RESOLUTION NO. 25-58

A RESOLUTION ADOPTING THE FUTURE FLOOD RISK ADAPTATION PLAN TO ENHANCE COMMUNITY RESILIENCE AND INFORM LONG-TERM PLANNING; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Atlantic Beach is experiencing increased flood risks due to sea level rise, more intense rainfall events, tidal flooding, and storm surge, which threaten infrastructure, natural systems, and public safety; and

WHEREAS, the State of Florida, through Section 380.093, Florida Statutes, requires and supports the development of data-driven strategies for reducing vulnerability to flooding and sea level rise through the Resilient Florida Program; and

WHEREAS, the Future Flood Risk Adaptation Plan Title provides a comprehensive assessment of projected future flood risks, identifies vulnerable assets, and recommends adaptive strategies to improve the resilience of the City's infrastructure, natural systems, and built environment; and

WHEREAS, the Plan was developed in coordination with stakeholders, technical experts, and the community and reflects the best available science, including sea level rise projections, flood models, and asset exposure analysis; and

WHEREAS, the Future Flood Risk Adaptation Plan aligns with and supports the Coastal Vulnerability Assessment and other resilience-related initiatives undertaken by [Jurisdiction], and serves as a critical tool to guide capital improvements, land use decisions, emergency preparedness, and policy development; and

WHEREAS, approval of this Plan positions the City to access funding through the Resilient Florida Grant Program and other state and federal resources for resilience planning and infrastructure adaptation;

NOW THEREFORE, be it resolved that:

SECTION 1. The City Commission of the City of Atlantic Beach hereby adopts the Future Flood Risk Adaptation Plan (attached as Exhibit A) as a strategic framework for addressing future flood hazards and enhancing the community's climate resilience. This assessment shall be used to inform updates to the 2045 Comprehensive Plan, Land Development Regulations, Capital Improvements Plan, and emergency preparedness and response plans. The City shall periodically review and update the Plan to reflect new data, projections, and community priorities, and to ensure continued compliance with Section 380.093, Florida Statutes. The adoption of this assessment qualifies the City for continued participation in the Resilient Florida Program and future state resilience funding opportunities.

SECTION 2. This Resolution shall take effect immediately upon the adoption date below.

ADOPTED by the City of Atlantic Beach on this 14th day of July 2025.

ATTEST:

Ladayija Nichols, Deputy City Clerk

Curtis Ford, Mayor

Approved as to form and correctness:

Jason Gabriel, City Attorney

Exhibit A

Future Flood Risk Adaptation Plan

Updated
July 2025

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Executive Summary

Coastal communities in Florida are already experiencing the effects of sea-level rise (SLR), stronger coastal storms, and more intense precipitation events. As sea levels are projected to rise at an accelerating rate in the coming years and decades, increases in flood frequency and flood depth in coastal areas are expected, which could lead to increased flood insurance costs, market value declines, and property damage. As a low-lying coastal community bordering the Atlantic Ocean on the east and the Intracoastal Waterway (ICW) to the west, Atlantic Beach is especially vulnerable to storm surge, rainfall flooding, nuisance flooding, and SLR.

Atlantic Beach completed a Coastal Vulnerability Assessment in 2019 that was updated in 2021.. Since then, state regulations have been introduced to standardize these assessments, Section 380.93 (F.S.). In addition, our modeling capabilities have significantly improved. In this 2025 update, projected SLR, nuisance flooding, and 100-year recurrence interval flood risk areas were modeled for the 25- and 55-year future scenarios. These models were then used to assess potential risks to property, structures, and infrastructure and to identify focus areas within the City. A vulnerability assessment such as this is a key step in the adaptation planning process because the findings are used to inform the strategies discussed in this Plan. Further, a vulnerability assessment fulfills a statutory requirement for designating Adaptation Action Areas (AAAs) and forms the scientific basis for complying with the “Peril of Flood” statutory requirement.

An Adaptation Plan identifies goals and strategies to best minimize risks and establishes a process to implement those strategies. Becoming a more resilient community is not a one-time process of planning and implementing. Rather, it is a continual process that will forever be a part of the City’s future. According to the National Oceanic and Atmospheric Administration (NOAA), the ultimate goal of an Adaptation Plan is to create coastal communities that are organized to take action, have the tools to take action, and take action to plan for and adapt to the impacts of SLR and climate change. This Adaptation Plan Update is the result of the first iteration of the City’s adaptation planning process. This Plan contains general recommendations for adaptation strategies to be applied to exposed areas of the City as well as a recommended implementation schedule. Subsequent iterations of this living document will be completed after solicitation of public input and will contain additional objective data, more specific strategies, and updated implementation schedules as appropriate.

This project was made possible by a grant provided by the Florida Department of Environmental Protection’s (FDEP) Resilient Coastlines program and a Community Development Block Grant Mitigation Program grant provided by the Florida Department of Commerce. City of Atlantic Beach staff provided content along with technical support from Jones Edmunds & Associates, Inc.

1.0 Background

1.1 Location and History

The City of Atlantic Beach is one of three small coastal communities in northeast Florida that make up the *Beaches* of Jacksonville. The City is approximately 4 square miles in size with a population of around 14,000 and is between the Atlantic Ocean on the east and the San Pablo Creek/Atlantic ICW on the west. Atlantic Beach is a near fully-developed municipality where the predominant land use is residential consisting of stable and well-established neighborhoods.

As a low-lying coastal community, Atlantic Beach is especially vulnerable to flood risks as experienced during Hurricane Irma, Hurricane Matthew, Tropical Storm Nicole and the November 2015 Nor'easter. Additionally, most of the City was developed before modern stormwater regulations for flood protection, which has contributed to flooding issues in the City. Understanding these existing and potential hazards, the City, with the assistance from the Florida Department of Environmental Protection (FDEP) Resilient Coastline program, completed a vulnerability assessment in 2019 and updates in 2021 and 2025, which will inform this Adaptation Plan.

1.2 Sea-Level Rise (SLR) Trend

Scientists from around the world have been studying climate change and the resulting sea-level rise (SLR) impacts for decades. Today, multiple sources of data are available to predict realistic scenarios of future sea levels and their impacts on coastal communities. These projections are generally based on global climate models (GCMs) that use assumptions regarding future human behavior with respect to greenhouse gas emissions. On average, the sea level has risen globally by approximately 8 inches since scientific recordkeeping began in 1880. This rate has increased in recent decades to a little more than an inch per decade. Global average sea level has risen by approximately 7 to 8 inches (16 to 21 centimeters [cm]) since 1900, with around 3 inches occurring since 1993. In addition to the global average SLR, local SLR – sometimes called *relative SLR* – happens at different rates in different places. Local SLR is affected by the global SLR, but also by local land motions and the effects of tides, currents, and winds.

Figure 1-1 shows an increase in the global average sea level since 1880 in inches. The blue line, which shows tide-gauge data, becomes steeper in more recent decades. This indicates an increasing rate of change. The surrounding light-blue shaded area shows the upper and lower 95-percent confidence intervals, and the orange line shows sea level as measured by satellites for comparison from 1993 through 2020 (US Global Change Research Program, 2017). As sea levels have risen, the incidence of nuisance flooding or *sunny day* flooding during spring-tide events at certain times of the year has increased five- to tenfold since the 1960s in several US coastal cities, and rates of increase at over 25 long-term gage locations on the Atlantic and Gulf coasts are accelerating. In Atlantic Beach, nuisance flooding resulting in overtopped roads is occurring now in areas of Atlantic Beach such as Dutton Island Road and West Plaza. The closest National Oceanic and Atmospheric Administration (NOAA) primary tidal gauge to Atlantic Beach is at the Mayport Bar Pilot's Dock (NOAA tide gauge No. 8720218) near the ferry slip. Figure 1-2 depicts the relative change in sea level at the Mayport Bar Pilot's Dock over the 95-year history of this station. The current local rate of sea-level change is approximately 1 inch every decade (https://tidesandcurrents.noaa.gov/sltrends/).

Although the rate of change in SLR is uncertain, sea level is certainly rising in our area. As sea levels rise, incidents of nuisance flooding will increase, and flooding due to severe weather events will affect larger areas of the City. To aid in planning and assessing the City's potential vulnerability under future scenarios with higher sea levels, the City conducted a rigorous technical analysis to determine what those effects may be and how they will impact residents and critical infrastructure.

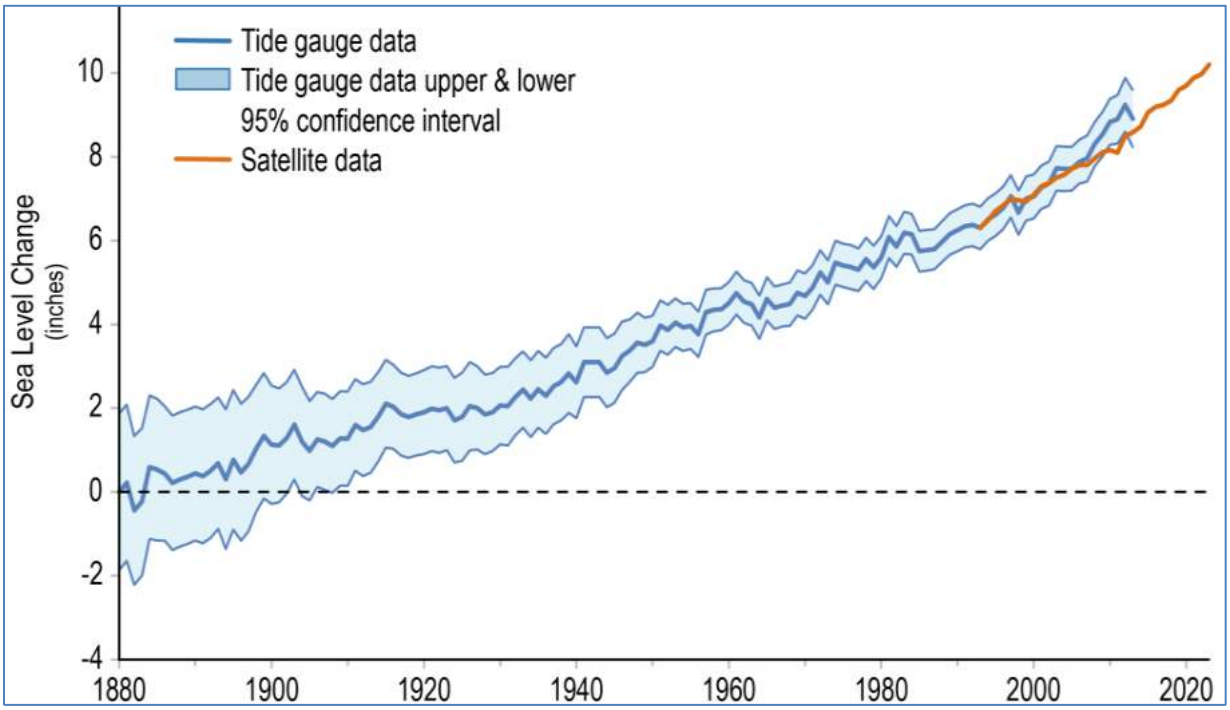


Figure 1-1 – Global Change in Sea Levels

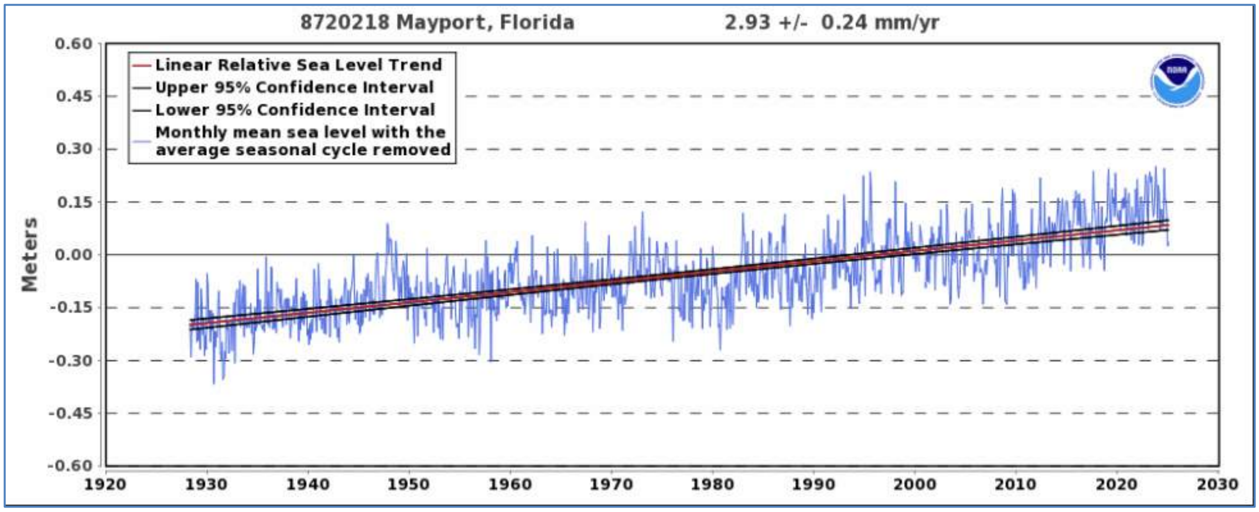


Figure 1-2 – Sea Level Trends at Mayport Bar Pilots Dock

1.3 Community Resilience

Resiliency is the ability to collaboratively prepare for, prevent, absorb, recover from, and more equitably adapt for damage from chronic stressors (i.e., aging infrastructure and SLR) and adverse events (i.e., hurricanes, coastal storms, and flooding). Resiliency in coastal communities such as Atlantic Beach is especially important due to high population densities and coastal hazards. A community that is informed and prepared will be more resilient and have a greater opportunity to rebound quickly after an adverse event.

1.4 General Adaptation Planning

An Adaptation Plan is a sound and sensible method for Florida's coastal communities to develop and enhance their strategies for protecting coastal populations and infrastructure. An Adaptation Plan identifies goals and strategies to best minimize risks and establishes a process to implement those strategies. According to NOAA, the ultimate goal of an Adaptation Plan is to create coastal communities that are organized to take action, have the tools to take action, and take action to plan for and adapt to the impacts of SLR and climate change. A community can select from a wide range of strategies in the following categories: Protection, Accommodation, Strategic Relocation, Avoidance, and Procedural.

1.4.1 Protection

Protection strategies involve both hard and soft (*gray* or *green*) structurally defensive measures to mitigate impacts of current and future flooding to maintain existing development. Examples such as seawalls, revetments, and levees are examples of hard or *gray* protection strategies, and examples such as beach renourishment and living shorelines are examples of soft or *green* strategies.

1.4.2 Accommodation

Accommodation strategies do not act as a barrier to inundation but rather alter the design, construction, and use of structures to handle periodic flooding. Examples include elevating structures above flood stage and stormwater retrofits that improve drainage or using natural features to soak up or store water and runoff (i.e., green infrastructure).

1.4.3 Strategic Relocation

Strategic relocation strategies consist of relocating existing development to safer areas through voluntary or incentivized measures. Examples include redevelopment regulations, home buyout programs, and rolling easements.

1.4.4 Avoidance

Avoidance strategies involve guiding new development away from vulnerable areas to safer, more appropriate areas. Such measures include transfer of development rights, land conservation, and increased setbacks/buffers.

1.4.5 Procedural

Procedural strategies aim to generate vulnerability and adaptation information, increase awareness of vulnerabilities and adaptation options, or incorporate such information into plans or policies. Examples include vulnerability assessments, community outreach and education activities, new Comprehensive Plan language addressing SLR, and real estate disclosures.

2.0 Legal Context

2.1 Comprehensive Planning

Florida Statutes (F.S.) require every municipality in Florida to maintain a comprehensive plan, which *shall provide the principles, guidelines, standards and strategies for the orderly and balanced future economic, social, physical, environmental, and fiscal development of the area…* (163.3177(1), F.S.). Comprehensive Plans contain different *elements*, some of which are required by the state including a Future Land Use Element and a Conservation and Coastal Management Element.

The Future Land Use Element, according to F.S., *shall establish the long-term end toward which land use programs and activities are ultimately directed*. This and several additional statutes provide a solid legal basis for adding to or revising the Goals, Objectives, and Policies of the Future Land Use Element for adaptation purposes. For example, statutory provisions discouraging urban sprawl address protecting and conserving natural resources such as wetlands, beaches, and floodplains.

The Conservation and Coastal Management Element is required by F.S. to address SLR. Senate Bill (SB) 1094, enacted in 2015, requires coastal localities to include a redevelopment component within this element and specified that the principles, strategies, and engineering solutions described in the redevelopment component must address flood risk arising from several sources, including SLR. The redevelopment component is the logical place to include guidelines and restrictions that do not take effect until they are triggered by an event, such as flooding of a particular depth. SB 1094's requirements provide communities with a good reason to adopt such measures and also with a potent tool for inoculating restrictions on development against takings claims.

Comprehensive Plans must be informed by analysis of relevant and appropriate data, which must be gathered from professionally accepted sources or generated by the local government so long as the methodologies for gathering data are professionally accepted. Florida law also requires that changes to the Comprehensive Plan must be supported by analysis and that such analysis must reflect reasonable and proportionate applications of the data cited. Scientific certainty is not a required feature of supporting data or their analysis. This flexibility means that the City's Coastal Vulnerability Assessment will not operate as a *floor* or *ceiling* for planning purposes. If the City refers to the Vulnerability Assessment as supporting particular language or parameters, the City will only need to articulate a logical link between the Assessment and the action.

Planning timeframes also changed under SB 1094 in 2015 by allowing localities to incorporate additional planning periods for specific components or projects rather than be limited to the 5- and 10-year periods previously required. This change has vital implications for Plans involving assets or facilities whose useful life exceeds 10 years and whose location makes them vulnerable to SLR. Local governments can now ensure SLR projections inform their Plans for such infrastructure designs, planning restrictions, and capital investments. The University of Florida's

Conservation Clinic drafted model language to ensure adaptation planning employs an appropriate timeframe:

> *Policy 1.2.1: [Planning Horizon] Utilize a (__) year planning horizon when considering the adoption of any protection, accommodation, and managed retreat strategy within the City/County.*

The 2011 Comprehensive Planning Act authorized localities to designate Adaptation Action Areas (AAAs), which are locations *that experience coastal flooding due to extreme high tides and storm surge and that are vulnerable to the related impacts of rising sea levels.* This designation is to prioritize funding and planning in these vulnerable areas.

2.1 Litigation Risk

As SLR shifts the operations of local government, the result is potentially a double-edged sword situation regarding litigation risk. If local governments act to address SLR, they could be sued by property owners claiming injury from limitations on the property's use or adverse effects to property values. On the other hand, local governments could also be sued for failing to address SLR.

The Takings Law protects private-property owners from government actions that fail to provide them with *just compensation* for the condemnation or appropriation of their real property or for regulations that deprive their real property of all or almost all of its use and economic value. In Florida, two sources of Takings Law are available: the Fifth Amendment to the US Constitution and the Bert Harris Private Property Rights Protection Act. The Takings Law can be complex and unpredictable in its application to particular cases and the source of highly fact-specific legal disputes.

Local governments will face challenges legally when implementing particular adaptation strategies. However, many state and local governments already use a multitude of strategies to manage development in their communities. By using existing strategies in new ways, governments may be able to minimize the complexities of adaptation.

3.0 Coastal Vulnerability

Given the location of the City of Atlantic Beach between the AICW and the Atlantic Ocean and its relatively low elevation, certain areas of the City are particularly vulnerable to SLR. The City of Atlantic Beach Coastal Vulnerability Assessment was completed in June 2019, updated in April 2021 to include City-owned water and wastewater infrastructure outside the City limits, and updated in July 2025 to comply with data standards set in Section 380.093, F.S. The Vulnerability Assessment identified areas of the City that may be subject to increased flooding due to SLR.

The Coastal Vulnerability Assessment also identified assets that could be impacted such as buildings, residences, and critical infrastructure. This section describes the exposure of these assets to SLR as well as their sensitivity to this exposure.

3.1 Exposure

For coastal flooding, exposure is defined as the impact to an asset from extreme coastal storm flooding and nuisance flooding using the SLR scenarios identified in the Coastal Vulnerability Assessment. Extreme coastal storm flooding in the context of this analysis are 100-year storm events caused by a temporary increase in water levels due to a combination of high tides, storm surge, waves, and rainfall. Nuisance flooding is defined as water levels expected at least once per year that are 1 foot greater than the mean higher high-water level. Appendix A to this Plan provides maps depicting exposure under these conditions for current and future scenarios.

The coastal flooding analysis completed for the Coastal Vulnerability Assessment included flooding from storm surge as well as rain-induced flooding for predicted sea levels in 25, 50, and 100 years. The results of this analysis identified the potential exposure of property and critical infrastructure within the study area to flooding during a 100-year storm event. Table 3-1 provides the results of the exposure analysis for the 25- and 55-year scenarios.

Table 3-1 – Exposure of Property by Scenario

2050 Intermediate-Low Scenarios	Number of Parcels Impacted (% of All Parcels)	Number of Buildings on Impacted Parcels	Land Value of Impacted Parcels	Building Value of Impacted Parcels	Taxable Value of Impacted Parcels
Nuisance Flooding	625 (10%)	738	$290,351,970	$269,609,632	$282,169,878
Storm Surge	701 (11%)	803	$234,070,885	$224,527,108	$230,900,463

2050 Intermediate Scenarios	Number of Parcels Impacted (% of All Parcels)	Number of Buildings on Impacted Parcels	Land Value of Impacted Parcels	Building Value of Impacted Parcels	Taxable Value of Impacted Parcels
Nuisance Flooding	779 (12%)	667	$303,272,940	$280,466,531	$293,224,628
Storm Surge	776 (12%)	887	$255,644,673	$241,941,745	$248,670,883

2080 Intermediate-Low Scenarios	Number of Parcels Impacted (% of All Parcels)	Number of Buildings on Impacted Parcels	Land Value of Impacted Parcels	Building Value of Impacted Parcels	Taxable Value of Impacted Parcels
Nuisance Flooding	842 (13%)	947	$360,909,500	$326,838,789	$340,582,741
Storm Surge	1,291 (21%)	1,200	$420,541,921	$356,443,699	$365,651,140

2080 Intermediate Scenarios	Number of Parcels Impacted (% of All Parcels)	Number of Buildings on Impacted Parcels	Land Value of Impacted Parcels	Building Value of Impacted Parcels	Taxable Value of Impacted Parcels
Nuisance Flooding	1,276 (20%)	1167	$489,165,039	$424,150,388	$439,807,776
Storm Surge	1,736 (27%)	1,833	$707,341,778	$589,529,782	$605,611,756

3.2 Sensitivity

Although the assets discussed above will potentially be exposed to flooding, some will be more sensitive to exposure than others. In this context, sensitivity is how assets identified in the exposure analysis respond or function during and after a flood impact. For example, a sewer pump station can be sensitive to flood waters if the electrical components become inundated, although a roadway that is flooded is less likely to suffer damage and is therefore less sensitive.

3.3 Ranking

The Coastal Vulnerability Assessment mapped critical assets within the City as well as water and wastewater assets that the City of Atlantic Beach owns and operates, that are outside the City limits. Tables 3-2, 3-3, and 3-4 were developed from this mapping data and summarize the projected vulnerability of critical facilities for the 2050 and 2080 planning horizons.

The degree of exposure of each asset was then combined with a qualitative assessment of the sensitivity and consequence of flooding of each exposed asset based on considerations unique to each asset category. The resulting matrix and ranking of critical assets are depicted in Table 3-5. Figure 3-1 graphically depicts the ranking of each critical roadway section identified in Table 3-5.

Table 3-2 – Percentage of Assets Flooded by Asset Type for Tidal Flooding Scenarios

Asset Type	Total Number of Assets	Tidal Flooding					Tidal Flood Days				
		Tidal MHHW+2' Existing Conditions	Tidal MHHW+2' Int-Low 2050	Tidal MHHW+2' Int 2050	Tidal MHHW+2' Int-Low 2080	Tidal MHHW+2' Int 2080	Tidal Flood Days Existing	Tidal Flood Days Int-Low 2050	Tidal Flood Days Int 2050	Tidal Flood Days Int-Low 2080	Tidal Flood Days Int 2080
Affordable Public Housing	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Colleges and Universities	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Community Centers	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Conservation Lands	5	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Day Cares	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Disaster Debris Management Sites	3	33%	33%	33%	33%	33%	33%	33%	33%	33%	33%
Disaster Recovery Centers	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Emergency Operation Centers	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fire Stations	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Health Care Facilities	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Historical Cultural Site	1	0%	100%	100%	100%	100%	0%	100%	100%	100%	100%
Law Enforcement Facilities	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lift Stations	33	3%	6%	9%	18%	30%	3%	6%	9%	18%	30%
Local Government Facilities	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Logistical Staging Areas	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parks	16	50%	50%	50%	50%	56%	50%	50%	50%	50%	56%
Radio Communications Towers	4	0%	25%	25%	25%	25%	0%	25%	25%	25%	25%
Risk Shelter Inventory	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Roads	83	0%	0%	1%	7%	16%	0%	0%	1%	7%	16%
Schools	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Solid and Hazardous Waste Facilities	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surface Waters	38	47%	50%	50%	55%	66%	47%	50%	50%	55%	66%
Waste Water Facilities	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Water Supply Wells	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Water Treatment Plants	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Wetlands	109	83%	84%	84%	86%	90%	83%	84%	84%	86%	90%

*Table 3-3 –**Percentage of Assets Flooded by Asset Type for Rainfall Flooding Scenarios***

Asset Type	Total Number of Assets	Rainfall Inundation									
		Rainfall 100-YR/24-HR Existing Conditions	Rainfall 500-YR/24-HR Existing Conditions	Rainfall 100-YR/24-HR Int-Low 2050	Rainfall 500-YR/24-HR Int-Low 2050	Rainfall 100-YR/24-HR Int 2050	Rainfall 500-YR/24-HR Int 2050	Rainfall 100-YR/24-HR Int-Low 2080	Rainfall 500-YR/24-HR Int-Low 2080	Rainfall 100-YR/24-HR Int 2080	Rainfall 500-YR/24-HR Int 2080
Affordable Public Housing	10	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Colleges and Universities	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Community Centers	4	0%	0%	0%	25%	0%	25%	0%	25%	25%	25%
Conservation Lands	5	60%	60%	60%	60%	60%	60%	60%	60%	60%	60%
Day Cares	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Disaster Debris Management Sites	3	0%	33%	33%	33%	33%	33%	33%	33%	33%	33%
Disaster Recovery Centers	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Emergency Operation Centers	1	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%
Fire Stations	1	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%
Health Care Facilities	10	0%	0%	0%	10%	0%	10%	0%	20%	0%	20%
Historical Cultural Site	1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Law Enforcement Facilities	1	0%	0%	0%	100%	0%	100%	0%	100%	0%	100%
Lift Stations	33	30%	42%	42%	42%	42%	45%	42%	48%	42%	48%
Local Government Facilities	3	0%	0%	0%	67%	0%	67%	0%	67%	33%	67%
Logistical Staging Areas	2	0%	0%	0%	50%	0%	50%	50%	50%	50%	50%
Parks	16	50%	50%	50%	50%	50%	50%	50%	50%	56%	56%
Radio Communications Towers	4	0%	0%	0%	25%	0%	25%	0%	25%	25%	25%
Risk Shelter Inventory	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Roads	83	45%	54%	53%	55%	53%	57%	55%	58%	55%	58%
Schools	3	0%	0%	0%	67%	0%	67%	0%	67%	0%	100%
Solid and Hazardous Waste Facilities	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Surface Waters	38	63%	63%	63%	63%	63%	66%	63%	66%	63%	66%
Waste Water Facilities	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Water Supply Wells	6	0%	0%	0%	0%	0%	0%	0%	17%	0%	17%
Water Treatment Plants	3	0%	0%	0%	0%	0%	0%	0%	33%	0%	33%
Wetlands	109	36%	36%	36%	36%	36%	36%	36%	36%	36%	36%

*Table 3-4 – **Percentage of Assets Flooded by Asset Type for Surge Flooding Scenarios***

Asset Type	Total Number of Assets	Storm Surge Flooding (SWEL)				
		Storm Surge 100-YR Existing Conditions	Storm Surge 100-YR Int-Low 2050	Storm Surge 100-YR Int 2050	Storm Surge 100-YR Int-Low 2080	Storm Surge 100-YR Int 2080
Affordable Public Housing	10	0%	0%	0%	0%	0%
Colleges and Universities	1	0%	0%	0%	0%	0%
Community Centers	4	0%	0%	0%	0%	0%
Conservation Lands	5	100%	100%	100%	100%	100%
Day Cares	2	0%	0%	0%	0%	0%
Disaster Debris Management Sites	3	0%	0%	0%	0%	0%
Disaster Recovery Centers	1	0%	0%	0%	0%	0%
Emergency Operation Centers	1	0%	0%	0%	0%	0%
Fire Stations	1	0%	0%	0%	0%	0%
Health Care Facilities	10	0%	0%	0%	0%	0%
Historical Cultural Site	1	100%	100%	100%	100%	100%
Law Enforcement Facilities	1	0%	0%	0%	0%	0%
Lift Stations	33	0%	0%	0%	0%	0%
Local Government Facilities	3	0%	0%	0%	0%	0%
Logistical Staging Areas	2	0%	0%	0%	0%	0%
Parks	16	38%	38%	38%	50%	50%
Radio Communications Towers	4	0%	0%	0%	0%	0%
Risk Shelter Inventory	1	0%	0%	0%	0%	0%
Roads	83	13%	20%	24%	34%	47%
Schools	3	0%	0%	0%	0%	0%
Solid and Hazardous Waste Facilities	2	0%	0%	0%	0%	0%
Surface Waters	38	50%	58%	58%	58%	61%
Waste Water Facilities	1	0%	0%	0%	0%	0%
Water Supply Wells	6	0%	0%	0%	0%	0%
Water Treatment Plants	3	0%	0%	0%	0%	0%
Wetlands	109	84%	87%	87%	87%	88%

Table 3-5 – Ranking of Exposed Roadway Segments

Segment ID	Segment Length (ft)	Asset Name	Regionally Significant	Asset Elevation	Exposure / Sensitivity Raw Score	Exposure / Sensitivity Score	Environmental	Social	Economic	Flood Impact Score	Regional Significance	Total Score	Priority Rating
A1	949	MAIN ST	No	9.39	18	0.45	0	5	5	6.7	0	3	Low
A2	517	MAIN ST	No	7.95	81	2.025	0	5	5	6.7	0	13.5	High
A3	184	MAIN ST	No	7.94	81	2.025	0	5	5	6.7	0	13.5	High
A4	326	MAIN ST	No	6.9	54	1.35	0	5	5	6.7	0	9	Medium
A5	691	MAIN ST	No	5.19	240	6	0	5	5	6.7	0	40	Highest
A6	695	MAIN ST	No	6.48	72	1.8	0	5	5	6.7	0	12	High
A7	684	MAIN ST	No	6.16	81	2.025	0	5	5	6.7	0	13.5	High
A8	696	MAIN ST	No	5.35	114	2.85	0	5	5	6.7	0	19	High
A9	688	MAIN ST	No	6.38	57	1.425	0	5	5	6.7	0	9.5	Medium
B1	650	DUTTON DR	No	5.63	108	2.7	0	5	5	6.7	0	18	High
B2	1719	DUTTON DR	No	9.24	36	0.9	0	5	5	6.7	0	6	Low
B3	425	CHURCH RD	No	8.46	72	1.8	0	5	5	6.7	0	12	High
B4	925	CHURCH RD	No	7.79	84	2.1	0	5	5	6.7	0	14	High
B5	647	DUTTON DR	No	11.15	3	0.075	0	5	5	6.7	0	0.5	Lowest
C1	244	LEVY RD	No	5.57	108	2.7	0	5	5	6.7	0	18	High
C2	250	LEVY RD	No	6.38	48	1.2	0	5	5	6.7	0	8	Medium
C3	773	LEVY RD	No	7.74	60	1.5	0	5	5	6.7	0	10	Medium
C4	2165	LEVY RD	No	9.07	27	0.675	0	5	5	6.7	0	4.5	Low
E2	549	PLAZA DR	No	8.31	60	1.5	0	5	5	6.7	0	10	Medium
E3	2427	PLAZA DR	No	9.19	24	0.6	0	5	5	6.7	0	4	Low
E4	328	PLAZA DR	No	7.68	30	0.75	0	5	5	6.7	0	5	Low
E5	624	PLAZA DR	No	6.16	174	4.35	0	5	5	6.7	0	29	Highest
E6	2443	PLAZA DR	No	7.97	66	1.65	0	5	5	6.7	0	11	Medium
F1	3586	SEMINOLE RD	No	8.59	72	1.8	0	5	5	6.7	0	12	High
F2	836	SEMINOLE RD	No	8.29	72	1.8	0	5	5	6.7	0	12	High
F3	1660	SEMINOLE RD	No	9.55	36	0.9	0	5	5	6.7	0	6	Low
F4	442	SEMINOLE RD	No	9.51	48	1.2	0	5	5	6.7	0	8	Medium
F5	803	SEMINOLE RD	No	8.89	39	0.975	0	5	5	6.7	0	6.5	Low
F6	761	SEMINOLE RD	No	8.1	45	1.125	0	5	5	6.7	0	7.5	Medium
F7	909	SEMINOLE RD	No	7.62	66	1.65	0	5	5	6.7	0	11	Medium
F8	741	SEMINOLE RD	No	7.88	45	1.125	0	5	5	6.7	0	7.5	Medium
F9	619	SEMINOLE RD	No	8.53	30	0.75	0	5	5	6.7	0	5	Low
F10	969	SEMINOLE RD	No	6.3	150	3.75	0	5	5	6.7	0	25	Highest
F11	213	SEMINOLE RD	No	7.03	72	1.8	0	5	5	6.7	0	12	High

F12	437	SEMINOLE RD	No	7.62	30	0.75	0	5	5	6.7	0	5	Low
F13	809	SEMINOLE RD	No	8.34	30	0.75	0	5	5	6.7	0	5	Low
F14	931	SEMINOLE RD	No	8.48	10	0.25	0	5	5	6.7	0	1.666666667	Lowest
G1	1045	SELVA MARINA DR	No	5.29	168	4.2	0	5	5	6.7	0	28	Highest
G2	2967	SELVA MARINA DR	No	6.24	132	3.3	0	5	5	6.7	0	22	High
G3	6103	SELVA MARINA DR	No	5.27	210	5.25	0	5	5	6.7	0	35	Highest
G4	2096	SELVA MARINA DR	No	7.6	48	1.2	0	5	5	6.7	0	8	Medium
H1	2025	SHERRY DR	No	6.24	150	3.75	0	5	5	6.7	0	25	Highest
H2	1185	SHERRY DR	No	7.82	30	0.75	0	5	5	6.7	0	5	Low
I2	263	MAYPORT RD	Yes	10.52	6	0.15	0	5	5	6.7	5	1.75	Lowest
I3	269	MAYPORT RD	Yes	10	36	0.9	0	5	5	6.7	5	10.5	Medium
I4	283	MAYPORT RD	Yes	9.51	54	1.35	0	5	5	6.7	5	15.75	High
I5	852	MAYPORT RD	Yes	9.6	54	1.35	0	5	5	6.7	5	15.75	High
I11	250	MAYPORT RD	Yes	8.93	18	0.45	0	5	5	6.7	5	5.25	Low
I12	252	MAYPORT RD	Yes	8.44	36	0.9	0	5	5	6.7	5	10.5	Medium
I13	261	MAYPORT RD	Yes	8.61	24	0.6	0	5	5	6.7	5	7	Medium
I16	738	MAYPORT RD	Yes	7.9	12	0.3	0	5	5	6.7	5	3.5	Low
J3	587	MAYPORT RD	Yes	9.55	54	1.35	0	5	5	6.7	5	15.75	High
J4	278	MAYPORT RD	Yes	9.8	36	0.9	0	5	5	6.7	5	10.5	Medium
J5	272	MAYPORT RD	Yes	10.35	18	0.45	0	5	5	6.7	5	5.25	Low
J9	257	MAYPORT RD	Yes	8.84	3	0.075	0	5	5	6.7	5	0.875	Lowest
J10	308	MAYPORT RD	Yes	8.52	6	0.15	0	5	5	6.7	5	1.75	Lowest
J11	38	MAYPORT RD	Yes	9.01	3	0.075	0	5	5	6.7	5	0.875	Lowest
J12	240	MAYPORT RD	Yes	9.03	3	0.075	0	5	5	6.7	5	0.875	Lowest

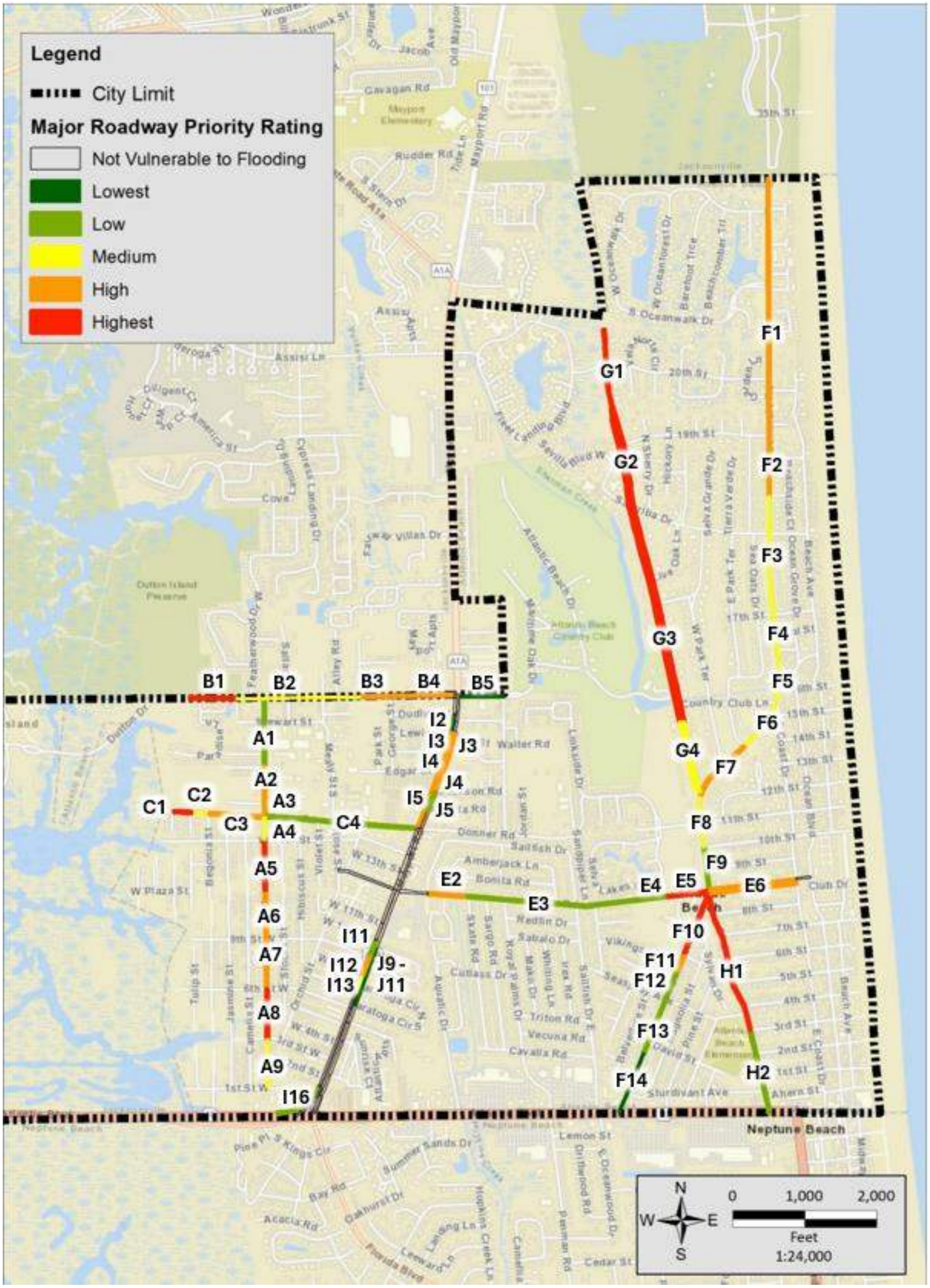


Figure 3-1 – Critical Roadway Segment Ranking

3.4 Public Input

The City conducted a public input meeting during the development of the Coastal Vulnerability Assessment to discuss the technical approach to assessing vulnerability, present the findings of the Assessment, and solicit public comments and concerns relating to current and future coastal flooding. Input from the Environmental Stewardship Committee was solicited at their March 12 and June 11 meetings.

The City presented the information to the City Commission on June 16, 2025 and conducted a public input meeting regarding adaptation planning and resiliency on June 26, 2025, to solicit input from the public and respond to comments and concerns.

In addition to local City of Atlantic Beach public meetings regarding vulnerability and adaptation planning, City staff worked closely with the City of Jacksonville (COJ) and participated in the City's Adaptation Action Area Working Group, Storm Resilience and Infrastructure Development Review Committee, and the City Council Special Committee on Resilience.

3.5 Local Priorities

The adopted 2021 priorities of the City Commission relating to adaptation planning include the following:

- Continue efforts to understand the potential impacts of local SLR and work towards improving community resilience.
- Update/adopt a long-term capital improvement plan (CIP) to include adaptation, resiliency, and stormwater.
- Ensure equitable spending throughout the community.
- Continue to foster productive partnerships with neighboring municipalities and state and local agencies.

The City is also actively working to protect natural areas that may improve storm defenses and supports the continued reauthorization of the Duval County Shore Protection Project (DCSPP) that results in periodic beach renourishment.

4.0 Adaptation Strategies

4.1 Range of Adaptation Strategies

Adaptation strategies can be implemented through regulations, policies, or capital projects and integrated into existing or new plans such as Comprehensive Plans, post-disaster redevelopment plans, CIPs, and in this case, Adaptation Plans. Adaptation strategies can be implemented to reduce exposure, reduce sensitivity, or increase adaptive capacity. The following sections describe these adaptation strategy categories and provide examples of general strategies within each category.

4.1.1 Reducing Exposure

In the context of SLR, exposure refers to the likelihood and timing of when an asset might experience flooding due to the combination of SLR and extreme rainfall and/or coastal surge events. The goal of exposure-reducing adaptation strategies is to reduce or eliminate the chances of an asset experiencing flooding in the future. This requires removing the asset from the future floodplain or altering the drainage system to limit future water levels during extreme events. Table 4-1 provides a qualitative comparison of common strategies that could be effective for reducing asset exposure to future flooding in the City.

Table 4-1 – Comparison of Exposure Reduction Strategies

Adaptation Strategy	Implementation Cost	Environmental Impact	Societal Impact	Construction Feasibility	Service Life
Retreat from Vulnerable Areas	Green	Green	Red	Green	Green
Land Acquisition/Conservation	Yellow	Green	Red	Green	Green
Seawall Improvements	Yellow	Yellow	Green	Green	Yellow
Stormwater Improvements (i.e., check valves, dams, pumps)	Red	Yellow	Green	Yellow	Yellow
Raising Critical Infrastructure (i.e., roads, buildings)	Red	Green	Green	Yellow	Green
Coastal Dune Maintenance	Red	Yellow	Yellow	Green	Red
Marsh/Vegetative Buffer Maintenance	Yellow	Green	Yellow	Yellow	Green

*Note: Green shaded boxes indicate strategies with lower costs, minimal environmental/societal impacts, relatively simple implementation, or longer service life. Yellow shaded boxes indicate strategies with moderate costs, some environmental/societal impacts, complex but feasible implementation, or moderate service life. Red shaded boxes indicate strategies with high costs, significant environmental/societal impacts, extremely complex implementation, or short service life.

4.1.2 Reducing Sensitivity

Sensitivity refers to the degree to which an asset's functionality is affected by exposure to a hazard. In this case, the hazard is flooding and the goal of sensitivity-reducing adaptation strategies is to reduce or eliminate impacts that flooding has on an asset's ability to function during or immediately after flooding. Table 4-2 qualitatively compares common strategies that could be effective for reducing asset sensitivity to future flooding in the City.

Table 4-2 – Comparison of Sensitivity Reduction Strategies

Adaptation Strategy	Implementation Cost	Environmental Impact	Societal Impact	Construction Feasibility	Service Life
Flood Proofing Water/Sewer Infrastructure	[Red]	[Green]	[Green]	[Green]	[Yellow]
Flood Proofing Emergency Service Operations (Police, Fire, City Hall)	[Yellow]	[Green]	[Green]	[Green]	[Green]
Flood Proofing Businesses and Homes	[Yellow]	[Green]	[Yellow]	[Yellow]	[Green]
Flood Recovery Strategies to Reduce Flood Durations	[Yellow]	[Green]	[Green]	[Green]	[Green]
Backup Power Generation for Critical Services (Water, Sewer, Emergency Services)	[Red]	[Green]	[Green]	[Green]	[Yellow]

*Note: Green shaded boxes indicate strategies with lower costs, minimal environmental/societal impacts, relatively simple implementation, or longer service life. Yellow shaded boxes indicate strategies with moderate costs, some environmental/societal impacts, complex but feasible implementation, or moderate service life. Red shaded boxes indicate strategies with high costs, significant environmental/societal impacts, extremely complex, or short service life.

4.1.3 Increasing Adaptive Capacity

Adaptive capacity is the ability to adjust to or live with the impacts of SLR and changes in extreme storm events. The adaptive capacity of existing infrastructure is often fairly confined to its inherent ability to be adjusted, so increasing the adaptive capacity of existing infrastructure is challenging. Strategies for increasing the adaptive capacity of a community are forward-looking and involve policies, regulations, and strategies to enhance the adaptability of a community. The following are examples of strategies to enhance adaptive capacity:

- Public Outreach and Education – As residents become more aware of future SLR and its associated flood risks, they will be more likely to support local adaptation efforts and will have the opportunity to make educated decisions that have positive impacts on the adaptability of the community.
- CIP – Local governments may choose to consider future flooding risks when developing projects in their CIP or discourage investment in projects that may be vulnerable to flood risks. The local government may also discontinue maintenance and repairs to infrastructure that is repetitively damaged and relocate or retrofit existing infrastructure to be more flood resilient.
- Pursuing Funding for Adaptation Projects – Implementing adaptation strategies can be very expensive. Several federal and state grant funding programs exist that can provide funds for implementing adaptation strategies.

- Transfer of Development Rights (TDR) – This strategy is meant to limit or reduce development within vulnerable areas by allowing one property owner to sever development rights in exchange for compensation from another property owner who would like their development rights to increase. The receiving area is then allowed to have increased density or dwelling units per acre. A TDR program serves as an incentive for a property owner to avoid developing on vulnerable property by providing compensation for lost privileges.
- Cluster Development – Cluster development encourages developers to concentrate development in upland/desirable areas on a tract of land while preserving/avoiding vulnerable areas, which maximizes protection of future structures, preserves vulnerable areas, and often saves developers money.
- Setbacks and Buffers – Setbacks and buffers are building restrictions that establish a distance from a boundary line where landowners are prohibited from building structures. These are regulatory tools that can be established through zoning and floodplain codes or conservation easements and serve to protect existing or new structures and inhabitants by allowing inland migration of shorelines and preservation of wetlands, dunes, estuaries, and other environmentally sensitive areas.
- Conservation Easements – A conservation easement is a strategy used by local governments for the permanent conservation of private lands by placing a limitation on the uses and/or allowable amount of development on a property to protect its associated resources while allowing the owner to live, retain, and develop the property with limited use. The easement can apply to all or a portion of a property. Usually, a conservation easement preserves a portion of property in its natural state.
- Floodplain Regulations – Floodplain regulations are a tool that a coastal community could amend to impose additional restrictions on development in floodplains above the National Flood Insurance Program (NFIP) minimum standards, such as *use* restrictions within the 100-year floodplain areas (only allow limited residential, recreational, or agricultural uses), and/or impose design requirements in the 500-year floodplain areas that are currently not required (elevation requirements).
- Building Codes and Standards – Building codes establish minimum requirements for building construction. Under the Florida Building Code Act, all local codes were replaced by the Florida Building Code in 2002. However, local governments may adopt more stringent regulations where local conditions warrant. Additional regulations governing construction include flood-protection regulations pursuant to NFIP and the state Coastal Construction Control Line (CCCL) permitting standards. A coastal community may evaluate applying flood-resistant code standards to currently unregulated areas that may be vulnerable to flooding in the future, such as the 500-year floodplain.
- Redevelopment Standards – Redevelopment standards are regulatory tools a community can use to limit, or even in some cases prohibit, what is allowed to be rebuilt on a property that has been damaged or destroyed by natural hazards. Communities can limit redevelopment of repetitive loss structures and/or other storm-damaged structures in highly vulnerable areas.

- Real Estate Disclosures – Governmental bodies (e.g., state or local agencies) could compile data, erosion maps, inundation models, and other relevant information and make this information accessible to potential property buyers and developers. Governments could require sellers to disclose to potential buyers that a property is in an area vulnerable to flooding.

4.2 Focus Areas for Adaptation

Predicted SLR over the next 25 years has a fair degree of certainty and less certainty beyond that. From a planning perspective and given increasing uncertainty over time, the City's adaptation planning efforts will focus on the 25-year time horizon with consideration given to the 55-year predictions. Based on the exposure and sensitivity analyses over these timeframes, the focus areas identified for adaptation planning are provided below.

4.2.1 Citywide

The City of Atlantic Beach is considered by COJ to be in an AAA. As discussed in Section 2.1, the 2011 Comprehensive Planning Act authorized localities to designate AAAs, which are locations *that experience coastal flooding due to extreme high tides and storm surge and that are vulnerable to the related impacts of rising sea levels*. COJ opted to define AAAs in Duval County as areas that are subject to inundation from a 500-year flood event or a Category 3 hurricane storm surge. NOAA predicts that virtually all of the City of Atlantic Beach could be inundated by a Category 3 storm; hence, the entire City is considered to be in an AAA.

Although no return interval is assigned to a Category 3 storm, unlike a 100-year flood event, the entire community can still be considered to have potential exposure. Accordingly, all of the City of Atlantic Beach is considered to be a focus area for adaptation primarily from a planning and policy perspective.

4.2.2 Areas West of Mayport Road

As indicated by the future 100-year flood maps shown in Figure 4-1, many residential and commercial areas west of Mayport Road are predicted to be impacted from rising sea levels. These areas are expected to be subject to the chronic condition of nuisance flooding and an increasing likelihood of inundation due to storm surge and rainfall-induced flooding during a 100-year storm event. Figure 4-2 depicts the expected extent of flooding due to the 100-year storm event in 2050.

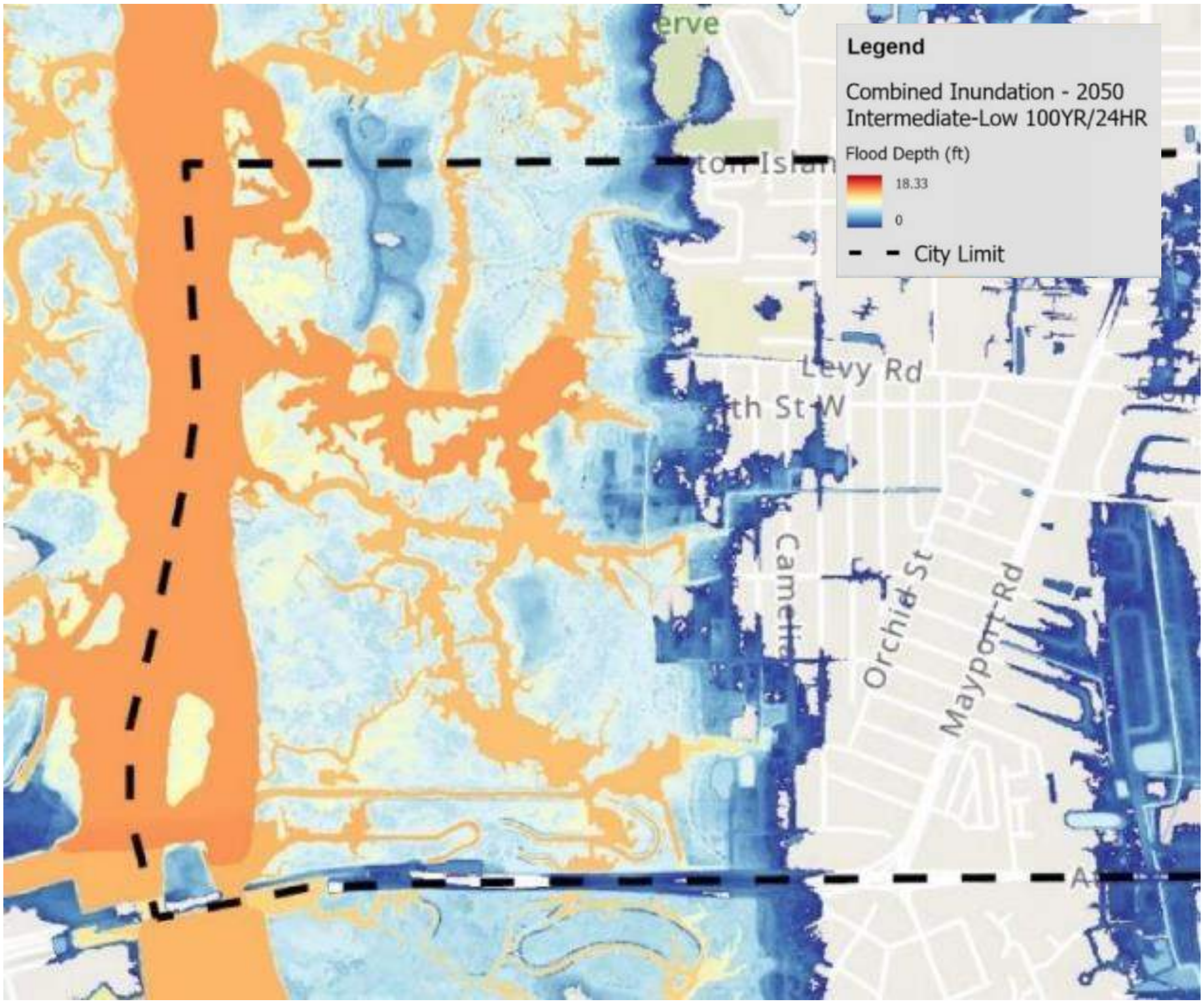


Figure 4-1 – Combined Flooding for the 100-Year Storm Event Under 2050 Intermediate-Low SLR Conditions West of Mayport Road

4.2.3 Major Drainageways

East of Mayport Road, minimizing the extent and duration of flood events depends largely on the ability of the major drainageways to manage the stormwater runoff discharging into them. Adaptation measures will be required to ensure that the major drainageways function properly and will not be adversely impacted by rising sea levels.

Figure 4-2 shows that the major drainageways serving the City include Hopkins Creek, Sherman Canal, Puckett Creek, and Sherman Creek.

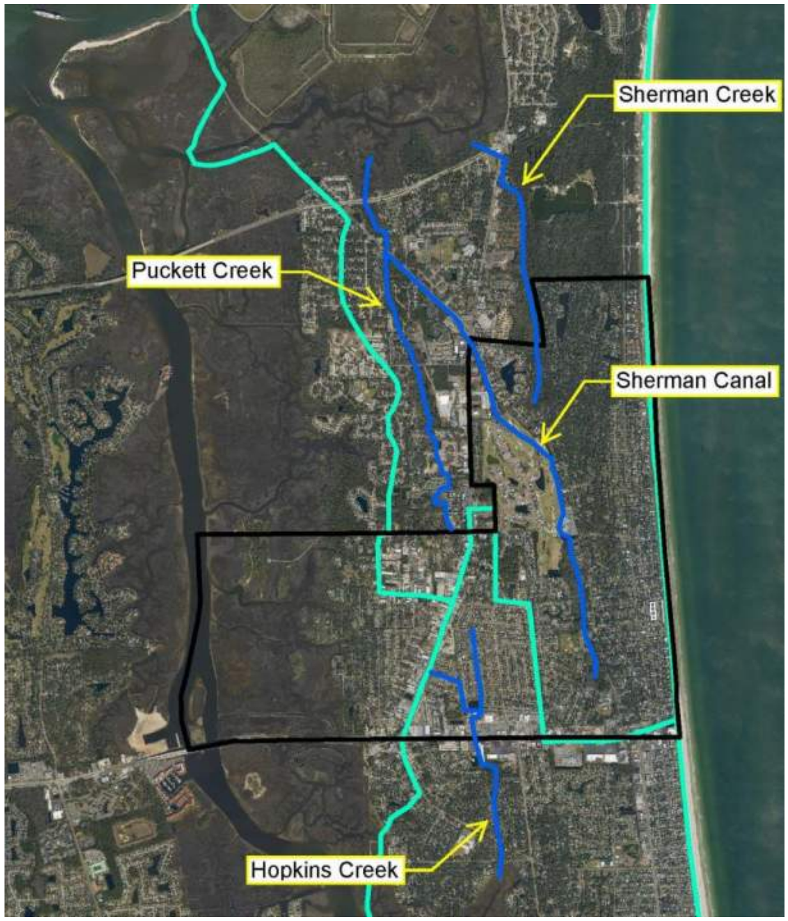


Figure 4-2 – Major Drainageways

4.2.4 Roadways

As discussed in Section 3, many of the major ingress and egress routes from the City may be affected by rising sea levels. These roadways will be considered a focus area for adaptation planning. The two busiest roads in the City are Mayport Road and Atlantic Boulevard. Both roadways are managed by the Florida Department of Transportation (FDOT), not the City of Atlantic Beach.

4.2.5 Critical Utility Infrastructure

Critical infrastructure that will be a focus area for adaptation planning to include numerous lift stations, two of the City's water plants, and four potable water wells.

4.2.6 Critical Public Facilities

Public facilities expected to be exposed to future flooding conditions will also be focus areas for adaptation planning efforts. These include City Hall, the Police and Fire Departments, and several of the City's community centers.

4.3 Current Strategies and Existing Regulations

Assessing existing strategies and regulations is recommended by the FDEP before identifying adaptation strategies and recommendations. This includes looking at the City's current plans, development regulations, and other initiatives that may be used or modified for adaptation purposes.

4.3.1 Existing Plans

Coastal Vulnerability Assessment

This assessment used existing and projected conditions to model 25-, 50-, and 100-year scenarios for SLR and future flood hazards. The models were then used to identify vulnerable areas, properties, and infrastructure.

2018 Stormwater Master Plan Update

This update built on the previous 1995, 2002, and 2012 plans and modeled existing and projected hydrologic conditions within the City, including recommended stormwater improvement projects in identified locations.

2045 Comprehensive Plan

In 2019, the City updated the Comprehensive Plan to comply with the *Peril of Flood* statute, which required local governments to incorporate SLR planning into their redevelopment policies. In addition, the Plan contains numerous goals, objectives, and policies related to adaptation.

4.3.2 Existing Development Regulations

Finished Floor Elevation (FFE)

All lots and building sites shall be developed so that habitable space is constructed at a minimum FFE of 8.5 feet above mean sea level or with 2.5 feet of freeboard (above the base flood elevation), whichever is greater.

Base Flood Elevations

Development that encroaches into a regulated floodway must demonstrate that the development will not cause any increase in base flood elevations.

Floodplain Storage

Development within the 100-year floodplain must create storage onsite to mitigate for any filling of volume onsite to accomplish *no net loss* of storage.

Onsite Storage of Stormwater

Development which increases the impervious surface on a site by more than 400 square feet must provide onsite storage of stormwater.

Impervious Surface Area

In 2019, the maximum impervious surface area for properties within residential zoning districts was reduced from 50 to 45 percent.

Grading and Drainage

All development sites must be graded so that stormwater drains to the adjacent street, existing natural element, or a City drainage structure after meeting on-site stormwater storage requirements. Except as required to meet coastal construction codes or as required to meet applicable flood zone or stormwater regulations, the elevation or topography of a development site shall not be altered.

Wetland Mitigation

Any impacted wetlands on a development site must be replaced elsewhere on the site or within the City so that no net loss of jurisdictional wetlands occurs within the City.

Wetland Buffer

New development must maintain a 50-foot buffer from jurisdictional wetlands adjacent to water bodies connected to the (ICW) and a 25-foot buffer from other jurisdictional wetlands. This buffer is reduced to 25 feet for single-family lots platted before 2002.

Special Planned Area (SPA)

An SPA zoning district may be applied for or required by the City where a proposed development has unique characteristics or special environmental features. This zoning district provides flexibility and creates opportunities for preservation (i.e., cluster development).

4.3.3 Current Initiatives

Federal Emergency Management Agency's (FEMA's) Community Rating System (CRS)

The City participates in the CRS program, which provides reductions in flood insurance premiums for cities that implement activities that exceed the minimum criteria for FEMA's National Flood Insurance Program (NFIP).

Leadership in Energy and Environmental Design (LEED) Certification

The City of Atlantic Beach became LEED for Cities certified in 2019. Cities with this certification aim to ensure a more sustainable future by creating a healthier environment.

Urban Forestry

Since 2019, over 800 trees have been planted in public spaces throughout the City. Additionally, the City is working to strengthen its tree protection ordinance to preserve and regenerate the urban canopy.

Street Sweeping and Stormwater Inlet Cleaning

Street sweeping and inlet cleaning help reduce localized flooding by removing debris that blocks drainage infrastructure.

Vulnerable Property Acquisition

Multiple properties have been purchased by the City over the years for preservation purposes including the Tide Views, Dutton Island, and River Branch Preserves. The City purchased Selva Preserve and an approximately 2-acre parcel west of Lily Street providing preservation of wetlands, maintenance of stormwater storage capacity, and storm-surge protection for adjacent properties. Additionally, the property at the eastern end of Dora Drive was purchased in 2024 with plans to use the parcel as a stormwater storage pond.

Duval County Shore Protection Project (DCSPP)

The DCSPP, which is the federal program established for beach renourishment, is critical to maintenance and restoration of beach and dune systems, providing protection to the Atlantic Ocean coastline in Duval County.

4.4 Recommended Strategies for Focus Areas

The following adaptation strategies have been developed for the identified vulnerable focus areas within the study area. These recommendations and associated timeframes are based on best available information and shall be updated as new information becomes available or additional adaptation strategies are identified.

4.4.1 Citywide

The following relate to recommended changes and updates of policies, ordinances, etc. to better help the City manage and adapt to changing vulnerability and flooding potential throughout the City. These apply to the chronic stressor of SLR and the acute stressor of a major storm event.

- Ensure that every CIP implemented by the City is examined through the lens of resilience.
- Review building and zoning codes of other Florida cities and counties for resilience and adaptation-related elements and determine if the City of Atlantic Beach’s building and zoning codes should be updated to reflect similar elements.
- Craft policies that do not disincentivize property owners from making repairs and renovations for resiliency purposes because such repairs may currently trigger a requirement for full compliance with all current codes.
- Reinforce the value of trees for absorbing stormwater runoff.
- Explore ways to disclose flood zone and prior flooding information on real estate transactions and lease agreements.
- Establish education and public engagement tools such as user-friendly websites, newsletters, social media platforms, and resource guides to reach diverse audiences.

- Establish a community relief center to enable and assist citizens to deal with stressors related to water inundation.

- Keep shorelines natural by implementing a 6-foot low-maintenance buffer (no mowing, fertilizer, pesticide, or herbicide application) along public lands adjacent to waterways and drainage ditches. This should also be encouraged along waterways on private property through education and outreach.

- Partner with COJ, Jacksonville Port Authority (JAXPORT), and the US Army Corps of Engineers (USACE) to develop a program for the beneficial reuse of dredged material through Thin Layer Placement (TLP), or other methods of strategic placement. This may be especially important to the City's marsh system. TLP may help to build the marsh up ahead of SLR and prevent marsh areas from converting to open waters, resulting in a reduction of wave energy reaching the upland shoreline.

- Work with COJ to establish an outreach program to provide voluntary property vulnerability assessments in vulnerable areas of the City. Provide property owners with suggested adaptation actions they may wish to undertake to increase resiliency to SLR, storm surge, and extreme tides while simultaneously providing habitat and water-quality benefits.

- Map riparian areas and coastal dune systems subjected to invasive species (i.e., Brazilian Pepper), develop a program to eradicate species on public property, and provide guidance to owners of infested private properties. Invasive species often do not provide the degree of protection from erosion and wave attenuation that native species do.

- Ensure that DCSPP remains funded and provides for continuous beach and dune restoration on an as-needed basis.

- Incorporate US Environmental Protection Agency (EPA) Green Streets concepts such as green infrastructure and drainage into medians, sidewalks, and landscaped areas during the planning and design of roadway transportation projects.

- Seek state and federal assistance, when available, to help pay for removing remaining septic tanks on the west side of the City, and work with COJ for removing septic tanks within the Public Utilities service area that fall outside the City's limits.

- Incentivize low-impact design (LID) practices. LID can include rain gardens, recessed planting beds, bio-swales, green roofs, or simply planning for a greater pervious surface in site design.

- Review minimum off-street parking requirements. Today, off-street parking minimums for residential and commercial developments artificially inflate the number of parking spaces; therefore, impervious surface areas must be developed. This contributes to the amount of stormwater runoff generated from developments and increases flooding potential, especially in areas that do not have space to add stormwater ponds.

- Consider revising minimum FFEs for areas in a 500-year flood zone on the current FEMA Flood Insurance Rate Map. The extents of a 500-year flood event are similar to the predicted extents of a 100-year flood event in 2050. Minimum FFEs in these areas could be revised to 2.5 feet above the nearest adjacent 100-year base flood elevation to provide for future protection. Building height limitations in these areas could also be revised to be based on the required FFE, similar to Section 24-90(a) of the City's Land Development Regulations and Section 8-53(1)(a) of the city's floodplain ordinance. The current minimum FFE in an area impacted by a 100-year flood event (Special Flood Hazard Area) is 2.5 feet above the base flood elevation.

These recommendations are primarily near-term recommendations (i.e., within 12 months). A specific implementation schedule should be developed to further prioritize, evaluate, refine, and consider for implementation.

4.4.2 Areas West of Mayport Road

As verified by the Coastal Vulnerability Assessment, the marsh-facing areas west of Mayport Road will be particularly vulnerable to flooding events given higher sea levels in the future. Many residents in this area are already impacted by nuisance flooding that is projected to get worse.

- Commission a study within the next 12 to 36 months to evaluate the most cost-effective means of protecting this area of the City. This evaluation should result in the development of a 25-year plan for managing nuisance flooding and storm surge in this area to maximize protection of affected residential and commercial properties, critical facilities, and infrastructure and roadways. The plan should include implementation triggers, expected timeframes, and probable costs for proposed improvements.

  Improvements that are expected to be evaluated include but are not limited to the following:

  - Strategically raising centerline road elevations to protect inland properties.
  - Installing check valves in drainage ditches to prevent storm surges from entering inland areas.
  - Extending water and sewer utilities where needed to ensure continuity of service.
  - Raising vulnerable structures to a safe elevation.
  - Identifying and conserving properties strategically located along the marsh edge to maintain or develop the ability to reduce wave impacts on the immediately adjacent upland areas.
  - Evaluate the rate and extent of marsh erosion and develop plans to stem the loss of marsh and commensurate loss of storm protection benefits.

A preliminary screening level review was completed to identify improvement concepts and general locations that could be considered in future studies for protecting the areas west of Mayport Road.

- Raise Camelia Street between 1st Street and 6th Street, 6th Street between Camelia Street and Jasmine Street, and Jasmine Street from 6th Street to approximately 350 feet north of 6th Street out of the 100-year surge floodplain. This concept may require upsizing of the stormwater collection system and includes installing backflow prevention systems on the stormwater outfalls. This improvement could provide protection for the properties and City roadways east of Camelia Street from a 100-year storm surge flood event.
- Raise 6th Street between Jasmine Street and Begonia Street and Begonia Street from 6th Street to approximately 450 feet north of 6th Street above the projected 2050 high-tide flood elevation. This improvement could protect Begonia Street and properties east of Begonia Street from future high-tide/nuisance flooding.
- Construct a backflow prevention system and stormwater pump station in the ditch in the open right-of-way on Camelia Street between 9th Street and 14th Street. This system could protect the City roadways and properties east of Camelia Street from the 100-year storm surge flood event.
- Raise Main Street between 9th Street and 14th Street out of the 100-year storm surge elevation and install backflow prevention on the cross-culverts in the ditch under main street. This improvement may require up-sizing the cross-culverts under Main Street to ensure that rainfall induced flooding in the area is not worsened. This improvement could protect Main Street and the City roadways and properties east of Main Street from the 100-year storm surge.
- Raise West Plaza Street west of Tulip Street and Gladiola Street above the high-tide/nuisance flood elevation. This improvement could reduce the amount of nuisance flooding experienced on these roadways and improve ingress/egress for residents during flood conditions.
- Raise West Plaza Street between Tulip Street and Begonia Street and Tulip Street from West Plaza Street to approximately 200 feet south of West Plaza Street above the high-tide/nuisance flood elevation. This improvement could reduce the amount of nuisance flooding experienced on these roadways and improve ingress/egress for residents during flood conditions.

➢ Update the marsh study completed in 2025 every 5 years.

4.4.3 Major Drainageways

Of significant importance to the City of Atlantic Beach residents east of Mayport Road is the performance of the major drainageways during severe storm events. Performance of these systems is crucial regarding limiting the extent and duration of a flooding event. The City completed a Stormwater Master Plan Update in 2018 and staff have been implementing the recommendations in this plan as funding allows. The Stormwater Master Plan is expected to be updated again in 2025/2026.

The Coastal Vulnerability Assessment resulted in the prediction of future flooding associated with SLR and continued redevelopment within the City. This work was completed subsequent to the Stormwater Master Plan Update; therefore, the potential impacts from SLR are currently not wholly reflected in the 10-year CIP. The 2025/2026 Stormwater Master Plan update will add the following:

- Initiate a study to evaluate the major drainageway projects included in the current stormwater CIP regarding increased flooding due to SLR. This study should include developing a plan of action to account for these future conditions. This process will ensure that all major drainage infrastructure projects and improvements can be adapted to future conditions and will be complementary to potential future projects, such as stormwater pump stations, that may become necessary as sea level and flooding conditions change.
- Develop a 50-year plan for managing the major drainageways to maximize protection of affected residential and commercial properties, critical facilities, infrastructure, and roadways. This plan should include a local, COJ, state, and federal agency coordination plan, implementation triggers, expected timeframes, and probable costs for proposed improvements.

The 2018 Stormwater Master Plan Update and subsequent Coastal Vulnerability Assessment concluded that the box culvert on State Road A1A at Puckett Creek is severely undersized and contributes to poor performance of the Puckett Creek and Sherman Canal watersheds. This culvert is outside the City limits and is owned by FDOT; therefore, the City of Atlantic Beach has no jurisdiction over it. However, the City has initiated discussions with FDOT regarding upsizing the box culvert to improve drainage. City staff must continue communicating with FDOT and lobbying for the culvert's replacement.

Hopkins Creek and Sherman Creek Adaptation Strategies for Future Consideration

Results from the Coastal Vulnerability Assessment show that residential and commercial properties are vulnerable to widespread rainfall and storm surge driven flooding along Hopkins Creek and Sherman Creek under existing conditions. Flood conditions on these drainageways will continue to worsen with rising sea levels and more frequent extreme rainfall events. Large-scale long-term adaptation strategies will need to be implemented for these drainageways to reduce existing flood conditions and/or prevent them from worsening in the future.

Hopkins Creek and Sherman Creek are influenced by tidal and storm surge conditions. To protect these areas from flooding in the future, the City will likely need to construct backflow prevention systems with high-capacity stormwater pump stations. Detailed feasibility studies will be required to identify the exact locations for these systems, how big they will need to be, and determine how much they will cost to implement. A screening level review was completed for this Adaptation Plan to identify concepts and general locations that could be considered in future studies for protecting these critical drainageways.

For Hopkins Creek, the following locations and concepts were identified:

- Purchase the parcel at 1401 Atlantic Boulevard, demolish the existing structures on the parcel, and construct a stormwater pond with a pump station. Flow from Hopkins Creek north of Atlantic Boulevard would be diverted into the pond. Water would exit the pond through gravity flow under lower tide conditions and be pumped out when tides are elevated. Construction of a stormwater pond with the pump station will provide additional attenuation volume in the system and reduce the required pump capacity.
- Construct a backflow prevention system on the Hopkins Creek box culverts at Atlantic Boulevard and construct a high-capacity stormwater pump station on the north side of Atlantic Boulevard that discharges downstream of the Atlantic Boulevard box culverts.

For Sherman Creek, the following locations and concepts were identified:

- Construct a backflow prevention system on the Sherman Creek box culverts at Mayport Road and construct a high-capacity stormwater pump station on the east side of Mayport Road that discharges downstream of the Mayport Road box culverts.
- Construct a backflow prevention system in the ditch at the north end of Selva Marina Drive with a stormwater pump station that discharges into the wetland system west of Selva Marina Drive. Install backflow prevention on the existing stormwater outfall pipes that discharge into Sherman Creek at Saturiba Drive, Country Club Lane, and 11th Street. The intent of this system is to provide flood protection for the City east of Selva Marina Drive.
- Construct a backflow prevention system on the box culverts under the entrance of Fleet Landing at 20th Street with a stormwater pump station that discharges into the wetland north of the Fleet Landing entrance. This improvement would also require constructing a flood wall to prevent backflow through Fleet Landing in the future conditions 100-year surge scenarios.

As documented in the 2018 Stormwater Master Plan Update, Hopkins Creek between Atlantic Boulevard and Plaza has experienced significant and repeated rainfall driven flooding in recent years. The 2018 Stormwater Master Plan Update identified several stormwater system improvements that the City has been working on implementing as budgets and grant funding have allowed. This area should continue to be studied to identify additional improvements that could reduce rainfall driven flooding. A screening level review was completed for this Adaptation Plan to identify concepts that could be considered in future studies for reducing rainfall driven flooding in this area.

- Construct a new outfall pipe along Plaza, 12th Street, and Orchid Street to divert stormwater runoff from Hopkins Creek north of Plaza to the existing stormwater ditch between 14th Street and 9th Street west of Mayport Road. The existing ditch discharges west into the ICW and has existing culvert crossings at Hibiscus Street and Main Street that would likely need to be upsized.

- Construct a new outfall pipe from the ditch between Saratoga Circle North and Forrestal Circle South that discharges west into the ICW. This would divert stormwater runoff from the area west of Aquatic Drive between Plaza and Atlantic Boulevard away from Hopkins Creek.

As sea levels continue to rise, tidally driven nuisance flooding will continue to worsen and become a problem in lower-lying areas along the Hopkins Creek and Sherman Creek drainageways. Where feasible, the primary method for reducing the impact of nuisance flooding is installing backflow prevention on stormwater pipes. A screening-level review was completed to identify locations where backflow prevention could be installed at the downstream ends of collection system pipes to reduce nuisance flooding under existing and projected future conditions tidal flooding.

The locations identified for potential backflow prevention on Hopkins Creek are:

- The 24-inch outfall pipe on Aquatic Drive approximately 450 north of the centerline of Atlantic Boulevard. Aquatic Drive has roadway elevations below the existing tidal flood elevation. Therefore, tidal flooding could be reduced for the existing conditions.
- The 29-inch-by-45-inch outfall pipe from Aquatic Drive into the Aquatic Drive pond. Aquatic Drive has roadway elevations below the existing tidal flood elevation. Therefore, tidal flooding could be reduced for the existing conditions.
- The double 24-inch pipes under the entrance road to Lift Station F. Tidal flooding upstream of the pipes is minimal for the existing conditions, but is predicted to increase significantly by 2050.
- The 29-inch-by-45-inch Skate Road outfall pipe between Cutlass Drive and Cavalla Road that discharges into the Skate Road ditch. Tidal flooding upstream of the pipe is minimal for existing conditions, but is predicted to increase significantly by 2050.
- The 34-inch-by-53-inch Cavalla Road outfall pipe that discharges into the Skate Road ditch. Tidal flooding upstream of the pipe is minimal for the existing conditions, but is predicted to increase significantly by 2050.
- The 38-inch-by-60-inch and 42-inch outfall pipes from the stormwater pond at the Atlantic Beach Dog Park that discharge into Hopkins Creek. Tidal flooding upstream of the pipe is minimal for the existing conditions, but is predicted to increase significantly by 2050.

The locations identified for potential backflow prevention on Sherman Creek are:

- The 48-inch outfall pipe from Pine Street that discharges into Sherman Creek at the south end of Howell Park. Tidal flooding upstream of the pipe is minimal for the existing conditions, but is predicted to increase significantly by 2050.

- The 30-inch outfall pipe from the Sevilla Condominiums stormwater pond that discharges into Sherman Creek. Tidal flooding upstream of the pipe is minimal for the existing conditions, but is predicted to increase significantly by 2050.
- The 30-inch outfall pipe at the west end of Saturiba Drive that discharges into Sherman Creek. Tidal flooding upstream of the pipe is minimal for the existing conditions, but is predicted to increase significantly by 2050.
- The 4-foot-by-7-foot box culvert crossing under 20th Street between Brista De Mar Circle and Garden Lane. Tidal flooding occurs upstream of this culvert on Creekside Circle under the existing conditions and is predicted to increase significantly by 2050.

Alternatively, the City could consider installing backflow prevention measures at larger downstream culvert crossings in Hopkins Creek and Sherman Creek to reduce tidal and storm surge-driven flooding in the creeks. For Hopkins Creek, installing these measures could be effective at the box-culvert crossing under Atlantic Boulevard and for Sherman Creek it could be effective at the Mayport Road box-culvert crossing. Backflow systems considered at these locations could include amil gates, floating water control weirs, and flap gates, but additional studies and analysis would be needed to determine the best options and locations.

The Dora Drive and Stanley Road area was identified as flood-prone in the 2018 Stormwater Master Plan Update. Outfall pipe improvements were proposed in the Master Plan Update for this area and the City is moving forward with plans to construct the improvements. Since the Master Plan Update was completed, the City purchased vacant land at the east end of Dora Drive with the intent of constructing a stormwater pond to further reduce flooding in the area. The City is currently pursuing grant funding to design and construct the stormwater pond and should continue moving forward with design and construction as funding allows.

4.4.4 Roadways

The roadways evaluated as part of this effort include major ingress and egress roads within the City limits, excluding Atlantic Boulevard and Mayport Road, which are controlled by FDOT. The ranking presented in Section 3.3 provides a roadmap in order of importance regarding each vulnerable road segment. Recommendations related to these roadway segments are as follows:

- Review the current pavement management plan and update it as necessary to reflect the roadway segment ranking within the next 12 months.
- Before repaving or making major improvements to any vulnerable roadway segments, determine improvements that can be made to increase the roadway segment's resilience and ability to function during the predicted 2050 100-year flooding conditions.
- Evaluate minor arterial roadways on a case-by-case basis to identify potential improvements resulting in better performance due to chronic and acute flooding conditions.
- Ensure that City staff share vulnerability data with FDOT to help inform their adaptation planning regarding Atlantic Boulevard and Mayport Road.

The initial planning required to implement these recommendations should be addressed before any capital expenditures, and these recommendations should be implemented within 24 months or before any major capital expenditures relating to improvements of any ranked roadway segment.

Based on results from the Coastal Vulnerability Assessment, the following roadway segments were included in the "highest" vulnerability rating category and improvements for reducing their vulnerability to flooding should be considered:

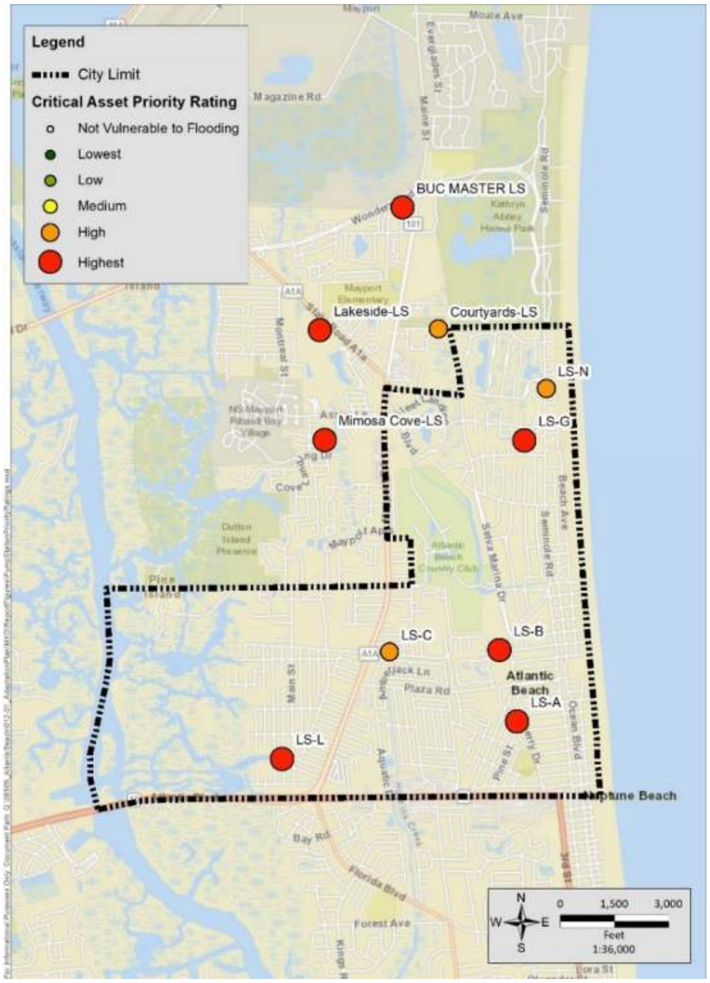
- Selva Marina Drive between Saturiba Drive and Country Club Lane. This section of roadway is vulnerable to flooding in the existing conditions 100-year rainfall and storm surge flood scenarios.
- Sherry Drive between 8th Street and 4th Street. This section of roadway is vulnerable to flooding in the existing conditions 100-year rainfall and storm-surge flood scenarios.
- Plaza at the Sherman Creek box culvert crossing. This section of roadway is vulnerable to flooding in the existing conditions 100-year rainfall and storm-surge flood scenarios. Raising the road at this location would require improvements to the Sherman Creek box-culvert crossing. Improvements to this culvert crossing were recommended in the 2018 Stormwater Master Plan Update.
- Seminole Road between Seaspray Avenue and Plaza. This section of roadway is vulnerable to flooding in the existing conditions 100-year rainfall and storm surge flood scenarios. Raising the road at this location would require improvements to the Sherman Creek box-culvert crossing. Improvements to this culvert crossing were recommended in the 2018 Stormwater Master Plan Update.
- Selva Marina Drive from 500-feet north of 20th Street to 500-feet south of 20th Street. This section of roadway is vulnerable to flooding in the existing conditions 100-year rainfall and storm-surge flood scenarios.

4.4.5 Critical Utility Infrastructure

Vulnerable City-owned critical utility infrastructure within and outside the City limits include sewer pump stations, potable water plants, and several potable water wells. The City has identified and begun modifying and/or raising 14 vulnerable sanitary sewer lift stations as funding has allowed. The Coastal Vulnerability Assessment identified 10 pump stations with a priority rating of "highest" or "high" that the City should continue to prioritize in their adaptation efforts. The stations identified in the Coastal Vulnerability Assessment include:

- The Courtyards Lift Station.
- Lakeside Lift Station.

- Lift Station A.
- Lift Station B.
- Lift Station C.
- Lift Station G.
- Lift Station L.
- Lift Station N.
- Mimosa Cove Lift Station.
- Buc Master Lift Station (modification complete in July 2025).



The Public Utilities Department will implement the following recommendations to ensure continuity of service under all conditions:

- Continue efforts to evaluate exposed utility infrastructure with a ranking of high or highest to identify improvements required to protect these assets from expected 100-year event flood levels in 2050. These improvements should be implemented as funding becomes available.
- Within the next 24 months, retain a consultant to evaluate all identified exposed critical utility infrastructure to identify improvements required to protect these assets from the expected 100-year event flood levels in 2050. These improvements should be implemented within 36 months of completion of the evaluation or sooner as funding becomes available.

4.4.6 Critical Public Facilities

Based on results from the Coastal Vulnerability Assessment sensitivity analysis, City Hall, the Commission Chamber building, and the Public Safety (fire and police) building should be prioritized for identifying adaptation needs and strategies to flood proof the facilities. The City has already implemented improvements at these facilities, but additional studies and improvements are needed.

The City is exploring converting the Marsh Oaks Community Center into a resiliency hub to provide essential services during extreme weather and flood events. Located outside the floodplain, the facility would offer reliable power, clean water, internet access, and shelter to residents during emergencies. This initiative supports long-term community resilience by ensuring equitable access to resources and strengthening neighborhood-level preparedness.

5.0 Recommended Actions

This Adaptation Plan is the result of the first iteration of the City's adaptation planning process. This Plan contains general recommendations for adaptation strategies to be applied to exposed areas of the City as well as a recommended implementation schedule. Subsequent iterations of this living document will be completed after solicitation of public input and will contain additional objective data, more specific strategies, and updated implementation schedules as appropriate.

5.1 Summary of Recommended Actions and Schedule

Tables 5-1 through 5-6 summarize the recommendations for adaptation strategies identified in each focus area with a recommended timeframe for implementation. The timeframes for initiation are based on the following criteria:

- Ongoing ➔Actions currently being undertaken by staff
- Immediate ➔ Upon adoption of Adaptation Plan
- Near-Term ➔ <12 months
- Mid-Term ➔ 12-36 months
- Long-Term ➔ 36-48 months

Table 5-1 – Summary of Recommendations and Implementation Schedule

Recommendation	Action	Timeframe for Initiation
Review all capital projects in context of adaptation	Incorporate into project planning procedures	Ongoing*
Building and zoning code review	Initiate review process and produce report of recommended actions	Near-Term
Policies to encourage homeowner resiliency projects	Establish policies	Mid-Term
Reinforce value of trees for absorbing runoff	Develop educational materials; coordinate with COJ efforts	Ongoing*
Real estate disclosures	Initiate discussions with Property Appraiser and develop approach for implementation	Mid-Term
Education and Public Engagement Tools	Develop/adapt educational materials	Near-Term
Low maintenance buffers on City property	Establish policy	Ongoing*
Marsh restoration partnering w/ COJ, JAXPORT, USACE	Begin planning, discuss with relevant agencies, determine funding sources	Mid-Term*
Work with COJ on vulnerability outreach program	Begin coordination and development of outreach materials	Mid-Term
Invasive species mapping in riparian areas	Complete map and develop eradication plan	Ongoing*
Maintain federal authorization for beach renourishment	Maintain contact with USACE, COJ and FDEP to assure authorization is maintained	Ongoing
Incorporate EPA Green Streets into planning & projects	Incorporate in to Complete Streets program	Near-Term

Seek funding to phase out septic tanks	Initiate discussions with COJ, FDEP and SJRWMD to identify funding opportunities	Ongoing
Incentivize LID practices	Develop LID guide and update code as necessary to incentivize	Near-Term
Review minimum off-street parking requirements	Review and update applicable sections of code	Near-Term
Revise minimum FFEs in exposed areas	Evaluate impact of change and implement code change	Mid-Term

Note: * = timeframes that were updated in 2025

Table 5-2 – Areas West of Mayport Road Recommended Actions & Schedule

Recommendation	Action	Timeframe for Initiation
25-Year plan for SLR protection	Commission evaluation and present options to the community	Mid-Term
Marsh baseline study	Commission study	Ongoing*

Table 5-3 – Major Drainageways Recommended Actions & Schedule

Recommendation	Action	Timeframe for Initiation
Evaluation of current CIPs	Initiate review of projects	Ongoing*
50-year drainage plan	Engage consultant to develop 50-year plan; incorporate findings in to the CIP	Near-Term*

Table 5-4 – Roadways Recommended Actions & Schedule

Recommendation	Action	Timeframe for Initiation
Rank roads in pavement management plan	Review & update pavement management plan	Near-Term
Improve resilience of vulnerable roadways prior to repaving or making major improvements	Evaluate roadway projects as they arise	Ongoing
Minor arterial roadway evaluation	Evaluate in response to inspections and complaints	Ongoing
Atlantic Boulevard and Mayport Road resiliency	Coordinate w/ FDOT	Ongoing

Table 5-5 – Critical Utility Infrastructure

Recommendation	Action	Timeframe for Initiation
Evaluate and upgrade exposed infrastructure w/ ranking >=15	Evaluate and implement recommended improvements	Ongoing*
Evaluate and upgrade exposed infrastructure w/ ranking <15	Evaluate and implement recommended improvements	Mid-Term

Table 5-6 – Critical Public Facilities

Recommendation	Action	Timeframe for Initiation
Develop plan for exposed facilities with ranking >= 15	Complete plan; design and schedule recommended improvements	Near-Term
Develop plan for exposed facilities with ranking <15	Complete plan; design and schedule recommended improvements	Mid-Term

5.2 Monitoring and Evaluation

This Adaptation Plan is a living document and the recommendations and implementation schedule contained in the Plan must be routinely visited and updated as necessary. SLR predictions are subject to change as new information and data become available. These changes must be incorporated into the exposure and sensitivity analyses to reveal any significant changes that must be accounted for. This Plan is also expected to be revised as additional data, such as marsh baseline data, are obtained.

The analyses described in the Coastal Vulnerability Assessment should be revisited every 5 years at a minimum using the most recent sea levels and SLR predictions available. Subsequent to updating these analyses, this Adaptation Plan should be revised to add additional adaptation strategies as necessary and to move projects and actions listed in Section 4.3 to Section 4.4 as they are implemented or completed.

6.0 References

2015 Unified Sea Level Rise Projection for Southeast Florida, Southeast Florida Regional Climate Change Compact Sea Level Rise Work Group, 2015

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City of Atlantic Beach Coastal Vulnerability Assessment, Revision June 2025

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City of Jacksonville Storm Resiliency and Infrastructure Development Review Committee Final Presentation, June 25, 2019

Climate Science Special Report: Fourth National Climate Assessment, U.S. Global Change Research Program, 2017

Florida Adaptation Planning Guidebook, FDEP, June 2018

Global and Regional Sea Level Rise Scenarios for the U.S., NOAA Technical Report NOS CO-OPS 083, 2017

Global Sea Level Rise Scenarios for the United States, NOAA Technical Report OAR CPO-1 National Climate Assessment, 2012

Incorporating Sea Level Changes in Civil Works Programs, USACE Engineer Regulation (ER) 1100-2-8162, 2013

NOAA Tides & Currents – Water Levels (https://tidesandcurrents.noaa.gov/sltrends/)

Appendix A – Inundation Scenarios and Maps

Figure 1 Rainfall-Induced Flooding for the 100-Year, 24-Hour Storm Event Under the Existing Conditions

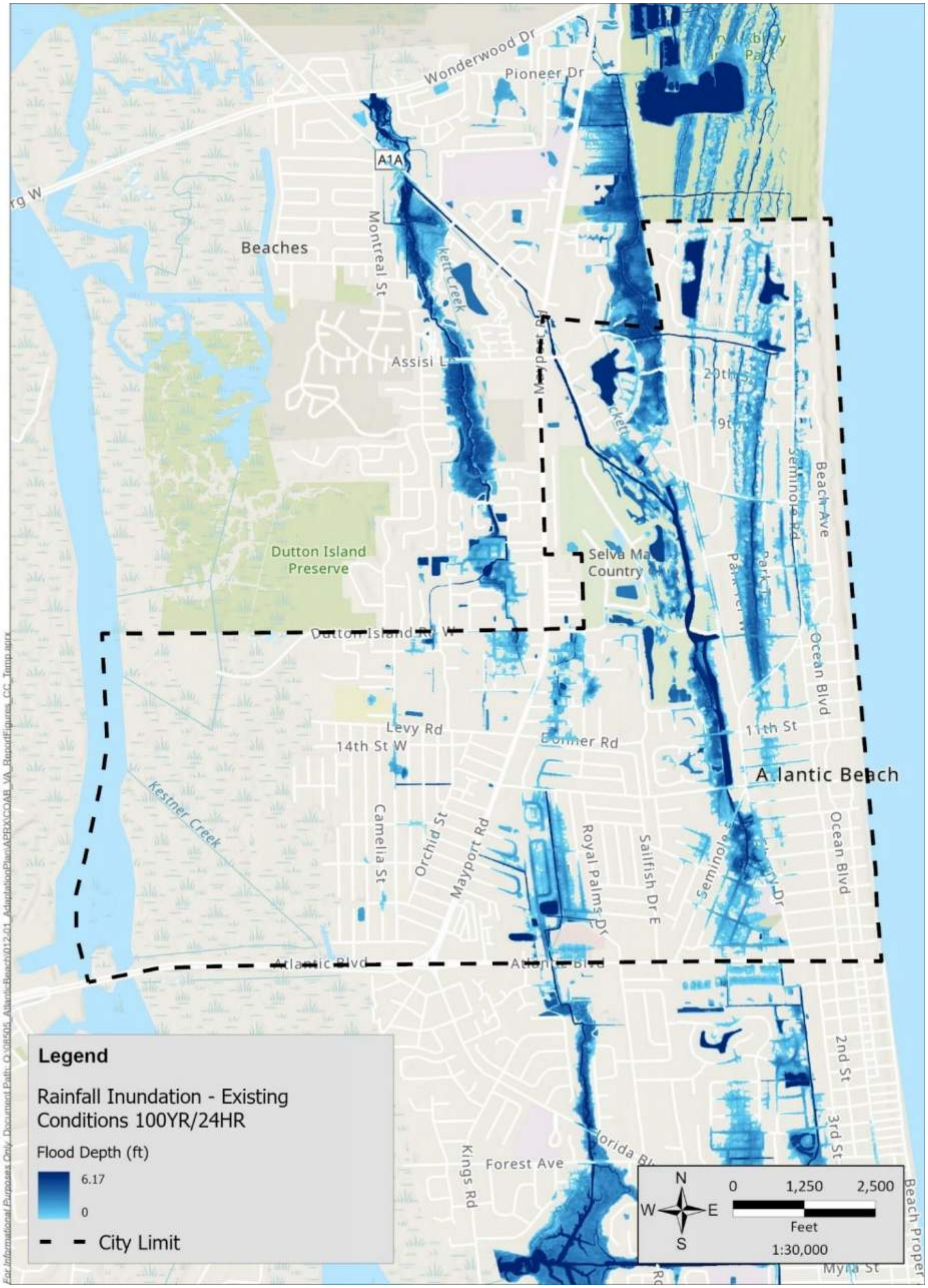


Figure 2 Rainfall-Induced Flooding for the 500-Year, 24-Hour Storm Event Under the Existing Conditions

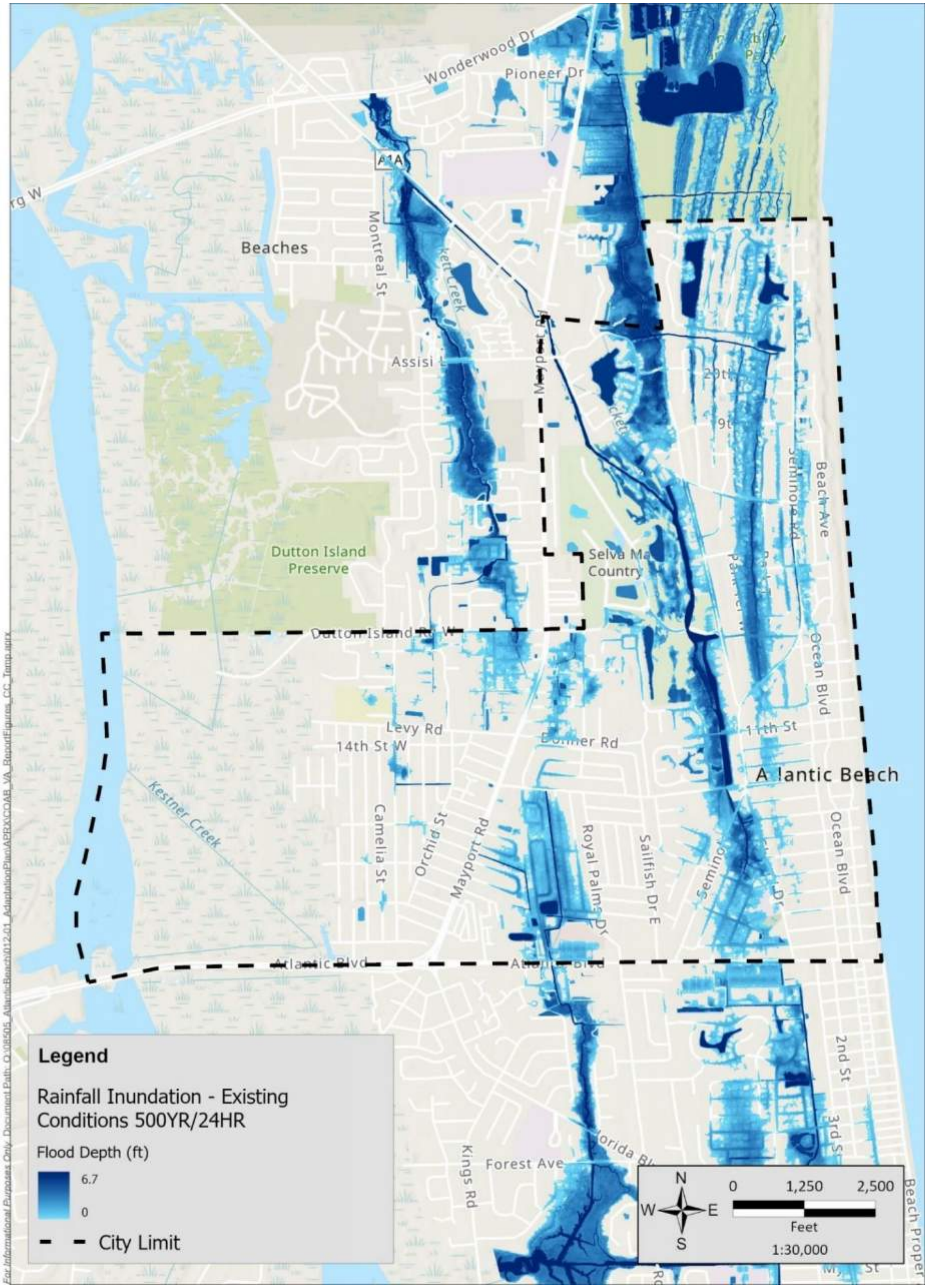
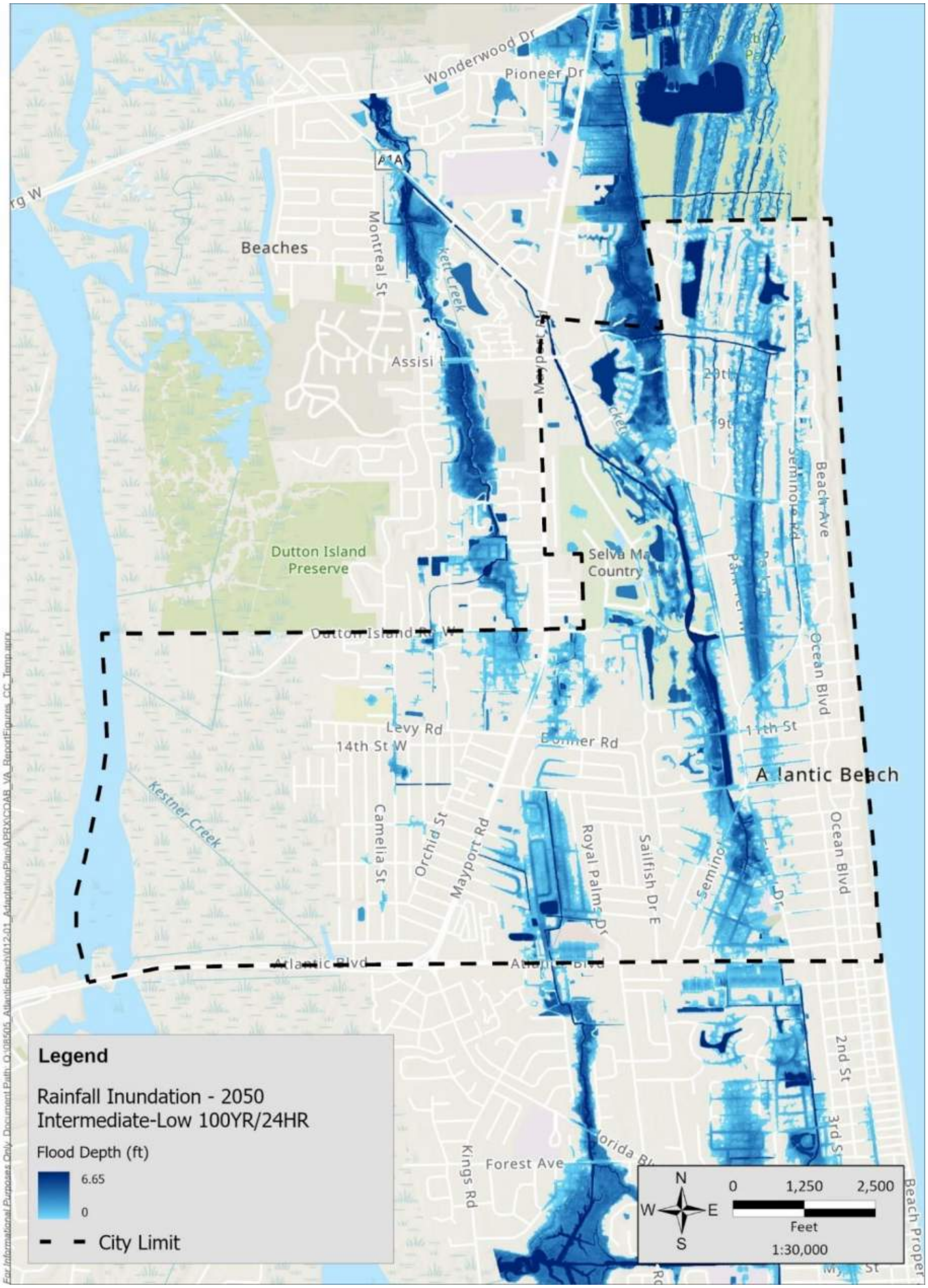


Figure 3 Rainfall-Induced Flooding for the 100-Year, 24-Hour Storm Event Under 2050 Intermediate-Low SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 4 Rainfall-Induced Flooding for the 100-Year, 24-Hour Storm Event Under 2050 Intermediate SLR Conditions

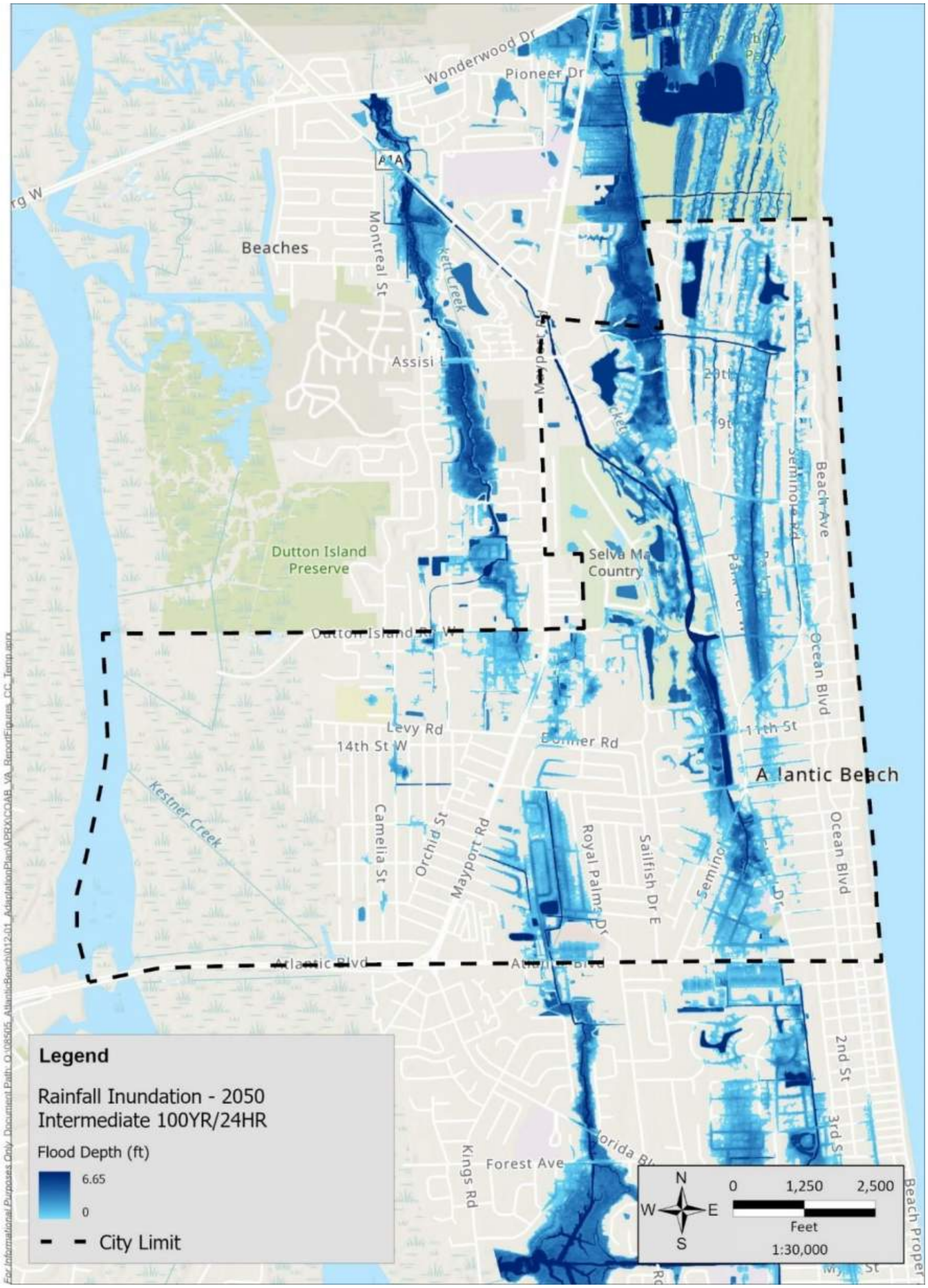
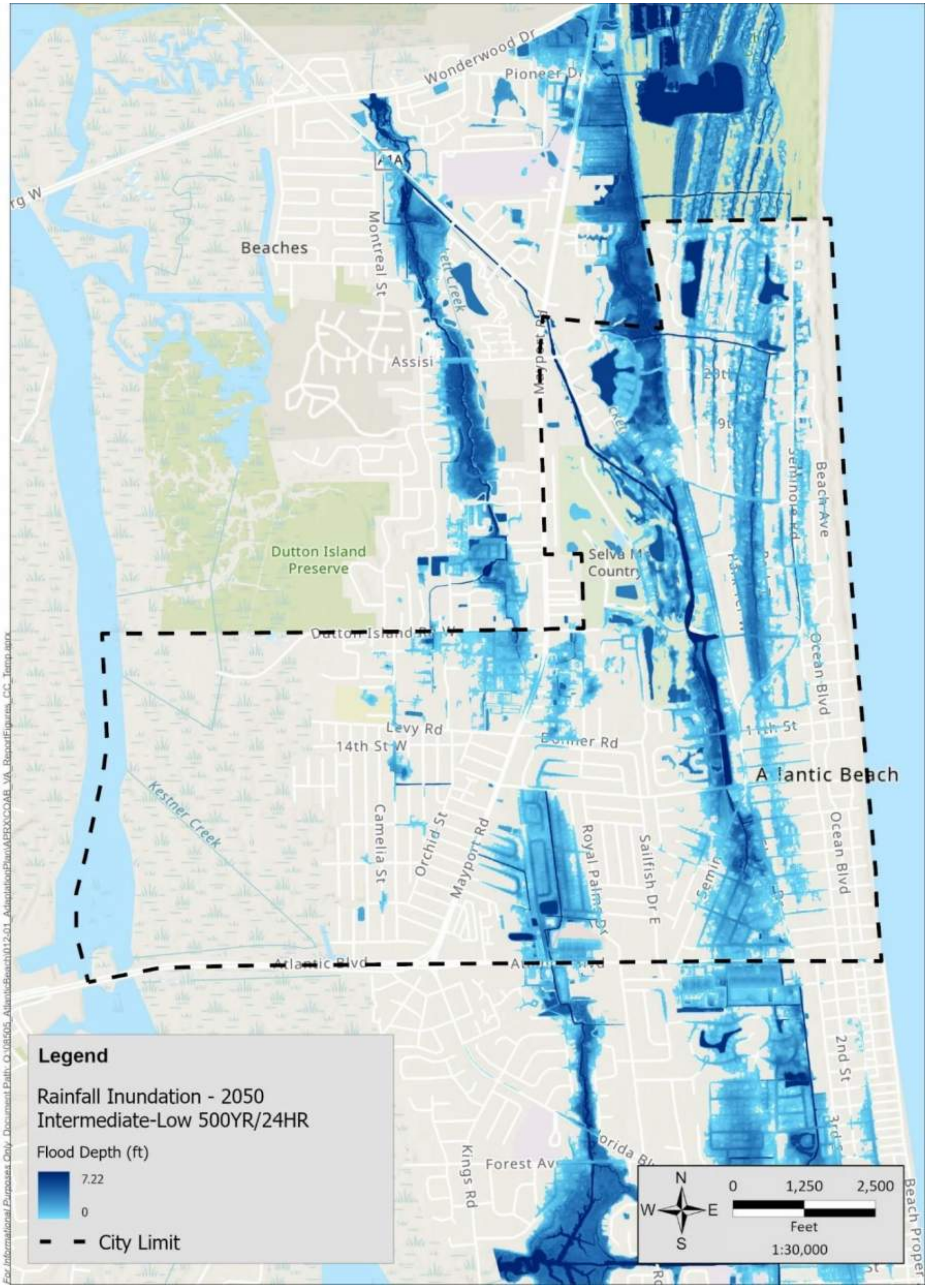


Figure 5 Rainfall-Induced Flooding for the 500-Year, 24-Hour Storm Event Under 2050 Intermediate-Low SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 6 Rainfall-Induced Flooding for the 500-Year, 24-Hour Storm Event Under 2050 Intermediate SLR Conditions

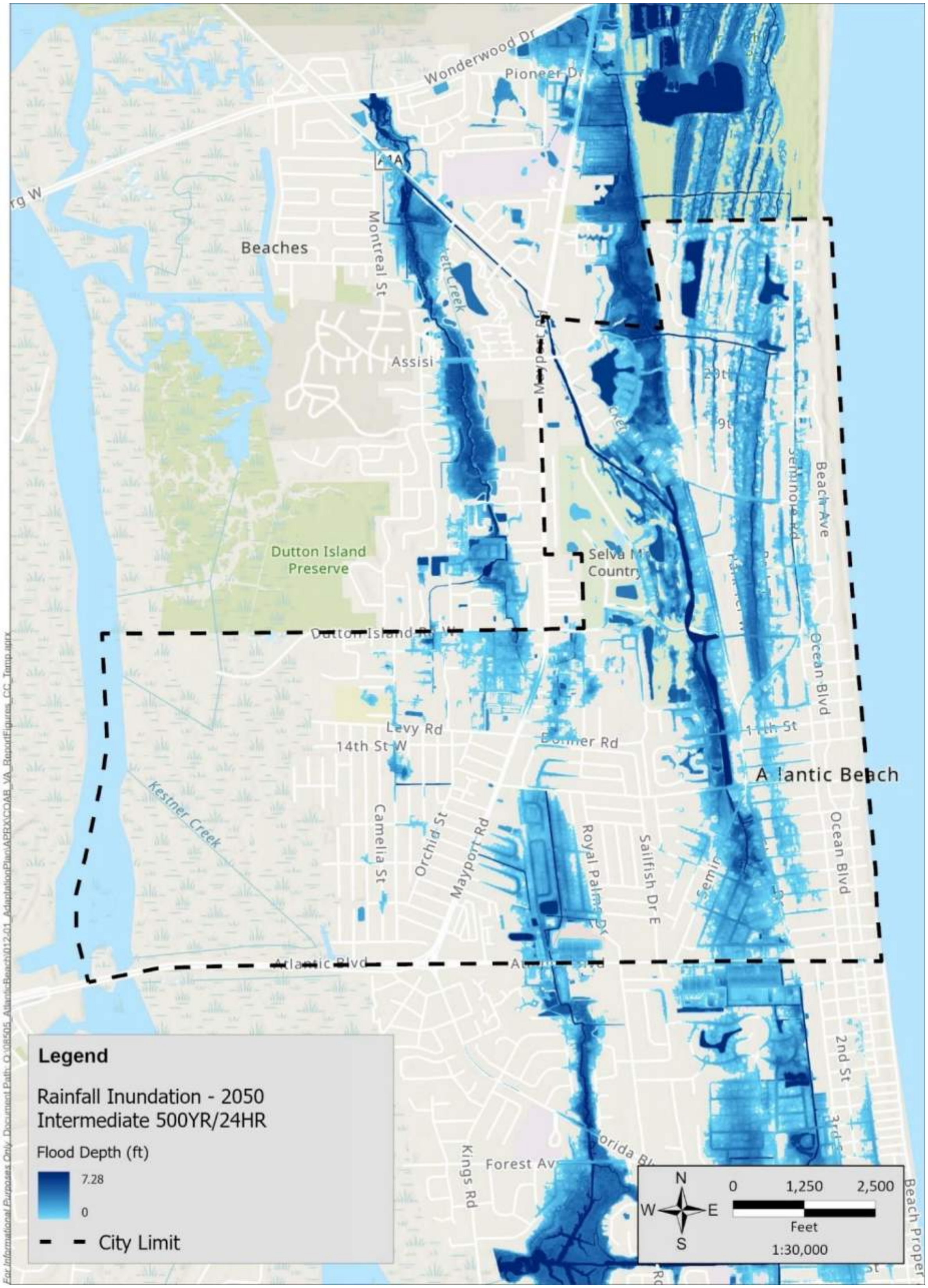
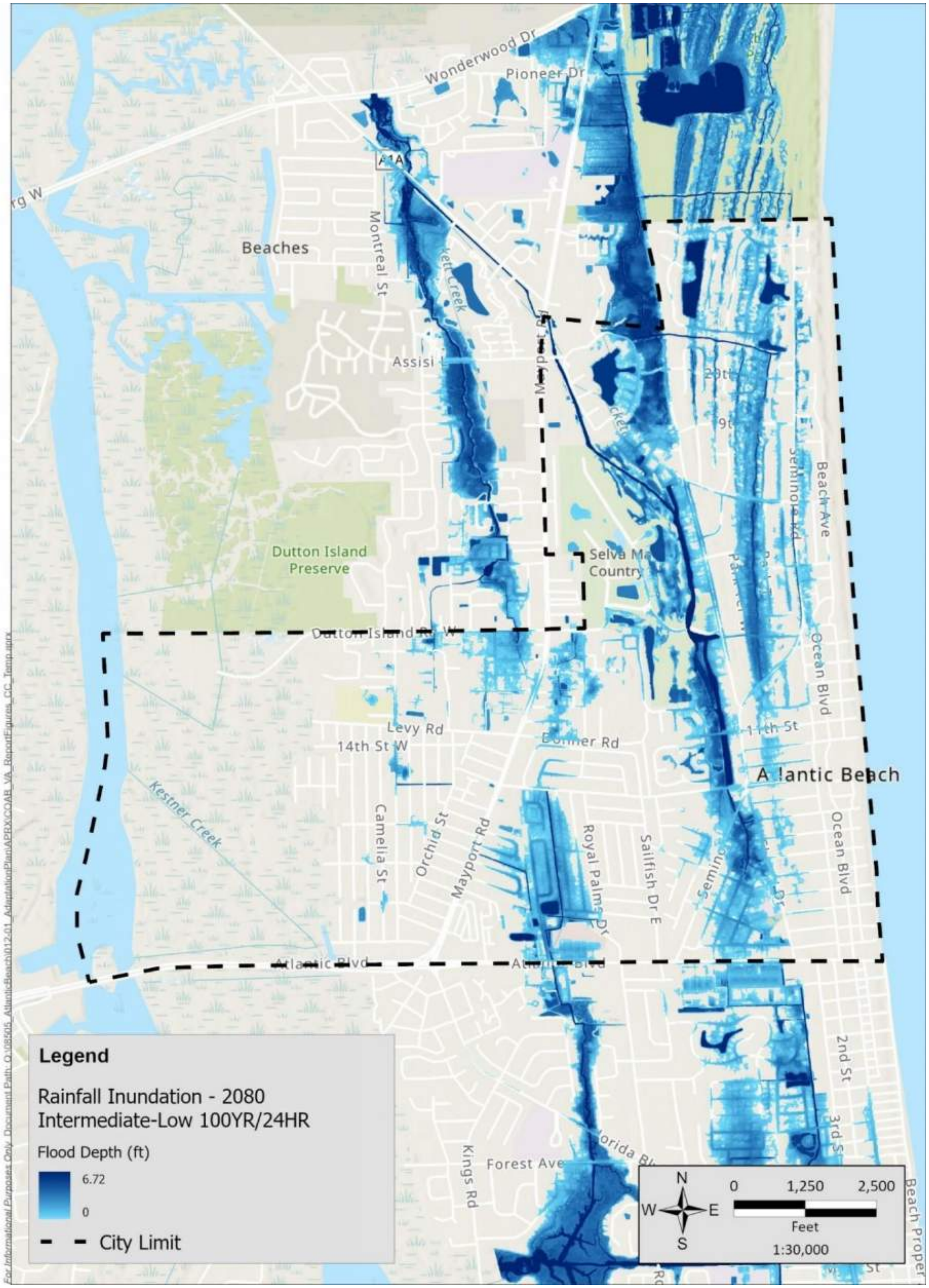


Figure 7 Rainfall-Induced Flooding for the 100-Year, 24-Hour Storm Event Under 2080 Intermediate-Low SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 8 Rainfall-Induced Flooding for the 100-Year, 24-Hour Storm Event Under 2080 Intermediate SLR Conditions

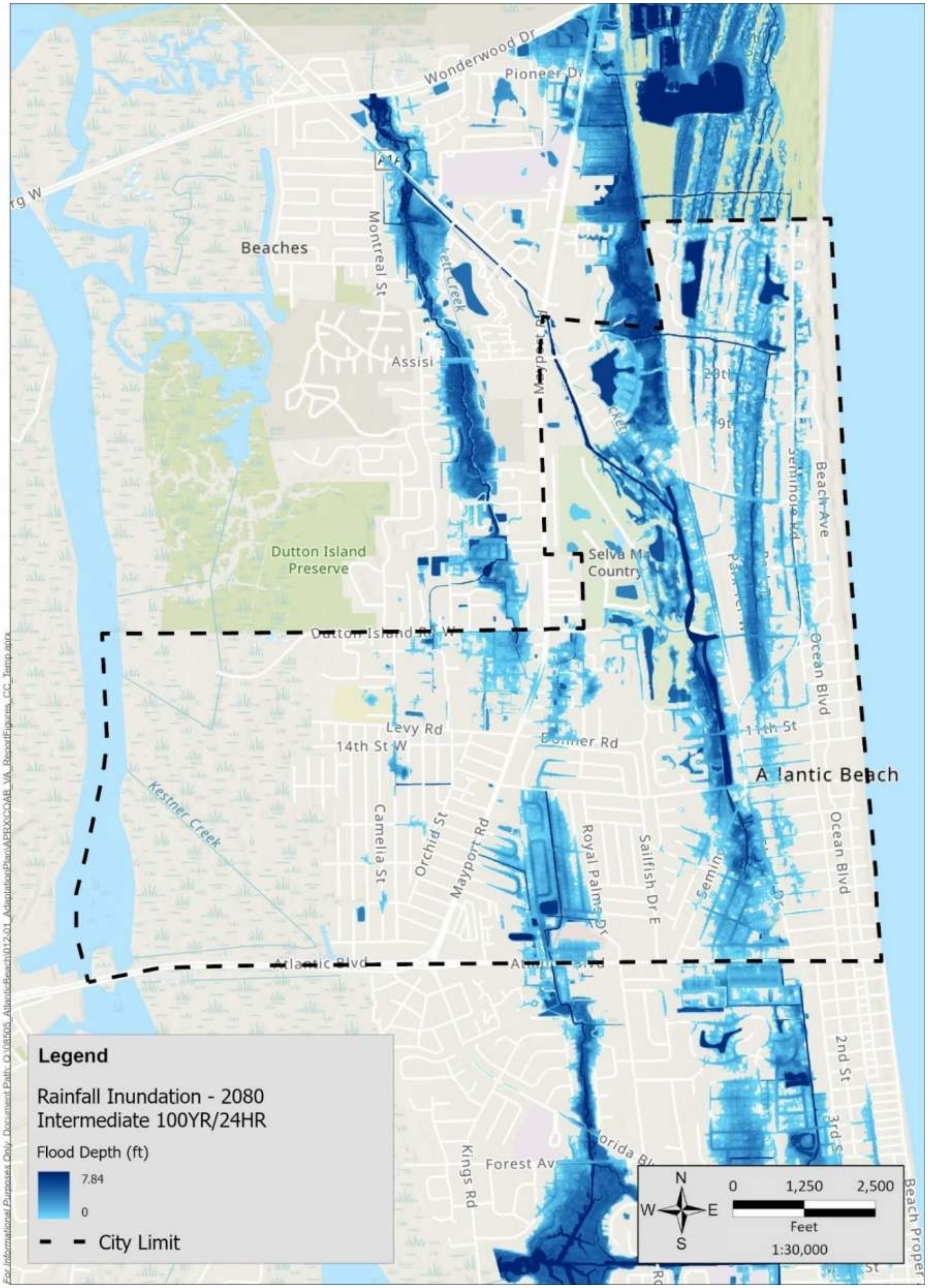


Figure 9 Rainfall-Induced Flooding for the 500-Year, 24-Hour Storm Event Under 2080 Intermediate-Low SLR Conditions

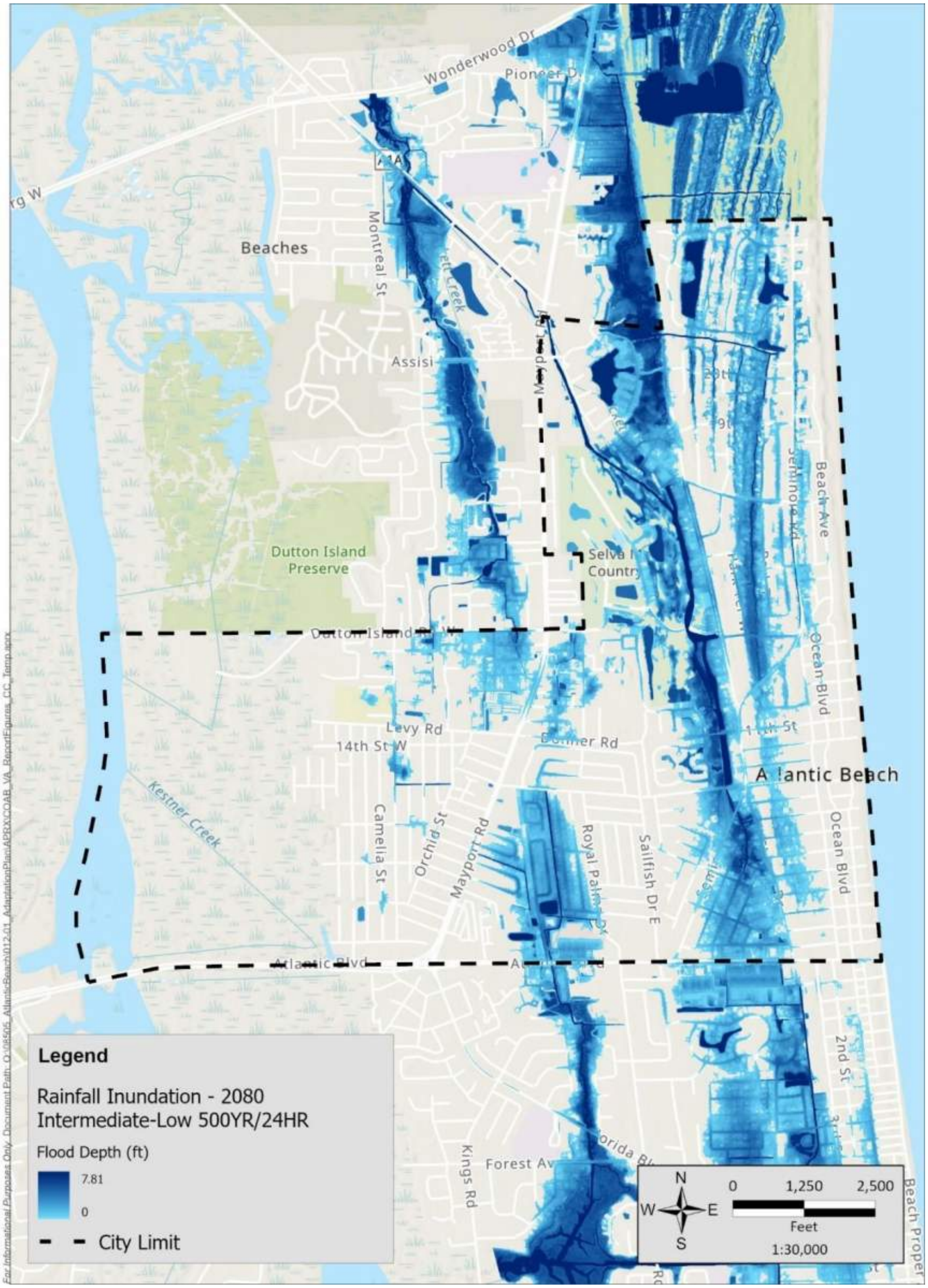
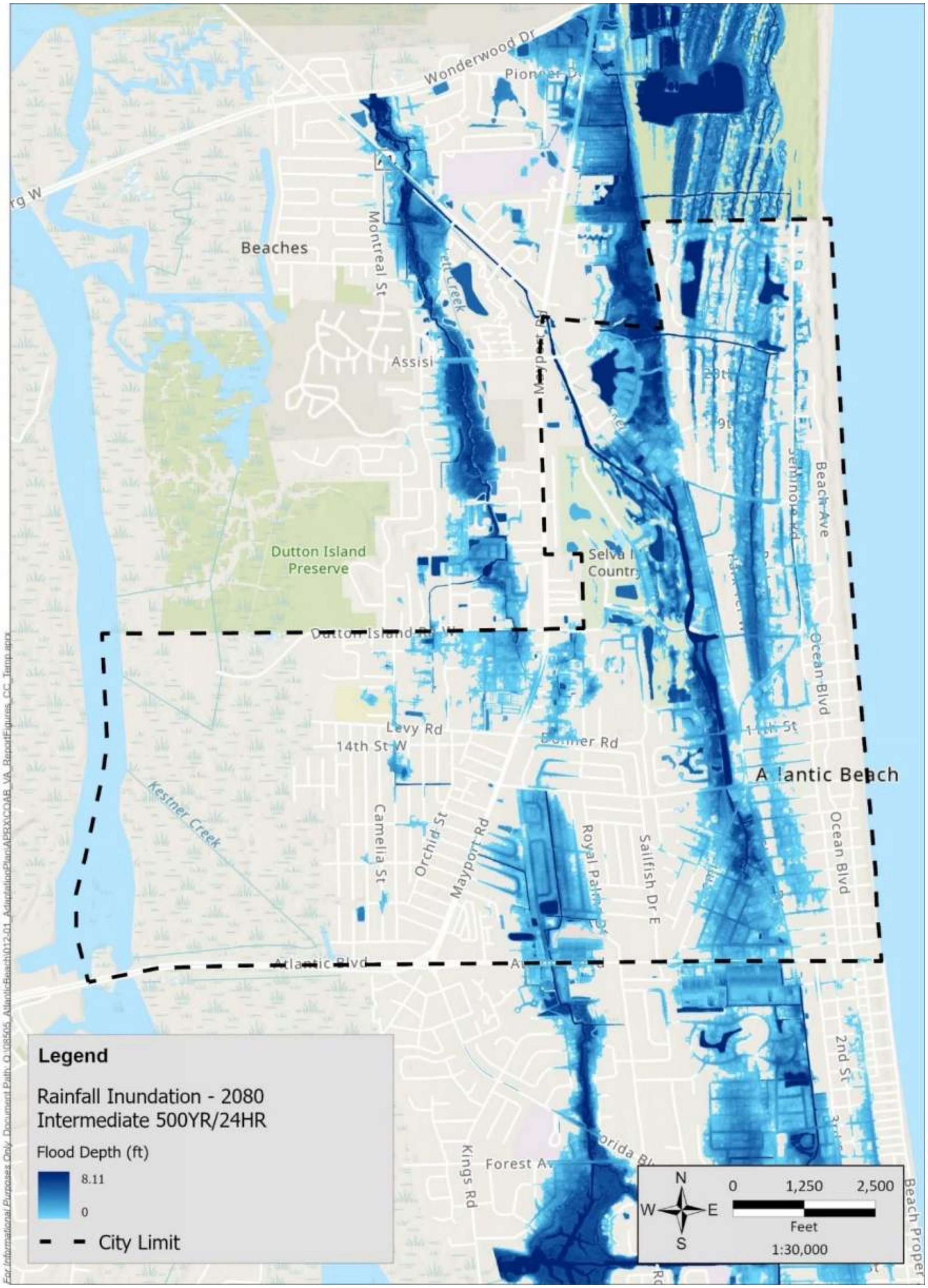


Figure 10 Rainfall-Induced Flooding for the 500-Year, 24-Hour Storm Event Under 2080 Intermediate SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 11 High-Tide Flooding Depth Under the Existing Conditions

Appendix A – Inundation Scenarios and Maps

Figure 12 High-Tide Flooding Depth Under 2050 Intermediate-Low SLR Conditions

Figure 13 High-Tide Flooding Depth Under 2050 Intermediate SLR Conditions

Appendix A – Inundation Scenarios and Maps

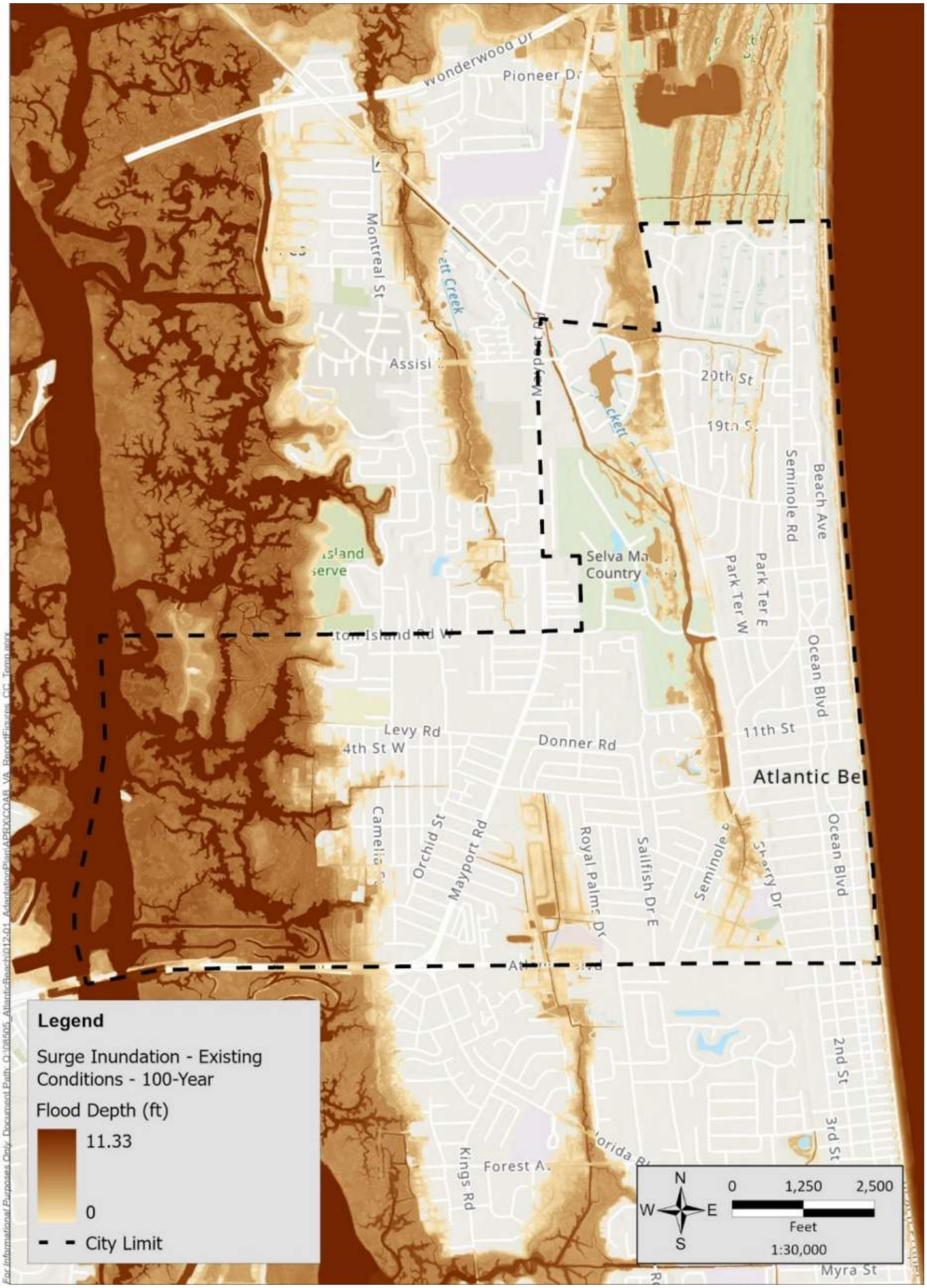
Figure 14 High-Tide Flooding Depth Under 2080 Intermediate-Low SLR Conditions

Appendix A – Inundation Scenarios and Maps

Figure 15 High-Tide Flooding Depth Under 2080 Intermediate SLR Conditions

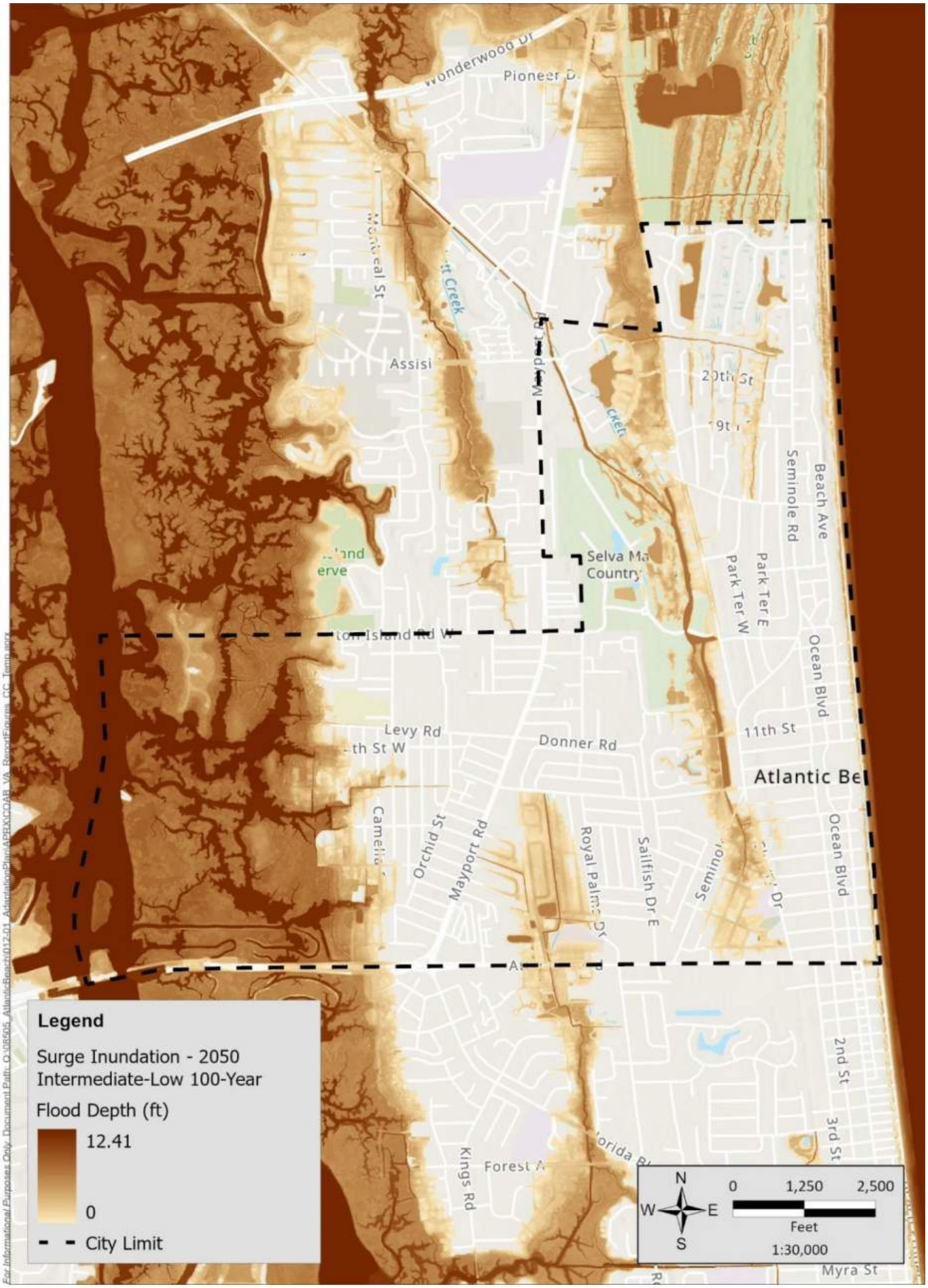
Appendix A – Inundation Scenarios and Maps

Figure 16 100-Year Storm-Surge Flooding Under the Existing Conditions



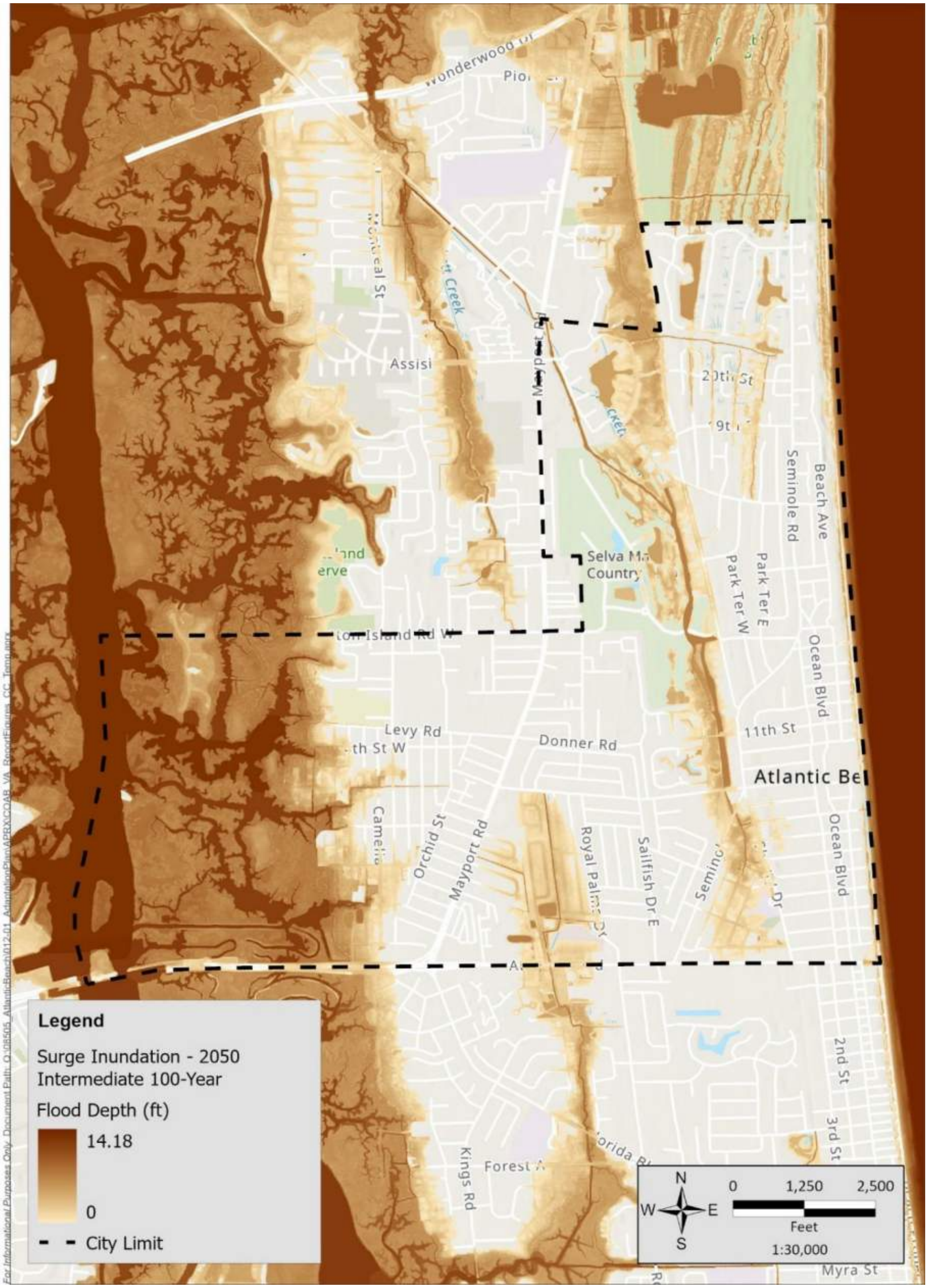
Appendix A – Inundation Scenarios and Maps

Figure 17 100-Year Storm-Surge Flooding Under 2050 Intermediate-Low SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 18 100-Year Storm-Surge Flooding Under 2050 Intermediate SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 19 100-Year Storm-Surge Flooding Under 2080 Intermediate-Low SLR Conditions

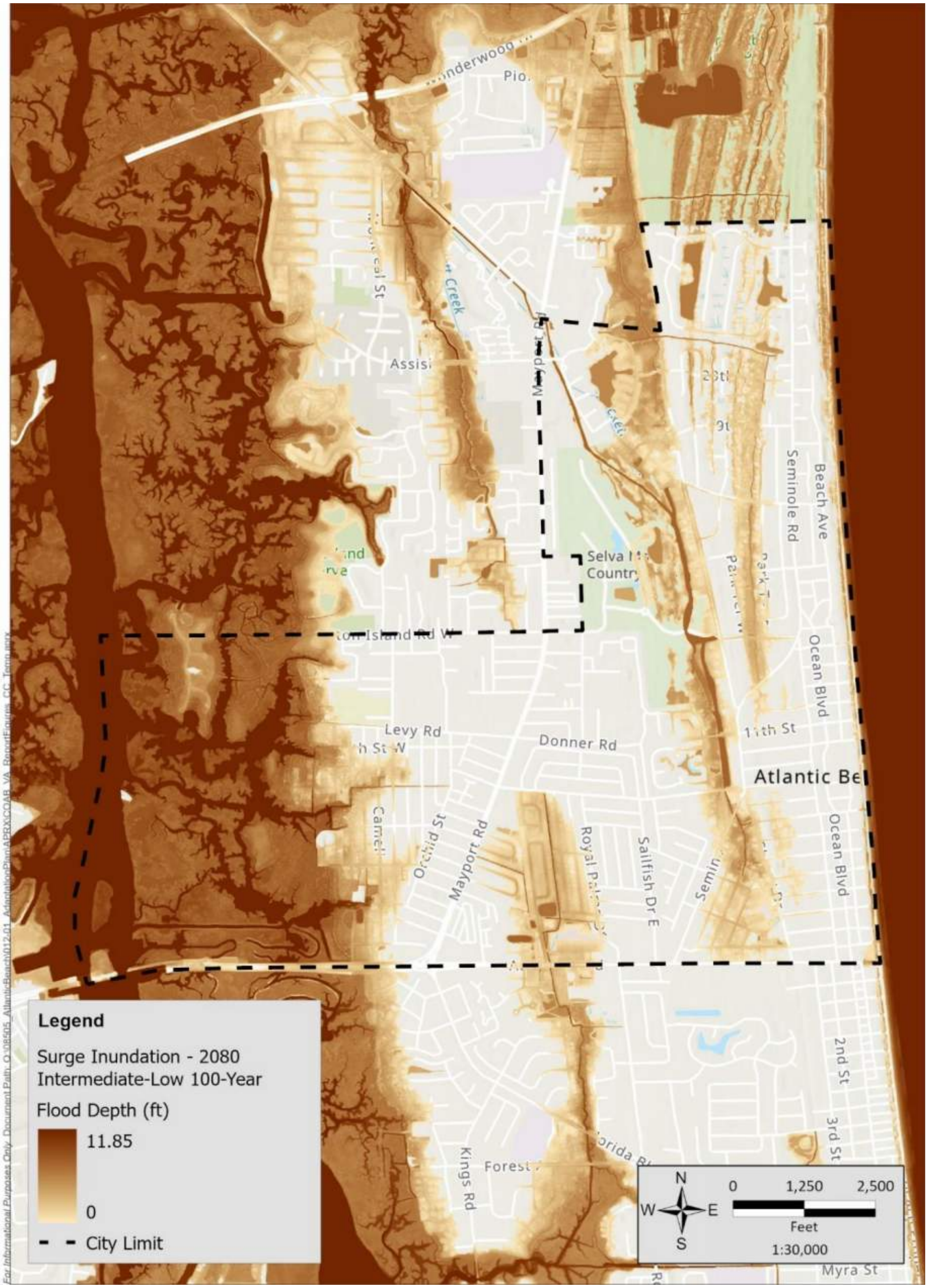
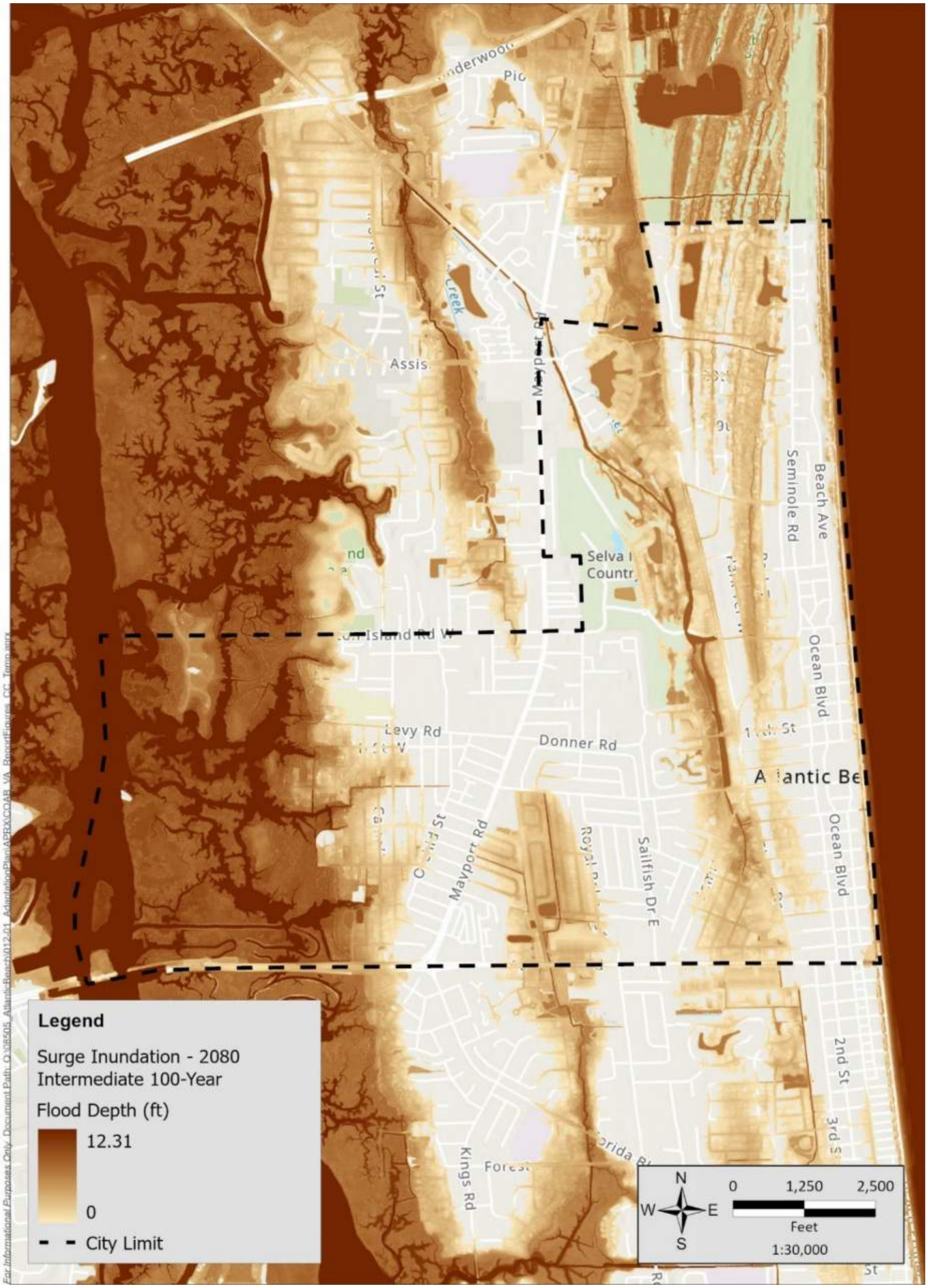


Figure 20 100-Year Storm-Surge Flooding Under 2080 Intermediate SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 21 Combined Flooding for the 100-Year, 24-Hour Storm Event Under Existing Conditions

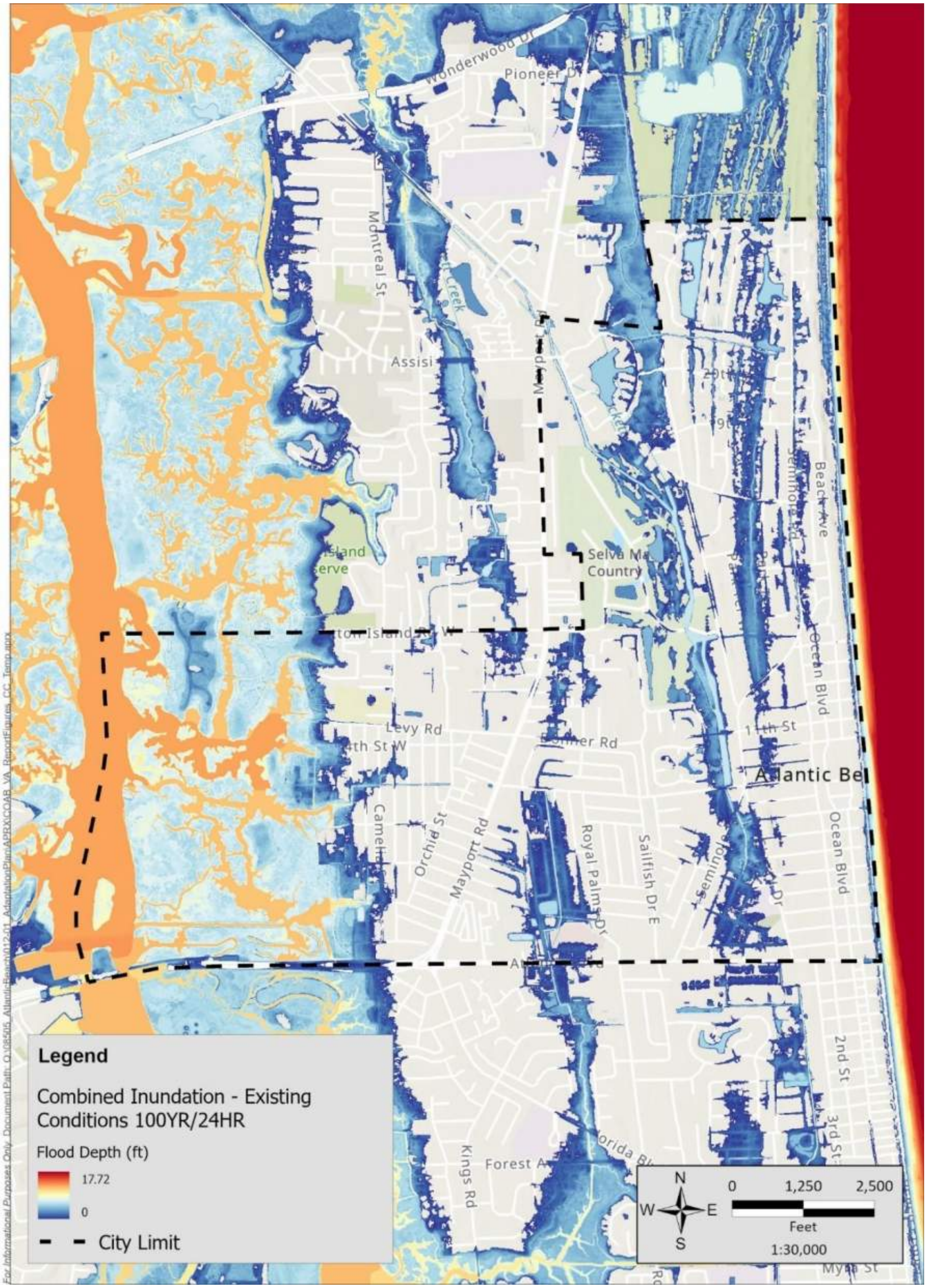


Figure 22 Combined Flooding for the 100-Year, 24-Hour Storm Event Under 2050 Intermediate-Low SLR Conditions

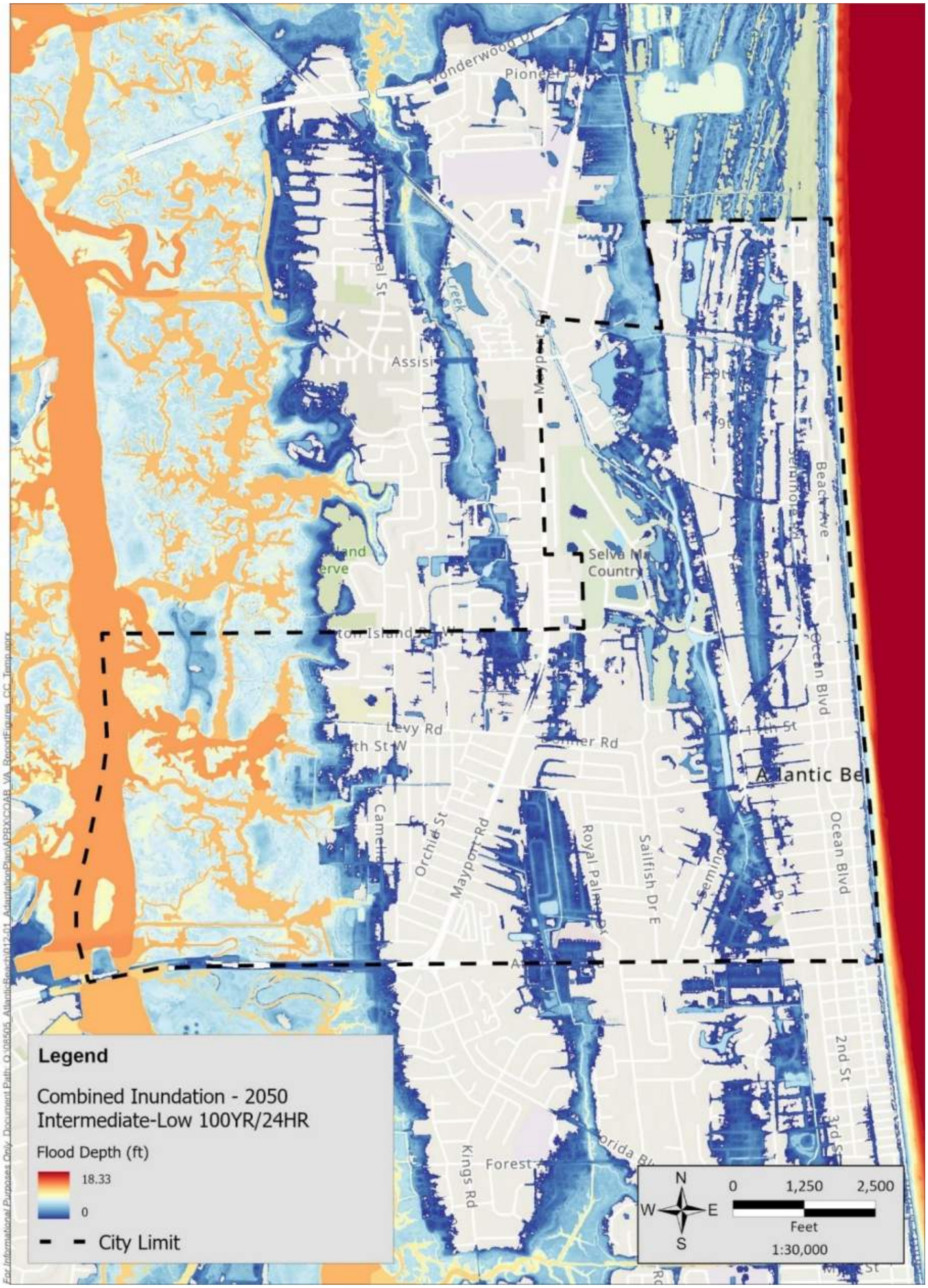
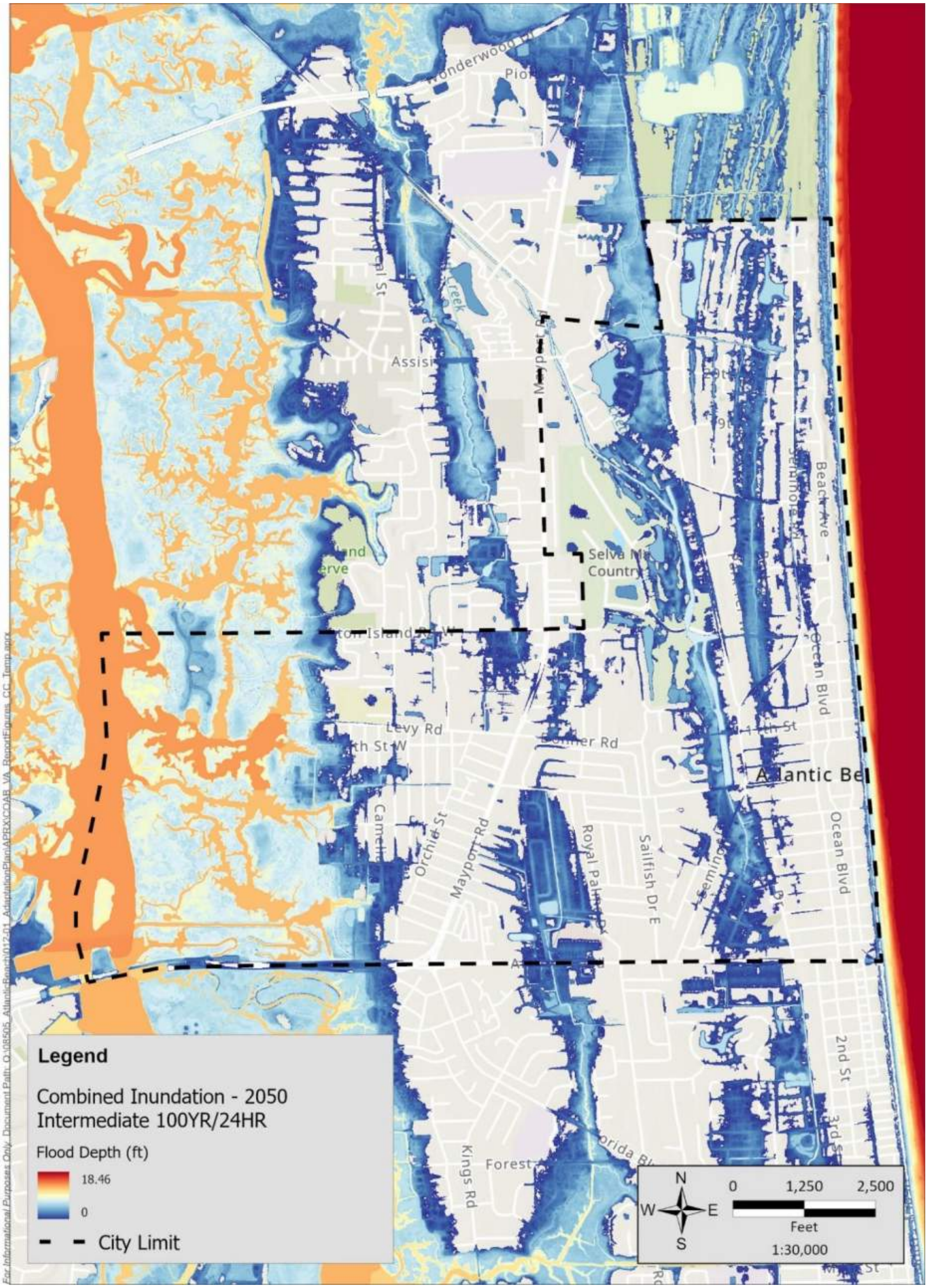
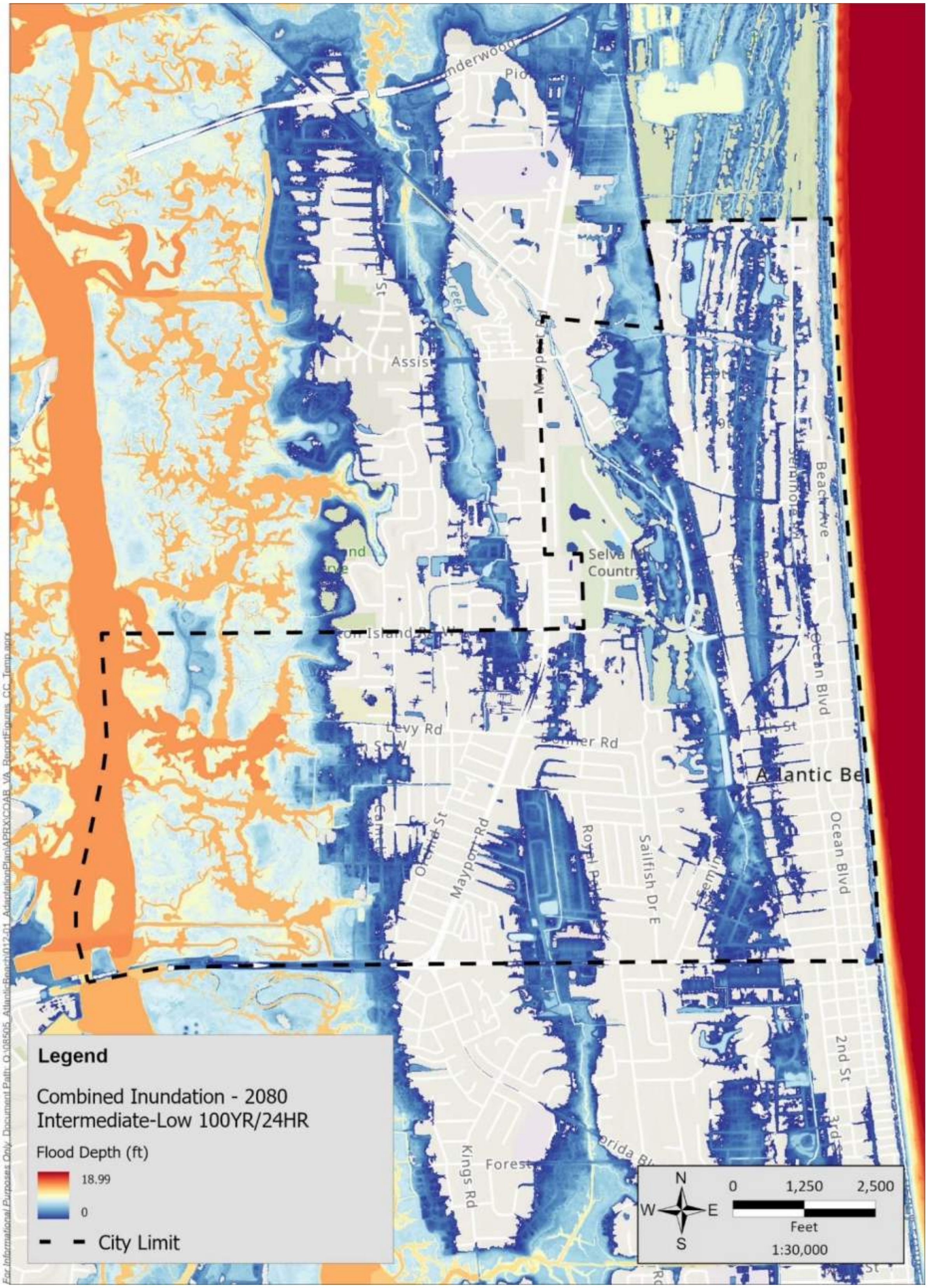


Figure 23 Combined Flooding for the 100-Year, 24-Hour Storm Event Under 2050 Intermediate SLR Conditions



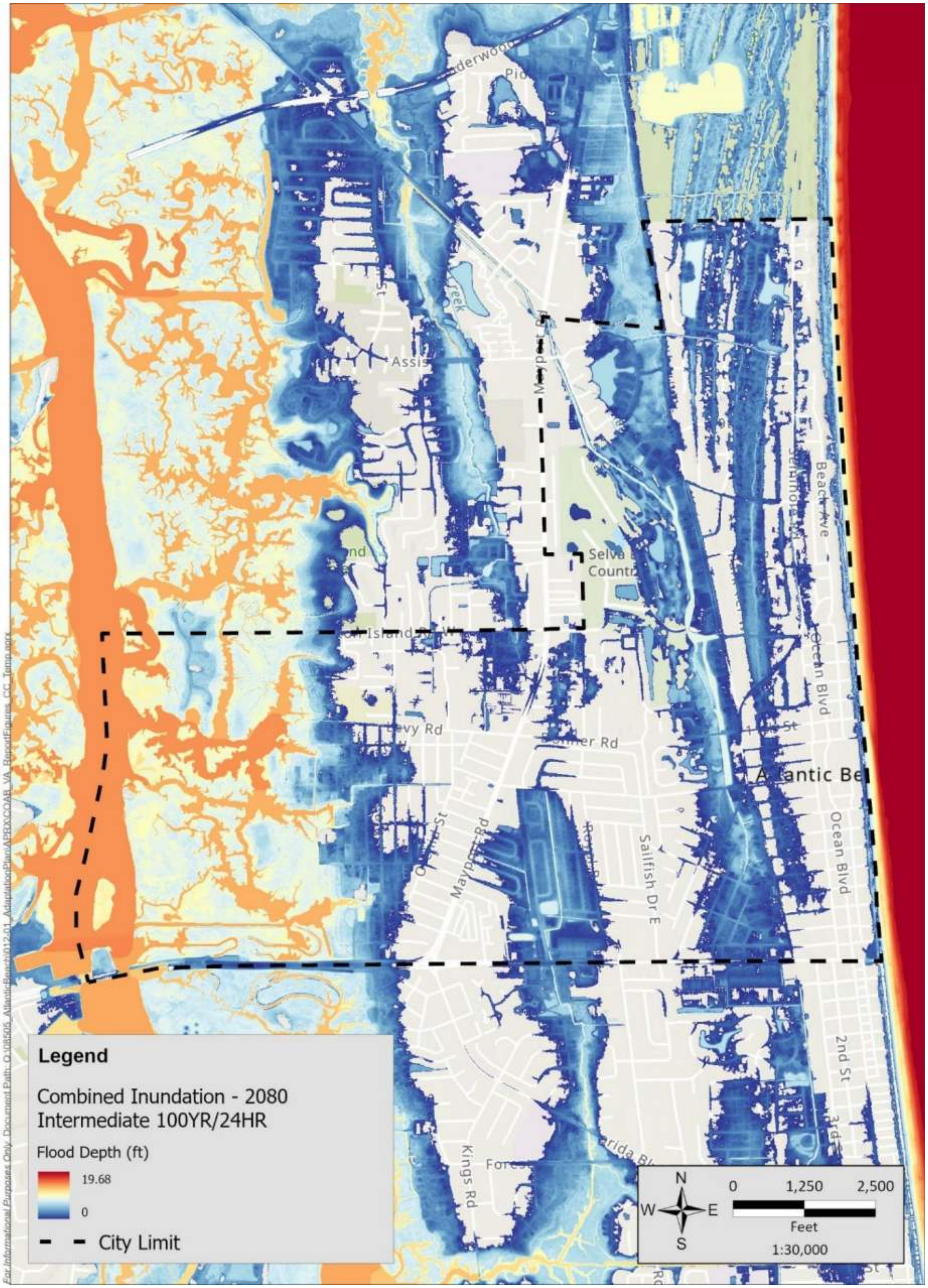
Appendix A – Inundation Scenarios and Maps

Figure 24 Combined Flooding for the 100-Year, 24-Hour Storm Event Under 2080 Intermediate-Low SLR Conditions



Appendix A – Inundation Scenarios and Maps

Figure 25 Combined Flooding for the 100-Year, 24-Hour Storm Event Under 2080 Intermediate SLR Conditions



Appendix B

Public Workshop Comments

No public comments have been received to date. As this is a living document that will be updated often as additional information becomes available, comments received from planned public meetings will be incorporated as appropriate in to the document and will be added to this appendix.