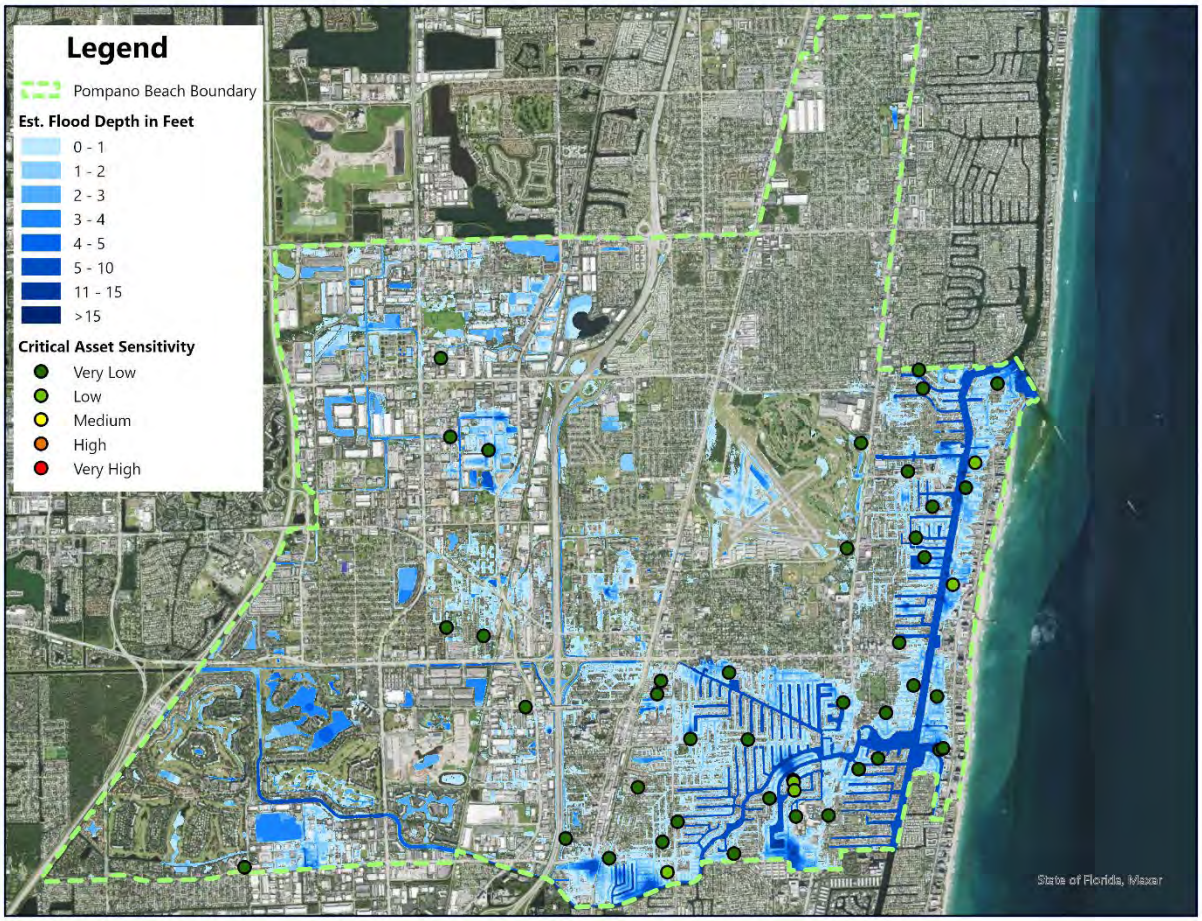

Figure 42: Sensitive Critical Assets under Scenario 5 (RS&H)

Table 18 shows asset types of sensitive critical assets in Scenario 5, classified into either very low, low, medium, and high categories.

Table 18: Asset Type of Sensitive Critical Assets under Scenario 5

Asset Type	Very Low	Low	Medium	High
Bridges	-	2	-	-
Communication Facilities	1	-	-	-
Fire Stations	1	-	-	-
Health Care Facilities	1	2	-	-
Schools	1	1	-	-
Wastewater Treatment Facilities and Lift Stations	37	-	-	-

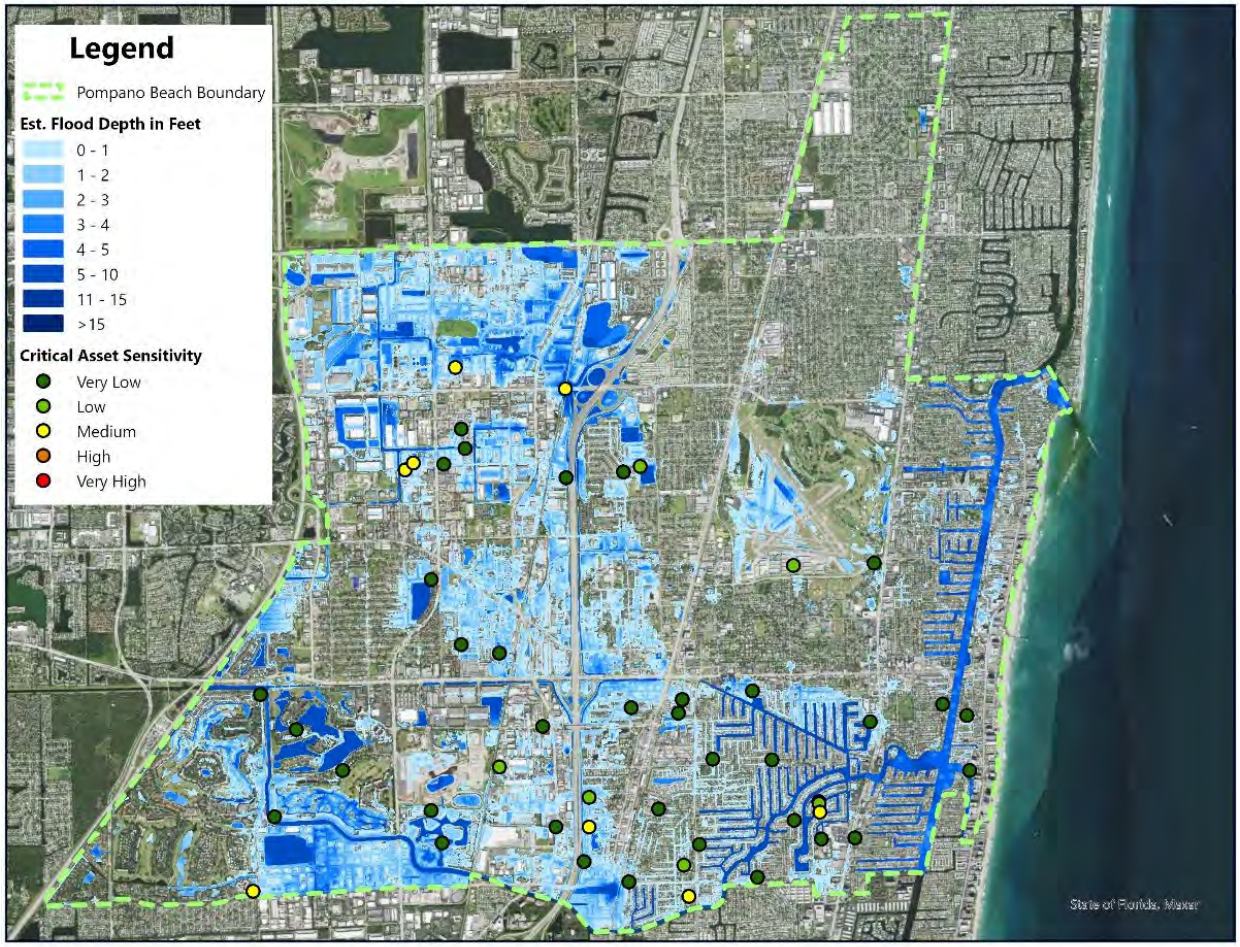

Figure 43: Sensitive Critical Assets under Scenario 6 (RS&H)

Of the sensitive critical assets under Scenario 6, **Table 19** breaks them down into asset types and classifies the vulnerability under very low, low, medium, or high.

Table 19: Asset Type of Sensitive Critical Assets under Scenario 6

Asset Type	Very Low	Low	Medium	High
Airports	-	1	-	-
Bridges	-	1	1	-
Communications Facilities	-	1	-	-
Fire Stations	-	-	1	-
Health Care Facilities	-	2	1	-
Rail Facilities	-	-	1	-
Schools	-	-	4	-
Wastewater Treatment Facilities and Lift Stations	37	1	-	-

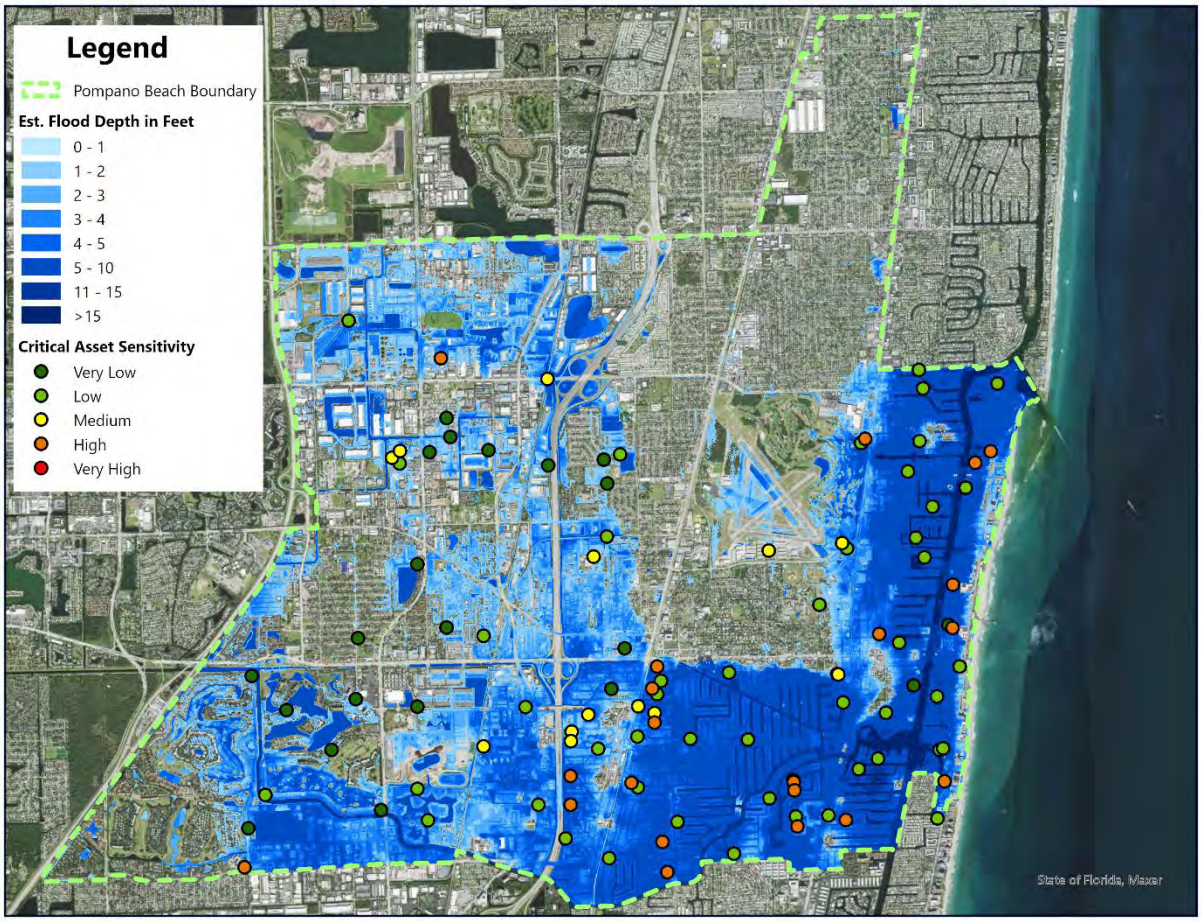

Figure 44: Sensitive Critical Assets under Scenario 7 (RS&H)

Of the sensitive critical assets under Scenario 7, **Table 20** breaks them down into asset types and classifies the vulnerability under very low, low, medium, or high.

Table 20: Asset Type of Sensitive Critical Assets under Scenario 7

Asset Type	Very Low	Low	Medium	High
Airports	-	-	1	-
Bridges	-	-	-	2
Communications Facilities	-	1	1	-
Pompano High School Hurricane Shelter	-	1	-	-
Fire Stations	-	-	1	3
Health Care Facilities	-	-	5	8
Law Enforcement Facilities	-	-	1	-
Local Government Facilities	-	-	-	1
Rail Facilities	-	1	2	-
Schools	-	2	3	6
Wastewater Treatment Facilities and Lift Stations	21	43	-	1

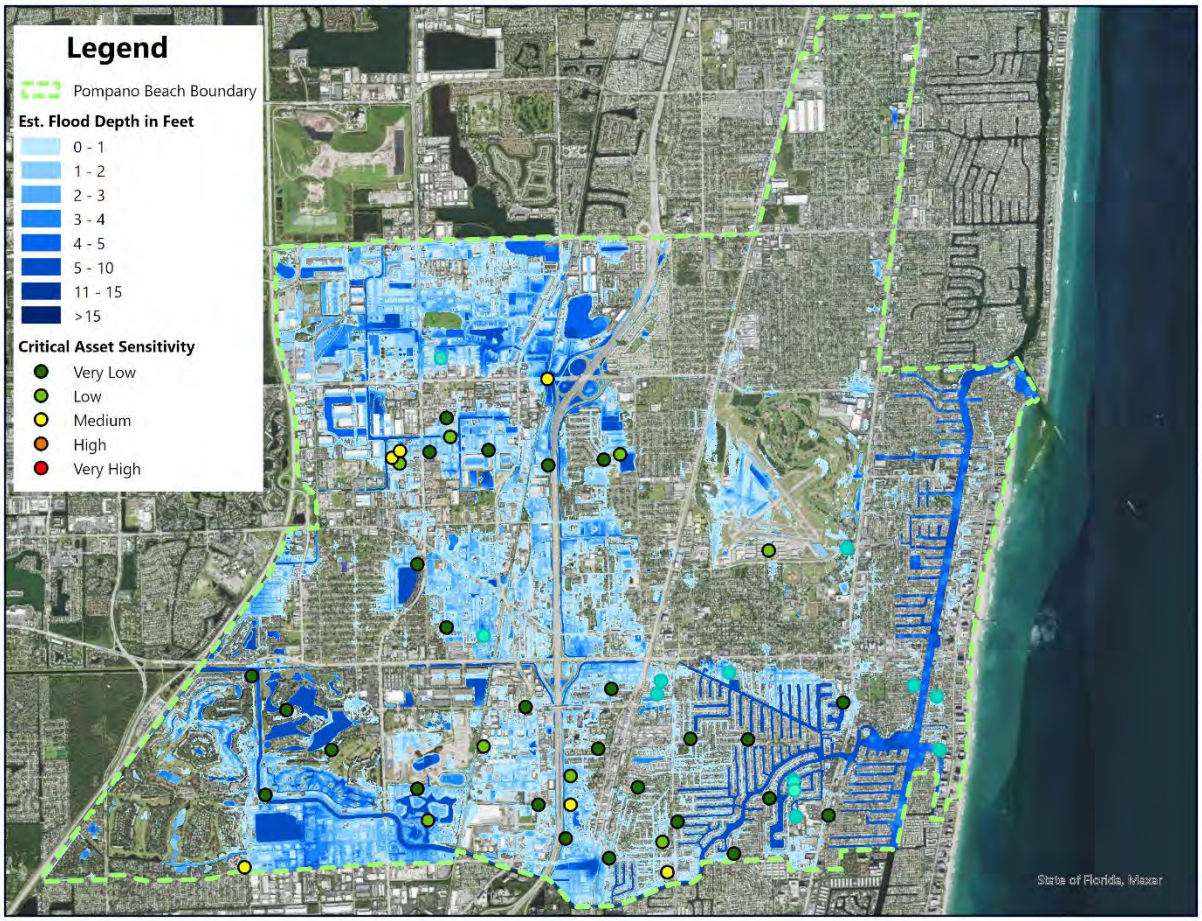

Figure 45: Sensitive Critical Assets under Scenario 8 (RS&H)

Of the sensitive critical assets under Scenario 8, **Table 21** breaks them down into asset types and classifies the vulnerability under very low, low, medium, or high.

Table 21: Asset Type of Sensitive Critical Assets under Scenario 8

Asset Type	Very Low	Low	Medium	High
Airports	-	1	-	-
Bridges	-	1	1	-
Communications Facilities	-	1	-	-
Fire Stations	-	-	1	-
Health Care Facilities	-	2	1	-
Rail Facilities	-	-	1	-
Schools	-	1	3	1
Wastewater Treatment Facilities and Lift Stations	35	4	-	-

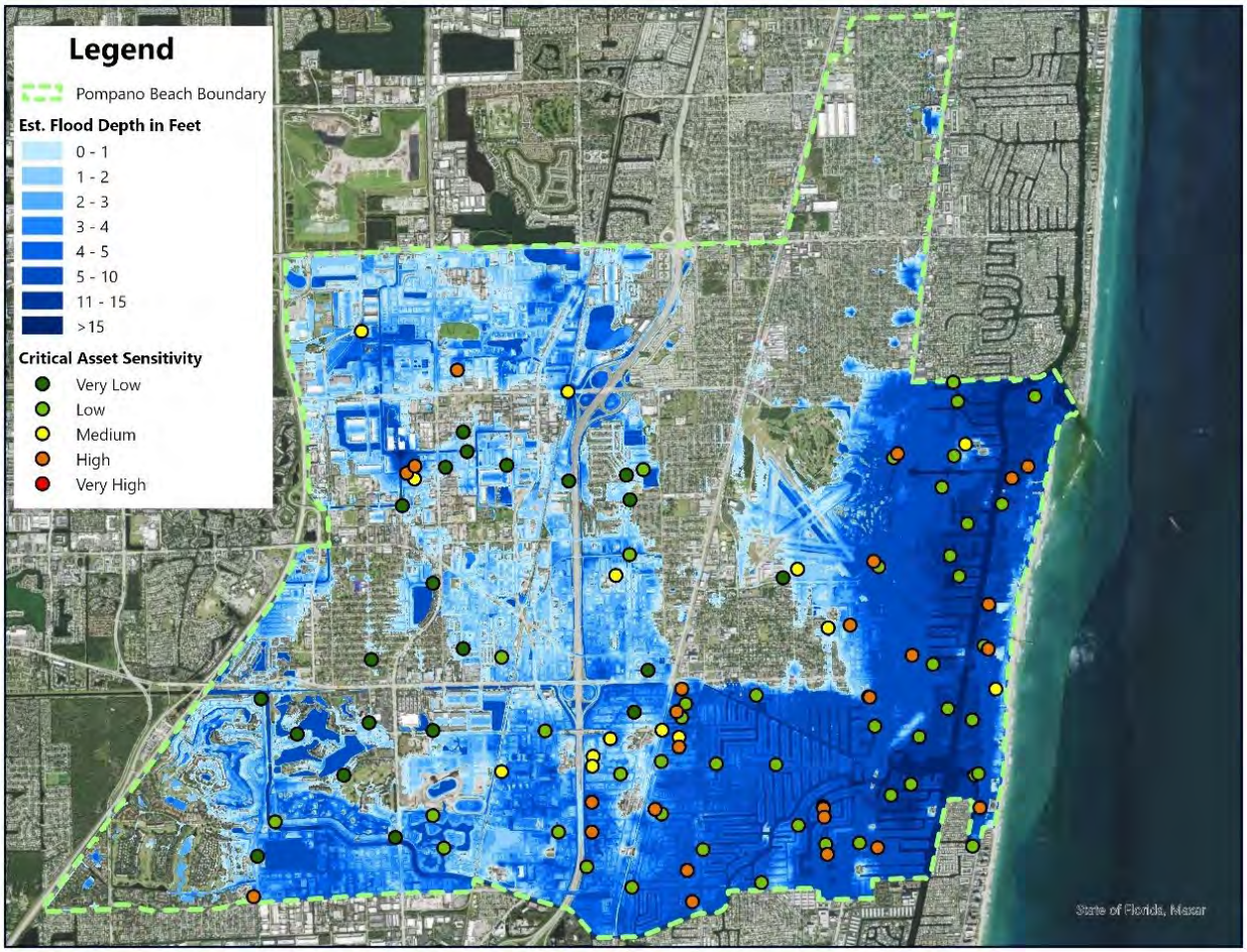

Figure 46: Sensitive Critical Assets under Scenario 9 (RS&H)

Of the sensitive critical assets under Scenario 9, **Table 22** breaks them down into asset types and classifies the vulnerability under very low, low, medium, or high.

Table 22: Asset Type of Sensitive Critical Assets under Scenario 9

Asset Type	Very Low	Low	Medium	High
Airports	-	-	1	-
Bridges	-	-	-	2
Communications Facilities	-	-	2	-
Pompano High School Hurricane Shelter	-	-	-	1
Fire Stations	-	-	-	4
Health Care Facilities	-	-	4	10
Law Enforcement Facilities	-	-	1	-
Local Government Facilities	-	-	-	1
Rail Facilities	-	1	2	-
Schools	-	-	4	8
Wastewater Treatment Facilities and Lift Stations	21	45	-	1

8.3 Regional Asset Vulnerability

Figure 47, **Figure 48**, **Figure 49**, and **Figure 50** display the sensitivity of regional assets under flood Scenarios 1, 4, 6 and 9 in Pompano Beach[2]. **Appendix E** shows the sensitivity for Scenarios 2, 3, 5, 7, and 8. Scenario 1 has 29 exposed regional assets, Scenario 4 has 34, Scenario 6 has 91, and Scenario 9 has 220 exposed regional assets. Of the exposed assets, Scenario 1 has four highly sensitive assets, Scenario 4 has zero, Scenario 6 has four, and Scenario 9 has 83 highly sensitive assets.

In the least severe flood scenario, the majority of sensitive regional assets with the highest vulnerability scores are stormwater treatment facilities. These assets, when flooded, can experience a capacity overload, leading to system overloads. This can result in untreated stormwater releases into the environment, posing risks to public health and local ecosystems. Additionally, flooding can disrupt the normal treatment processes at stormwater facilities, affecting their ability to remove pollutants from the water.

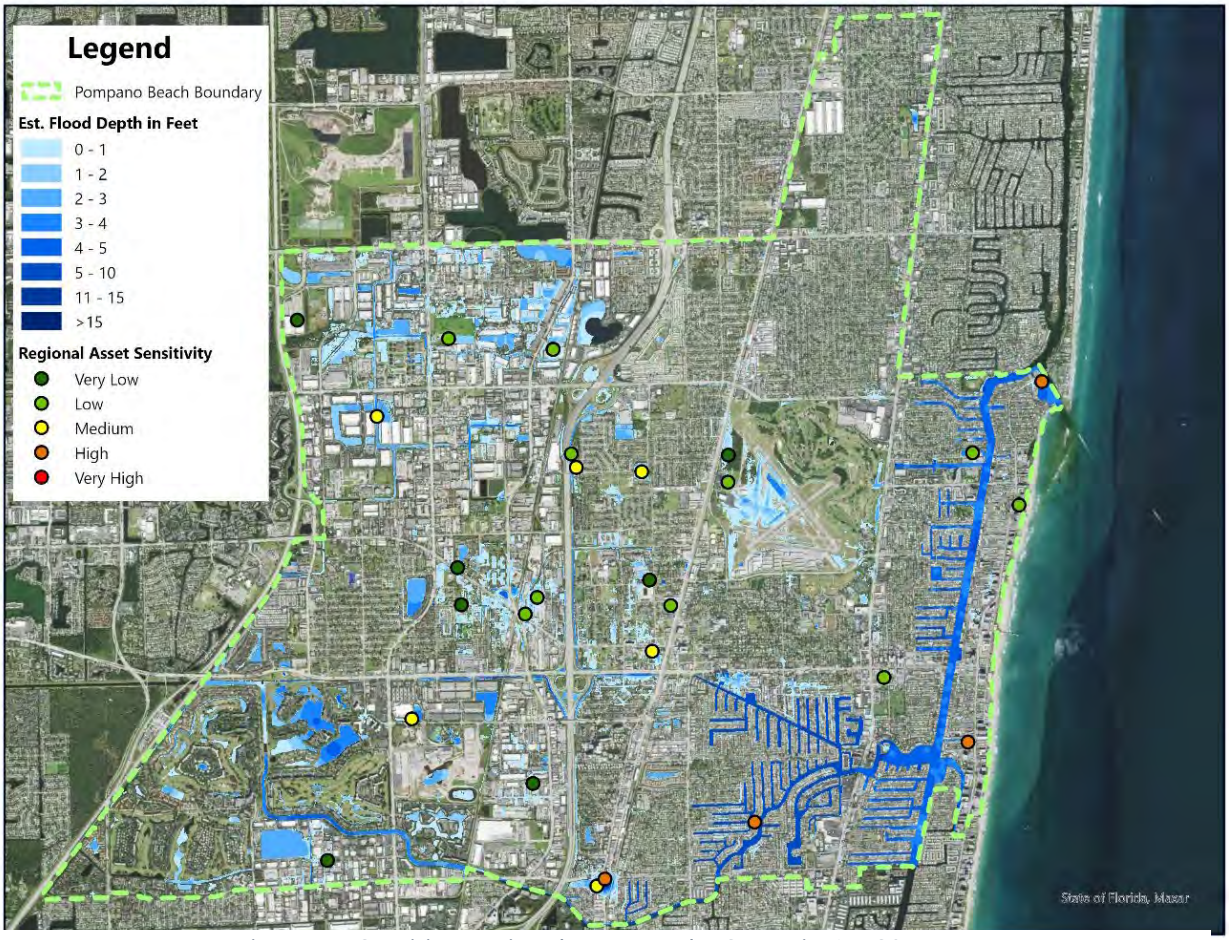

Figure 47: Sensitive Regional Assets under Scenario 1 (RS&H)

[2] Note that there may be overlap between critical and regional assets in some cases due to the datasets involved. A list of Critical Assets was provided by the City and Regional Assets were identified through available GIS datasets from a variety of sources. In some cases, the same asset may exist in both datasets.

Of the sensitive regional assets under Scenario 1, **Table 23** breaks them down into asset types and vulnerability levels.

Table 23: Asset Type of Sensitive Regional Assets under Scenario 1

Asset Type	Very Low	Low	Medium	High
Marinas	-	-	-	2
Parks	-	2	3	-
Stormwater Treatment Facilities	8	9	3	2

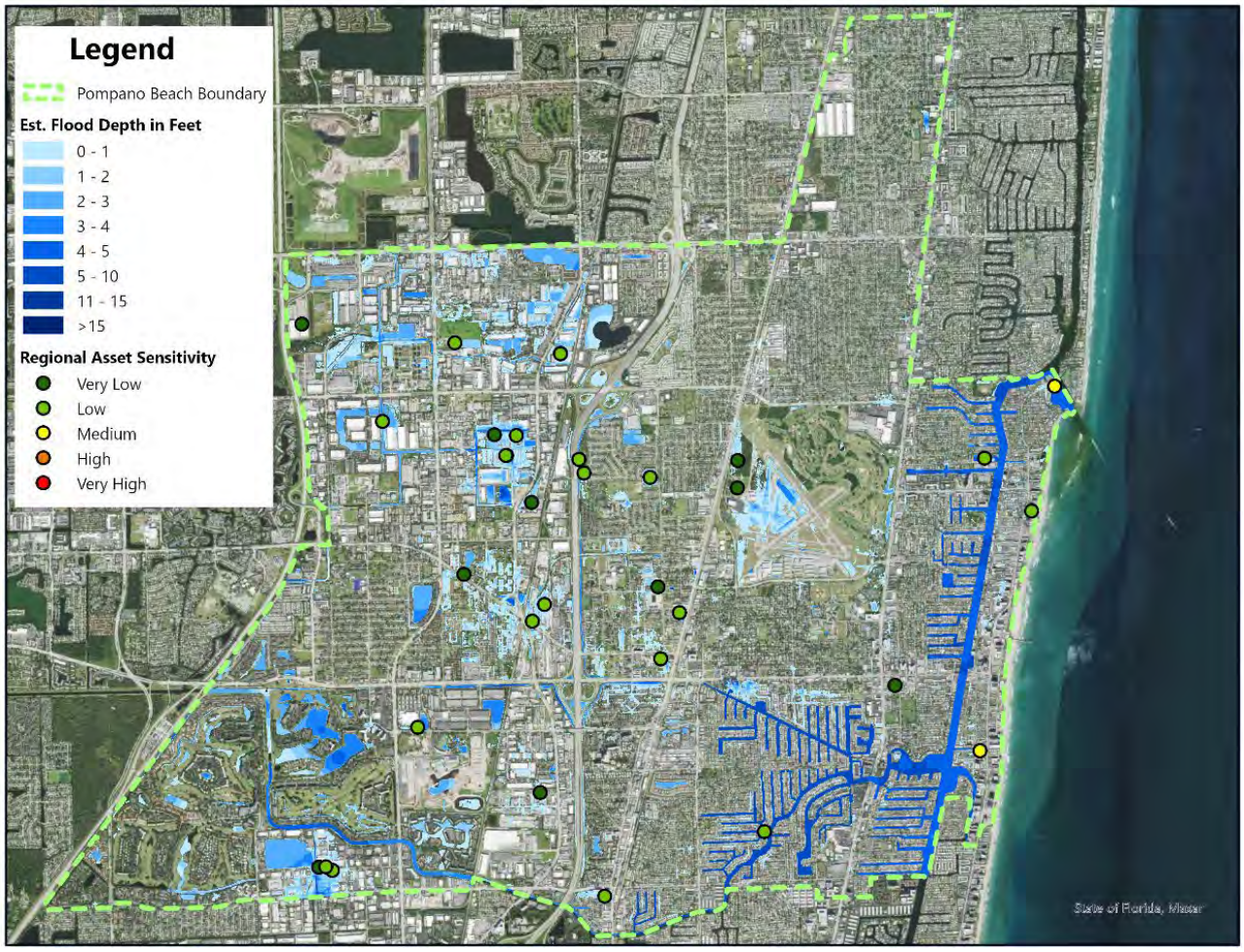

Figure 48: Sensitive Regional Assets under Scenario 4 (RS&H)

Of the sensitive regional assets under Scenario 4, **Table 24** breaks them down into asset types and vulnerability levels.

Table 24: Asset Type of Sensitive Regional Assets under Scenario 4

Asset Type	Very Low	Low	Medium	High
Marinas	-	-	2	-
Parks	2	3	-	-
Stormwater Treatment Facilities	9	18	-	-

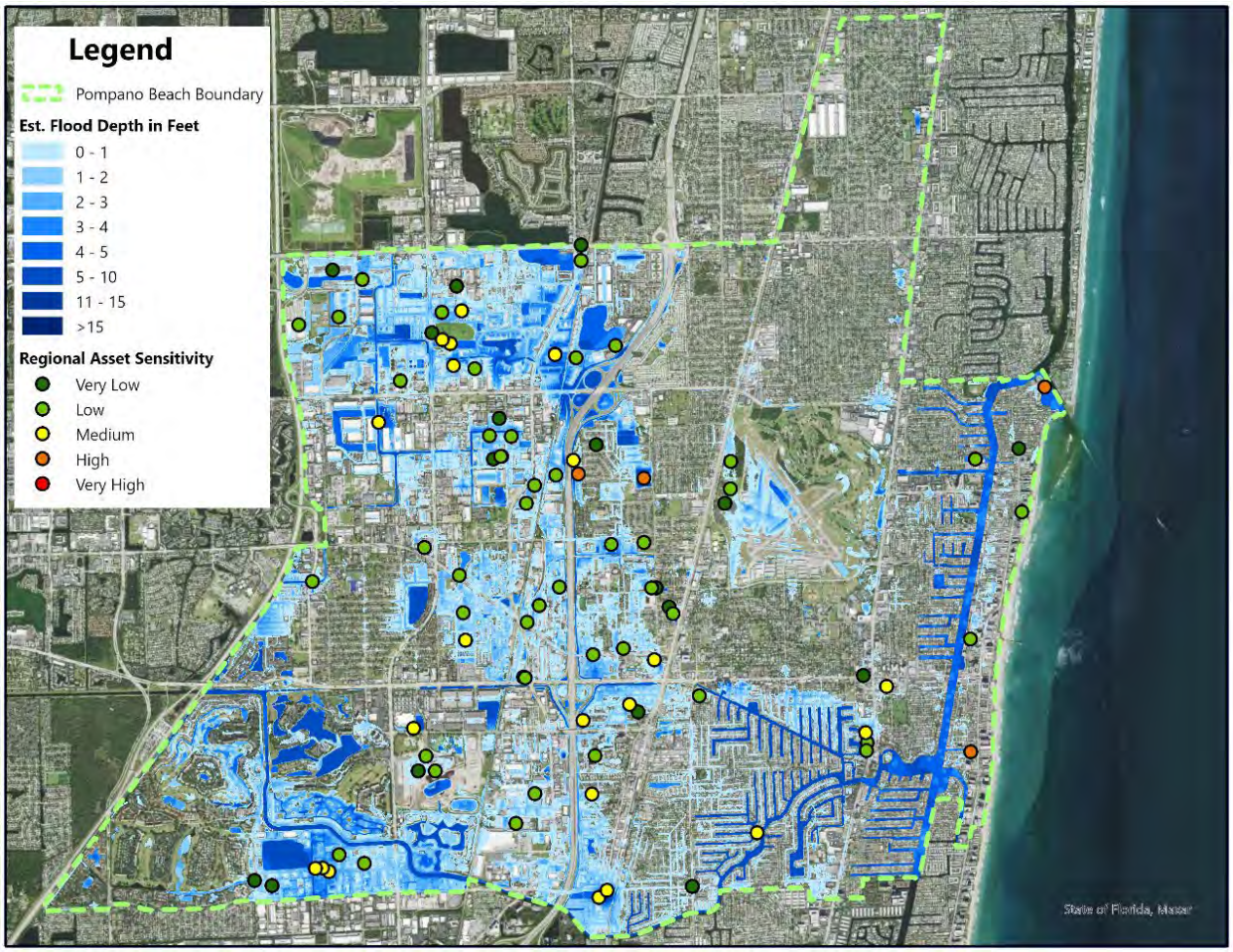

Figure 49: Sensitive Regional Assets under Scenario 6 (RS&H)

Table 25 breaks down sensitive assets under **Scenario 6** into types and vulnerability levels.

Table 25: Asset Type of Sensitive Regional Assets under Scenario 6

Asset Type	Very Low	Low	Medium	High
Correctional Facilities	-	-	2	-
Fire Stations (Broward County Fire Station 51)	-	-	1	-
Marinas	-	2	1	2
Parks	-	2	5	2
Schools	-	1	1	-
Stadiums	-	1	-	-
Stormwater Treatment Facilities	19	40	12	-

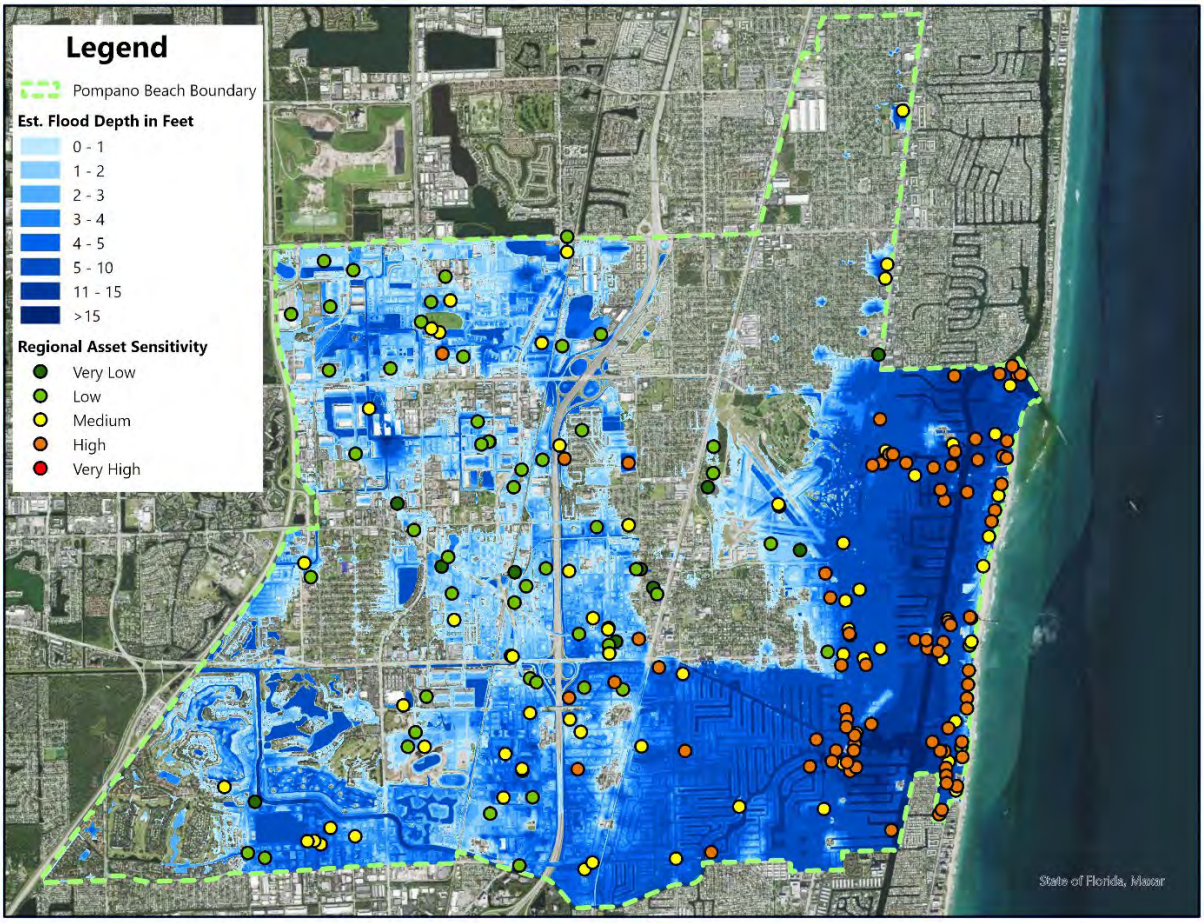

Figure 50: Sensitive Regional Assets under Scenario 9 (RS&H)

Of the sensitive regional assets under Scenario 9, **Table 26** breaks them down into asset types.

Table 26: Asset Type of Sensitive Regional Assets under Scenario 9

Asset Type	Very Low	Low	Medium	High
Airports	-	-	1	-
Community Centers	2	2	1	-
Correctional Facilities	-	-	1	1
Fire Stations (Broward County Fire Station 51)	-	-	1	-
Health Care Facilities	-	-	-	1
Historical and Cultural Assets	-	-	-	2
Local Government Facilities	-	1	1	1
Marinas	-	-	-	39
Parks	-	1	8	35
Schools	-	-	3	2
Stadiums	-	-	2	1
Stormwater Treatment Facilities	10	52	51	-

8.4 Citywide Sensitivity Analysis

Using GIS, the sensitivity of the City's transportation network was evaluated and summarized for each flood scenario.

8.4.1.1 Citywide Transportation Network Sensitivity

Pompano Beach's transportation network was analyzed for sensitivity to all nine flood scenarios. Transportation networks are critical during storm events as they maintain connectivity and significantly impact community safety, including the ability to evacuate.

Figure 51, **Figure 52**, **Figure 53**, and **Figure 54** display the sensitivity for roadways under flood Scenarios 1, 4, 6 and 9 in Pompano Beach. **Appendix E** shows the sensitivity for Scenarios 2, 3, 5, 7, and 8. The impact of flooding on infrastructure extends to residential roads and evacuation routes within all evaluated scenarios, with most significant effects in Scenarios 7 and 9. Scenarios 1 through 6 primarily affect local roads, which have higher adaptive capacity since more detours exist. Collectors, highways, and evacuation routes are more significantly impacted in Scenarios 5-9. Flooding of evacuation routes can severely hamper evacuation efforts, delay emergency services, and increase risks for residents attempting to leave flood-affected zones. Evacuation routes leading inland from the beaches are the most significantly affected, especially in scenarios which account for storm surge (Scenarios 7 and 9).

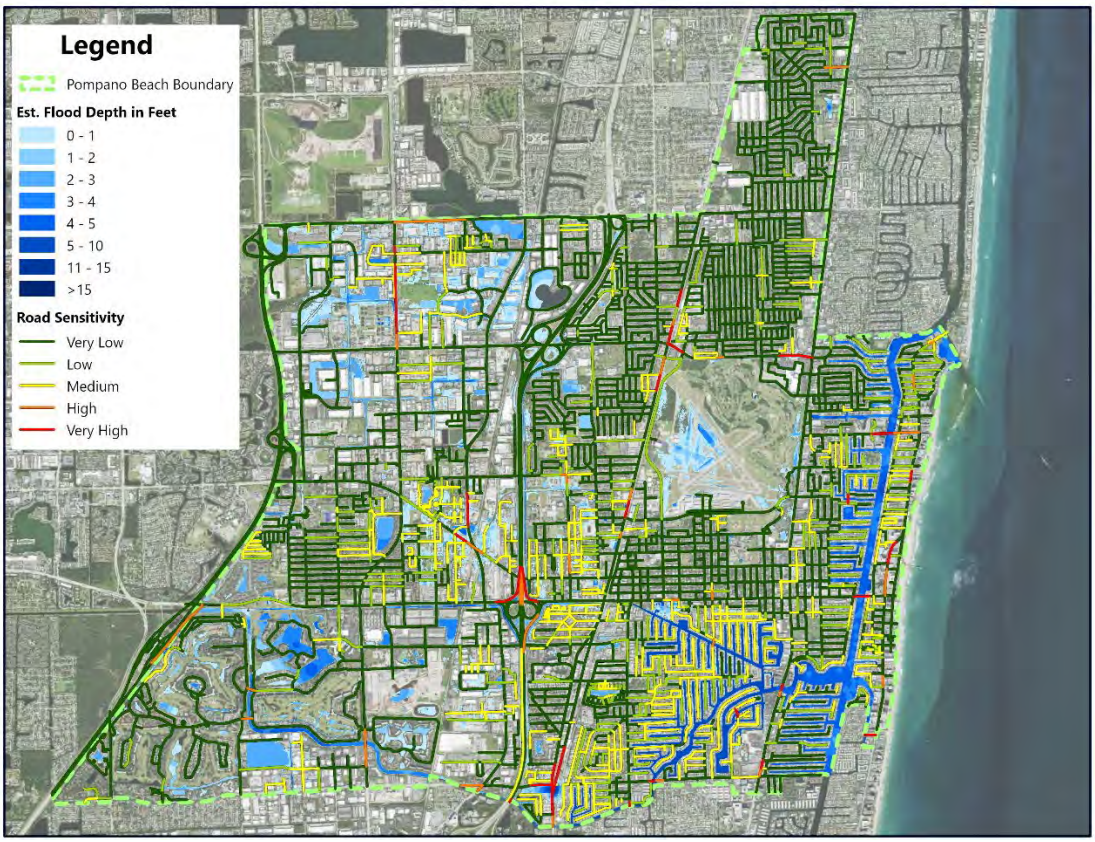

Figure 51: City Roadway Sensitivity under Scenario 1 (RS&H)

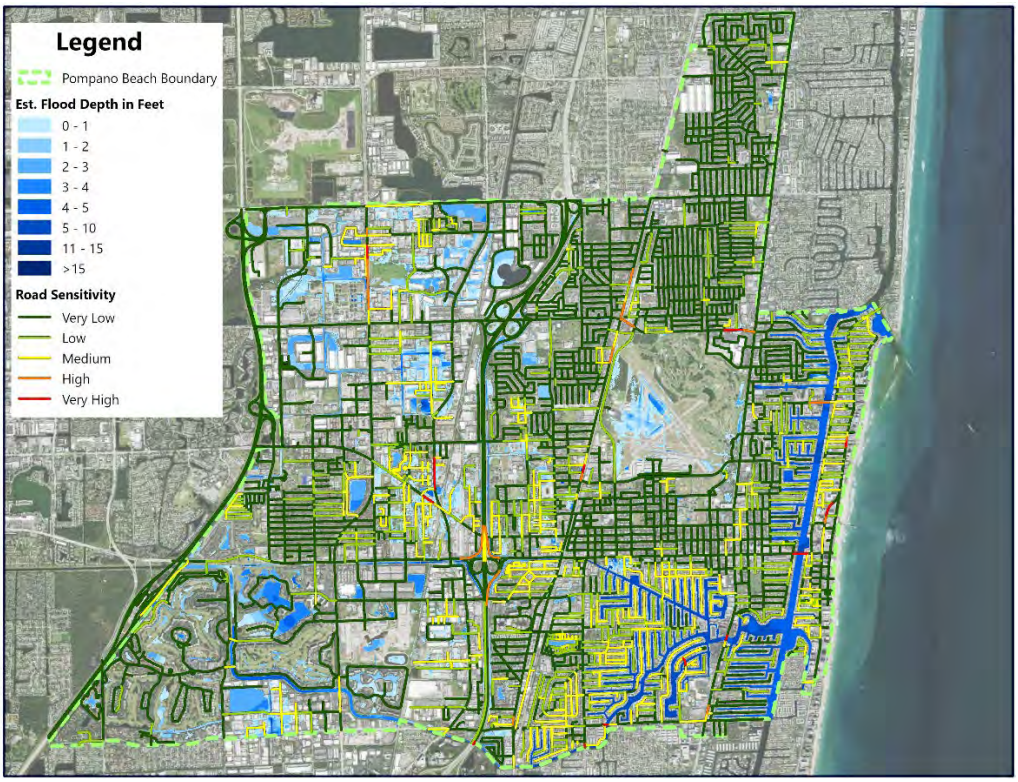

Figure 52: City Roadway Sensitivity under Scenario 4 (RS&H)

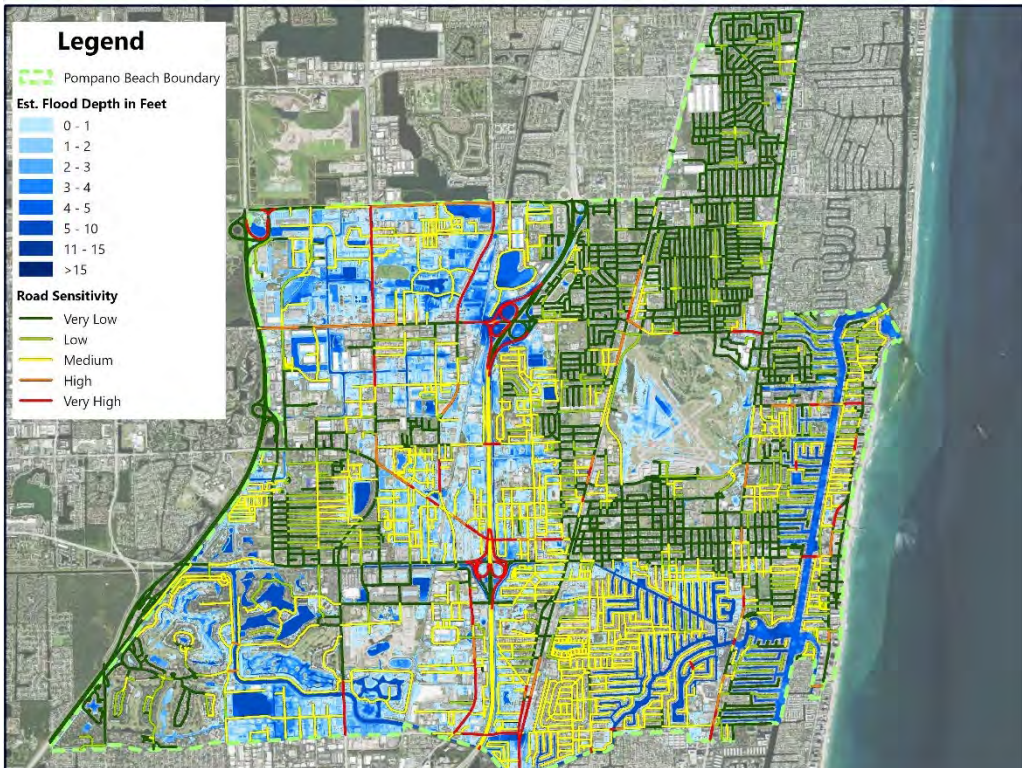

Figure 53: City Roadway Sensitivity under Scenario 6 (RS&H)

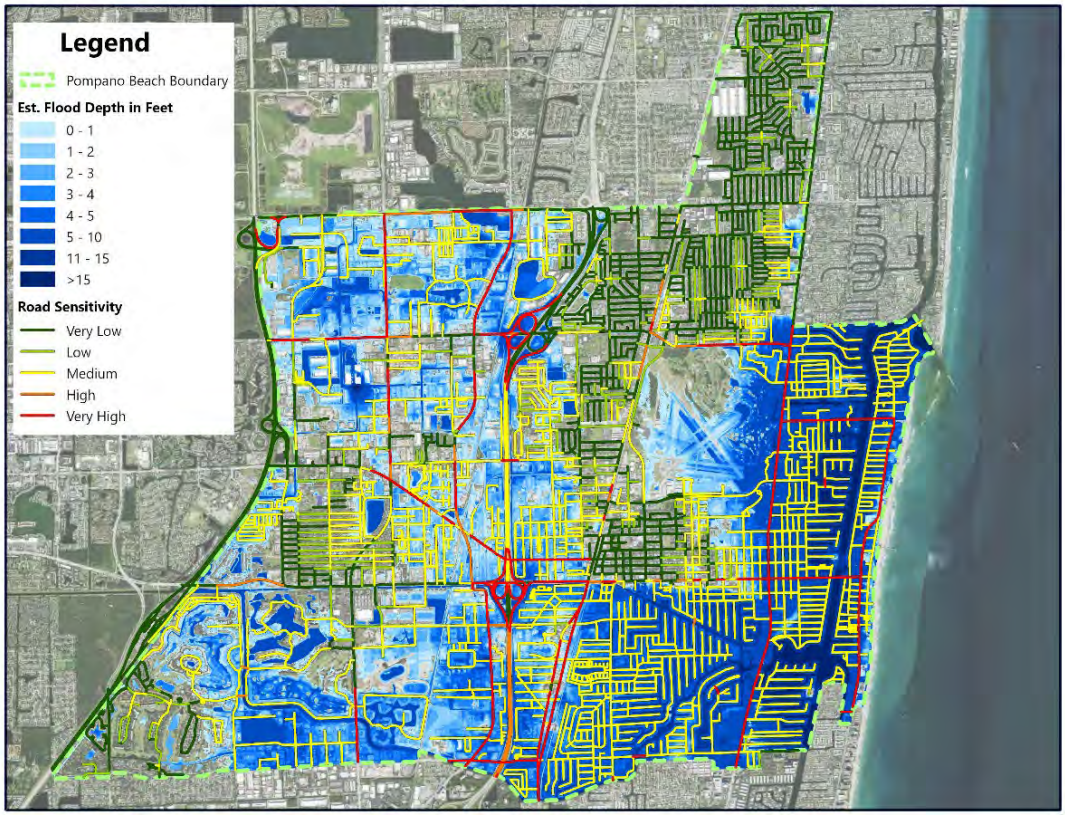

Figure 54: City Roadway Sensitivity under Scenario 9 (RS&H)

9 Adaptation Recommendations

Based on vulnerability assessment findings and community feedback, an Adaptation Action Area (AAA) recommendation was developed for adoption by the City. Adopting an AAA would support the creation of recommended adaptation actions that could significantly enhance Pompano Beach's resilience to flooding scenarios and could have benefits for community outreach and funding pursuits.

9.1 Adaptation Action Areas

The identification of AAAs is a critical step in the process of enhancing community resilience to flooding. AAAs allow targeted regulation for areas vulnerable to flood impacts, allowing them to be prioritized for adaptation actions and funding opportunities.

Initially, four options for AAA boundaries were developed for the City's consideration, based on the comprehensive vulnerability assessment findings. These options were presented at the Public Information Meeting.

Subsequently, two 500-year storm analyses (Scenarios 8 and 9) were added to the study, which resulted in more extensive flooding than originally modeled. After coordination with the City, the AAA recommendation was modified to include the entire City boundary. This configuration should provide maximum flexibility to the City for seeking funding and targeting awareness campaigns for flood risk in the City, which is widespread and not confined to specific neighborhoods.

9.2 Suggested Adaptation Actions

The National Climate Assessment identifies five stages to adaptation: awareness, assessment, policy, implementation, and evaluation. This report focuses on the first two stages, awareness and assessment.

The next step for the City would be to complete an Adaptation Plan as outlined in Pompano Beach's Sustainability and Resilience Workplan. The Adaptation Plan would provide a framework for evaluation and monitoring of results. An Adaptation Plan would also address the policy, implementation, and evaluation stages. It would include planning-level development of specific adaptation actions designed to address the vulnerabilities identified in this report, with cost/benefit analysis and prioritization of potential adaptation actions, an implementation plan, and definition of metrics for evaluation as projects are implemented. It is likely that the Adaptation Plan could be grant funded through the Florida Resilient Coastlines Program. The City submitted a grant application to fund an Adaptation Plan in September 2024 which is in the process of being reviewed by the Florida Department of Environmental Protection (FDEP).

A review of the vulnerabilities identified in this study points to other initial adaptation recommendations the City should consider. These recommendations could be rolled into the Adaptation Plan and developed to a further level of detail through that planning process. They

have been developed and categorized through an Adaptive Management planning approach, which involves a flexible approach to decision making. By continuously learning from outcomes, adjusting strategies, and integrating new knowledge, adaptive management enhances resilience and facilitates sustainable outcomes. For the City, Adaptive Management strategies are crucial for proactively addressing flood hazard vulnerabilities. The adaptation actions recommended here fall into three categories:

1) **Evaluate** - Understand the City's risk tolerance and investigate the necessity and suitability of adaptation actions.
2) **Plan** - Integrate adaptation decisions with existing plans and systems
3) **Coordinate** -Engage community and regional stakeholders and the public to raise awareness and collaborate to address flood vulnerabilities.

Evaluate

- Evaluate portable flood barriers as a possible solution to reduce or eliminate flood damage at vulnerable local government facilities.
- Study impacts of loss of access at the parcel which includes FS-63 and where the planned new Emergency Operations Center (EOC) will be located. This parcel may experience flooding and loss of access under some scenarios. While the new EOC will be designed to Category 5 hurricane rating, maintaining access to the parcel in the event of a severe storm or hurricane event will be critical.
- Evaluate current maintenance procedures to ensure wastewater and stormwater facilities are well-maintained to prevent equipment failures and blockages during a flood event.
- Conduct a site-specific flood risk study and develop a flood preparedness plan at the Airpark, since it may be critical to keep it open in the aftermath of a significant flood event.
- Evaluate vulnerable lift stations for upgrades, such as elevating controls higher than predicted flood levels for Scenarios 1-6, and additional waterproofing as needed to prevent water intrusion. Lift stations 20 and 21 are already subject to flooding on a regular basis and could be addressed first as pilot projects.

Plan

- Develop a contingency plan for access to City Hall in case of flooding at the site. While the facility is elevated, a canal is present at the property and the parcel could flood in a severe storm or storm surge scenario, restricting access.
- Ensure vulnerable Fire stations have contingency plans for lack of access during significant flood events. Fire stations 11, 24, 63 and 144 showed vulnerabilities to flooding. Although the fire stations are built to withstand a Category 5 hurricane, access to the site could be compromised in a significant flood event, rendering them unusable until flood waters recede.
- Develop a plan to move buses, vehicles and equipment stored in vulnerable parking lots and maintenance yards ahead of storms, if feasible.

Coordinate

- Coordinate with vulnerable Broward County schools as well as private schools. Schools can develop flood preparedness plans that identify flood-prone areas, establish evacuation routes, designate assembly points, train staff and students on flood safety protocols, maintain emergency kits, monitor weather alerts, and implement structural modifications like elevating electrical equipment and installing flood barriers as necessary.
- Work with vulnerable healthcare facilities, nursing homes and assisted living facilities to understand how they could be impacted by flooding and ensure adequate flood preparation and evacuation plans are in place. The John Knox facility was identified as a particular concern by the City's Emergency Management Administrator due to the number of vulnerable people living in high-rise buildings at the site. The City should ensure the facilities and City emergency services have contingency plans in place for temporary loss of access that could result from flooding at these facilities.
- Work with Broward County regarding potential vulnerabilities to BSO Pompano Headquarters in storm surge scenarios.
- Conduct outreach to marinas located within the City to determine the potential consequences of flooding to stormwater control / treatment features, marina buildings, and infrastructure. Docks and marinas are at high risk of flooding due to their proximity to waterways. The vulnerability assessment shows the potential for pollutants to enter waterways if stormwater treatment infrastructure is overtopped during flood events, as well as for damage to buildings and infrastructure located at marinas.
- Consider conducting additional public outreach to City residents, community associations, business owners and other stakeholder groups to inform and engage them regarding the City's flood vulnerabilities.
- Coordinate with the Florida East Coast Railway regarding rail crossings that are vulnerable in some flood scenarios.

Appendix A: Stormwater Model Update

RS&H

December 1, 2024

City of Pompano Beach
Vulnerability Assessment
Stormwater Model Update

City of Pompano Beach Vulnerability Assessment Stormwater Model Update

DRAFT
Volume No. 1
Date: December 1, 2024
Pompano Beach, Florida
Contract No.: L41-16 Work Authorization No. 4 RS&H No.: 10060018002

Prepared by RS&H, Inc. at the
direction of City of Pompano Beach

Table of Contents

List of Tables

Appendices

Appendix A **Criteria Documentation**

Exhibit A-1: Excerpts from *Global and Regional Sea Level Rise Scenarios for the United States*
Exhibit A-2: NOAA Tidal Datum Information
Exhibit A-3: SFWMD Extreme Rainfall Change Factors for Broward County
Exhibit A-4: Excerpts from *Design Storm Surge Hydrographs*
Exhibit A-5: Excerpts from *Design Storm Surge Hydrographs For The Florida Coast*
Exhibit A-6: National Geodetic Survey (NGS) Vertical Datum Conversion
Exhibit A-7: Typical FEMA FIRMette

Appendix B **EPA SWMM Model Results**

Study Area 1. Pompano Park Place and Andrews Avenue
Study Area 2. Northwest CRA TOC
Study Area 3. Lyons Park Neighborhood
Study Area 4. Avondale Neighborhood
Study Area 5. Esquire Lake Neighborhood
Study Area 6. Gateway Drive
Study Area 7. Kendall Lake Neighborhood
Study Area 8. US-1 and NE 14th Street Causeway Area
Study Area 9. NE 14th Street and NE 3rd Street
Study Area 10. Dixie Highway and West McNab Road
Study Area 11. Bay Drive Neighborhood
Study Area 12. North Riverside Drive and NE 14th Street Causeway
Study Area 13. Atlantic Boulevard and South Riverside Drive

1 Introduction

The City of Pompano Beach has retained RS&H to provide a comprehensive vulnerability assessment of its infrastructure and critical assets to incorporate its assets into the Resilient Florida Grant Program. In 2013, the City completed its Stormwater Master Plan report to identify any deficiencies in the existing stormwater management system and to recommend system improvements to alleviate flooding problems within public right of way areas. To achieve this purpose, the report subdivided the City into 25 main Study Areas that contain critical infrastructure assets with opportunities for improvements. Each of the Study Areas was modeled in EPA SWMM software using all available hydrologic parameters, water level elevations, and boundary conditions.

The 2013 Stormwater Master Plan report and the EPA SWMM models for existing conditions and proposed alternatives for Study Areas 1 through 25 were received by RS&H in 2022 to evaluate inland water stage elevations, flooding areas, and impacts on the City's drainage network related to climate change and therefore assess vulnerabilities in the city's infrastructure. This analysis focused on the preferred alternative for each Study Area as indicated by the Stormwater Master Plan report.

2 2013 Stormwater Master Plan Update

In order to comply with the requirements of the new Resilient Florida Grant Program (Section 380.093, Florida Statute (F.S.)), each one of the preferred alternatives per Study Area in the 2013 Stormwater Master Plan was updated to incorporate the following scenarios and standards:

1. At least two local sea level rise scenarios, which must include the 2017 NOAA Intermediate-Low and Intermediate-High sea level rise projections. These scenarios must include at least 2 planning horizons including:
   a. 2040 planning horizon
   b. 2070 planning horizon
2. Tidal Flooding including future high tide flooding, which must use thresholds published and provided by the department,
3. Rainfall-induced Flooding using spatiotemporal analysis or existing hydrologic and hydraulic modeling results.
4. Current and future storm surge flooding using publicly available NOAA or FEMA storm surge data. The initial storm surge events used must equal or exceed the current 100-year flood event and the 500-year event.
5. Compound flooding or the combination of tidal, storm surge, and rainfall-induced flooding.

The following table summarizes the Study Areas identified in the 2013 Stormwater Master Plan and modeled in EPA SWMM:

Table 2-1: 2013 Stormwater Master Plan Study Areas Modeled in EPA SWMM

Study Area
1. Pompano Park Place and Andrews Avenue
2. Northwest CRA TOC
3. Lyons Park Neighborhood
4. Avondale Neighborhood
5. Esquire Lake
6. Gateway Drive
7. Kendall Lake Neighborhood
8. US-1 and NE 14th Street Causeway Area
9. NE 14th Street and NE 3rd Street
10. Dixie Highway and West McNab Road
11. Bay Drive Neighborhood
12. N. Riverside Drive and NE 14th Street Causeway
13. Atlantic Blvd. and South Riverside Drive
14. NE 27th Avenue and NE 16th Street
15. Powerline Road and NW 33rd Street
16. NW 22nd Street
17. SE 28th Avenue South of Atlantic Blvd.
18. NW 22nd Court
19. NE 10th Street & Dixie Highway
20. US-1 and SE 15th Street
21. SE 9th Street
22. NW 16th Lane
23. Northeast Martin Luther King Boulevard and Powerline Road
24. NW 7th Terrace
25. SE 15th Avenue

2.1 Sea Level Rise

The sea level rise estimates were updated using the 2017 NOAA intermediate-low and NOAA intermediate-high projections to 2040 and to 2070 planning horizons to comply with Section 380.093, F.S. The Global Mean Sea Level (GMSL) rise rates are published 2017 NOAA report titled "*Global and Regional Sea Level Rise Scenarios for the United States*" (refer to Exhibit A-1 of **Appendix A** for excerpts) as summarized in **Table 2-2** below:

Table 2-2: 2017 Global Mean Sea Level (GMSL) Rise Rates

2017 GMSL Scenario	2040 Planning Horizon Rate (mm/yr)	2040 Planning Horizon Rate (ft/yr)	2070 Planning Horizon Rate (mm/yr)	2070 Planning Horizon Rate (ft/yr)
Intermediate-Low	5	0.0164	5	0.0164
Intermediate-High	13	0.0426	20	0.0656

2.2 Tidal Flooding

Tidal flooding is a major consideration in assessing vulnerability of critical infrastructure. **Table 2-3** below provides a summary of the latest tidal datum for the Hillsboro Inlet Ocean Station No. 8722862 provided by the National Oceanic Atmospheric Administration (NOAA), refer to Exhibit A-2 of **Appendix A** for excerpts of NOAA Tidal Datum Information:

Table 2-3: Summary of Tidal Datums at Hillsboro Inlet Ocean Station No. 8722862

Tidal Datums	Elevation (ft-NAVD)
Mean Higher-High Water (MHHW)	0.39
Mean High Water (MHW)	0.25
Mean Tide Level (MTL)	-1.01
Mean Sea Level (MSL)	-1.01
Mean Diurnal Tide Level (DTL)	-1.02
Mean Low Water (MLW)	-2.26
Mean Lower-Low Water (MLLW)	-2.43

It is important to note that the 2013 Stormwater Master Plan report uses the same Hillsboro Inlet Station to model the boundary conditions for the existing condition and proposed improvements. A boundary condition of 0.45 ft-NAVD based Mean Higher-High Water (MHHW) was used originally for modeling during the one-day and three-day design storm simulations. Since the MHHW was originally used for tidal modeling, it was used as the baseline elevation. The currently published MHHW elevation on this Tidal Station of 0.39 ft-NAVD (2001 Tidal Epoch Year) was now used. The Sea Level Rise rate estimates shown in **Table 2-2** for each of the Planning Horizons for the Intermediate-Low and Intermediate-High scenarios were applied to the tidal information gathered from the Hillsboro Inlet Station to model inundation depths and extents. **Table 2-4** below summarizes these findings:

Table 2-4: Modeled Scenarios Based on 2017 GMSL Rates

2017 GMSL Scenario	MHHW El. (ft-NAVD)	Tidal Epoch Year	Current Design Year	Current MHHW El. with 2040 Rate (ft-NAVD)	2040 Planning Horizon El. (ft-NAVD)	Current MHHW El. with 2070 Rate (ft-NAVD)	2070 Planning Horizon El. (ft-NAVD)
Intermediate-Low	0.39	2001	2022	0.73	1.03	0.73	1.52
Intermediate-High	0.39	2001	2022	1.28	2.05	1.77	4.92

Outfalls in the EPA SWMM models for each of the 25 Study Areas discharging to the Intracoastal Waterway or Atlantic Ocean were changed from a fixed stage to reference a tidal curve based on the appropriate sea level rise scenario mentioned above.

2.3 Rainfall-induced Flooding

The EPA SWMM model rain gages of the 2013 Stormwater Master Plan used the 5-year, 24-hour event, 100-year, 72-hour event and the 500-year, 72-hour event.

The 5-year and the 100-year rainfalls were adjusted using locally published Extreme Rainfall Change Factors for Broward County, provided by the South Florida Water Management District, refer to Exhibit A-3 of **Appendix A** for excerpts. The 5-year rainfall increased from 7.8 inches to 8.7 inches, and the 100-year rainfall increased from 20.0 inches to 24.6 inches. Refer to **Table 2-5** below for a summary of the Change Factors used to simulate rainfall-induced flooding.

Table 2-5: SFWMD Extreme Rainfall Change Factors

Storm Return Period (Year)	Extreme Rainfall Change Factor	Rainfall Depth (in)	Adjusted Rainfall Depth (in)
5	1.11	7.8	8.7
100	1.23	20.0	24.6
500	-	26.2	-

A new rain gage was added to the SWMM model to the model the 500-year, 72-hour storm event. The rainfall depth used for the 500-year, 72-hour storm event was obtained from the NOAA Atlas 14 for Pompano Beach. Refer to Exhibit A-4 of **Appendix A** for excerpts. There are no Extreme

Rainfall Change factors available from SFWMD to simulate conditions of extreme rainfall conditions for the 500-year storm event, so an adjusted rainfall depth was not used.

The EPA SWMM models for each preferred alternative utilized these updated rain gages to provide a baseline "effective" model.

2.4 Storm Surge Flooding

The 100-year event and the 500-year models were also simulated with a storm surge event scenario to observe the potential impacts on the Study Areas. Referencing **Table A-1** in the 2003 report *"Design Storm Surge Hydrographs for the Florida Coast"* by the University of Florida (refer to Exhibit A-5 of **Appendix A** for excerpts), a 100-year and 500-year storm surge peaks for Pompano Beach were calculated to be 12.5 ft-NGVD29 (10.9 ft-NAVD88) and 17.1 ft-NGVD29 (15.5 ft-NAVD88), respectively. These values were implemented in the models as a tidal curve, similar to the 5-year models. Refer to **Appendix A** for excerpts from Global and Regional Sea Level Rise Scenarios for the United States as well as a typical FEMA Firmettes for the City of Pompano Beach.

Table 2-6: Peak Storm Surge Heights

Storm Return Period (Year)	Storm Surge Peak (ft, NGVD)	Storm Surge Peak (ft, NAVD)
100	12.5	10.9
500	17.1	15.5

3 EPA SWMM Model Results

3.1 Study Area 1 - Pompano Park Place and Andrews Avenue

This study area is located on the west side of the I-95, east of Andrews Avenue and south of Pompano Park Place. This study area mainly consists of industrial and commercial properties with high amounts of impervious ground surface. Many of these commercial properties have their own on-site drainage system or along private roadways. Some properties located at the center of the study area discharge to two large lakes at SW 6th Street and Andrews Avenue which overflow through a control structure into the Andrews Avenue stormwater system.

This analysis focused on the preferred Alternative 2 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of the installation of new exfiltration trenches within available right-of-way areas throughout the study area. Alternative 2 was modeled

in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.2 Study Area 2 - Northwest CRA TOC

The study area for the Northwest CRA TOC Neighborhood has general boundaries of NW 6th Street on the north, West Atlantic Boulevard on the south, I-95 on the west, and NE 5th Street on the east. The NW CRA TOC Neighborhood typically experiences flooding throughout the area during heavy rainfall events.

Th stormwater improvements that were recommended for the West Basin consist of exfiltration trenches and dry retention areas. However, this Study Area was not model in the 2013 Stormwater Master Plan report. Therefore, the existing model was used to conduct the analysis of this Study Area. This model was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.3 Study Area 3 - Lyons Park Neighborhood

The Lyons Park Neighborhood is located west of South Cypress Road, north of McNab Road, east of South Flagler Avenue and south of Southwest 8th Street. This study area is a residential neighborhood with chiefly single-family homes, which is served by an existing stormwater collection system.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of pipe size upgrades. Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.4 Study Area 4 - Avondale Neighborhood

The Avondale Neighborhood is bound by I-95 to the west, SW 3rd Street to the south, Dixie Highway to the east and Atlantic Boulevard to the north. The Avondale Neighborhood typically experiences significant flooding throughout the area during heavy rainfall events.

This analysis focused on the preferred Alternative 4 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of a new pump station, a retention area, and backflow prevention devices at some of the existing outfalls to the SFWMD G16 Canal. Alternative 4 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.5 Study Area 5 - Esquire Lake Neighborhood

The study area for the Esquire Lake Neighborhood is located on the west side of the Powerline Road, south of Martin Luther King Boulevard. This residential neighborhood contains a lake towards the east side, which collects runoff from all local roadways through gravity stormwater pipes ranging from 12 inches to 36 inches.

This analysis focused on the preferred Alternative 2 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of the installation of exfiltration trenches within portions of the study area not currently served by the existing stormwater system. Alternative 2 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.6 Study Area 6 - Gateway Drive

The Gateway Drive study area is a commercial and industrial neighborhood bounded by West McNab Road to the south, by Powerline Road to the east, by SW 36th Avenue to the west and by SFWMD C14 Canal to north. Due to the commercial nature of the study area, the public right-of-way areas have a high percentage of impervious ground coverage, which limits the infiltration of stormwater runoff into the ground surface.

This analysis focused on the preferred Alternative 2 for this Study Area as indicated by the Stormwater Master Plan report. This alternative includes installation of a new drainage connection between the proposed exfiltration system and the existing drainage canal, exfiltration trenches and stormwater pipe to connect to the drainage canal. Alternative 2 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.7 Study Area 7 - Kendall Lake Neighborhood

The Kendall Lake Neighborhood is a residential neighborhood bounded by NW 21st Street on the north, by NW 16th Street on the south, NW 5th Way on the west and NW 1st Avenue on the east. The study area consists of all single-family developments, which are completely built out.

This analysis focused on the preferred Alternative 2 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of exfiltration trenches and expansion of an existing lake. Alternative 2 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.8 Study Area 8 - US-1 and NE 14th Street Causeway Area

This study area is generally located southeast of the intersection of US Highway 1 and NE 14th Street Causeway. This study area consists chiefly of residential properties along with commercial

properties located along US-1 and NE 14th Street. The existing drainage system within the study area includes a few separate systems, such as the FDOT drainage system along US-1 and NE 14th Street Causeway and various independent City systems within the neighborhood.

Based on the 2013 Stormwater Master Plan report, Alternative 2 (pipe size upgrades) was recommended. Alternative 2 does not provide enough additional flood protection to meet the level of service criteria for all public roadways within the study area. Therefore, for the purpose of this Vulnerability Assessment, Alternative 4 (pump station) was selected to model this study area. It will increase the conveyance capacity of the stormwater management system to alleviate the existing flooding issues quicker. Refer to **Appendix B** for the results of the most critical nodes.

3.9 Study Area 9 - NE 4th Street and NE 3rd Street

This study area includes NE 4th Street and NE 3rd Street to the east of Harbor Drive immediately adjacent to the Intracoastal Waterway. This residential neighborhood includes two separate areas surrounded by the finger canals off the Intracoastal Waterway. The public right-of-way areas within this neighborhood do not have an existing drainage system to address any flooding issues since these roadways are hydraulically isolated from adjacent areas with existing drainage infrastructure, such as Harbor Drive.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of the installation of new exfiltration trenches within available right-of-way areas throughout the study area. Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.10 Study Area 10 – Dixie Highway and West McNab Road

This study area is bounded by Interstate-95 on the west, by SW 9th Street on the north, by Dixie Highway on the east, and by West McNab Road on the south. This study area consists of a mixture of residential and commercial properties. A portion of this study area consists of a large development project, which is currently under construction and bounded by SW 13th Court to the south and SW 10th Street to the north.

Only one Alternative was recommended for this Study Area, which consists of the installation of a proposed connection of the system to the Interstate 95 system. However, no model was conducted for this Alternative. Therefore, the existing model was used to conduct the analysis of this Study Area. This model was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.11 Study Area 11 – Bay Drive Neighborhood

This study area consists of a residential neighborhood, which is bounded by Robbins Road to the south, by North Riverside Drive to the north, by A1A to the west and Bay Drive to the east. The existing stormwater system within the study area consists of the FDOT system along US A1A and a City system along Bay Drive with an existing outfall discharging directly to the Hillsboro Inlet.

Only one Alternative was recommended for this Study Area, which consist of the installation of new drainage pipe and catch basin inlets within low lying portions of this study area. However, no model was conducted for this Alternative. Therefore, the existing model was used to conduct the analysis of this Study Area. This model was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.12 Study Area 12 – North Riverside Drive and NE 14th Street Causeway

This study area is primarily located along North Riverside Drive between NE 14th Street Causeway and NE 8th Street. This neighborhood is a mixture of single-family homes, multi-family residential complex and commercial properties. The existing stormwater system within the study area consists of the FDOT system along US A1A and a City system along North Riverside Drive with three existing outfalls discharging directly to the Intracoastal Waterway.

This analysis focused on the preferred Alternative 4 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation of one pumped drainage well and the installation of pipe size upgrades. Alternative 4 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.13 Study Area 13 – Atlantic Boulevard and South Riverside Drive

This study area is located on the east side of the Intracoastal Waterway chiefly along Riverside Drive. The project area extends along Riverside Drive from the intersection with Atlantic Boulevard on the northern limits to the intersection of SE 10th Street on the southern limits.

This analysis focused on the preferred Alternative 6 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of the installation of three pumped drainage wells and the installation of upsized outfall pipes. Alternative 6 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.14 Study Area 14 – NE 27th Avenue and NE 16th Street

This study area is bounded by US-1 on the west, NE 22nd Street on the north, NE 28th Avenue on the east, and NE 16th Street on the south. This study area consists of primarily single-family residential properties with a limited existing drainage system serving the roadways. The existing

drainage system within the study area consists of two independent drainage systems that collect stormwater runoff from the public right-of-way and discharges via existing 24-inch outfalls into tidal canals, which are directly connected to the Intracoastal Waterway.

This analysis focused on the preferred Alternative 5 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation of exfiltration trenches and pipe size upgrades. Alternative 5 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.15 Study Area 15 – Powerline Road and NW 33rd Street

This study area is bounded by Powerline Road on the west, NW 33rd Court on the north, NW 18th Terrace on the east and NW 31st Street on the south. This study area consists mainly of industrial and commercial properties. The study area has a limited number of public roadways, which include NW 33rd Court, NW 33rd Street, NW 18th Terrace and NW 32nd Street.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation exfiltration trenches. Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.16 Study Area 16 – NW 22nd Street

This study area is an isolated right-of-way area with heavy flooding problems just south of Copans Road and just west of Powerline Road. This study area mainly consists of industrial and commercial properties, with only one City roadway (NW 22nd Street) with significant impervious ground coverage, which can limit the infiltration of stormwater runoff into the ground surface. The remainder of the study area includes multiple private roadways and driveways which also have flooding problems.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation exfiltration trenches. Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.17 Study Area 17 – SE 28th Avenue South of Atlantic Boulevard

This study area is located along SE 28th Avenue between SE 1st Court and SE 4th Street, which is immediately west of the Intracoastal Waterway. The existing drainage system in this study area includes two existing 21-inch RCP, which discharge directly to the Intracoastal Waterway.

Based on the 2013 Stormwater Master Plan report, Alternatives 1 and 4 were eliminated. However, it is not clear if Alternative 2 (exfiltration trenches) or Alternative 3 (drainage wells) is recommended. Therefore, Alternative 2 was selected for this study area since is the most common alternative selected in the other study areas and it is less expensive than installing drainage wells. Refer to **Appendix B** for the results of the most critical nodes.

3.18 Study Area 18 – NW 22nd Court

This study area is an isolated right-of-way area with heavy flooding problems just south of Copans Road and just east of Powerline Road. This study area mainly consists of industrial and commercial properties, with only two City roadways (NW 22nd Court and NW 18th Avenue) with significant impervious ground coverage, which can limit the infiltration of stormwater runoff into the ground surface.

This analysis focused on the preferred Alternative 2 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation exfiltration trenches. Alternative 2 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.19 Study Area 19 – NE 10th Street & Dixie Highway

This study area is a single-family residential neighborhood bounded by NE 10th Street to the north, by Dixie Highway to the west, by NE 6th Street to the south and by NE 5th Avenue to the east. According to the drainage atlas, there are no existing drainage facilities located within this study area.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation exfiltration trenches. Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.20 Study Area 20 – US-1 and SE 15th Street

This study area is a residential neighborhood located between US-1 and the Intracoastal Waterway along SE 13th Street, SE 13th Court, SE 14th Street and SE 15th Street. The ground surface elevations within this study area are very low, which creates some of the flooding problems. The existing stormwater system includes an exfiltration system, without a positive outfall into the Intracoastal Waterway.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation exfiltration trenches.

Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.21 Study Area 21 – SE 9th Street

This study area is along SE 9th Street to the east of SE 22nd Avenue, which is surrounded by the Intracoastal Waterway. This residential neighborhood has a closed exfiltration trench system without a positive outfall at the eastern end of the right–of-way. There is also an isolated inlet structure at the western end of the right-of-way that discharges into the Intracoastal Waterway.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of the installation of new pipe connections to existing exfiltration trench system and existing outfalls. Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.22 Study Area 22 – NW 16th Lane

This study area is an isolated right-of-way area with a heavy flooding problem just north of Copans Road between Powerline Road and Andrews Avenue. This study area mainly consists of industrial and commercial properties with only one City roadway (NW 16th Lane) with significant impervious ground coverage, which can limit the infiltration of stormwater runoff into the ground surface.

This analysis focused on the preferred Alternative 1 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of installation exfiltration trenches. Alternative 1 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.23 Study Area 23 – Northeast Martin Luther King Boulevard and Powerline Road

This study area consists of a mixture of industrial and commercial properties, which is bounded by Martin Luther King Boulevard to the south, Powerline Road to the west, NW 16th Street to the north and NW 18th Avenue to the east. The City right of way areas within this study area are basically limited to NW 15th Street and NW 16th Street. Most of the study area is private property. The existing City stormwater system within the study area is limited to two independent closed exfiltration systems along NW 16th Street and along NW 15th Street and a dry retention area within the right of way.

Based on the 2013 Stormwater Master Plan, a system improvement alternative was not recommended for this Study Area since flooding problems within the public right-of-way areas appear to be localized based on an additional investigation. Due to space constraints within the

right of way areas of NW 15th Street and NW 16th Street, the existing stormwater systems could not be modified to provide any additional flood protection to the study area. Therefore, the existing model was used to model the scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.24 Study Area 24 – NW 7th Terrace

This study area is an isolated section of right-of-way along NW 7th Terrace and NW 7th Lane immediately east of I-95. This study area mainly consists of single-family residential properties. The public right-of-way area for NW 7th Terrace and NW 7th Lane has an existing stormwater system which ranges from 15 inch to 24 inch pipe and discharges into a stormwater retention pond at the north side of the study area.

This analysis focused on the preferred Alternative 2 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of the expansion of the existing retention area. Alternative 2 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

3.25 Study Area 25 – SE 15th Avenue

This study area is a single-family residential neighborhood located immediately south of East Atlantic Boulevard along SE 15th Street. The existing drainage system within the study consists of a small pipe network that collects stormwater runoff along SE 15th Avenue between SE 2nd Street and SE 3rd Street and discharges via an outfall pipe between SE 14th Avenue and SE 15th Avenue into a tidal canal.

This analysis focused on the preferred Alternative 3 for this Study Area as indicated by the Stormwater Master Plan report. This alternative consists of pipe size upgrades. Alternative 3 was modeled in several scenarios stated in Section 2 of this report. Refer to **Appendix B** for the results of the most critical nodes.

Appendix B: Methodology

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Prepared by RS&H, Inc. at the
direction of the City of Pompano Beach

Table of Contents

A. Overview

The City of Pompano Beach vulnerability assessment required several steps to complete. This iteration of the report comprises all tasks 1-8.

Task 1 involved initial data collection and flood mapping, during which the City's 2013 stormwater management model (SWM) was updated. The updated SWM considers sea level rise, future precipitation patterns, and storm surge scenarios as mandated by resilient Florida program. This update resulted in a one-dimensional flood model of the City, which showed flooding at individual stormwater nodes. Appendix A shows a detailed methodology for the initial flood mapping and stormwater management model.

Task 2 involved the collection of background data and the identification of regional and critical assets. Regionally significant assets encompass critical assets but also include assets which drive regional and local economies. Critical assets are essential components of the city that are crucial for the daily functioning of a community, and are based on a list provided by the City.

Task 3 required an exposure analysis, in which the one-dimensional flood models were converted to two-dimensional flood extents. Flooding layers for nine different storm scenarios allowed for an analysis of which areas of the city would be exposed to flooding under each scenario. From this, figures and tables were developed to show the exposure area of the City under each scenario.

Task 4 involved an analysis of the sensitivity of assets that were exposed to flooding impacts. For this vulnerability assessment the sensitivity of Roads and Rails, Neighborhoods, Business Districts, Social Justice Areas, Critical Assets, and Regionally Significant Assets were analyzed.

Task 5 comprised of a public meeting during which the draft vulnerability assessment was shared and open for public comment. This meeting helped to identify Adaptation Action Areas (AAAs) using stakeholder and community input.

Task 6 involved the development of the final vulnerability report, in which all methodology was finalized, and any updates were incorporated into the draft report.

Task 7 required a public presentation at the commission meeting to share the results of the report with Pompano Beach officials.

Task 8 was ongoing throughout the entirety of the vulnerability report development and required the development of an online mapping tool. This tool will help City employees and

community members visualize how different sea level rise and storm scenarios would impact critical and regional assets, transportation networks and neighborhoods.

B. Task 1: Kickoff, Data Collection, and Initial Flood Mapping

Specific details on the development of the updated stormwater management plans can be found in Appendix A.

C. Task 2: Background Data

C.1 Regional Assets:

The regional asset layer was developed by identifying resources defined as "critical" by the Standardized Vulnerability Assessment: Scope of Work Guidance and creating points using ArcGIS. The sources of the assets include the UF GeoPlan Center, Florida Department of Health, Florida Department of Environmental Protection, United States Fish and Wildlife Service, Florida Fish and Wildlife Conservation Commission, Federal Aviation Administration, and the National Bridge Inventory. The City of Pompano Beach provided data on schools, government facilities, and stadiums.

An attribute field called "Layers" was created for each asset point to identify the type of resource (i.e. health care, fire stations, colleges...). The ArcGIS merge tool was used to join each of the critical point layers. The point locations were updated to include the following attribute fields:

AssetClass	statutory asset group (i.e., transportation and evacuation route, critical infrastructure, critical community and emergency facilities, etc.)
Address	facility street address obtained from source
FID	unique ID generated from ArcGIS
Lat_DD	latitude in decimal degrees
Layer	identifies type of facility
Long_DD	longitude in decimal degrees
Asset Name	facility name (provided by source)
Asset Type	statutory asset type (i.e., airports, bridges, roadways, marinas, etc.)
Asset Owner	the owner or maintainer of the asset
Asset Size	(i.e., capacity for wastewater facilities, acres, etc.)
Asset ID	unique identifier of the asset
Asset Elev	elevation of the asset
Note	identifies discrepancies in location of the data point

The "Add Surface Information" tool was used with the 2018 LiDAR derived DEM from SFWMD to produce elevations of the facilities.

C.2 Critical Assets

The critical assets layer was developed by geocoding a list of assets provided by the City of Pompano Beach. The assets were imported from an Excel table to ArcGIS using the add X,Y point data and the facilities' latitude and longitude data. The facilities located outside of the Pompano City boundary were deleted. The point locations were modified based on the address

listed by the source and Google Maps. Facilities with the asset type listed as "Stormwater Treatment" were removed.

Parcels that contain both regional asset points and critical facilities points were identified and a "Notes" field was added to the attribute table to identify which features in the same parcel were the same. The critical assets point layer and the parcels layer with only parcels containing regional assets and critical assets were exported to an ESRI shapefile. The attribute fields for critical assets were as follows:

FID	field description
UNIQ_ID	provided by Excel spreadsheet source
Entity Name	Name of the facility
Asset Name	Asset label or description (i.e., hydrant, stormwater pipe, cell tower, etc.)
Asset Type	statutory asset type (i.e., airports, bridges, roadways, marinas, etc.)
Long_DD	longitude in decimal degrees
Asset Name	facility name (provided by source)
Asset Type	statutory asset type (i.e., airports, bridges, roadways, marinas, etc.)
Asset Class	Statutory asset group (i.e., transportation and evacuation route, critical infrastructure, critical community and emergency facilities, etc.)
Asset Ownr	The owner or maintainer of the asset.
Asset Size	(i.e., capacity for wastewater facilities, acres, etc.)
Asset ID	unique identifier of the asset
Critical	notes a Y if asset is identified as critical
Shortlist	
DESCRP	description of the asset
Address	street address of the facility including milepost or relevant facility number
Address2	street address including the city and state
GC_Add	
Lat	facility latitude in decimal degrees
Lon	facility longitude in decimal degrees
GCStatus	
Note	notes the specific section of the facility or if the point represents the same facility as the regional assets layer
Contact	contact person or group for the dataset
Title	professional title of the contact person
Phone	contact phone number
Emer_Plan	
WarningReq	

D. Task 3: Exposure Analysis

D.1 Flood Extents

The flood extents layers were developed by translating one-dimensional flood models (i.e., flood depths at stormwater nodes) to a two-dimensional flood model (i.e., flood extents) using ArcGIS.

The one-dimensional flood model was developed using EPA's Storm Water Management Model and included nine flood scenarios to reflect a variety of flood risks over different weather conditions, sea level projections, and time frames. These included flooding from:

1) Flood Scenario 1: 5-year, 24-hour storm event, current sea level;
2) Flood Scenario 2: 5-year, 24-hour storm event, 2017 NOAA Intermediate-low SLR projection for 2040;
3) Flood Scenario 3: 5-year, 24-hour storm event, 2017 NOAA Intermediate-high SLR projection for 2040;
4) Flood Scenario 4: 5-year, 24-hour storm event, 2017 NOAA Intermediate-low SLR projection for 2070;
5) Flood Scenario 5: 5-year, 24-hour storm event, 2017 NOAA Intermediate-high SLR projection for 2070;
6) Flood Scenario 6: 100-year, 72-hour storm event, current sea level; and,
7) Flood Scenario 7: 100-year, 72-hour storm event plus 100 year-peak storm surge
8) Flood Scenario 8: 500-year, 72-hour rainfall event
9) Flood Scenario 9: 500-year, 72-hour rainfall event with 500-year storm surge event

The nine one-dimensional flood models were exported to ESRI shapefiles consisting of the point locations of the stormwater nodes and associated attribute data. The point locations were discontinuous and represented the actual locations of stormwater features (i.e., outlets, inlets, manholes, etc.) within the city. The attributes fields were as follows:

Field ID	Field Description
RASTERVALU	ground elevation obtained for the DEM
SWMM	top elevation of the storm structure obtained from the EPA SWMM model
FINAL_RIM	best elevation selected for the top elevation of the structure
5_24_HGL	hydraulic grade line for the 5Yr-24Hr event
5_24_FB	freeboard for the 5Yr-24Hr event (FINAL_RIM - HGL)

5_2040L_HG	hydraulic grade line for the 5Yr-24Hr event, 2040 Intermediate Low
5_2040L_FB	freeboard for the 5Yr-24Hr 5Yr-24Hr event, 2040 Intermediate Low
5_2040H_HG	hydraulic grade line for the 5Yr-24Hr event, 2040 Intermediate High
5_2040H_FB	freeboard for the 5Yr-24Hr 5Yr-24Hr event, 2040 Intermediate High
5_2070L_HG	hydraulic grade line for the 5Yr-24Hr event, 2070 Intermediate Low
5_2070L_FB	freeboard for the 5Yr-24Hr 5Yr-24Hr event, 2070 Intermediate Low
5_2070H_HG	hydraulic grade line for the 5Yr-24Hr event, 2070 Intermediate High
5_2070H_FB	freeboard for the 5Yr-24Hr 5Yr-24Hr event, 2070 Intermediate High
100_72_HGL	hydraulic grade line for the 100Yr-72Hr event
100_72_FB	freeboard for the 100Yr-72Hr event
100_SUR_HG	hydraulic grade line for the 100Yr-72Hr event, storm surge
100_SUR_FB	freeboard for the 100Yr-72Hr event, storm surge

The one-dimensional flood models were translated into two-dimensional flood coverages using the following methodology. Interpolation using the Inverse Distance Weighted method with a variable search radius and comparison of 12 points was used to generate a Raster coverage from each of the nine input point shapefiles. Then the Raster Calculator tool was used to subtract the elevation (derived from a digital elevation model or DEM) from the interpolated Hydraulic Grade Line (i.e. flood elevation) value. This resulted in a raster layer containing the flood elevation above ground level for each of the nine flood scenarios.

D.2 Climate and Economic Justice Screening Tool

The Climate and Economic Justice Screening Tool (CEJST) was developed by the Council on Environmental Quality (CEQ) and uses public and consistent nationwide datasets. The datasets used to develop the model are summarized in the table below.

Census tract information and demographics	Used to identify and locate each tract in a state and county. The demographic information, race/ethnicity and age, are included to better characterize the people living in the tract.
Low income	Percent of a census tract's population in households where household income is at or below 200% of the Federal poverty level, not including students enrolled in higher education.
Expected agriculture loss rate	Expected agricultural value at risk from losses due to fourteen types of natural hazards. These hazards have some link to climate change. They are: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather. The rate is calculated by dividing the agricultural value at risk by the total agricultural value.
Expected building loss rate	Expected building value at risk from losses due to fourteen types of natural hazards. These hazards have some link to climate change. They are: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather. The rate is calculated by dividing the building value at risk by the total building value.

Expected population loss rate	Expected fatalities and injuries due to fourteen types of natural hazards each year. These hazards have some link to climate change. They are: avalanche, coastal flooding, cold wave, drought, hail, heat wave, hurricane, ice storm, landslide, riverine flooding, strong wind, tornado, wildfire, and winter weather. Population loss is defined by the Spatial Hazard Events and Losses and National Centers for Environmental Information's (NCEI). It reports the number of fatalities and injuries caused by the hazard. An injury is counted as one-tenth (1/10) of a fatality. The NCEI Storm Events Database classifies both direct and indirect injuries. Both types are counted as population loss. The total number is divided by the population in the census tract to get the population loss rate.
Projected flood risk	A high precision, climate-adjusted model that projects flood risk for properties in the future. The dataset calculates how many properties are at risk of floods occurring in the next thirty years from tides, rain, riverine and storm surges, or a 26% risk total over the 30-year time horizon. The risk is defined as an annualized 1% chance. The tool calculates tract-level risk as the share of properties meeting the risk threshold. The risk does not consider property value.
Projected wildfire risk	A 30-meter resolution model projecting the wildfire exposure for any specific location in the contiguous U.S., today and with future climate change. The risk of wildfire is calculated from inputs associated with fire fuels, weather, human influence, and fire movement. The risk does not consider property value.
Energy cost	Average household annual energy cost in dollars divided by the average household income.
PM2.5 in the air	Fine inhalable particles with 2.5 or smaller micrometer diameters. The percentile is the weight of the particles per cubic meter.
Asthma	Share of people who answer "yes" to both of these questions: "Have you ever been told by a health professional that you have asthma?" and "Do you still have asthma?".
Diabetes	Share of people ages 18 years and older who have been told by a health professional that they have diabetes other than diabetes during pregnancy.
Heart disease	Share of people ages 18 years and older who have been told by a health professional that they had angina or coronary heart disease.
Low life expectancy	Average number of years people have left in their lives.
Historic underinvestment	Census tracts that experienced historic underinvestment based on redlining maps created by the federal government's Home Owners' Loan Corporation (HOLC) between 1935 and 1940. The tool uses the National Community Reinvestment Coalition's methodology for converting boundaries in the HOLC maps to census tracts. Census tracts meet the threshold when they have a score of 3.25 or more out of 4.
Housing cost	Share of households that are both earning less than 80% of Housing and Urban Development's Area Median Family Income and are spending more than 30% of their income on housing costs.
Lack of green space	Share of land with developed surfaces covered with artificial materials like concrete or pavement, excluding crop land used for agricultural purposes. Places that lack green space are also known as nature-deprived.
Lack of indoor plumbing	Housing without indoor kitchen facilities or complete plumbing facilities.
Lead paint	Share of homes built before 1960, which indicates potential lead paint exposure. Tracts with extremely high home values (i.e. median home values above the 90th percentile) that are less likely to face health risks from lead paint exposure are not included.
Abandoned mine land	Presence of an abandoned mine left by legacy coal mining operations
Formerly Used Defense Sites	Properties that were owned, leased, or possessed by the United States, under the jurisdiction of the Secretary of Defense prior to October 1986.
Proximity to hazardous waste facilities	Number of hazardous waste facilities (Treatment, Storage, and Disposal Facilities and Large Quantity Generators) within 5 kilometers (or nearest beyond 5 kilometers), each divided by distance in kilometers.

Proximity to Superfund sites	Number of proposed or listed Superfund or National Priorities list (NPL) sites within 5 kilometers (or nearest one beyond 5 kilometers), each divided by distance in kilometers.
Proximity to Risk Management Plan (RMP) facilities	Count of Risk Management Plan (RMP) facilities within 5 kilometers (or nearest one beyond 5 kilometers), each divided by distance in kilometers. These facilities are mandated by the Clean Air Act to file RMPs because they handle substances with significant environmental and public health risks.
Diesel particulate matter exposure	Mixture of particles in diesel exhaust in the air, measured as micrograms per cubic meter.
Transportation barriers	Average relative cost and time spent on transportation relative to all other tracts.
Traffic proximity and volume	Number of vehicles (average annual daily traffic) at major roads within 500 meters, divided by distance in meters.
Underground storage tanks and releases	Weighted formula of the density of leaking underground storage tanks and the number of all active underground storage tanks within 1,500 feet of the census tract boundaries.
Wastewater discharge	Risk-Screening Environmental Indicators (RSEI) modeled toxic concentrations at stream segments within 500 meters, divided by distance in kilometers.
Linguistic isolation	Share of households where no one over age 14 speaks English very well.
Low median income	Low median income calculated as a share of the area's median income.
Poverty	Share of people living at or below 100% of the Federal poverty level.
Unemployment	Number of unemployed people as a share of the labor force.
High school education	Share of people aged 25 years or older who didn't graduate from high school.
Tribes	The Land Area Representation (LAR) dataset depicts American Indian land areas for Federally Recognized Tribes.

The CEJST uses the datasets as indicators of burdens and categorizes communities as disadvantaged if they fall in a census tract that is at or above the threshold for either environmental, climate or socioeconomic burdens. If a census tract is surrounded by disadvantaged communities and is also above the 50th percentile for low income would also be flagged as disadvantaged. Land within Federally Recognized Tribe boundaries is also considered disadvantaged.

The source of the asset includes the Council on Environmental Quality, ESRI.

The disadvantaged tracts were symbolized using the SN_C field where "0" represents non-disadvantaged and "1" represents disadvantaged tracts. The "summarize within" tool was used to calculate the acres of land affected and the percent of land affected by each of the 7 flood scenarios. Attribute fields added to the table include the following:

- Acres: Justice40 census tract acreage
- The suffix "_Exposed" field represents the acres of the Justice40 census tract flooded under each scenario (i.e., S1_Exposed is acres flooded under Scenario 1)
- The suffix "_Percent" field represents the percentage of the Justice40 census tract flooded under each scenario (i.e., S1_Percent is percent of area flooded under Scenario 1)

The flood scenarios are categorized as follows:

Flood Scenario 1	Hydraulic grade line for the 5 year-24 hour flood event
Flood Scenario 2	Hydraulic grade line for the 5 year-24 hour flood event, for the 2040 intermediate low projection
Flood Scenario 3	Hydraulic grade line for the 5 year-24 hour flood event, for the 2040 intermediate high projection
Flood Scenario 4	Hydraulic grade line for the 5 year-24 hour flood event, for the 2070 intermediate low projection
Flood Scenario 5	Hydraulic grade line for the 5 year-24 hour flood event, for the 2070 intermediate high projection
Flood Scenario 6	Hydraulic grade line for the 100 year-72 hour flood event
Flood Scenario 7	Hydraulic grade line for the 100 year-72 hour flood event with storm surge
Flood Scenario 8	Hydraulic grade line for the 500 year-72 hour flood event
Flood Scenario 9	Hydraulic grade line for the 500 year-72 hour flood event with storm surge

Symbology was updated to reflect the percentage of land affected using green as the lowest percentage and red as the highest percentage.

E. Task 4: Sensitivity Analysis

E.1 Vulnerability Scoring

The vulnerability (or sensitivity) of key assets to various flood scenarios was assessed both at the parcel and individual asset levels. Sensitivity was determined by analyzing assets exposed to flooding across any of the nine scenarios and evaluating characteristics that heightened their sensitivity. A scale, as detailed in **Table 1**, was used to assign each asset a rating from "Very Low" to "Very High" sensitivity.

Table 1: Sensitivity Scoring for Exposed Critical Assets

Scoring	Scale	Definition
Very Low	< 0.5	Minimal impact on critical asset, with no significant short or long-term damage, and no loss of access to the parcel.
Low	0.5 – 1.25	Slight impact with minor short-term damage and minimal loss of access to parcel, unlikely to affect long-term asset functionality.
Medium	1.25 – 2	Moderate impact causing some level of reversible damage and loss of access to parcel, with potential short to medium-term effects on asset functionality.
High	2 – 3	Considerable impact with significant damage and loss of access to parcel, leading to long-term consequences on asset functionality.
Very High	> 3	Severe impact resulting in extensive damage and complete loss of access to parcel, critically affecting the asset's functionality permanently or requiring major repairs.

Sensitivity of the exposed critical and regional assets was determined by risk and adaptive capacity. Risk was calculated using likelihood, confidence, consequence, and criticality as displayed in **Figure 1**.

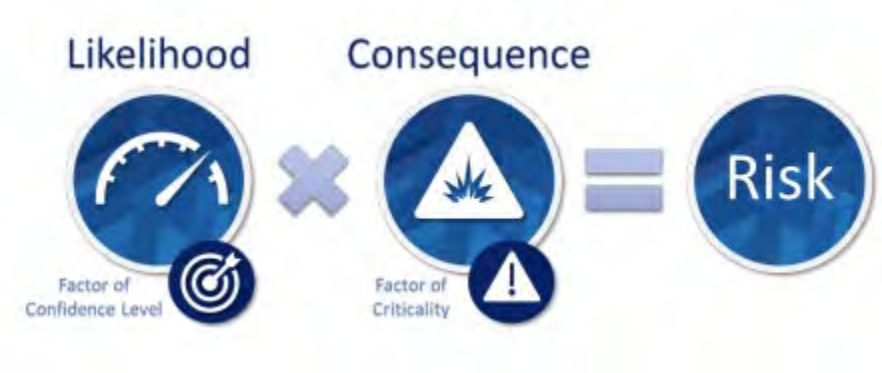

Figure 1: Risk Equation

Each of the nine scenarios was given a likelihood, based on the probability of the scenario occurring. Flood Scenarios 1 and 2 were deemed most likely, due to the near time frame and the higher probability of the storm occurring in a year. Scenarios 5 through 9 are considered low likelihood due to the lower probability of a 100-year or 500-year event occurring in a givem year. Likelihood was assessed using the scale shown in **Table 2**:

Table 2: Likelihood Scale

Scale Factor	**Likelihood**	**Flood Scenario**
1	High	S1, S2
0.875	Medium	S3, S4
0.75	Low	S5, S6, S7, S8, S9

The confidence level is factored into the likelihood in the risk equation. The confidence level adjusts likelihood based on the degree of certainty ("confidence") of the flood scenarios and their associated sea level rise projections. The scale shown in **Table 3** was used during the risk assessment process.

Table 3: Confidence Scale

Scale Factor	**Confidence Level**	**Flood Scenario**
1	High	S1, S2, S6, S7, S8, and S9
0.75	Medium	S3, S4
0.50	Low	S5

Consequence encompasses the range of effects that each flood scenario may have on an asset, extending beyond mere environmental or physical damage. This concept also embraces the social and economic repercussions, considering the scale of impact that could arise should the asset become damaged or non-functional as a result of flood exposure. In this assessment, the consequence is scored based on the inundation depth for each flood scenario. The scale used to translate flood depth to consequence can be seen in **Table 4**.

Table 4: Consquence Scale

Scale Factor	**Consequence Level**	**Flood Depth**
1	Low	Flooding between 0 – 0.49 feet
2	Medium	Flooding between 0.49 – 2.99 feet
3	High	Flooding between 2.99 – 5.99 feet
4	Very High	Flooding >= 6 feet

Consequence is adjusted by a criticality scale factor in the risk equation. Criticality factors consequence based on the importance of the asset to the overall function of the city. The scale used for this assessment is shown in **Table 5**. Because all assets have been deemed critical by the city, all assets were given a confidence level of 1.

Table 5: Criticality Scale

Scale Factor	**Criticality**	**Definition**
1	High	The loss of the asset or operation would significantly impair or shutdown essential operations in the city (i.e., utilities, medical, facilities, law enforcement, emergency response) until repaired or disaster response is complete.
0.66	Medium	The loss of the asset or operation would impair the function of the city in limited locations and amount of time.
0.33	Low	The loss of the asset or operation would have a minimal or localized impact on the city.

Vulnerability is the degree to which the City's critical assets are susceptible to and unable to cope with future flood scenarios. Vulnerability considers both risk and the ability of the existing system to accommodate the change. Although risk is critical to understand the potential adverse effects of these flood scenarios on an asset, vulnerability allows the city to understand the sensitivity of its assets to flooding. Vulnerability is the product of risk and adaptive capacity shown in **Figure 2**.

Figure 2: Vulnerability Equation

For a complete summary of all asset vulnerabilities, refer to **Appendix D: Prioritized Lists of Critical and Regional Assets**.

Adaptive capacity is the ability of an existing asset to accommodate expected flooding from Flood Scenarios 1-7. Adaptive capacity can vary for different assets and was determined using the scale shown in **Table 6**.

Table 6: Adaptive Capacity Scale

Scale Factor	Confidence Level	Definition
0.33	High	Reducing vulnerability would require flood proofing with manageable level of effort/expense.
0.66	Medium	Reducing vulnerability would require flood proofing, elevation or relocation with a significant level of effort/expense.
1	Low	Reducing vulnerability would require relocation or unrealistic level of effort/expense.

E.2 Prioritization of Assets

All critical and regional assets identified as vulnerable were further prioritized. The prioritization process was based on a multifaceted approach that considered several key factors: the overall vulnerability score, which synthesized the asset's risk and adaptive capacity; the specific flood scenarios to which each asset was exposed; the depth of flooding anticipated under each scenario; the designated flood zone of each asset; and the asset's elevation relative to typical flood levels (if an elevation certificate was available). This methodical evaluation enabled a targeted strategy, ensuring that resources are allocated efficiently to protect the most at-risk assets. By integrating these diverse criteria, the process aimed to establish a hierarchy of needs that could guide effective flood resilience planning and adaptation actions.

For the complete list of prioritized critical and regional vulnerabilities, refer to **Appendix D: Prioritized Lists of Critical and Regional Assets**.

E.3 Identification of Adaptation Action Areas

The identification of adaptation action areas was a critical step in the process of enhancing community resilience to flooding. This phase involved a detailed analysis and strategic selection of specific regions that require focused adaptation efforts based on the comprehensive vulnerability assessment previously conducted. Areas are pinpointed where targeted interventions can significantly mitigate flood risks and safeguard critical assets and communities. The following outlines the methodology for identifying these vital areas:

1. **Spatial Analysis of Vulnerable Assets**: Utilizing Geographic Information Systems (GIS), a spatial analysis was performed to map the distribution of critical assets relative to their vulnerability scores, flood exposure scenarios, and geographical features such as elevation and flood zones. This analysis assisted in visualizing the areas with high concentrations of vulnerable assets and identifying geographical patterns of risk.

2. **Risk Concentration Assessment**: By analyzing the spatial distribution of risks, areas with a high concentration of assets facing significant flood threats were identified. This assessment considered not only the physical vulnerability of assets but also the potential social and economic impacts of their impairment. Areas with clusters of high-risk assets were flagged for further evaluation.

3. **Strategic Importance Evaluation**: Beyond the vulnerability score, the strategic importance of assets within potential action areas was assessed. This involves considering the role of assets in the community's infrastructure, economy, and social services.

4. **Community Input**: Engaging with the community in a public meeting gathered input and provided additional insights into areas repeatedly affected by flooding. Feedback and personal experience were collected that was not captured through quantitative analysis alone.

5. **Selection of Adaptation Action Areas**: Based on the comprehensive analysis, 4 adaptation action areas were selected for adaptation interventions. These areas were chosen for their high concentration of vulnerable and strategically important assets, community feedback, and historical susceptibility to flooding.

E.4 Suggested Adaptation Actions

Vulnerabilities to critical and regional assets were reviewed and preliminary recommendations for adaptation actions to address them were developed. These recommendations will be further developed into adaptation initiatives in the next phase of resilience planning for the City, when an Adaptation Action Adaption Plan is developed.

Appendix C: Exposure Analysis Results

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Volume No. 1

March 5, 2025

City of Pompano Beach, Florida

Contract No.: L41-16 Work Authorization No. 4

RS&H No.: 1006-0018-002

Prepared by RS&H, Inc. at the direction of City of Pompano Beach

Table of Contents

A. Critical Assets - Flood Exposure Depths (feet)

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
75	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	1.35	-	12.04	-	13.94
119	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	2.00	-	11.25	-	13.69
79	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	1.85	-	10.43	-	13.31
137	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	0.76	0.90	1.16	1.02	3.51	1.47	11.07	1.53	13.24
127	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	3.02	-	9.41	-	12.45
151	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	1.88	-	8.54	-	12.09
35	ATLANTIC SHORE RETIREMENT RESI	HEALTH CARE FACILITIES	-	-	-	-	0.73	-	7.20	-	11.05
139	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	0.05	-	2.93	-	9.12	-	11.03
82	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	0.02	0.49	0.16	2.97	1.07	8.93	1.11	11.02
129	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	0.32	0.42	0.58	0.49	2.29	1.58	2.59	1.63	10.71
124	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	0.31	-	7.40	-	10.69
126	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	0.53	-	7.22	-	10.66
115	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	0.34	-	3.16	-	8.40	-	10.38
34	SUNSET BY THE SEA	HEALTH CARE FACILITIES	-	-	-	-	1.58	-	7.04	-	10.37
81	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	1.39	-	7.88	-	10.15
125	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	1.76	-	6.61	-	9.41
33	VIZCAYA BY THE SEA INC	HEALTH CARE FACILITIES	-	-	-	-	-	-	5.96	-	9.28
86	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	0.75	-	7.10	-	9.26
238	REGIONAL BOOSTER PUMP STATIONS	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	1.09	-	6.94	-	9.10
21	Lift Station	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	0.32	-	5.45	-	8.84
80	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	0.93	0.19	5.97	0.22	8.28

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
166	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	**0.51**	**0.55**	**0.62**	**0.58**	**2.57**	**1.54**	**7.12**	**1.61**	**8.20**
111	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	**0.29**	**0.31**	**0.34**	**0.33**	**0.61**	**0.77**	**3.92**	**0.80**	**8.07**
40	FIVE STAR PREMIER RESIDENCES	HEALTH CARE FACILITIES	-	-	-	-	-	-	**5.16**	-	**8.06**
277	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**4.90**	-	**7.44**
109	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	1.75	1.28	**6.80**	**1.26**	**7.29**
30	SEAVIEW NURSING & REHABILITATI	HEALTH CARE FACILITIES	-	-	-	-	-	-	**3.87**	-	**7.11**
155	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	**1.67**	**1.68**	**1.78**	**1.72**	**2.65**	**2.45**	**7.04**	**2.48**	**7.06**
248	WATER REUSE PLANT	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**3.36**	-	**7.06**
70	BRIDGES (ELECTRICALLY OPERATED)	BRIDGES	**0.10**	**0.12**	**0.21**	**0.16**	**1.95**	**1.24**	**6.70**	**1.33**	**6.72**
94	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	5.28	-	**6.65**
167	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	**0.02**	**0.04**	**0.14**	**0.08**	**2.50**	**1.01**	**6.55**	**1.06**	**6.56**
13	COPB FIRE STATION 11	FIRE STATIONS	-	-	-	-	-	-	**3.53**	-	**6.51**
153	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	**0.55**	**0.61**	**0.68**	**0.64**	**1.68**	**1.55**	**6.43**	**1.62**	**6.46**
88	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**2.18**	**0.95**	**6.37**	**1.01**	**6.39**
156	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**1.37**	**0.86**	**6.36**	**0.90**	**6.37**
73	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	**0.24**	**0.30**	**0.40**	**0.34**	**1.00**	**1.29**	**6.12**	**1.34**	**6.26**
177	IGLESIA BAUTISTA DE POMPANO BEACH INC	SCHOOLS	-	-	-	-	**1.60**	**0.99**	**6.16**	**1.14**	**6.16**
146	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**0.95**	**0.17**	**6.09**	**0.25**	**6.09**
157	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**0.98**	**1.25**	**6.04**	**1.27**	**6.05**
180	ST COLEMAN SCHOOL	SCHOOLS	-	-	-	-	-	-	**4.26**	-	**5.98**
69	BRIDGES (ELECTRICALLY OPERATED)	BRIDGES	-	-	-	-	**1.62**	**0.42**	**5.93**	**0.47**	**5.95**
14	COPB FIRE STATION 11 Lift Station	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**2.92**	-	**5.81**
144	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**1.11**	**0.38**	**5.79**	**0.58**	**5.80**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
71	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**0.71**	**0.67**	**5.79**	**0.68**	**5.79**
15	COPB FIRE STATION 24	FIRE STATIONS	-	-	-	-	-	-	**1.38**	-	**5.49**
41	WITH LOVE INC	HEALTH CARE FACILITIES	-	-	-	-	**0.19**	**0.19**	**5.40**	**0.43**	**5.40**
143	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**5.25**	**5.43**	**5.40**	**5.38**
192	SBBC #0841-1 MCNAB ELEMENTARY	SCHOOLS	-	-	-	-	-	-	**3.30**	-	**5.37**
165	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**1.72**	**4.99**	**1.78**	**5.04**
134	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**0.13**	**0.35**	**4.99**	**0.47**	**5.01**
176	HENDERSON BEHAVIORAL HEALTH, INC.	HEALTH CARE FACILITIES	-	-	-	-	-	**1.49**	**4.88**	**1.57**	**4.92**
196	SBBC #9155-9 NORTH AREA BUS LOT	SCHOOLS	-	-	-	-	-	**1.35**	**1.94**	**1.74**	**4.76**
150	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**1.20**	**4.69**	**1.19**	**4.75**
222	SBBC #0841-1 MCNAB ELEMENTARY SC	SCHOOLS	-	-	-	-	-	-	**2.78**	-	**4.71**
3	POMPANO BEACH CLUB ASSOC EMS CELLULAR FACILITIES (POLICE/FIRE/HOSPITAL)	COMMUNICATIONS FACILITIES	-	-	-	-	-	-	**1.42**	-	**4.69**
200	SBBC #3651-5 DAVE THOMAS CENTER	SCHOOLS	-	-	-	-	-	-	**4.54**	-	**4.58**
201	SBBC #9212-9 NORTH AREA PORTABLE	SCHOOLS	-	-	-	-	-	**0.95**	**1.52**	**1.33**	**4.43**
83	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**0.24**	**0.52**	**4.21**	**0.86**	**4.28**
251	TELECOM FACILITIES (NAP DATA CENTERS ISPS)	COMMUNICATIONS FACILITIES	-	-	-	-	**0.00**	**0.60**	**4.18**	**0.93**	**4.27**
116	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**0.77**	**3.69**	**1.82**	**3.89**
47	GREEN LIFE ASSISTED LIVING FAC	HEALTH CARE FACILITIES	-	-	-	-	-	**0.30**	**3.76**	**0.41**	**3.81**
31	CHILDRENS COMPREHENSIVE CARE C	HEALTH CARE FACILITIES	-	-	-	-	-	-	**2.68**	-	**3.72**
12	COPB FIRE STATION 63	FIRE STATIONS	-	-	-	-	-	-	**3.67**	-	**3.70**
19	COPB FIRE STATION 114	FIRE STATIONS	-	-	-	-	**0.13**	**1.60**	**3.62**	**1.87**	**3.68**
221	SBBC #1781-1 CYPRESS ELEM	SCHOOLS	-	-	-	-	-	-	**3.66**	-	**3.68**
29	CITY HALL	LOCAL GOVERNMENT FACILITIES	-	-	-	-	-	-	**3.37**	-	**3.63**
84	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**1.63**	**3.42**	**1.68**	**3.45**
250	POMPANO HIGH SCHOOL HURRICANE SHELTER	DISASTER RECOVERY CENTERS	-	-	-	-	-	-	**0.45**	-	**3.44**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
49	BROWARD CHILDREN'S CENTER INC	HEALTH CARE FACILITIES	-	-	-	-	-	-	**2.33**	-	**3.43**
147	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**3.33**	-	**3.36**
118	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**2.64**	**3.27**	**3.14**	**3.30**
207	SBBC #9155-9 NORTH AREA MAINTENA	SCHOOLS	**0.04**	**0.04**	**0.05**	**0.05**	**0.04**	**2.94**	**3.08**	**2.99**	**3.29**
154	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**3.21**	**0.05**	**3.26**
132	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	**0.63**	**0.68**	**0.67**	**0.98**	**1.27**	**2.96**	**3.20**	**3.48**	**3.26**
140	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**0.90**	**2.82**	**0.98**	**2.91**
108	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**1.49**	**2.03**	**2.05**	**2.66**
114	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**1.74**	**2.30**	**2.06**	**2.57**
107	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	**0.70**	**0.91**	**1.65**	**2.38**	**4.40**	**2.45**
11	BSO POMPANO HEADQUARTERS	LAW ENFORCEMENT FACILITIES	-	-	-	-	-	-	**2.41**	-	**2.44**
135	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**0.86**	**2.20**	**0.96**	**2.30**
1	COPB AIR TRANSPORTATION FACILITIES (AIRPORTS FAA AIRPORT NAV)	AIRPORTS	-	-	-	-	-	**0.19**	**0.51**	**0.21**	**2.19**
218	SBBC #0751-1 POMPANO BEACH ELEM	SCHOOLS	-	-	-	-	-	-	-	-	**1.71**
202	SBBC #9212-9 NORTH AREA PORTABLE	SCHOOLS	-	-	-	-	-	-	**0.27**	**0.07**	**1.68**
105	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	**0.02**	**1.10**	**1.58**	**1.27**	**1.65**
95	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**0.98**	**1.46**	**1.14**	**1.48**
46	GARDENS WEST - JOHN KNOX VILLA	HEALTH CARE FACILITIES	-	-	-	-	-	-	**1.37**	-	**1.42**
168	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**1.36**	-	**1.40**
278	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**1.08**	**1.40**	**1.31**	**1.39**
261	RAILROAD CROSSINGS	RAIL FACILITIES	-	-	-	-	-	**1.27**	**1.36**	**1.24**	**1.38**
44	JOHN KNOX VILLAGE OF POMPANO W	HEALTH CARE FACILITIES	-	-	-	-	-	-	**1.31**	-	**1.37**
228	RAILROAD CROSSINGS	RAIL FACILITIES	-	-	-	-	-	-	**1.34**	-	**1.37**
72	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**0.12**	**1.21**	**0.22**	**1.36**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
191	SBBC #0361-3 BLANCH ELY HIGH	SCHOOLS	-	-	-	-	-	-	**1.17**	-	**1.21**
208	SBBC #2123-4 CYPRESS RUN ALTERNATIVE CNTR	SCHOOLS	-	-	-	-	-	-	**0.07**	-	**1.16**
122	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**0.99**	-	**1.07**
38	ANGEL CARE ALF INC	HEALTH CARE FACILITIES	-	-	-	-	-	-	-	-	**1.03**
89	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	**0.46**	**1.20**	**0.05**	**0.23**	**0.40**	**1.00**
131	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**0.08**	**0.89**	**0.25**	**0.95**
45	JOHN KNOX VILLAGE POMPANO NURS	HEALTH CARE FACILITIES	-	-	-	-	-	-	**0.80**	-	**0.85**
104	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	**0.29**	**0.69**	**0.57**	**0.82**
102	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**0.64**	-	**0.81**
243	REGIONAL WASTE WATER BOOSTER PUMPS (NOT ALL LIFT STATIONS)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**0.67**	-	**0.77**
227	RAILROAD CROSSINGS	RAIL FACILITIES	-	-	-	-	-	-	**0.32**	-	**0.34**
120	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	-	-	**0.34**
77	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**0.12**	-	**0.16**
266	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	-	-	**0.12**
92	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**0.05**	-	**0.07**
130	LIFT STATIONS (PUBLIC + PRIVATE)	WASTEWATER TREATMENT FACILITIES AND LIFT STATIONS	-	-	-	-	-	-	**0.00**	-	**0.04**

B. Regional Assets - Flood Exposure Depths (feet)

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
2	FEDEX EXPRESS - TNTA	STORMWATER TREATMENT FACILITIES	**0.35**	**0.69**	**0.35**	**0.36**	**0.70**	**1.57**	**1.87**	**1.84**	**2.01**
6	WAWA	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.49**	**3.35**	**1.67**	**3.34**
7	BRIDGE POINT POWERLINE ROAD	STORMWATER TREATMENT FACILITIES	**3.37**	**4.11**	**4.05**	**3.60**	**3.81**	**5.99**	**6.40**	**6.19**	**7.51**
9	SR-849/NW 31ST AVE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.77**	**1.39**	**1.04**	**4.24**
10	GE AVIATION	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.47**	**3.05**	**1.65**	**3.09**
11	UNFI POMPANO RETAIL DISTRIBUTION CENTER	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**1.96**	-	**2.05**
12	POMPANO BEACH FACILITY	STORMWATER TREATMENT FACILITIES	-	-	-	**0.18**	**1.04**	**1.05**	**1.48**	**1.30**	**1.68**
13	AAA COOPER TRANSPORTATION	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.49**	**2.89**	**0.83**	**2.96**
18	ISLE CASINO PARKING GARAGE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.18**	**1.23**	**0.60**	**1.43**
19	DPD 16-153 LIBERTY PARK SEWER IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.31**	**0.54**	**0.54**	**0.55**
20	TRADEMARK METALS RECYCLING LLC	STORMWATER TREATMENT FACILITIES	**0.66**	**0.66**	**0.65**	**0.65**	**0.65**	**0.94**	**1.14**	**0.98**	**1.18**
21	SOLEMAR	STORMWATER TREATMENT FACILITIES	**0.78**	**0.79**	**0.80**	**0.80**	**1.18**	**1.27**	**4.54**	**1.30**	**8.65**
23	JOHN KNOX VILLAGE	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.47**	**1.34**	**3.42**	**1.42**	**3.47**
26	WAL-MART STORE NO. 2962-505	STORMWATER TREATMENT FACILITIES	**3.43**	**3.45**	**3.44**	**3.44**	**3.56**	**5.48**	**6.37**	**5.53**	**6.55**
27	ANNIE GILLIS URBAN PLAZA	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.53**	**2.40**	**0.58**	**2.39**
28	PARAMOUNT PARK	STORMWATER TREATMENT FACILITIES	-	-	-	**1.55**	**2.05**	**1.62**	**1.89**	**1.99**	**2.42**
30	FIRST INDUSTRIAL 95 SOUTH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.26**	**2.60**	**1.39**	**2.66**
31	RAISING CANE'S #697 POMPANO BEACH, FL	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	-	-	**0.13**
32	AMAZON DMF7	STORMWATER TREATMENT FACILITIES	**0.01**	**0.06**	-	**0.03**	**0.06**	**1.99**	**2.01**	**2.05**	**2.12**
34	POMPANO AIRPARK	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.06**	-	**2.35**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
35	VISTA BMW POMPANO - NEW SERVICE GARAGE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**3.12**	-	**7.00**
37	AZZURRI KITCHENS WAREHOUSE	STORMWATER TREATMENT FACILITIES	-	-	-	**0.48**	**0.60**	**1.27**	**1.25**	**1.65**	**1.44**
38	CALIBER COLLISION	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.57**	-	**0.64**
39	AVONDALE STORMWATER IMPROVEMENTS PHASE 1	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.46**	**2.86**	**0.54**	**2.94**
40	FAIRFIELD POMPANO BEACH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**1.95**	-	**5.38**
41	GOLD COAST BEVERAGE DISTRIBUTORS	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.81**	**1.36**	**1.01**	**1.38**
42	FEDEX GROUND - FORT LAUDERDALE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	-	-	**0.56**
45	SW 36TH AVE PEDESTRIAN PATH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.07**	**2.36**	**0.38**	**2.42**
47	MERRITT BOAT & ENGINE WORKS INC	STORMWATER TREATMENT FACILITIES	**1.03**	**1.40**	**2.00**	**1.72**	**5.33**	**1.41**	**9.05**	**1.43**	**10.82**
48	BROADSTONE OCEANSIDE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**3.01**	-	**5.74**
49	RESIDENCE INN BY MARRIOTT	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.14**	**1.10**	**1.22**	**1.13**
53	POWERLINE/MLK COMMERCE CENTER	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.68**	**1.17**	**1.02**	**1.41**
54	WAWA - ATLANTIC AND ANDREWS	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.67**	**3.62**	**1.86**	**3.61**
56	HIDDEN HARBOUR MARINA	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**7.77**	-	**10.22**
57	DIXIE AUTO PARTS & SALVAGE	STORMWATER TREATMENT FACILITIES	**4.79**	**0.48**	**0.67**	**0.59**	**5.54**	**6.24**	**6.44**	**6.32**	**6.47**
58	MARINEMAX POMPANO	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.76**	-	**7.87**	-	**10.20**
59	PALLET CONSULTANTS CORP	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**2.66**	-	**2.71**
60	CITY OF POMPANO BEACH SR A1A WATERMAIN IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	-	-	**0.25**	-	**2.99**	-	**8.63**	-	**9.94**
61	HUNTERS MANOR	STORMWATER TREATMENT FACILITIES	**0.02**	**0.05**	**0.01**	-	**0.19**	**1.64**	**1.89**	**1.83**	**2.00**
62	POMPANO AIR CENTER	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	-	-	**0.32**
63	ROLLING FRITO-LAY - POMPANO BEACH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.17**	**0.75**	**1.21**	**0.82**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
64	COMPLETE MARINE	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.96**	-	**7.74**	-	**9.38**
66	RACETRAC - SAMPLE AND 27TH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.47**	**0.55**	**0.50**	**0.85**
67	NE 2ND STREET IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	-	-	-	-	**1.50**	**1.01**	**7.44**	**1.12**	**10.77**
68	REUSE SYSTEM NE EXPANSION PHASE 1	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.21**	-	**9.32**	-	**11.23**
69	ISLE CASINO PARKING GARAGE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.54**	**1.92**	**0.82**	**2.11**
71	FALCONE POMPANO BEACH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.61**	-	**3.32**
72	SAMPLE ROAD RECHARGE LINE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.25**	**0.19**	**0.18**	**0.58**
73	GATEWAY DRIVE STORMWATER IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	**0.34**	**0.41**	**0.38**	**1.79**	**2.11**	**3.88**	**5.75**	**4.09**	**5.81**
76	COASTAL AN OLDCASTLE COMPANY	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.22**	**1.35**	**1.49**	**1.51**
77	AVONDALE STORMWATER IMPROVEMENTS PHASE 1	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**2.55**	**0.01**	**2.69**
79	FESTIVAL FLEX WAREHOUSE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.78**	**1.87**	**1.82**	**2.13**
81	COMPLETE MARINE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**3.71**	-	**5.61**
83	BROWARD COUNTY OFF OF ENV SERV	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**1.13**	**0.94**	**2.20**
85	POMPANO BEACH FACILITY	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.01**	-	**0.12**
86	UNFI POMPANO RETAIL DISTRIBUTION CENTER	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**1.96**	-	**2.05**
87	MICRO-TYPING SYSTEMS INC	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.67**	**3.43**	**1.83**	**3.49**
88	BEN TURNER RIDGE APARTMENTS	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.33**	**0.33**	**0.36**	**0.36**
89	NEW WAVE SURGICAL	STORMWATER TREATMENT FACILITIES	**1.01**	**1.03**	**1.03**	**1.02**	**1.03**	**3.89**	**4.05**	**4.02**	**4.29**
92	SANITARY SEWER AT 2601 NE 14 ST	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.83**	-	**7.44**	-	**9.49**
97	COPANS WEST DRAINAGE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.32**	**1.39**	**1.40**	**1.40**
99	IOV SPEC - POMPANO BEACH	STORMWATER TREATMENT FACILITIES	-	-	-	**1.57**	**2.05**	**1.68**	**1.96**	**2.06**	**2.47**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
100	FIRE STATION #24	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.86**	-	**4.97**
101	ALSDORF PARK	STORMWATER TREATMENT FACILITIES	-	-	-	-	**2.13**	-	**7.35**	-	**10.74**
103	RACETRAC # 1153	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**1.16**	-	**3.37**
104	SOUTHEASTERN FREIGHT LINES	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**3.97**	**0.70**	**4.02**
105	POMPANO BEACH MOBILITY SIDEWALK	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**4.72**	**0.03**	**4.74**
106	AMAZON.COM SERVICES LLC - DMF3	STORMWATER TREATMENT FACILITIES	**1.66**	**1.66**	**1.66**	**1.65**	**1.66**	**4.45**	**4.32**	**4.30**	**4.48**
108	POMPANO OCEAN RESCUE HEADQUARTERS BUILDING	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	-	-	**2.54**
110	CITY OF POMPANO BEACH AIRPARK	STORMWATER TREATMENT FACILITIES	**0.32**	**0.32**	**0.34**	**0.32**	**0.32**	**0.70**	**0.70**	**0.73**	**0.74**
111	OLD DOMINION FREIGHT LINE, INC-POM	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.17**	**0.57**	**0.57**	**0.96**
112	STATE ROAD 9 (1-95) AT COPANS ROAD INTERCHANGE	STORMWATER TREATMENT FACILITIES	**1.23**	**1.23**	**1.23**	**1.23**	**1.25**	**4.91**	**5.38**	**5.12**	**5.39**
113	RACETRAC - SAMPLE AND 27TH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.47**	**0.55**	**0.50**	**0.85**
115	POMPANO AIRPARK	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.28**	-	**2.07**
116	POMPANO BEACH A1A STREETSCAPE PH 1	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**5.45**	-	**8.56**
118	AMAZON.COM SERVICES LLC - DMF7	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.50**	**0.56**	**0.52**	**0.74**
119	POMPANO STATION	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**1.05**	-	**7.72**
120	RETAIL WASTEWATER METER M-471	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.41**	**0.56**	**0.57**	**0.88**
122	MLK BLVD PHASE 2 IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.88**	**2.80**	**0.98**	**2.86**
123	BEACHCOMBER	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.14**	-	**2.43**
124	SYMBIA LOGISTICS	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.42**	-	**0.55**
125	AMAZON.COM SERVICES LLC - DMF3	STORMWATER TREATMENT FACILITIES	**1.64**	**1.65**	**1.64**	**1.64**	**1.65**	**4.44**	**4.31**	**4.29**	**4.47**
126	RIVERSIDE PROMENADE	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.76**	-	**6.82**	-	**9.81**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
127	DIXIE HWY CORRIDOR IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	**6.77**	-	-	-	**6.97**	**7.23**	**3.82**	**7.26**	**3.84**
128	RICK CASE HABITAT	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**1.19**	**2.16**	**1.70**	**2.18**
129	GOODYEAR AIRSHIP OP	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.09**	**0.09**	**0.11**	**0.11**
131	HOERBIGER CORP OF AMERICA INC	STORMWATER TREATMENT FACILITIES	-	-	-	**0.77**	**1.09**	**3.06**	**5.03**	**3.28**	**5.10**
133	PALLET CONSULTANTS CORP	STORMWATER TREATMENT FACILITIES	**1.07**	**1.07**	**1.07**	**1.06**	**1.04**	**1.65**	**1.99**	**1.72**	**2.04**
134	AVERY PLACE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**2.87**	-	**6.01**
135	SABBIA BEACH	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.47**	-	**3.93**
136	SCHROTH SAFETY PRODUCTS, LLC	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**3.44**	**0.44**	**3.49**
137	SMITH SURFACE PREPARATION SYSTEM, INC	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.14**	-	**1.03**
138	BROWARD COUNTY SEPTAGE RECEIVING FACILITY	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.92**	**1.01**	**1.06**	**1.48**
139	LYONS PARK NEIGHBORHOOD	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.31**	**0.30**	**5.52**	**0.54**	**5.52**
140	POMPANO BEACH SENIOR ACTIVITY CENTER	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.04**	-	**0.15**
141	SONATA APARTMENTS	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	**0.13**	**0.27**	**0.14**	**0.29**
142	1380 S OCEAN BLVD	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**2.35**	-	**4.84**
144	DIAMOND INNOVATIONS (DBA HYPERION)	STORMWATER TREATMENT FACILITIES	-	-	-	**0.43**	**0.73**	**3.08**	**5.17**	**3.30**	**5.24**
145	MAN ENERGY SOLUTIONS USA INC	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**3.85**	**0.17**	**3.92**
147	POMPANO PET LODGE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.06**	-	**0.65**
148	BURLINGTON SELF STORAGE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	**0.50**	-	**0.57**
149	SW 2ND ST STORMWATER IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	-	-	-	-	**1.76**	**1.35**	**6.24**	**1.43**	**6.55**
150	TAKATA PROTECTION SYSTEMS, INC.	STORMWATER TREATMENT FACILITIES	**0.33**	**0.33**	**0.45**	**0.33**	**0.67**	**1.28**	**4.84**	**1.87**	**4.89**
151	18-003 NE 20TH AVE DRAINAGE IMPROVEMENTS	STORMWATER TREATMENT FACILITIES	-	-	-	-	**0.20**	**0.25**	**3.34**	**0.45**	**6.45**

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
153	NW 18TH TERRACE	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	0.48	0.55	0.56	0.93
154	SUN #1 ERP	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	-	-	0.33
155	HIGHLAND OAKS	STORMWATER TREATMENT FACILITIES	0.39	0.39	0.39	0.39	0.59	0.90	1.17	0.93	1.21
156	SONATA APARTMENTS	STORMWATER TREATMENT FACILITIES	0.78	0.78	0.78	0.78	0.78	0.99	1.06	1.01	1.07
157	KIEWIT - SE 5TH AVE	STORMWATER TREATMENT FACILITIES	6.31	6.35	6.73	6.54	8.50	7.89	13.45	8.08	13.45
158	TD BANK	STORMWATER TREATMENT FACILITIES	-	-	-	-	-	-	5.14	-	7.19
160	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	-	-	2.77
161	NEIGHBORHOOD PARK / OPEN SPACE	PARKS	-	-	-	-	1.47	-	7.86	-	9.98
163	NEIGHBORHOOD PARK / OPEN SPACE	PARKS	-	-	-	-	1.31	-	7.82	-	11.90
164	NATURE PARK / EQUESTRIAN	PARKS	0.04	0.04	0.04	0.04	0.04	0.37	0.37	0.39	0.39
166	NATURE PARK / WATER ACCESS	PARKS	-	-	0.16	-	3.03	-	10.52	-	12.37
167	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	-	-	-	-	-	-	1.04	-	4.72
170	NEIGHBORHOOD PARK / OPEN SPACE	PARKS	-	-	-	-	-	-	6.29	-	9.27
171	NEIGHBORHOOD PARK / OPEN SPACE	PARKS	-	-	-	-	-	-	1.16	-	1.13
173	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	-	-	-	-	-	-	0.55	-	0.74
174	NEIGHBORHOOD PARK / PLAYGROUND	PARKS	-	-	-	-	-	-	1.06	-	1.43
176	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	-	-	-	-	-	-	4.21	-	4.23
177	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	-	-	-	-	0.43	1.87	5.25	1.98	5.30
178	NEIGHBORHOOD PARK / OPEN SPACE	PARKS	-	-	-	-	-	-	3.15	-	6.14
179	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	0.27	0.28	0.30	0.29	1.42	1.45	4.20	1.55	8.86
180	NATURE PARK / WATER ACCESS	PARKS	-	-	-	-	0.62	-	8.28	-	10.86
181	NATURE PARK / WATER ACCESS	PARKS	-	-	0.30	-	4.09	-	9.84	-	11.79
185	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	-	-	0.58	-	4.01	-	7.67	-	8.61
186	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	-	-	-	-	0.07	1.19	3.66	1.28	3.79
187	NEIGHBORHOOD PARK / PLAYGROUND	PARKS	-	-	-	-	-	0.08	0.65	0.30	0.68

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
188	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	-	-	-	-	-	0.88	1.06	1.13	1.15
189	NATURE PARK / WATER ACCESS	PARKS	-	-	-	-	1.71	-	9.03	-	12.47
194	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	4.63	-	7.17
195	NATURE PARK / WATER ACCESS	PARKS	-	-	-	-	1.63	-	9.25	-	12.34
196	NATURE PARK / WATER ACCESS	PARKS	1.70	1.70	1.70	1.70	1.69	7.10	7.25	7.24	7.20
197	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	-	-	1.74
198	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	-	-	3.26
199	NATURE PARK / BOAT RAMP	PARKS	-	-	-	-	1.82	-	7.01	-	10.53
200	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	2.68	-	4.79
201	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	1.46	-	3.80
202	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	0.11	-	3.26
203	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	0.80	-	3.94
204	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	0.02	-	3.42
205	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	1.07	-	4.07
206	NATURE PARK / WATER ACCESS	PARKS	-	-	-	-	1.01	-	8.75	-	11.95
207	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	3.18	-	7.22
208	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	5.57	-	9.23
211	NEIGHBORHOOD PARK / WALKING PATH	PARKS	2.01	2.01	2.01	2.01	2.06	2.75	4.63	2.79	4.57
213	NEIGHBORHOOD PARK / MIXED USE RECREATION	PARKS	1.02	1.01	1.02	1.01	1.04	3.27	3.85	3.50	3.87
216	NATURE PARK / DOCK - PIER	PARKS	-	-	-	-	0.24	-	7.43	-	10.00
217	NEIGHBORHOOD PARK / ATHLETIC	PARKS	-	-	-	-	-	-	0.95	-	0.95
218	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	3.81	-	7.51
219	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	6.42	-	10.34
220	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	0.55	-	3.75
221	NATURE PARK / BEACH ACCESS	PARKS	-	-	-	-	-	-	-	-	3.30
222	COMMERCIAL MARINA	MARINAS	-	-	-	-	-	-	2.39	-	5.17
223	OTHER	MARINAS	-	-	-	-	-	-	6.94	-	8.98
224	CONDOMINIUM	MARINAS	-	-	-	-	0.07	-	8.01	-	11.21
225	PUBLIC OWNED & OPER/GOVERNMENT/ MILITARY	MARINAS	3.26	3.87	7.50	4.45	11.32	3.40	14.39	3.41	15.90
226	CONDOMINIUM	MARINAS	-	-	-	-	-	-	3.20	-	6.59
227	CONDOMINIUM	MARINAS	-	-	-	-	0.30	-	8.32	-	10.61
228	CONDOMINIUM	MARINAS	-	-	1.67	-	3.77	-	8.82	-	11.27

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
229	BOAT DEALER/REPAIR/STORAGE	MARINAS	-	-	-	-	0.28	-	7.58	-	9.80
230	CONDOMINIUM	MARINAS	-	-	-	-	-	-	7.22	-	9.76
231	OTHER	MARINAS	-	-	-	-	0.17	-	8.10	-	10.51
232	COMMERCIAL MARINA	MARINAS	-	-	-	-	1.66	1.11	6.85	1.14	7.53
233	CONDOMINIUM	MARINAS	-	-	-	-	-	-	6.02	-	8.75
234	RESTAURANT	MARINAS	-	-	-	-	0.88	-	4.45	-	8.80
235	CONDOMINIUM	MARINAS	-	-	-	-	1.63	-	7.05	-	8.10
236	CONDOMINIUM	MARINAS	-	-	-	-	0.45	-	7.62	-	11.55
237	BOAT DEALER/REPAIR/STORAGE	MARINAS	-	-	-	-	0.96	0.20	6.47	0.24	7.35
238	CONDOMINIUM	MARINAS	-	-	-	-	-	-	3.74	-	6.24
239	HOTEL/MOTEL/RESORT/CAMP/RV PARK	MARINAS	5.73	5.90	6.45	6.05	8.98	6.37	16.06	6.38	18.56
240	CONDOMINIUM	MARINAS	-	-	-	-	0.20	-	4.85	-	5.20
241	BOAT DEALER/REPAIR/STORAGE	MARINAS	-	-	-	-	-	-	3.63	-	6.27
242	BOAT DEALER/REPAIR/STORAGE	MARINAS	-	-	-	-	0.93	-	6.81	-	8.02
243	CONDOMINIUM	MARINAS	-	-	-	-	-	-	5.24	-	8.05
244	CONDOMINIUM	MARINAS	-	-	-	-	-	-	1.69	-	4.30
245	BOAT DEALER/REPAIR/STORAGE	MARINAS	-	-	-	-	2.39	-	7.22	-	9.32
246	CONDOMINIUM	MARINAS	-	-	-	-	-	-	6.67	-	8.75
247	OTHER	MARINAS	-	-	-	-	-	-	5.33	-	7.05
248	BOAT DEALER/REPAIR/STORAGE	MARINAS	-	-	-	-	0.24	-	5.27	-	8.40
249	CONDOMINIUM	MARINAS	-	-	-	-	1.74	-	7.12	-	9.35
250	CONDOMINIUM	MARINAS	-	-	-	-	-	-	7.28	-	9.78
251	CONDOMINIUM	MARINAS	-	-	-	-	1.05	-	6.83	-	9.81
252	CONDOMINIUM	MARINAS	-	-	-	-	-	-	3.85	-	3.85
253	CONDOMINIUM	MARINAS	-	-	-	-	1.21	-	5.57	0.01	5.85
254	OTHER	MARINAS	-	-	-	-	1.12	0.04	6.99	0.09	8.20
255	CONDOMINIUM	MARINAS	-	-	-	-	-	-	1.59	-	4.13
256	CONDOMINIUM	MARINAS	-	-	-	-	-	-	4.22	-	7.30
257	BOAT DEALER/REPAIR/STORAGE	MARINAS	-	-	-	-	1.27	-	8.00	-	9.61
258	CONDOMINIUM	MARINAS	-	-	-	-	-	-	6.31	-	8.81
259	OTHER	MARINAS	-	-	-	-	2.85	-	8.53	-	10.20
260	OTHER	MARINAS	-	-	-	-	3.42	-	6.88	-	8.21
263	MEDICAL DOCTOR	HEALTH CARE FACILITIES	-	-	-	-	-	-	2.46	-	6.25
266	CIVIC CENTERS	STADIUMS	-	-	-	-	-	-	1.26	-	4.67

Unique ID	Asset Name	Asset Type	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
267	GREYHOUND AND/OR HORSE TRACK	STADIUMS	-	-	-	-	-	**0.11**	**1.05**	**0.45**	**1.25**
268	ICE SKATING RINKS	STADIUMS	-	-	-	-	-	-	**0.20**	-	**2.47**
269	ANDREWS HIGH SCHOOL	SCHOOLS	-	-	-	-	-	**0.22**	**0.22**	**0.07**	**0.73**
278	BROWARD COUNTY SCHOOL DISTRICT - NORTH WEST TRANSPORTATION TERMINAL	SCHOOLS	-	-	-	-	-	**2.84**	**2.94**	**2.82**	**3.25**
281	HOPE COLLEGE OF ARTS AND SCIENCES	SCHOOLS	-	-	-	-	-	-	**2.00**	-	**2.07**
282	BROWARD CHILDREN'S CENTER NORTH	SCHOOLS	-	-	-	-	-	-	**2.60**	-	**4.64**
291	INNOVATION CHARTER SCHOOL	SCHOOLS	-	-	-	-	-	-	**0.99**	-	**1.06**
292	HEALTH DEPARTMENT	LOCAL GOVERNMENT FACILITIES	-	-	-	-	-	-	**1.72**	-	**1.81**
293	HEALTH DEPARTMENT	LOCAL GOVERNMENT FACILITIES	-	-	-	-	-	-	**0.29**	-	**0.33**
294	CITY HALL	LOCAL GOVERNMENT FACILITIES	-	-	-	-	-	-	**3.30**	-	**3.56**
302	BROWARD COUNTY FIRE STATION 51	FIRE STATIONS	-	-	-	-	-	**0.75**	**0.94**	**0.98**	**1.15**
303	LIBRARY	HISTORICAL AND CULTURAL ASSETS	-	-	-	-	-	-	**1.28**	-	**4.51**
306	LIBRARY	HISTORICAL AND CULTURAL ASSETS	-	-	-	-	-	-	**1.35**	-	**4.34**
308	JUVENILE RESIDENTIAL FACILITY	CORRECTIONAL FACILITIES	-	-	-	-	-	**0.89**	**0.94**	**0.98**	**1.42**
309	WORK RELEASE CENTERS	CORRECTIONAL FACILITIES	-	-	**0.01**	-	**0.38**	**1.38**	**3.73**	**1.45**	**3.87**
310	FRATERNAL ASSOCIATIONS AND ORGANIZATIONS	COMMUNITY CENTERS	-	-	-	-	-	-	**2.05**	-	**2.12**
311	COMMUNITY CENTERS	COMMUNITY CENTERS	-	-	-	-	-	-	**0.28**	-	**0.30**
313	COMMUNITY CENTERS	COMMUNITY CENTERS	-	-	-	-	-	-	**0.40**	-	**0.43**
315	YOUTH ORGANIZATIONS	COMMUNITY CENTERS	-	-	-	-	-	-	-	-	**1.71**
316	CIVIC ASSOCIATIONS CLUBS AND ORGANIZATIONS	COMMUNITY CENTERS	-	-	-	-	-	-	**1.75**	-	**5.34**
321	COPB AIR TRANSPORTATION FACILITIES (AIRPORTS FAA AIRPORT NAV)	AIRPORTS	-	-	-	-	-	-	0.25	-	2.28

C. Citywide Transportation Network

Table 1: Exposure of Citywide Roadways Under Each Flood Scenario

Roadway Exposure by Owner	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
All Road Length (mi)	382.03	382.03	382.03	382.03	382.03	382.03	382.03	382.03	382.03
All Exposure (mi)	43.85	45.84	53.37	50.06	108.59	140.88	209.01	147.35	222.66
All Exposure (%)	11%	12%	14%	13%	28%	37%	55%	39%	58%
City of Pompano (mi)	284.01	284.01	284.01	284.01	284.01	284.01	284.01	284.01	284.01
City of Pompano (%)	13%	13%	16%	14%	33%	39%	58%	41%	62%
Private (mi)	28.58	28.58	28.58	28.58	28.58	28.58	28.58	28.58	28.58
Private (%)	17%	17%	18%	20%	34%	63%	73%	64%	75%
Broward County (mi)	18.54	18.54	18.54	18.54	18.54	18.54	18.54	18.54	18.54
Broward County (%)	10%	10%	10%	12%	17%	38%	54%	42%	60%
FDOT Exposure (mi)	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9
FDOT Exposure (%)	2%	2%	3%	3%	7%	10%	27%	10%	28%

Table 2: Exposure of Citywide Railways Under Each Flood Scenario

Railway Exposure by Owner	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
All Rail Length (mi)	20.88	20.88	20.88	20.88	20.88	20.88	20.88	20.88	20.88
All Exposure (mi)	1.09	0.98	1.04	1.01	1.29	3.86	7.84	4.45	8.13
All Exposure (%)	5%	5%	5%	5%	6%	18%	38%	21%	39%
FEC Length (mi)	11.23	11.23	11.23	11.23	11.23	11.23	11.23	11.23	11.23
FEC Exposure (%)	6%	5%	5%	5%	7%	23%	43%	26%	43%
SFRC Length (mi)	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84	8.84
SFRC Exposure (%)	4%	4%	4%	4%	4%	11%	25%	13%	28%
CSXT Length (mi)	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
CSXT Exposure (%)	9%	9%	16%	10%	26%	40%	95%	48%	97%

D. Business District Exposure

Table 3: Percentage Area of Each Business District Type Exposed to Each Flood Scenario

Business District	Acres	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
AOD	98.6	8%	9%	11%	9%	34%	17%	89%	17%	99%
B-1	4	8%	8%	9%	8%	17%	92%	100%	94%	100%
B-2	102.2	9%	9%	10%	10%	27%	38%	65%	43%	66%
B-3	683.9	8%	8%	9%	8%	26%	29%	62%	31%	67%
B-3/PCD	31.2	16%	13%	14%	13%	30%	37%	84%	38%	86%
B-3/PCI	57	10%	10%	10%	10%	10%	15%	31%	16%	33%
B-4	250.5	11%	5%	5%	5%	22%	37%	73%	39%	74%
B-4/PCD	10.1	3%	2%	2%	3%	3%	97%	100%	99%	100%
LAC	65.3	3%	3%	3%	3%	16%	40%	93%	42%	93%
TO-DPOD	527.1	21%	21%	22%	21%	27%	44%	59%	46%	59%
TO-EOD	280.6	7%	7%	8%	8%	26%	19%	79%	24%	88%

E. Neighborhood Exposure

Table 4: Percentage Area of Each Neighborhood Exposed to Each Flood Scenario

Neighborhood	Acres	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
Andrews Industrial	550.3	13.41%	13.48%	14.66%	13.68%	23.45%	56.38%	93.35%	62.58%	93.51%
Arvida-Pompano Park	400.1	12.05%	12.09%	12.16%	12.11%	13.26%	34.74%	65.86%	39.47%	68.10%
Avalon Harbor	570.8	17.23%	17.28%	18.86%	17.88%	63.44%	22.77%	99.16%	23.34%	99.52%
Avondale	131.0	34.26%	35.25%	36.59%	35.54%	50.55%	71.97%	92.42%	73.47%	92.60%
Beach	471.4	17.05%	18.45%	25.99%	20.17%	52.45%	27.37%	89.65%	28.13%	97.78%
Blanche Ely	487.6	25.32%	25.30%	25.59%	25.30%	33.86%	59.02%	76.48%	61.06%	76.85%
Boulevard Park	98.2	30.43%	24.27%	28.28%	25.69%	96.16%	79.53%	99.98%	88.12%	99.98%
Canal Point	24.0	5.21%	5.21%	5.21%	5.21%	5.25%	25.35%	39.60%	30.36%	40.67%
Civic Campus	20.8	18.93%	20.89%	25.28%	22.56%	52.99%	61.73%	95.17%	63.81%	95.69%
Collier City	479.5	6.78%	6.35%	6.36%	6.83%	7.11%	24.27%	30.00%	27.78%	34.54%
Cresthaven	764.1	2.09%	2.12%	2.23%	2.13%	2.61%	5.58%	9.43%	5.91%	19.65%
Cypress Bend	185.9	19.21%	19.25%	19.54%	19.38%	24.18%	92.03%	98.47%	95.75%	98.54%
Cypress Lakes	292.6	27.52%	28.78%	31.54%	29.38%	79.04%	54.17%	99.92%	56.50%	99.94%
Downtown	63.2	0.05%	0.05%	0.05%	0.05%	0.39%	1.03%	4.38%	1.08%	5.44%
Garden Isles	533.3	27.12%	28.65%	31.26%	28.89%	85.76%	57.92%	100.00%	60.96%	100.00%
Gardens	94.7	5.40%	5.40%	5.40%	5.40%	5.40%	14.52%	14.56%	14.57%	14.60%
Golfview Estates	71.6	5.70%	5.17%	4.89%	5.93%	6.48%	76.77%	83.71%	80.25%	87.89%
Harbor Village	267.3	15.66%	15.97%	16.82%	16.23%	51.08%	20.66%	99.22%	27.14%	99.97%
Hillsboro Shores	143.7	26.36%	27.20%	33.79%	28.14%	78.82%	33.83%	94.56%	34.45%	94.73%
Island Club	133.3	10.97%	10.97%	10.97%	10.95%	11.29%	33.90%	47.82%	37.39%	52.83%
John Knox Village	72.9	4.15%	4.21%	4.68%	4.31%	26.15%	49.00%	88.71%	50.83%	88.94%
Kendall Green	604.6	1.59%	1.59%	1.59%	1.59%	1.59%	3.80%	3.86%	4.01%	4.02%
Kendall Lake	255.5	18.45%	18.18%	18.13%	18.48%	18.48%	56.58%	63.27%	62.23%	63.81%
Leisureville	169.2	2.60%	2.60%	2.60%	2.59%	2.62%	9.05%	9.24%	9.64%	9.64%
Loch Lomond	314.3	12.52%	12.26%	12.34%	12.37%	12.41%	54.83%	55.28%	54.68%	63.48%
Lyons Park	292.6	11.02%	12.37%	15.26%	12.37%	50.96%	53.77%	99.79%	60.16%	99.79%
Northwest Pompano	2,748.6	23.05%	23.67%	22.83%	26.95%	28.73%	63.95%	68.75%	67.19%	73.95%
Old Collier	371.2	25.57%	27.47%	27.06%	27.01%	31.38%	60.70%	71.70%	63.32%	72.92%
Old Pompano	593.6	6.94%	7.04%	7.25%	7.13%	9.34%	12.77%	32.40%	13.65%	50.11%
Palm Aire	1,665.2	17.88%	18.21%	18.35%	20.77%	25.75%	50.01%	64.49%	51.59%	65.04%
Pompano Airpark	930.6	20.70%	20.76%	21.39%	20.83%	23.76%	30.15%	50.49%	30.89%	69.85%
Sanders Park	71.8	7.36%	5.68%	5.37%	7.59%	7.02%	30.14%	43.83%	37.50%	44.27%
Santa Barbara Estates	204.0	18.57%	19.19%	21.63%	20.08%	65.31%	32.89%	94.50%	34.60%	99.92%

Neighborhood	Acres	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8	Scenario 9
Santa Barbara Shores	269.3	29.26%	29.66%	31.92%	30.11%	61.26%	32.49%	98.48%	32.69%	98.97%
Snug Harbor	232.9	37.49%	38.70%	41.53%	39.93%	79.64%	68.47%	95.34%	69.14%	97.38%
South Dixie	284.4	17.36%	9.84%	11.96%	10.45%	38.11%	61.36%	90.81%	62.41%	90.91%
Terra Mar	24.3	52.10%	52.85%	56.01%	53.82%	98.71%	59.36%	100.00%	60.05%	100.00%

Appendix D: Prioritized List of Critical and Regional Assets

Appendix D: Sensitivity Analysis Results

Volume No. 1

March 4, 2025

City of Pompano Beach, Florida

Contract No.: L41-16 Work Authorization No. 4

RS&H No.: 1006-0018-002

Prepared by RS&H, Inc. at the direction of City of Pompano Beach

Table of Contents

Summary

This appendix shows the prioritized critical and regional assets affected by flooding. Two tables are provided, one for critical and one for regional assets. Assets are prioritized in order from first to last. The tables may be interpreted as follows:

- For the Critical Assets table, the "Unique ID" field can be used to match the assets with GIS data
- The Regional Assets table includes the Florida Department of Revenue parcel number and Latitude/Longitude coordinates
- Asset Names and Addresses are given in the next two fields.
- The "Max Vulnerability" field shows the highest vulnerability score each asset received across all nine flood scenarios.
- The "Flood Scenarios" field lists all scenarios in which the asset score "Low" or higher vulnerability
- The "Max Flood Depth" field is the maximum modeled flood depth at the asset location across all nine scenarios, in feet.
- The "Flood Zone and Elevation fields" contain flood zone and elevation data from the City of Pompano Beach Flood Information website.
- The scenario matrix on the right of each table shows vulnerability scores for each of the nine flood scenarios (S1, S2, etc.)
    - **Very Low** vulnerability / not vulnerable is shown in black
    - **Low** vulnerability is shown in green
    - **Medium** vulnerability is shown in yellow
    - **High** vulnerability is shown in red

A. Critical Assets Sensitivity – Prioritized List

ID	Asset Name	Address	Max Vulnera-bility	Flood Scenarios	Max Flood Depth	Flood Zone	Elevation	S1	S2	S3	S4	S5	S6	S7	S8	S9
207	SBBC #9155-9 North Area Maintenance	2800 NW 18th Ter # Bus Pk	High	Scenario 1, 2, 3, 4, 6, 7, 8, and 9	3.3	N/A	Not on website									
70	Bridges (Electrically Operated)	1011 SE 9th Ave #Bridge	High	Scenario 1, 2, 3, 4, 5, 6, 7, 8, and 9	6.7	AE	No documentation; BFE = 4'									
69	Bridges (Electrically Operated)	1000 SE 9th Ave #Bridge	High	Scenario 5, 6, 7, 8, and 9	5.9	AE	No documentation; BFE = 4'									
29	City Hall	100 W Atlantic Blvd	High	Scenario 7 and 9	3.6	AE	No documentation; BFE = 7'									
13	COPB Fire Station 11	109 N Ocean Blvd	High	Scenario 7 and 9	6.5	AE	7.72; BFE = 5'									
12	COPB Fire Station 63	120 SW 3 Street	High	Scenario 7 and 9	3.7	AE	6.5; BFE = 6'									
40	Five Star Premier Residences	1371 S Ocean Bl	High	Scenario 7 and 9	8.1	AE	No documentation; BFE = 6'									
248	Water Reuse Plant	1799 N Federal Hwy	High	Scenario 7 and 9	7.1	AH	No documentation; BFE = 9'									
47	Green Life Assisted Living Facility	840 SW 8 St	High	Scenario 6, 7, 8, and 9	3.8	AH	No documentation; BFE = 7'									
176	Henderson Behavioral Health, Inc.	868 SW 10th St	High	Scenario 6, 7, 8, and 9	4.9	N/A	Not on website									
177	Iglesia Bautista De Pompano Beach Inc	101 SW 17th St	High	Scenario 5, 6, 7, 8, and 9	6.2	X500	No documentation or BFE									
192	SBBC #0841-1 McNab Elementary	1350 SE 9th Ave # New Vlt	High	Scenario 7 and 9	5.4	AH	No documentation; BFE = 5'									
221	SBBC #1781-1 Cypress Elementary	851 SW 3rd Ave	High	Scenario 7 and 9	3.7	AH	No documentation; BFE = 6'									
200	SBBC #3651-5 Dave Thomas Center	190 SW 2nd St	High	Scenario 7 and 9	4.6	AE	No documentation or BFE									
35	Atlantic Shore Retirement Resi	1500 N Riverside Dr	High	Scenario 5, 7 and 9	11.1	AE	No documentation; BFE = 5'									
19	COPB Fire Station 114	1499 SW 36 Avenue	High	Scenario 6, 7, 8, and 9	3.7	AH	10; BFE = 8'									
30	Seaview Nursing & Rehabilitation	2401 NE 2 St	High	Scenario 7 and 9	7.1	X500	No documentation or BFE									
180	St Coleman School	2350 SE 12th St # Church	High	Scenario 7 and 9	6	AE	No documentation; BFE = 5'									
34	Sunset By the Sea	420 N Riverside Dr North	High	Scenario 5, 7 and 9	10.4	AE	No documentation; BFE = 5'									
33	Vizcaya By the Sea Inc	1621 N Ocean Bl	High	Scenario 7 and 9	9.3	AE	No documentation; BFE = 6'									
41	With Love Inc	1320 SW 1 Terrace	High	Scenario 6, 7, 8, and 9	5.4	X500	No documentation or BFE									
49	Broward Children's Center Inc	207 SE 20th Ave	High	Scenario 7 and 9	3.4	AH	No documentation; BFE = 6'									
15	COPB Fire Station 24	2001 NE 10 Street	High	Scenario 7 and 9	5.5	X500	No documentation or BFE									
31	Children's Comprehensive Care Center	200 SE 19 Ave	High	Scenario 7 and 9	3.7	AH	No documentation; BFE = 6'									
196	SBBC#9155-9 North Area Bus Lot	1751 NW 22nd Ave # A	High	Scenario 6, 7, 8, and 9	4.8	AE	No documentation; BFE = 11'									
201	SBBC #9212-9 North Area Portable	2201 NW 18th St	High	Scenario 6, 7, 8, and 9	4.4	N/A	Not on website									

ID	Asset Name	Address	Max Vulnera-bility	Flood Scenarios	Max Flood Depth	Flood Zone	Elevation	S1	S2	S3	S4	S5	S6	S7	S8	S9
250	Pompano High School Hurricane Shelter	1700 NE 6th St	High	Scenario 7 and 9	3.4	N/A	Not on website									
208	SBBC #2123-4 Cypress Run Alternative Center	2800 NW 30 Ave, Pompano Beach, Fl, Usa	Medium	Scenario 7 and 9	1.2	AH	No documentation; BFE = 12'									
1	COPB Air Transportation Facilities (Airports Faa Airport Nav)	1001 Ne 10th St Pompano Beach, Fl	Medium	Scenario 6, 7, 8, and 9	2.2	AH	No documentation; BFE = 14'									
46	Gardens West - John Knox Villa	Pompano Beach, Fl, Usa	Medium	Scenario 7 and 9	1.4	AE	8; BFE = 9'									
44	John Knox Village Of Pompano W	700 SW 4th St, Pompano Beach, Fl, Usa	Medium	Scenario 7 and 9	1.4	AE	No documentation; BFE = 9'									
228	Railroad Crossings	South Dixie Highway, Pompano Beach, Fl, Usa	Medium	Scenario 7 and 9	1.4	AE	No documentation or BFE									
191	SBBC #0361-3 Blanch Ely High	1201 NW 6th Ave Auditorium, Pompano Beach, Fl, 33060	Medium	Scenario 7 and 9	1.2	AE	No documentation; BFE = 11'									
45	John Knox Village Pompano Nursing Home	Pompano Beach, Fl, Usa	Medium	Scenario 7 and 9	0.9	AE	No documentation; BFE = 9'									
11	BSO Pompano Headquarters	100 SW 3rd St Pompano Beach, Fl	Medium	Scenario 7 and 9	2.4	AE	6.5; BFE = 6'									
261	Railroad Crossings	1219 W Copans Rd	Medium	Scenario 6, 7, 8, and 9	1.4	N/A	Not on website									
218	SBBC #0751-1 Pompano Beach Elementary	700 Ne 13th Ave , Pompano Beach, Fl, 33060	Medium	Scenario 9	1.7	AH	No documentation; BFE = 13'									
251	Telecom Facilities (Nap Data Centers Isps)	599 SW 16 Ter, Pompano Beach, Fl, Usa	Medium	Scenario 6, 7, 8, and 9	4.3	AH	No documentation; BFE = 8'									

B. Regional Assets Sensitivity – Prioritized List

ID	Parcel Number	Asset Name	Asset Type	Address	Latitude	Longitude	Max Vulner-ability	Flood Scenario	Max Flood Depth	S1	S2	S3	S4	S5	S6	S7	S8	S9
225	484329070063	Public Owned & Oper/Government/Military	Marinas	2700 N Ocean Blvd	-	-	High	Scenario 1, 2, 3, 6, 7, 8, and 9	15.9									
239	494306PY0000	Hotel/Motel/Resort/Camp/RV Park	Marinas	3229 SE 11 St	-	-	High	Scenario 1, 2, 3, 6, 7, 8, and 9	18.6									
196	484226351340	Nature Park / Water Access	Parks	1650 NW 3rd Ave	26.251741	-80.128272	High	Scenario 6, 7, 8, and 9	7.3									
213	484227000620	Neighborhood Park / Mixed Use Recreation	Parks	800 NW 20th St	26.252208	-80.135546	High	Scenario 6, 7, 8, and 9	3.9									
211	484235001090	Neighborhood Park / Walking Path	Parks	304 Hammondville Rd	26.233662	-80.127202	High	Scenario 7 and 9	4.6									
179	484236012450	Neighborhood Park / Mixed Use Recreation	Parks	2250 E Atlantic Blvd	26.230865	-80.101354	High	Scenario 7 and 9	8.9									
207	484329010000	Nature Park / Beach Access	Parks	NE 13th St	26.249294	-80.085801	High	Scenario 7 and 9	7.2									
218	484329010060	Nature Park / Beach Access	Parks	3424 NE 16th St	26.251982	-80.085178	High	Scenario 7 and 9	7.5									
208	484329030000	Nature Park / Beach Access	Parks	NE 16th St	26.252185	-80.085639	High	Scenario 7 and 9	9.2									
185	484329041480	Neighborhood Park / Mixed Use Recreation	Parks	2700 N Ocean Blvd	26.260555	-80.083923	High	Scenario 7 and 9	8.6									
259	484329051630	Other	Marinas	Hillsboro Shores LLC	-	-	High	Scenario 7 and 9	10.2									
260	484329051650	Other	Marinas	2705 N Riverside Drive	-	-	High	Scenario 7 and 9	8.2									
206	484330000060	Nature Park / Water Access	Parks	2800 NE 24th St	26.260465	-80.091070	High	Scenario 7 and 9	12.0									
256	484330000813	Condominium	Marinas	2731 NE 14th Street	-	-	High	Scenario 7 and 9	7.3									
195	484330000840	Nature Park / Water Access	Parks	1210 NE 28th Ave	26.247687	-80.092262	High	Scenario 7 and 9	12.3									
248	484330000940	Boat Dealer/Repair/Storage	Marinas	3109 E Atlantic Blvd On The ICW	-	-	High	Scenario 7 and 9	8.8									
234	484330000940	Restaurant	Marinas	2821 E Atlantic Blvd	-		High	Scenario 7 and 9	8.4									
166	484330011120	Nature Park / Water Access	Parks	1199 N Riverside Dr	26.248524	-80.089704	High	Scenario 7 and 9	12.4									
163	484330020000	Neighborhood Park / Open Space	Parks	Ne 16th St & N Riverside Dr	26.252005	-80.089005	High	Scenario 7 and 9	11.9									
230	484330050010	Condominium	Marinas	2494 NE 16th St	-	-	High	Scenario 7 and 9	9.8									
250	484330050010	Condominium	Marinas	2400 NE 16th Street	-	-	High	Scenario 7 and 9	9.8									
258	484330050010	Condominium	Marinas	2498 NE 16 St	-	-	High	Scenario 7 and 9	8.8									
241	484330160160	Boat Dealer/Repair/Storage	Marinas	1490 North Federal Highway	-	-	High	Scenario 7 and 9	6.3									
224	484330211000	Condominium	Marinas	2840 NE 14th Street Causeway	-	-	High	Scenario 7 and 9	11.2									

246	484330370290	Condominium	Marinas	2701 NE 15th Street	-	-	High	Scenario 7 and 9	8.8	
238	484331150012	Condominium	Marinas	140 NE 28 Avenue	-	-	High	Scenario 7 and 9	6.2	
236	484331500130	Condominium	Marinas	2721-2733 NE 1st Street	-	-	High	Scenario 7 and 9	11.6	
170	484331520010	North Riverside Park	Parks	143 N Riverside Dr	26.235214	-80.091927	High	Scenario 7 and 9	9.3	
178	484331520010	Oceanside Park	Parks	109 N Ocean Blvd	26.234873	-80.091706	High	Scenario 7 and 9	6.1	
176	494201000390	Neighborhood Park / Mixed Use Recreation	Parks	570 S Cypress Rd	26.222125	-80.122048	High	Scenario 7 and 9	4.2	
252	494201001000	Condominium	Marinas	1319 SE 3 Avenue	-	-	High	Scenario 7 and 9	3.9	
186	494202000020	Neighborhood Park / Mixed Use Recreation	Parks	225 SW 6th Ave	26.227682	-80.135216	High	Scenario 7 and 9	3.8	
309	494202020010	Work Release Centers	Correctional Facilities	400 SW 2nd St	26.229248	-80.129997	High	Scenario 7 and 9	3.9	
177	494202030970	Neighborhood Park / Mixed Use Recreation	Parks	801 SW 8th St	26.220331	-80.134293	High	Scenario 7 and 9	5.3	
294	494202060110	City Hall	Local Government Facilities	100 W Atlantic Blvd	26.230743	-80.124965	High	Scenario 7 and 9	3.6	
223	494306000460	Other	Marinas	740 South Federal Highway	-	-	High	Scenario 7 and 9	9.0	
237	494306020050	Boat Dealer/Repair/Storage	Marinas	651 S Federal High	-	-	High	Scenario 7 and 9	7.3	
242	494306020080	Boat Dealer/Repair/Storage	Marinas	701 S Federal High	-	-	High	Scenario 7 and 9	8.0	
254	494306020090	Other	Marinas	707 S. Fed Hwy	-	-	High	Scenario 7 and 9	8.2	
232	494306020100	Commercial Marina	Marinas	599 S Federal Hwy	-	-	High	Scenario 7 and 9	7.5	
161	494306050090	Neighborhood Park / Open Space	Parks	1232 Hibiscus Ave	26.221900	-80.092470	High	Scenario 7 and 9	10.0	
181	494306050110	Nature Park / Water Access	Parks	2596 SE 13th St	26.221941	-80.092964	High	Scenario 7 and 9	11.8	
180	494306080010	Nature Park / Water Access	Parks	2290 SE 7th St	26.224788	-80.100792	High	Scenario 7 and 9	10.9	
216	494306160680	Nature Park / Dock - Pier	Parks	2596 SE 13th St	26.213836	-80.098602	High	Scenario 7 and 9	10.0	
257	494306261510	Boat Dealer/Repair/Storage	Marinas	800 S Federal Hwy.	-	-	High	Scenario 7 and 9	9.6	
243	494306380040	Condominium	Marinas	1371 Ocean Blvd	-	-	High	Scenario 7 and 9	8.1	
247	494306400010	Other	Marinas	750 S Federal Highway	-	-	High	Scenario 7 and 9	7.1	
219	484329BG9998	Nature Park / Beach Access	Parks	3424 NE 16th St	26.253758	-80.085116	High	Scenario 7 and 9	10.3	
240	494201BG0000	Condominium	Marinas	1100 SE 5th Court	-	-	High	Scenario 7 and 9	5.2	
253	494201PN0000	Condominium	Marinas	934 SE 9 Ave	-	-	High	Scenario 7 and 9	5.9	
194	494305AD0000	Nature Park / Beach Access	Parks	900 Ft North Of Terra Mar Dr & S Ocean Blvd	26.218302	-80.091084	High	Scenario 7 and 9	7.2	
235	494306BB0000	Condominium	Marinas	777 S Federal Highway	-	-	High	Scenario 7 and 9	8.1	
251	494306BG0000	Condominium	Marinas	801 S Federal Hwy	-	-	High	Scenario 7 and 9	9.8	

249	494306CJ0000	Condominium	Marinas	810 SE 22nd Avenue	-	-	High	Scenario 7 and 9	9.4	
233	494306DM0000	Condominium	Marinas	1361 S. Ocean Blvd.	-	-	High	Scenario 7 and 9	8.8	
228	494306GD0000	Condominium	Marinas	3208 SE 12th St	-	-	High	Scenario 7 and 9	11.3	
227	494306HM0000	Condominium	Marinas	851 SE 22 Ave	-	-	High	Scenario 7 and 9	10.6	
278	484222000233	Broward County School District - North West Transportation Terminal	Schools	2600 NW 18 Ter	26.263111	-80.149397	High	Scenario 9	3.3	
306	484236010890	Library	Historical And Cultural Assets	225 N Federal Hwy	-	-	High	Scenario 9	4.3	
282	484236012842	Broward Children's Center North	Schools	25 SE 20th Ave	26.230820	-80.104170	High	Scenario 9	4.6	
266	484236230010	Civic Centers	Stadiums	1801 NE 6th St	26.240263	-80.105920	High	Scenario 9	4.7	
167	484236230010	Neighborhood Park / Mixed Use Recreation	Parks	2001 NE 10th St	26.240263	-80.105920	High	Scenario 9	4.7	
198	484330000000	Nature Park / Beach Access	Parks	East End Of NE 10th St Off Of N Ocean Blvd	26.246635	-80.086561	High	Scenario 9	3.3	
263	484330000190	Medical Doctor	Health Care Facilities	2000 N Federal Highway	26.256044	-80.099576	High	Scenario 9	6.3	
303	484331010210	Library	Historical And Cultural Assets	221 Pompano Beach Blvd	26.235695	-80.089495	High	Scenario 9	4.5	
220	484331010210	Nature Park / Beach Access	Parks	221 N Pompano Beach Blvd	26.235695	-80.089495	High	Scenario 9	3.8	
222	484331420010	Commercial Marina	Marinas	125 N Riverside Drive	-	-	High	Scenario 9	5.2	
205	494306030000	Nature Park / Beach Access	Parks	SE 8th St	26.226317	-80.089905	High	Scenario 9	4.1	
202	494306060634	Se 2nd Street Beach Access	Parks	SE 2nd St	26.230189	-80.089662	High	Scenario 9	3.3	
203	494306060634	Se 4th Street Beach Access	Parks	SE 4th St	26.228760	-80.089759	High	Scenario 9	3.9	
204	494306060634	Se 6th Street Beach Access	Parks	SE 6th St	26.227335	-80.089889	High	Scenario 9	3.4	
255	494306320090	Condominium	Marinas	1401 South Ocean Blvd	-	-	High	Scenario 9	4.1	
221	484331BM0000	Nature Park / Beach Access	Parks	East End Of NE 8th St Off Of N Ocean Blvd	26.245511	-80.086928	High	Scenario 9	3.3	
244	494306DK0000	Condominium	Marinas	1421 South Ocean	-	-	High	Scenario 9	4.3	
201	494306GA0000	Nature Park / Beach Access	Parks	SE 13th St	26.221297	-80.090477	High	Scenario 9	3.8	
157	494201311090	Kiewit - Se 5th Ave	Stormwater Treatment Facilities	1051 SE 5th Ave	26.216368	-80.115888	High	Scenario 1 and 2	6.4	
127	494211000530	Dixie Hwy Corridor Improvements	Stormwater Treatment Facilities	1621 S Dixie Hwy W	26.210750	-80.132658	High	Scenario 1	6.8	
101	484330000830	Alsdorf Park	Stormwater Treatment Facilities	2901 NE 14th Street Causeway	26.251244	-80.091464	High	Scenario 7 and 9	10.5	
56	484330160020	Hidden Harbour Marina	Stormwater Treatment Facilities	2315 NE 15th Street	-	-	High	Scenario 7 and 9	10.5	

47	484330420010	Merritt Boat & Engine Works Inc	Stormwater Treatment Facilities	2931 NE 16th St	-	-	High	Scenario 7 and 9	9.3	
116	494306050000	Pompano Beach A1a Streetscape Ph 1	Stormwater Treatment Facilities	3424 SE 12th St	26.222886	-80.090485	High	Scenario 9	4.8	
58	494306080020	MarineMax Pompano	Stormwater Treatment Facilities	700 S Federal Hwy	-	-	High	Scenario 7 and 9	9.8	
48	494306560020	Broadstone Oceanside	Stormwater Treatment Facilities	1333 S Ocean Blvd	-	-	High	Scenario 7 and 9	6.6	

Appendix E: Supplemental Figures

Appendix E: Supplemental Figures

Volume No. 1
March 10, 2025
City of Pompano Beach, Florida
Contract No.: L41-16 Work Authorization No. 4
RS&H No.: 1006-0018-002

Prepared by RS&H, Inc. at the
direction of the City of Pompano Beach

Table of Contents

A. Regional Asset Sensitivity

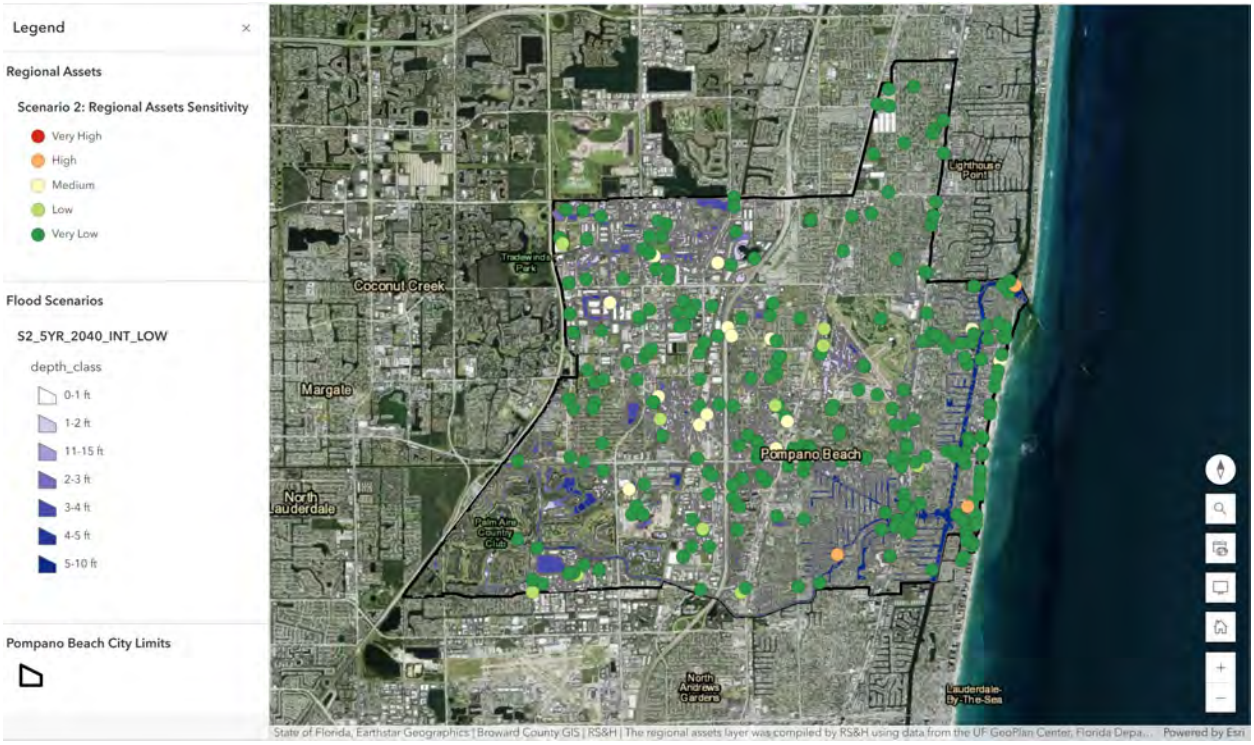

Figure 1: Sensitive Regional Assets under Scenario 2 (RS&H)

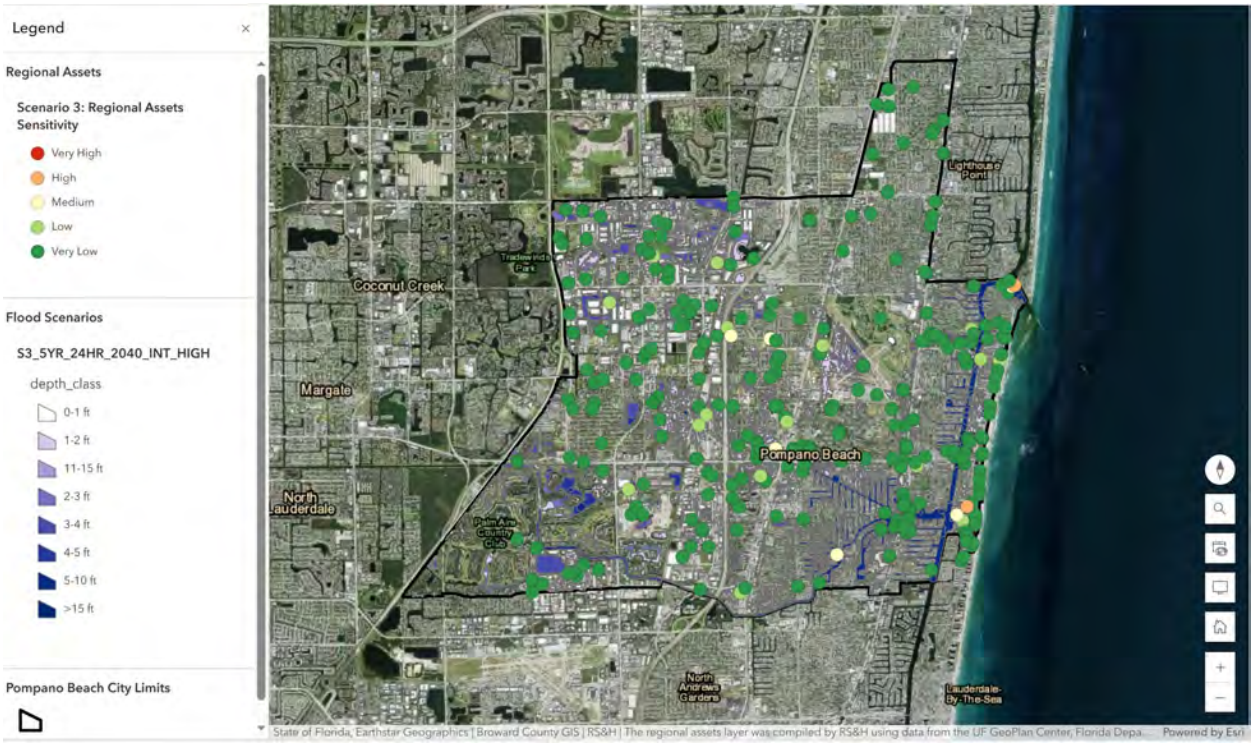

Figure 2: Sensitive Regional Assets under Scenario 3 (RS&H)

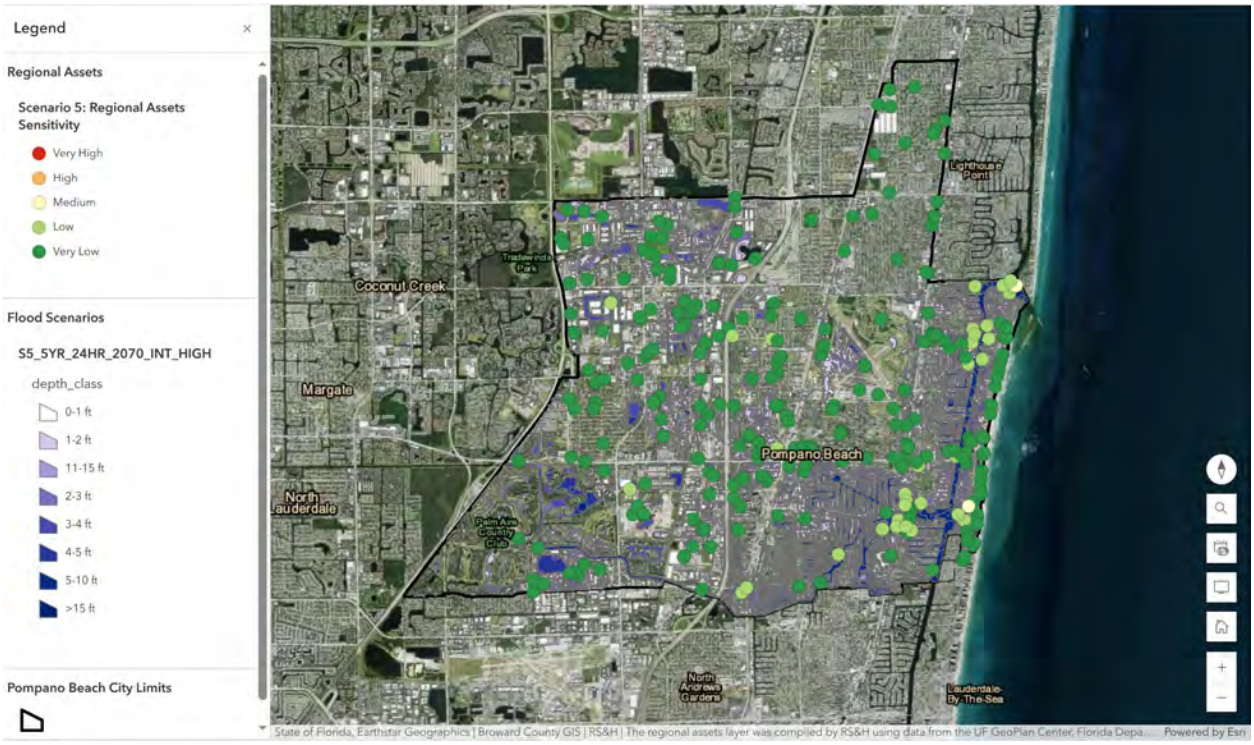

Figure 3: Sensitive Regional Assets under Scenario 5 (RS&H)

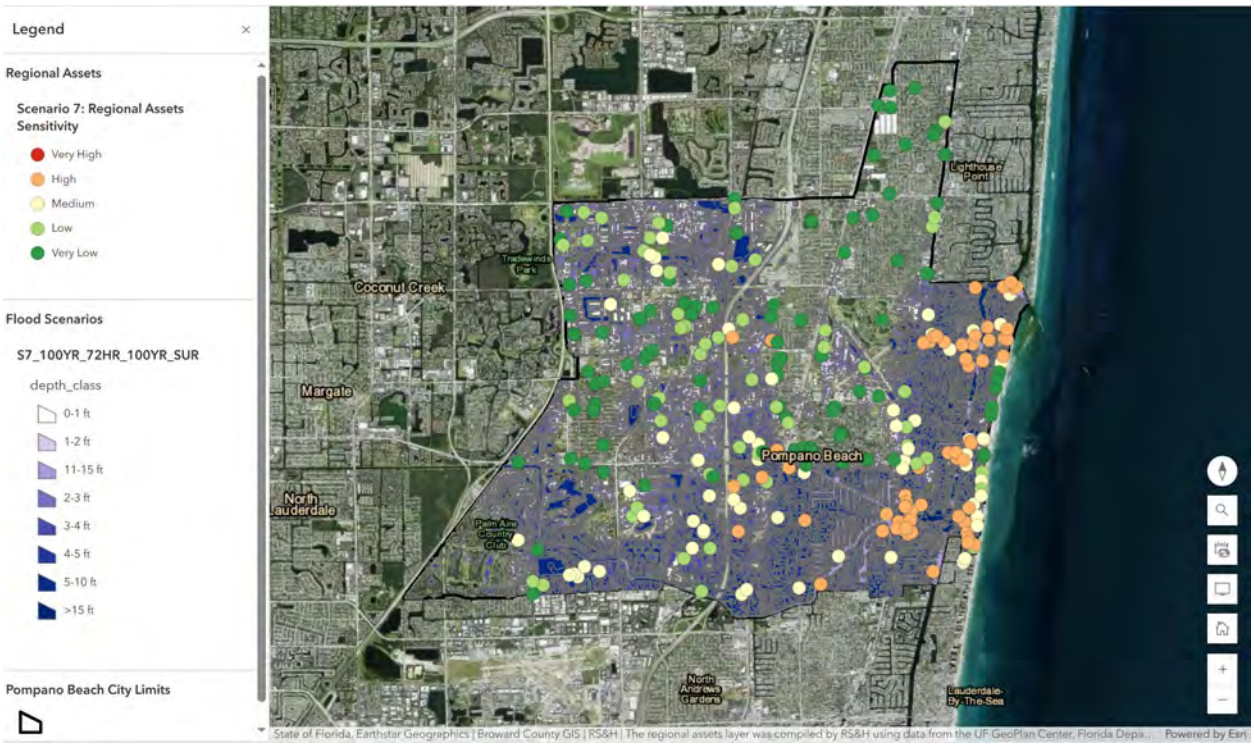

Figure 4: Sensitive Regional Assets under Scenario 7 (RS&H)

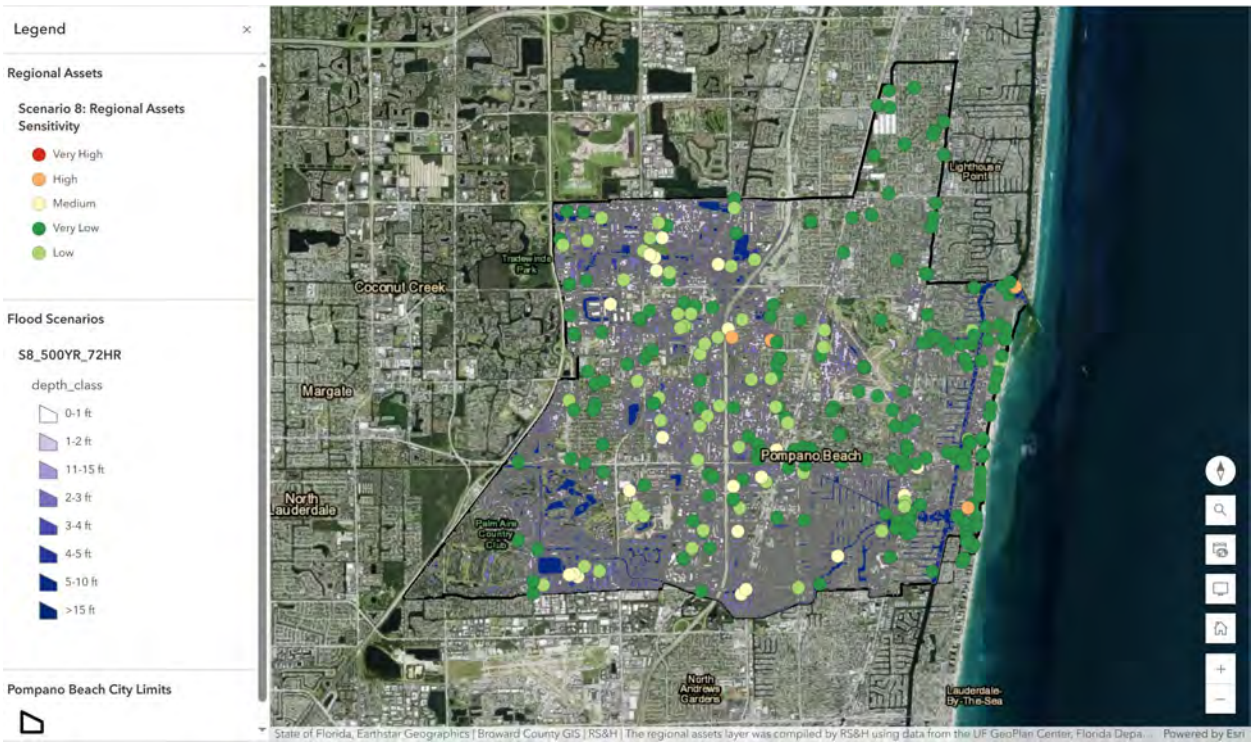

Figure 5: Sensitive Regional Assets under Scenario 8 (RS&H)

B. Citywide Transportation Network Sensitivity

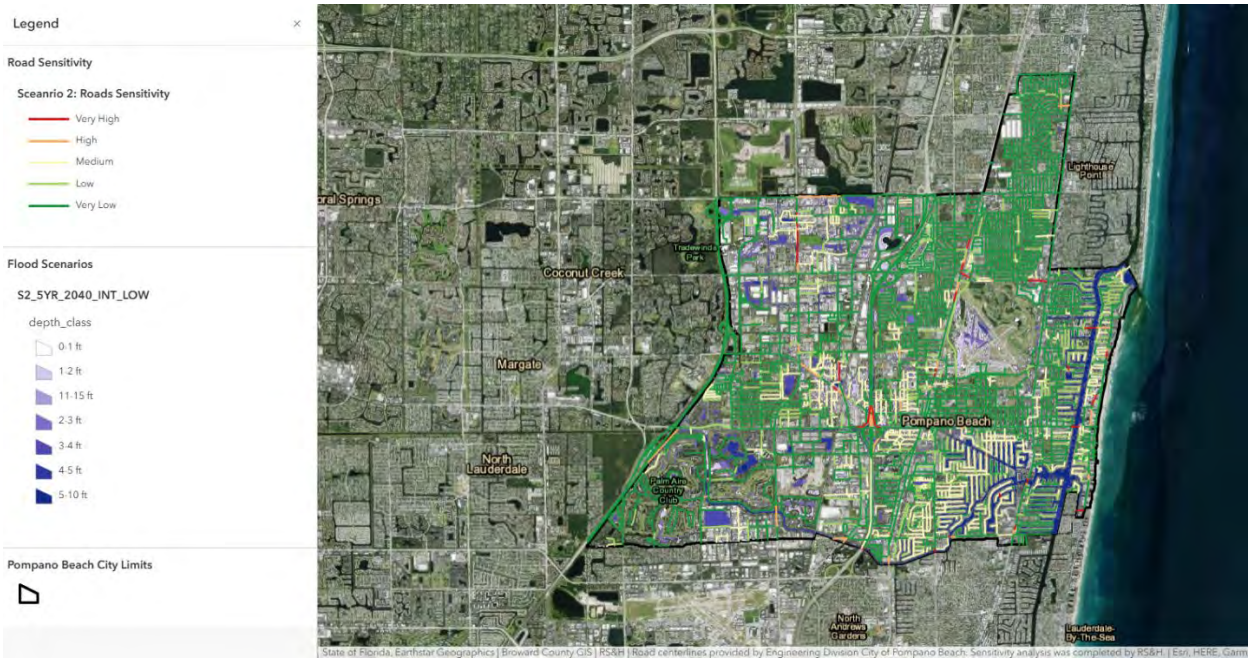

Figure 6: City Roadway Sensitivity under Scenario 2 (RS&H)

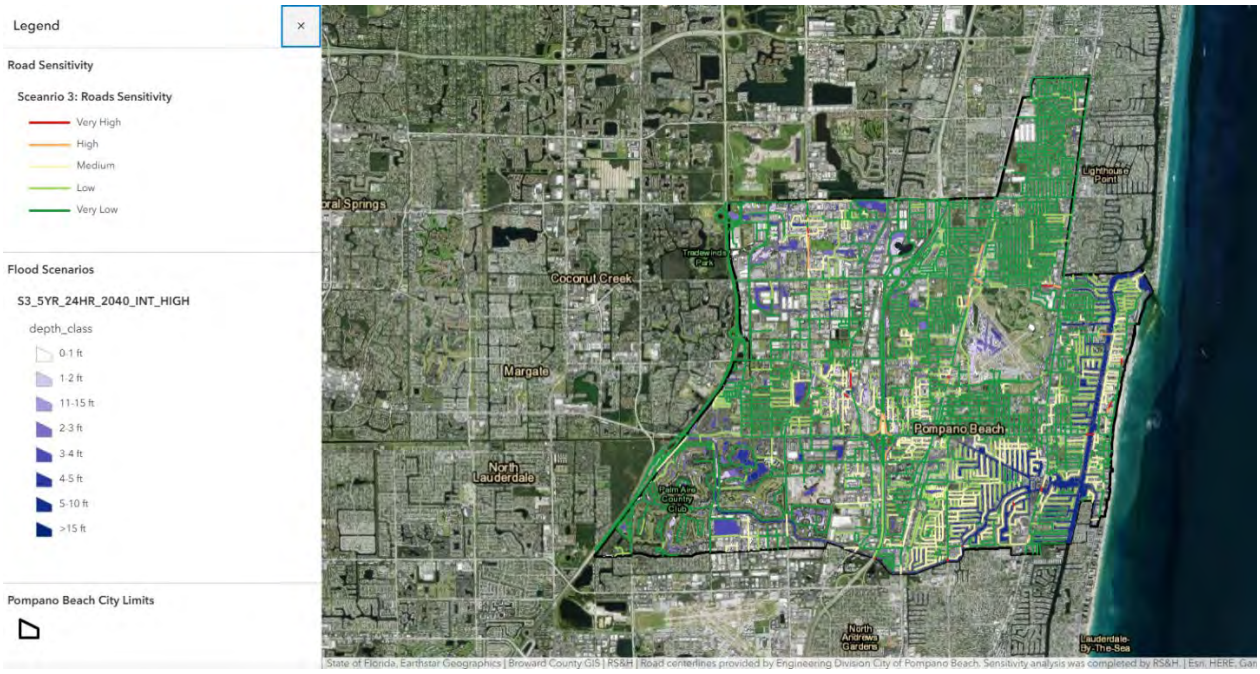

Figure 7: City Roadway Sensitivity under Scenario 3 (RS&H)

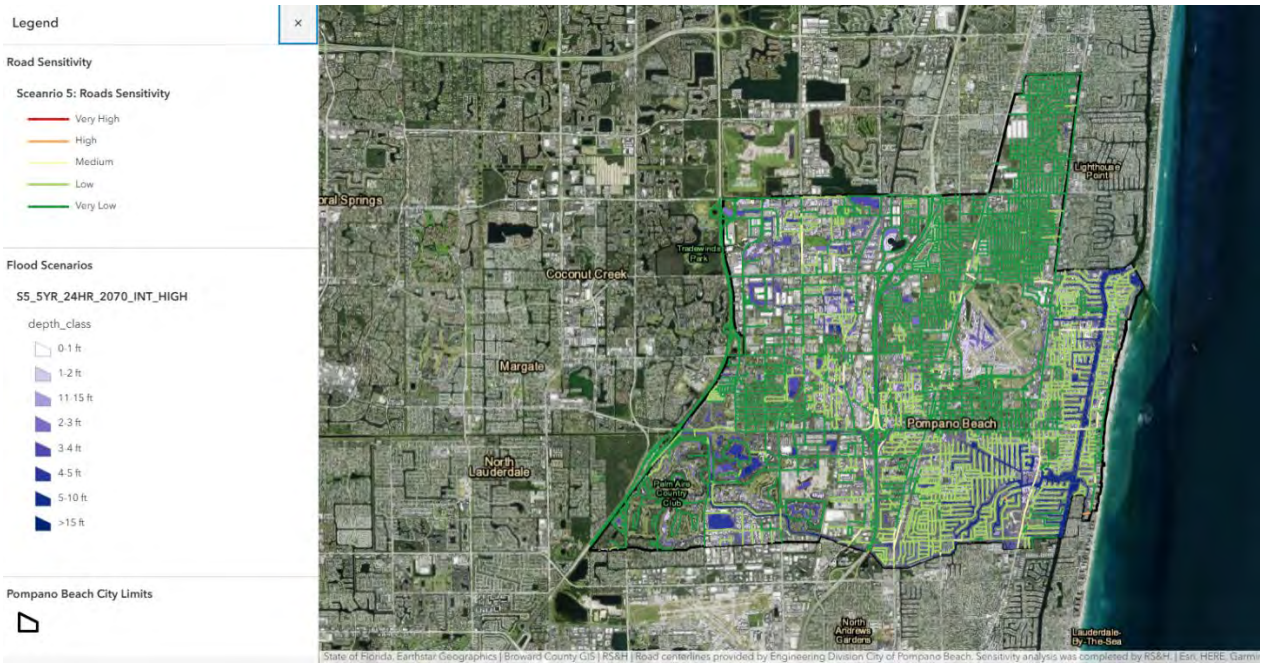

Figure 8: City Roadway Sensitivity under Scenario 5 (RS&H)

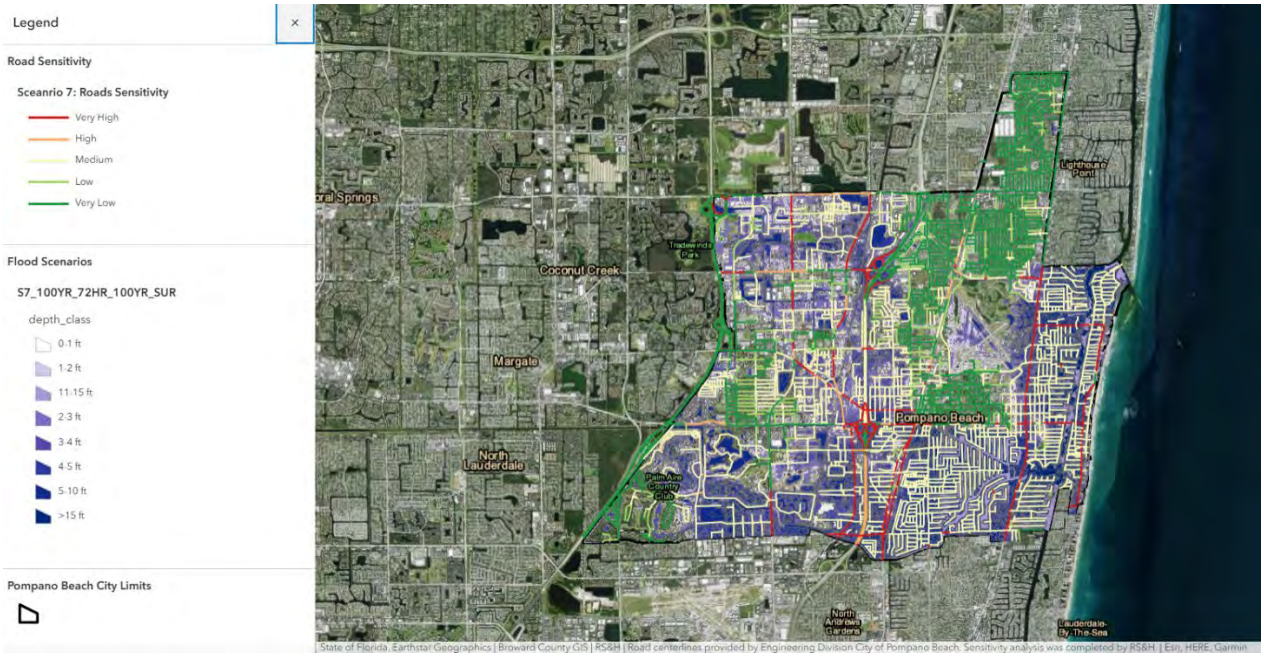

Figure 9: City Roadway Sensitivity under Scenario 7 (RS&H)

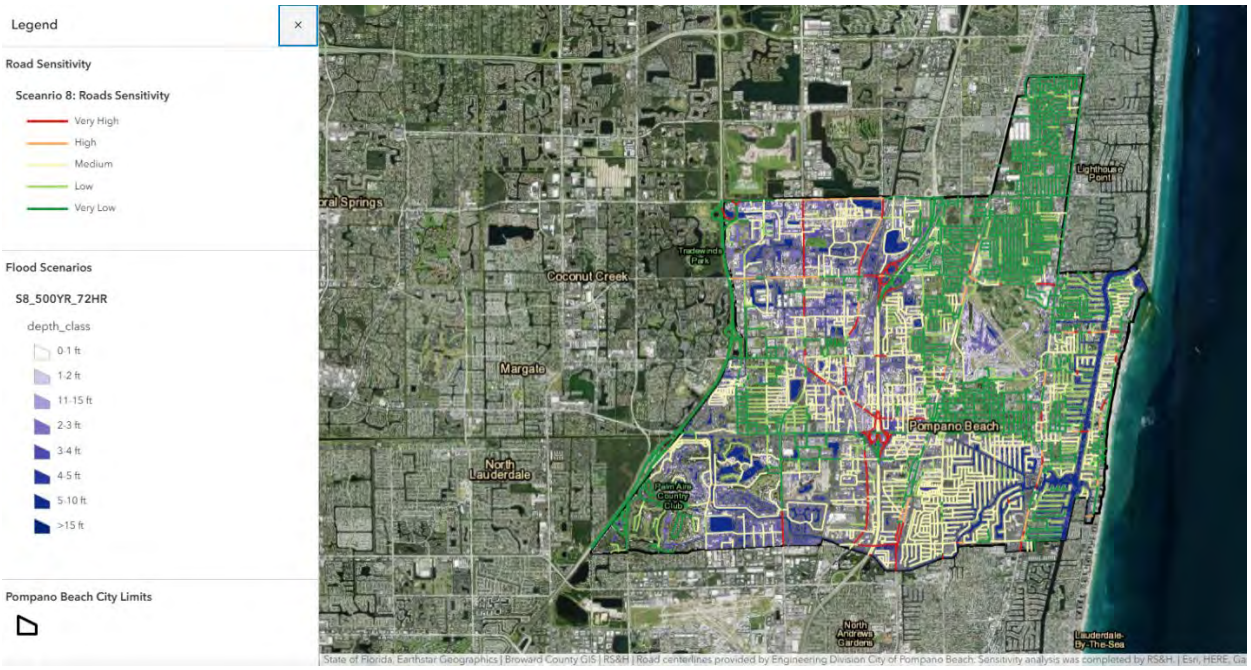

Figure 10: City Roadway Sensitivity under Scenario 8 (RS&H)

Appendix F: References

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