

PLANNING COMMISSION
February 12, 2025

The public may view the public meeting at:
www.youtube.com/user/cityofisleofpalms

Public Comment: Citizens may provide public comment here:
<https://www.iop.net/public-comment-form>

AGENDA

The Isle of Palms Planning Commission will hold its regular meeting on Wednesday, February 12, 2025, at 4:30 p.m. in Council Chambers of City Hall, 1207 Palm Boulevard.

- A. Call to order and acknowledgment that the press and the public were duly notified in accordance with state law.
- B. Approval of minutes January 8, 2025
- C. New business
- D. Old business Review of Comprehensive Plan
Review of Sea Level Rise Adaptation Plan
Review of Community Enrichment Task Force recommendations
- E. Miscellaneous business
- F. Adjourn



**Planning Commission Meeting
4:00pm, Wednesday, January 8, 2025
1207 Palm Boulevard, Isle of Palms, SC and
broadcasted live on YouTube: <https://www.youtube.com/user/cityofisleofpalms>**

MINUTES

1. Call to Order

Present: Ron Denton, Sue Nagelski, Sandy Stone, Tim Ahmuty, Jeffrey Rubin,
David Cohen, Rich Steinert

Staff present: Director Kerr, Zoning Administrator Simms

2. Nomination and Election of Chair and Vice Chair

Ms. Nagelski nominated Mr. Denton as Chair of the Planning Commission. Mr. Cohen seconded the motion. There being no other nominations, a vote was taken with all in favor of Mr. Denton as Chair of the Planning Commission.

Ms. Nagelski nominated Mr. Cohen as Vice Chair of the Planning Commission. Dr. Rubin seconded the motion. There being no other nominations, a vote was taken with all in favor of Mr. Cohen as Vice Chair of the Planning Commission.

3. Approval of minutes

Ms. Nagelski expressed concern about the clarity of the sentence beginning “Director Kerr noted his surprise...” under the discussion about the draft of the Sea Level Rise Adaptation Plan. After some discussion, Director Kerr offered the following adjustment: “Director Kerr noted his surprise that the maps were based on existing topography with no account for future erosion and therefore showed a lack of water inundation on the oceanside of the island and the lack of projected inundation in the later years along the backside of the island.”

MOTION: Mr. Cohen made a motion to approve the minutes of the September 11, 2024 meeting as amended. Dr. Rubin seconded the motion. The motion passed unanimously.

3. New Business

Discussion of Future Initiatives

Director Kerr briefly shared the status of the work done by the Community Enrichment Task Force and Beach Preservation Ad Hoc Committee throughout 2024. The Community Enrichment Task Force is planning to present their work to the City Council in February. The recommendations of the Beach Preservation Ad Hoc Committee will be presented to and discussed by City Council at next week's workshop. The final version of the Sea Level Rise Adaptation Plan will be presented to Council in March.

Director Kerr believes some of the recommendations from these plans will be directed to the Planning Commission for further consideration. He believes some Community Enrichment recommendations overlap those in the Comprehensive Plan, which is scheduled to be presented and discussed at City Council's April Workshop.

Director Kerr said he would forward copies of all plans and recommendations to the Commissioners.

4. Old Business

Referencing an earlier Planning Commission discussion, Mr. Cohen asked about alternative uses for the municipal lot in the business district, specifically mentioning a solar farm micro grid. Director Kerr said the site was being considered as a future site for City Hall, but it was not a popular option among Council members.

Director Kerr updated the Commissioners on the status of the Waterway Boulevard project, sharing that the City received a grant for those improvements. The USACE Beneficial Use Project is anticipated to begin on Isle of Palms in February. The permit application process for the next large renourishment project has begun. The need for it will depend on the success of the beneficial use project and the shoal management project.

5. Miscellaneous

The next meeting of the Planning Commission will be Wednesday, February 12, 2025 at 4:00pm.

6. Adjournment

Mr. Stone made a motion to adjourn, and Mr. Cohen seconded the motion. The meeting was adjourned at approximately 4:34pm.

Respectfully submitted,

Nicole DeNeane
City Clerk

Amended Comprehensive Plan

for the

City of Isle of Palms, South Carolina

Prepared by the
Isle of Palms Planning Commission

Revised May 26, 2015

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Vision Statement

Isle of Palms has transformed into a top-tier residential community situated on a barrier island, offering a range of housing styles, commercial opportunities, and recreational amenities. Despite the island's natural beach erosion and low-lying terrain, which are typical of barrier islands, the pristine natural resources that contribute to the island's appeal as a desirable place to live and visit have been preserved. To ensure the island maintains its exceptional qualities and safeguards the environment for future generations, it is crucial to implement measures that promote responsible development, preserve the island's unique character, and maintain a high quality of life.

~~Isle of Palms has developed into a premier barrier island residential community with a variety of housing styles, commercial uses and recreational facilities. Despite the natural cycle of beach erosion and low-lying terrain that is inherent on barrier islands and the extensive development of the island, the natural resources that make Isle of Palms such a wonderful place to live and visit remain intact and in good condition. Measures that will enhance the existing character of the island as a quality place to live, and protect the environment both on and around the island, must be taken to guide development and preserve the quality of life for generations to come.~~

January 31, 2002 (revised July 7, 2023 May 26, 2015)

INTRODUCTION

In 1994 the State of South Carolina adopted the Comprehensive Planning Enabling Act. This Act revised the State's planning laws, including the process by which municipalities may develop and adopt comprehensive plans. The Isle of Palms Comprehensive Plan was prepared in accordance with the 1994 Act. ~~Throughout the extensive preparation period, a multitude of workshops and public hearings took place, involving consultations with numerous experts from diverse fields. During the many months of preparation, numerous workshops and public hearings were held and many experts in various fields were consulted.~~ A list of meetings and their associated topic are presented in ~~at which the plan was discussed and the topics discussed at those meetings appear in~~ Appendix AC. All meetings were open to the public and public participation ~~in the planning process~~ was encouraged.

This Comprehensive Plan is intended to document ~~the Isle of Palms~~ the history of development ~~on the Isle of Palms~~, identify ~~y~~ the community's problems and needs, and articulate a vision for its future. The Plan is also intended to help guide future decision making in matters affecting the physical, social, and economic growth, development and redevelopment of the community. ~~Though this~~ plan is not a final product; it is, ~~in fact,~~ part of a continuing planning process and ~~therefore~~ should be updated ~~and revised~~ ~~as when~~ new information, ~~problems, and needs arise.~~ ~~becomes available or as new problems and needs arise.~~

The first plan, ~~n~~ adopted pursuant to ~~the Act of~~ 1994, SC Code 6-29-510 Act was adopted in December 1997 and ~~then~~ amended ~~in March 1998~~ ~~to include~~ with the addition of time frames for implementing strategies, ~~that were contained in the plan in March of 1998.~~ ~~By~~ In November 2002, the Planning Commission began on what was intended to be a five year review. However, the number of changes became significant enough to warrant a ten-year update to the plan. ~~–~~

~~The~~ ~~During the~~ ~~The~~ ~~revisions from this review were incorporated in early~~ 2004. ~~The plan was reviewed by the Planning Commission in 2008.~~ ~~Comprehensive Plan review added,~~ ~~and as a part of this review,~~ two new elements ~~were added;~~ Transportation and ~~Priority Investment~~ Priority Investment, as required by the 2007 South Carolina Priority Investment Act.

~~The~~ ~~By~~ In 2014 Comprehensive Plan review included, ~~the Planning Commission reviewed the plan and recommended that the plan be updated to include information regarding pertaining to the 2010 Census~~ ~~in addition to and addressing~~ beach erosion issues.

~~The~~ ~~During the~~ 2023 Comprehensive Plan report review and sequential update. In 2023, the Planning Commission incorporated 2020 Census updated the plan again to included data, ~~a~~ addresses, ~~–~~ several developing issues such as ~~In addition to the updated Census data, other such issues as stormwater~~

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~~drainage, sea-level rise, and the expansion of the public sewer system were also addressed. Furthermore, this review adds a new element, resiliency, to the Comprehensive Plan as required by the 2020, Act No. 163 amending The Code of Laws of South Carolina, 1976, by adding Chapter 62 to Title 48 and modifying Section 6-29-510 requiring jurisdictions to consider the potential impacts of flooding or other natural hazards on citizens and the community.~~

~~In 2020, Act No. 163 added a new required element to the comprehensive plan. The new resiliency element (10) requires jurisdictions to consider the potential impacts of flooding or other natural hazards on citizens and the community from the 2020 Census and matters associated with drainage, sea-level rise and efforts to expand the public sewer system.~~

Today, The Comprehensive Plan includes ~~10~~^{nine} major elements: Population, Economic, Natural Resources, ~~Resilience~~, ~~Resilience~~, Cultural Resources, Community Facilities, Housing, Land Use, Transportation, and Priority Investment. Each element includes background information, ~~and may also include~~ a list of key ~~issues, and issues, and~~ a set of goals and implementation strategies where appropriate. Preceding these elements is an overall vision statement and brief description of the island's location and history.

Time frames and priorities for implementing the strategies contained in this plan are included in parentheses at the end of each strategy.

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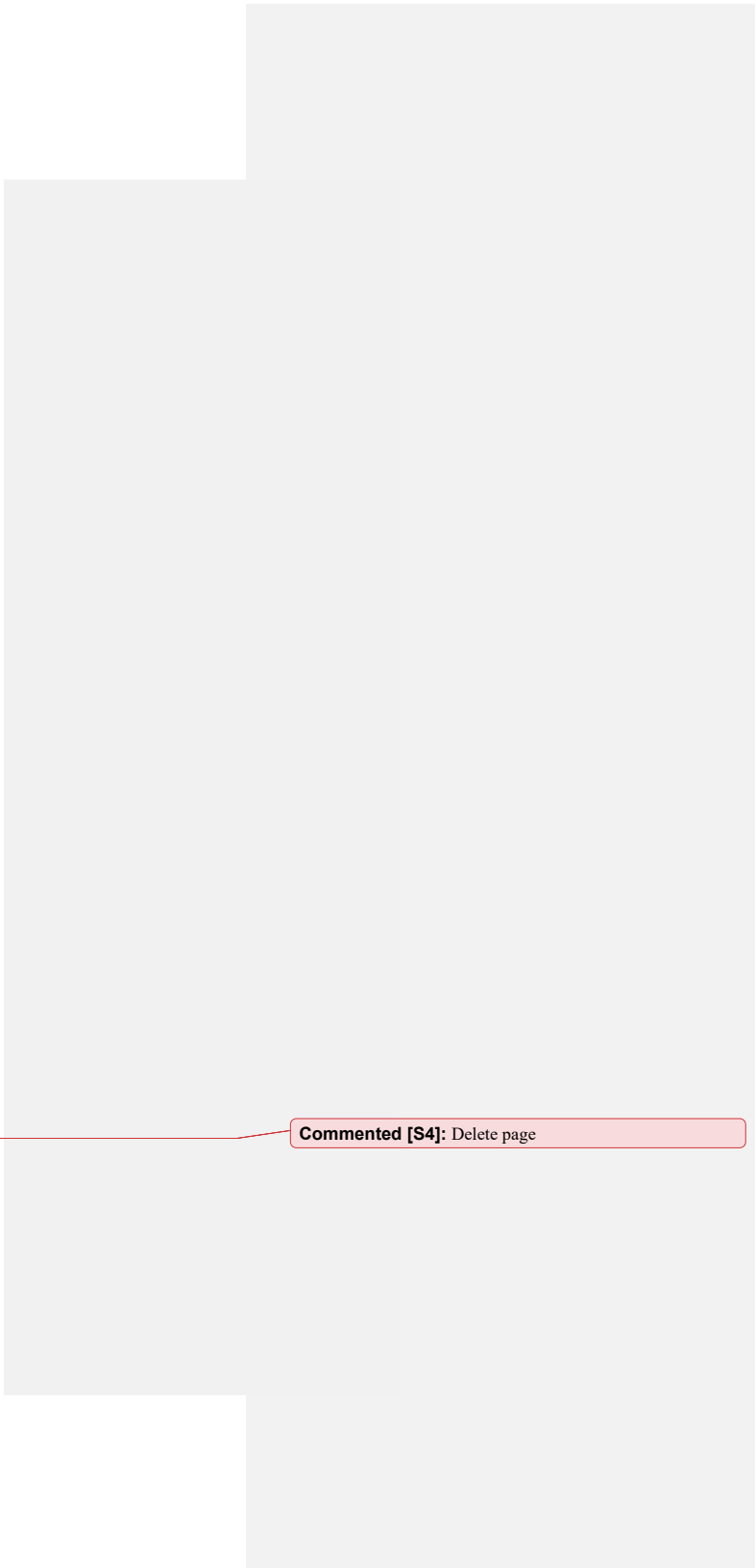
Vision Statement

~~Isle of Palms has developed into a premier barrier island residential community with a variety of housing styles, commercial uses and recreational facilities. Despite the natural cycle of beach erosion and low-lying terrain that is inherent on barrier islands and the extensive development of the island, the natural resources that make Isle of Palms such a wonderful place to live and visit remain intact and in good condition. Measures that will enhance the existing character of the island as a quality place to live, and protect the environment both on and around the island, must be taken to guide development and preserve the quality of life for generations to come.~~

~~January 31, 2002 (revised May 26, 2015)~~

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LOCATION AND HISTORY

Location and Climate

Isle of Palms is a seven-mile-long barrier island located eight miles east of Charleston on the South Carolina coast. This long and relatively narrow island varies in width from .35 miles to 1.6 miles, and its slightly curving shoreline has an orientation of southwest to northeast.

For descriptive purposes, the end of the island nearest Charleston is referred to as the “west” end, while the opposite end of the island is referred to as the “east” end. The total area of the island is four and one-half square miles.

The island is bounded on the **N**orth by Hamlin Creek and the Intracoastal Waterway, on the **E**ast by Dewees Inlet and Dewees Island, on the **S**outh by the Atlantic Ocean, and on the **W**est by Breach Inlet and Sullivan’s Island.

The average annual temperature is 66 Degrees F, with a low monthly average of 50 degrees in January and a high monthly average of 81 degrees in July and August. Precipitation averages 46.8 inches annually and varies from 2.1 inches in November to 6.2 inches in August.

History

Originally referred to as Hunting Island in the mid-18th century and later named Long Island in 1898, the Isle of Palms has long served as a haven for refuge and relaxation. During the American Revolution, the island played a vital role as a staging area for troops. In a significant event in 1776, Sir Henry Clinton's British forces landed on the Isle of Palms, then known as Long Island, with the intention of crossing Breach Inlet and launching a surprise attack on the American fort located on Sullivan's Island. However, the American troops, led by Colonel William Thomson, intercepted and repelled Clinton's troops as they endeavored to navigate the challenging waters of the inlet. This incident gave rise to the name "Breach Inlet," symbolizing the unsuccessful

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Originally known as Hunting Island and then between the mid-18th century PP

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~~18~~ century

~~and Long Island in 1898 as Long Island, the Isle of Palms served as a place for refuge and relaxation for many years. D as a place of refuge and recreation and, during the American Revolution, Isle of Palms became as a staging area for troops. In fact, Breach Inlet, located on at the west end of the island derives its name from a 1776 n event in 1776, when Sir Henry Clinton's British troops landed on Isle of Palms, known then as Long Island, and attempted to cross the inletBreach Inlet to Sullivan's Island toand attack the American fort on Sullivan's Island from the rear. Clinton's troops were intercepted by American troops, led by Colonel William Thomson, and repulsed as they attempted to "breach" the treacherous waters of the inlet, thus giving us Breach Inlet.~~

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In 1898, the first house was constructed on the island by Nicholas Sottile. The ~~next~~ following year, Dr. Joseph S. Lawrence changed the name of the island to

Isle of Palms and provided the first overland access by means of a trolley rail line running from Mount Pleasant across Sullivan's Island to Isle of Palms. Dr. Lawrence was a physician and business entrepreneur who wanted to create a holiday resort. As such, he opened a restaurant and Ferris wheel were opened for island visitors. thBy e following year, and in 1902 the Seashore Hotel was completed and open for guests.

As the island's popularity continued to increase, a long, covered pavilion, which stood until the late 1930s, was constructed along the beach. However, in 1924, Isle of Palms was effectively closed when the ferry service from Charleston to Mount Pleasant was discontinued due to financial difficulties.

In 1926 a wooden bridge replaced the trolley trestle, enabling visitors to come by car. With the opening of the Grace Memorial Bridge in 1929, linking Charleston and Mount Pleasant, and the advent of other road and bridge improvements, it soon became even easier to reach the Isle of Palms by automobile. The Town of Isle of Palms, Incorporated, which was formed to capitalize on the improved accessibility of the island, inaugurated a new program of improvements on the island, including paving of roads. But-However, the effects of the Great Depression cut short these plans. By 1934, and in 1934, the Hardaway Contracting Company took control of the island. Unfortunately, Once again, the venture failed as Hardaway's efforts did not generate a return on his investment.

In 1944 J.C. Long, a Charleston attorney, purchased the Hardaway interests and otherwise un-owned portions of the island and formed a new land development company called The Beach Company. Mr. Long immediately began to make major improvements on the island, and the first substantial development of the Isle of Palms began.

Residential development began on the western end of the island, where many of the remaining homes date back to the 1940s. Residential subdivision and construction continued through the 1950s and into the 1960s. By 1975, the City approved plans for the development of a "recreational-oriented residential community" to be located at the eastern end of the island. This private, gated recreational-oriented residential community built by the Sea Pines Company development soon became known as Wild Dunes with a. The current year-round residential population of approximately is estimated at over 4,000 people and with a peak population of 20,000 people during peak major summer months and holiday weekends.

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In 1953, by an Act of the South Carolina Legislature the Town of Isle of Palms, Incorporated island was changed to incorporated as the City of Isle of Palms, incorporated by an Act of the South Carolina Legislature. Today, tThe City currently has a council for ofm of

government ~~that includes with~~ a Mayor and eight City Council members, each elected to four-year terms. The City also employs a City Administrator to manage its daily affairs.

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The commercial development on the island ~~known as Front Beach~~ was originally centered around ~~Ocean Boulevard between 10th and 14th Avenues. Currently, the commercial area now includes non residential portions of Palm Boulevard as well.~~

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~~Ocean Boulevard between 10th and 14th Avenues, known as the "Front~~

~~Beach" area.~~

~~The commercial area now includes Palm Boulevard as well.~~

Over the years, the type ~~and makeup~~ of commercial buildings have changed from open-air pavilions ~~favoring~~ seasonal activities to more substantial, enclosed buildings ~~housing and~~ shopping centers ~~housing and~~ businesses ~~allowing for which operate~~ year-round ~~operation.~~

The Island Center on Palm Boulevard opened in 1959, followed by the Ocean Park shopping center in 1992. In the meantime, the Pavilion Shops on Ocean Boulevard opened in 1989. The Sea Cabin condominiums, used mainly for seasonal occupancy, opened in 1980 and 1981. The island has had two hotels and several multi-family developments built since the late

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~~As a barrier island, 1990s:~~

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The Isle of Palms ~~has experience finds itself exposed to Nor'easters, tropical storms and hurricanes. The most d many storms and hurricanes, but none as~~ devastating ~~hurricane experienced occurred at midnight on September 21, 1989, as~~ Hurricane Hugo, ~~which hit the South Carolina coast at midnight on September hit the area as a~~ 21, 1989. ~~This~~ category four hurricane ~~damaginged~~ nearly every structure on the island and ~~destroyed~~ ~~more than another~~ 200 structures.

In October 1993 the Isle of Palms Connector opened, providing direct access between Isle of Palms and Mount Pleasant over a fixed span bridge. The Connector, named for the late Representative Clyde Moultrie Dangerfield, improved the ability of residents to evacuate in time of emergency.

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1.0 POPULATION

Characteristics

According to the 2020 Census, the population of the City of Isle of Palms has been relatively stable over the last decade. Between 2000 and 2010 the total population dropped slightly from 4,538 to 4,133. By 2020, population grew modestly to 4,371.

~~in 2010 and grew modestly to 4,371 in 2020.~~ During the summer beach season, the island's population rises to 12,000 people and as high as may increase to as many as 20,000 people during peak weekends such as Memorial Day, Fourth of July and Labor Day, based on Police Department estimates.

The number of year-round residents of the Isle of Palms is not expected to change significantly in the near future. This can be attributed to: a decreasing supply of residential development sites on the island, especially sites aimed at year-round residents, and a continuing decline in the average number of persons per household.

The 2020 Census indicates a 33% increase in the number of people over the age of 65, with the number of people in every other age category either decreasing or marginally increasing.

The 2020 Census indicates that the number of housing units increased by three-percent or 4,376 units over the 2010 Census. ~~to 4,376 units.~~ However, the number of owner-occupied units also increased by nearly fourteen percent or 1,684 over the same period. ~~to 1,684 units.~~ The Census category that includes units rented on a short-term basis and second homes increased by 26% from 1,939 units to 2,446 units.

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| Population- year round | | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2020 |
|------------------------|---------------------------------|-------|---------|---------|---------|---------|---------|----------------------------|
| | Isle Of Palms[Census] | 1,183 | 2,657 | 3,421 | 3,680 | 4,583 | 4,133 | 4,371 |
| | Mount Pleasant [Census] | | | | | 47,386 | 67,843 | 90,801 |
| | Charleston-North Charleston MSA | | | | | | | 799,636 |
| | Charleston County | | 247,561 | 276,556 | 295,159 | 310,749 | 350,998 | 413,024 |
| | Other Barrier Islands[Census] | | | | | | | |
| | Sullivan's Island | | | | 1,623 | 1,911 | 1,791 | 2,177,891 |
| | Folly Beach | | | | 1,398 | 2,116 | 2,617 | 2,664,078 |
| | Kiawah Island | | | | 718 | 1,163 | 1,626 | 4,772,013 |
| | Seabrook Island | | | | 948 | 1,250 | 1,714 | 1,8102,050 |

| Isle of Palms Housing Units | | 1970 | 1980 | 1990 | 2000 | 2010 | 2020 |
|-----------------------------|------------------|------|-------|-------|-------|-------|-------|
| | Total[Census] | | | 3,063 | 3,881 | 4,274 | 4,376 |
| | Occupied[Census] | 821 | 1,305 | 1,482 | 1,942 | 1,828 | 1,906 |
| | by Owner | | | 1,172 | 1,568 | 1,481 | 1,684 |

| | | | | | | |
|---------------------------------|---|--|--------------------|--------------------|--------------------|------------|
| | by Renter | | 310 | 374 | 347 | <u>222</u> |
| | Seasonal/Vacant | | 2,109 | 1,939 | 2,446 | 2,470 |
| | | | | | | |
| | Total within Wild Dunes[as of 4/8/2012] | | | 1,923 | 2,067 | 2,160 |
| | | | | | | |
| Vacant Residential Sites | | | <u>1995</u> | <u>2001</u> | <u>2010</u> | |
| | Total | | 975 | 375 | 215 | 99 |
| | | | | | | |
| | Single Family | | 825 | 206 | 117 | |

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Income (per census)

Income- median

Isle of Palms

1980- \$9,177
1990- \$25,421
2000- \$44,221
2010- \$68,759
2020- \$91,893

Mount Pleasant

1980- \$9,038
1990- \$25,421
2000- \$30,823
2010- \$40,808
2020- \$58,409

Charleston County

1980- \$6,358
1990- \$13,068
2000- \$21,393
2010- \$29,738
2020- \$43,141

Household income- median

Isle of Palms

1980- \$24,096
1990- \$60,682
2000- \$76,170
2010- \$86,477
2020- \$128,523

Key Issues

- The impact of a growing seasonal population.
- The impact of a growing year-round population of retirement age (60 years and over).

Goals and Implementation Strategies

Goal 1.1: Improve services for residents.

- Strategy 1.1.1 The City ~~should~~ will continue to monitor the Emergency Medical Services serving the island (see also Goal 6.5.1). (Ongoing; Fire Department, General Government and City Council)
- Strategy 1.1.2 Recreational opportunities for residents should be expanded or added, including additional safe walking or biking areas on the island (see also Goal 6.3 Strategy 5.4.3). (2008; Recreation Department, General Government and City Council)

Goal 1.2: Balance the needs of island residents with seasonal visitors.

- Strategy 1.2.1 Support commercial development only within the parameters set by the existing zoning regulations and consistent with the City's established character as a residential community. (Ongoing; Building Department and City Council)
- Strategy 1.2.2 While the needs of island residents should be paramount, efforts should be made to adjust the level of City services to meet the needs of seasonal visitors as well. (Ongoing; General Government and City Council)
- Strategy 1.2.3 The City should continuously monitor and keep records of the effect of seasonal visitors on the quality of life of the permanent residents; this

should include, but not be limited to the issues of parking, noise, trash, and general livability.
(Ongoing: General Government and City Council)

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2.0 ECONOMIC

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Characteristics

Isle of Palms is primarily a residential community consisting of year-round residents, second home owners, vacation rentals, long-term rentals, ~~and a commercial district, and .~~ ~~There is also a first World class residential, vacation, and recreational complex resort known as Wild Dunes Resort.~~ ~~Wild Dunes Resort sits at~~ the north end of the island with a similar blend of properties ~~and includes as well as~~ resort amenities.

~~Of the approximately 2,880 acres that make up Isle of Palms, on the island,~~ approximately 40.6 acres or 1.4 percent ~~of the island~~ is zoned commercial, excluding ~~resort amenities within the gated section of~~ Wild Dunes Resort. Only a small portion of the commercially zoned land remains undeveloped. The island's economic diversity and high property values provide a strong tax base and has allowed the millage rate, the factor that is multiplied by the assessed value of a property to determine the amount of property tax to be paid, to be the lowest of all municipalities within the Charleston area.

The island's ocean beach, tidal marshland, and marinas constitute the most important economic assets. ~~They~~ ~~These assets~~ are ~~the main~~ reason residents, daily visitors and tourists alike are drawn to the area. Only by maintaining and improving these natural assets will the island's community continue to grow and prosper. The desirability of living near these natural resources ~~has created~~ ~~creates~~ relatively high property values, ~~and thus,~~ ~~which in turn raises~~ ~~increases~~ the tax base. These same ~~resources~~ ~~assets~~ attract tourists ~~and increases,~~ ~~which results in~~ accommodations tax revenue. ~~This~~ ~~The accommodation tax~~ revenue is ~~essential~~ ~~vital to~~ ~~in~~ the support of services and infrastructure.

The gated community of Wild Dunes includes ~~two resort the hotels,~~ ~~several major resort,~~ conference ~~centers,~~ golf and tennis facilities, as well as single-family and multi-family dwelling units. Wild Dunes LLC owns and operates these facilities ~~with the assistance of Hyatt.~~ ~~In addition to the resort hotels, Wild Dunes Resort and also~~ manages many of the short-term rental properties within Wild Dunes, ~~though they aren't the sole short term rental property manager within Wild Dunes.~~

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~~Short term rental of these units in season is reaching capacity while unoccupied units remain during the off season.~~ The Planned Development District ~~or,~~ "PDD" zoning district and ~~the~~ Conservation-Recreation zoning district

"CR," ~~which~~ applies to most of the Wild Dunes community. ~~These districts,~~ ~~allows limit the occupancy to 297 resort hotel inn rooms for a maximum of 297 inn rooms,~~ which are made up by the Boardwalk Inn, The Village, and The ~~Sweetgrass~~ ~~Sweetgrass~~ Hotel. ~~and The Village,~~

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Key Issues

- ³⁵₁₇ Assure continuous economic vitality of the island by maintaining the quality of natural resources and community facilities.
- ³⁵₁₇ Assure the quality of life of full-time residents is not diminished by the daily visitors or vacation rental commerce.
- ³⁵₁₇ Maintain and expand City services as needed.
- ³⁵₁₇ Determine the impact that daily visitors and tourists may have on natural resources, services and infrastructure.
- ³⁵₁₇ Maintain a sound tax base on the island.

Goals and Implementation Strategies

Goal 2.1: Balance the needs of residents and tourists with those of the environment.

- Strategy 2.1.1: Maintain policies and procedures to ensure that beaches, marshlands and marinas are protected and preserved. *(Ongoing; Building Department and City Council)*
- Strategy 2.1.2: Encourage business development commensurate with the needs of the local community. *(Ongoing)*
- Strategy 2.1.3: Maintain and enhance an effective monitoring system to ensure beaches, marshlands and marinas are properly maintained. *(Ongoing; General Government and City Council)*

Goal 2.2: Maintain a sound tax base.

- Strategy 2.2.1: Monitor the activity of the State Legislature to ensure an equitable formulation of accommodation tax revenue for island communities. *(Ongoing; General Government and City Council)*

Strategy 2.2.2: Investigate ~~and other~~ evaluate other sources of revenue that can be generated from ~~daily~~ visitors and longer term ~~visitor~~ tourists. (Ongoing; General Government and City Council)

Strategy 2.2.3: Analyze revenue streams each year to ensure an appropriate balance is maintained. (Ongoing; General Government and City Council)

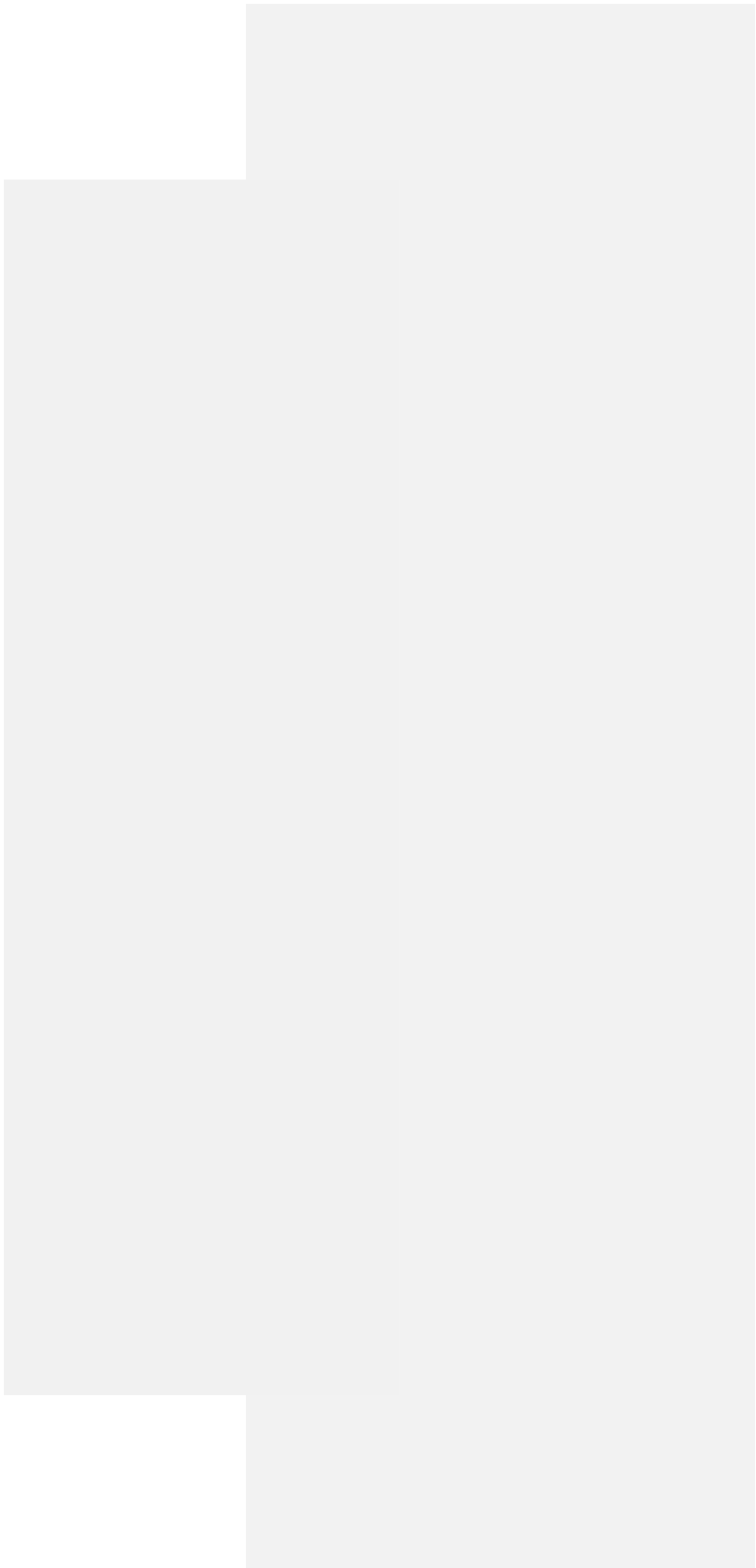
Goal 2.3: Determine the impact of tourists (daily, short-term and long-term) on the island's revenue and cost structure.

Strategy 2.3.1: Initiate comprehensive study by an outside agency to determine economic impact of visitors on recreational facilities, City services and infrastructure. (2008; Recreation Department, General Government and City Council)

Goal 2.4: Minimize escalating cost structure.

Strategy 2.4.1: Personnel costs make up approximately three-quarters of the City's general fund expenditure budget. Continually scrutinize planned projects for additional long-term personnel costs that may be associated with them. (Ongoing; General Government and City Council)

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3.0 NATURAL RESOURCES

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Characteristics

Isle of Palms, like most South Carolina barrier islands, is characterized by a beach and dune ridge system with an extensive tidal marsh along the northeastern side of the island. The island is surrounded by navigable waters and provides some opportunities for access by boat and numerous beach access points. Prior to development, the island was covered by maritime forest.

Despite erosion, flooding and susceptibility to coastal storms, the beautiful sandy beaches, marshes, creeks, ocean, clean air, trees, fish and wildlife make the Isle of Palms a very attractive place to live. Protection of these natural resources is essential to maintaining a high quality of life on the Isle of Palms.

Water Quality

The quality of waters surrounding the island is inextricably connected to the quality of life on the Isle of Palms. Early in the 1990s the South Carolina Department of Health and Environmental Control (DHEC) conducted a water quality monitoring program along the Intracoastal Waterway from Charleston harbor to McClellanville. The program monitored water quality at 51 sites in the study area, three of which were located on the Isle of Palms. In addition, DHEC routinely monitors shellfish beds in the Waterway.

Results of the above testing indicate that of the 51 sites in the testing area, as many as 41 sites have not met water quality safety standards for harvesting oysters, and 26 sites have not met safety standards for swimming.

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An informed City government and population are required to protect the sensitive ecosystem of the island and the impact of pollutants on its water quality. In an effort to better understand, and ultimately address, the island's

water quality issues, the City Council voted in August 2001 to apply for grant monies to study the waters behind the island. The grant monies were offered by the Environmental Protection Agency (EPA) through DHEC under a program entitled “319 Non-point Source Pollution;” to match funds allocated by the City to pay for the cost of such a study. The study began in August 2001 and was completed in March 2004. Pollutants that adversely impact the island’s back waters are nutrients, pesticides, heavy metals and fecal coliforms.

In 2007, the City developed a program in conjunction with Charleston County to improve water quality and comply with the requirements of the Clean Water Act. This program is explained in more detail in the Community Facilities element of this Plan.

Beach

The Isle of Palms shoreline generally is accreting, with sand bypassing Dewees Inlet and moving onto the northern shoreline in the form of large sand shoals. Once the shoals attach to the beach, the sediment shifts laterally along the shoreline, with the majority moving along the island’s beaches in the direction of Breach Inlet and some moving in the opposite direction onto the Dewees Inlet shoreline. Sediment that moves down the shore accumulates along the southwestern 1.5 miles of the Isle of Palms shoreline, which is accretional over the long-term. Some of the moving sediment bypasses Breach Inlet in the form of sand bars that ultimately attach to Sullivan’s Island.

As a result of the episodic nature of shoal attachment and sediment redistribution, the Isle of Palms shoreline closer to Dewees Inlet tends to exhibit unstable characteristics. This instability creates concerns that are described in more detail in the Resiliency element of this Plan.

State regulatory responsibility for protecting the beach and dune system rests with the South Carolina Office of Ocean and Coastal Resources Management (OCRM), which is a division of South Carolina Department of Health and Environmental Control (DHEC). This state agency was created in 1977 as the South Carolina Coastal Council, when the State Legislature adopted the South Carolina Coastal Zone Management Act, SC Code section 48-39-10, et. seq. The Act also established the first comprehensive set of regulations for protecting coastal resources in the eight South Carolina

coastal counties. In 1988, DHEC's jurisdiction on the beachfront was amended by passage of the South Carolina Beachfront Management Act, SC Code section 48-39-270, et. seq. which was further amended in 1990. In 1998, OCRM began a program to periodically test the quality of water along the shoreline. This testing has proven that the water at the beach is very clean, with only two swim advisories ever issued and the most recent advisory being in summer of 2002.

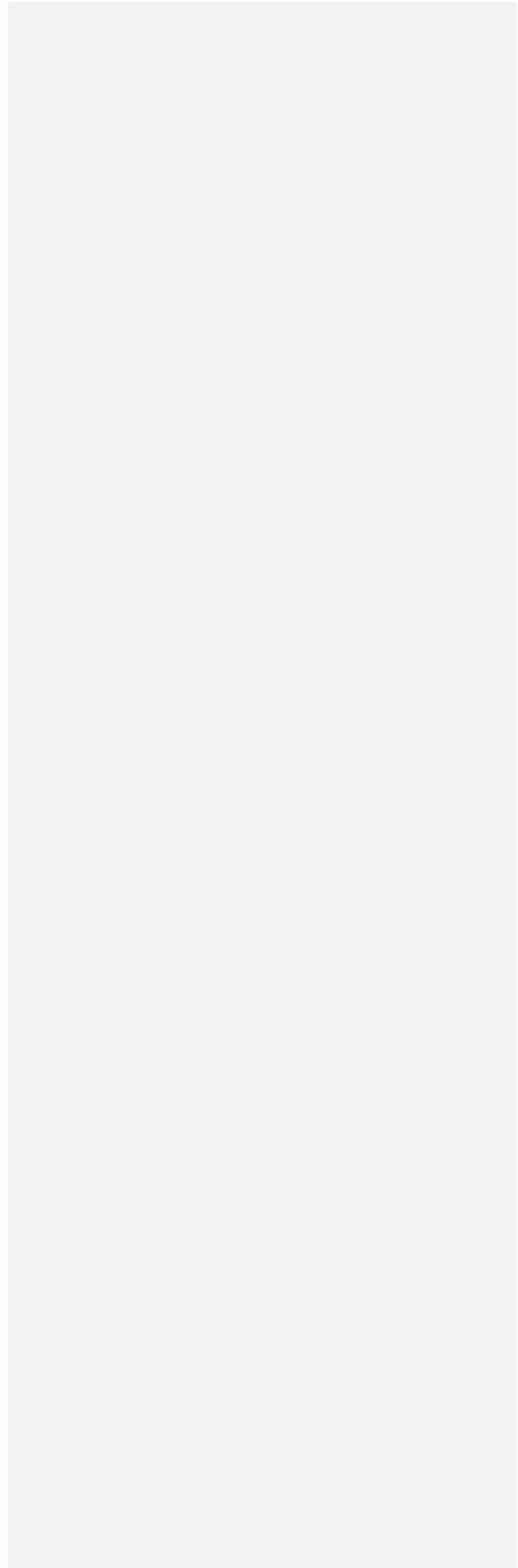
In addition to state regulatory authority over the beaches, the City of Isle of Palms also exercises jurisdiction over the beach on some issues. In areas where the City retains jurisdiction, it has adopted amendments to the zoning ordinance to protect areas abutting the OCRM jurisdiction. The City has marked the beach access paths with a numbering system that corresponds to the opposing street number. Also, provisions for handicapped accessible parking spaces and paths have been added at the 9th and 2nd Avenue beach accesses.

The Isle of Palms Local Comprehensive Beach Management Plan was approved by the City and OCRM in April of 2023. The Plan, which is required by state law and must be updated every ten years, reports on the state of the island's beaches and dunes and provides guidance for the City in managing these important assets.

The method of restoration, off-shore dredging, was recommended by a Long-Term Beach Management Report (not to be confused with the overall Local Comprehensive Beach Management Plan, mentioned above). This report was developed by a group of people with varying interests working with a coastal engineer to develop recommendations that reflect the consensus of the community for future beach management policies and actions. The City continues to monitor erosion on the entire shoreline and occasionally undertakes projects to address affected areas.

In 2015, the City Council approved a resolution expressing the City's opposition to seismic testing and offshore oil and gas development off the South Carolina Coast. Additionally in 2015, the City became the first community in South Carolina to ban the use of single-use plastic bags in commercial operations.

| *Wildlife and Vegetation*



Seven species of birds are listed on the federal endangered or threatened list which may be found in the area. The endangered species are the bald eagle, Bachman’s warbler, wood stork and red-cockaded woodpecker. Threatened birds are the piping plover, peregrine falcon and red knot.

The loggerhead sea turtle, a threatened species, visits the island to lay eggs along the beach. South Carolina beaches have the largest number of nest sites in the “population” tracked between North Carolina and Northern Florida. In recent years the nests have numbered between 20 and 60 on the beaches of the Isle of Palms. It is thought that individual turtles may return to historical/ regional nesting sites every two to five years, accounting for the wide fluctuation in the number of nests from year to year. Enforcement of the island’s lighting ordinance, which prohibits lighting directed at the beach, as well as ordinances requiring the removal of overnight beach furniture, filling in holes in the sand and properly disposing of all trash and garbage is going to help save this threatened species by protecting nests on the island.

No federally listed endangered or threatened plants are known to be located on the island. The primary tree species on the island are palmetto, live oak, loblolly pine, wax myrtle, and crepe myrtle. In 1989 the City adopted its first tree ordinance to prevent parcels from being completely cleared during development. In 2002, the ordinance was amended to include further protection for all live oak trees and other trees in excess of eight inches diameter.

After hurricane Hugo, Palm Boulevard was lined with palmetto trees through a privately organized and funded “Plant-a-Palm” program.

Key Issues

- ³⁵/₁₇ Improvement and maintenance healthy levels of water quality.
- ³⁵/₁₇ Protection of beach, dunes and marsh lands.
- ³⁵/₁₇ Protection of wildlife and vegetation.

Goals and Implementation Strategies

Goal 3.1: ~~Conclude~~ Evaluate the feasibility of whether obtaining an improved flood insurance Community Rating System (CRS) rating is feasible.

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Strategy 3.1.1: Pursue improving the CRS rating if and when feasible.
(Ongoing; Building Department)

Goal 3.2: Improve the water quality of the ocean, waterway and creeks surrounding the island.

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Strategy 3.2.1: _____

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Monitor and/or participate in local and regional water quality studies.
(Ongoing; General Government)

Strategy 3.2.2: Monitor DHEC/OCRM testing of ocean waters impacting the island. *(Ongoing; General Government and Building Department)*

Goal 3.3: Protect marshes, dunes and beaches.

Strategy 3.3.1: Create a public awareness/education program aimed at protecting the sensitive ecosystem of a barrier island, to include protection of dunes and marshes and their vegetation, as well as the importance of removing animal waste and trash from the beaches. *(General Government and Building Department)*

Strategy 3.3.2: Support efforts to minimize the impact of erosion throughout the island including beach nourishment projects, as the need arises. *(Ongoing; General Government)*

Goal 3.4: Promote the maintenance of green spaces throughout the island.

Strategy 3.4.1: Investigate the potential for establishing, or acquiring, City owned, undeveloped green spaces. (*Recreation Department and Building Department*)

Goal 3.5: Protect the island's wildlife and vegetation.

Strategy 3.5.1: Pursue enforcement of ordinance(s) aimed at protecting loggerhead turtle nesting activities and sites. (*Ongoing; Building Department and Police Department*)

Strategy 3.5.2: Support other regulations that protect wildlife and vegetation. (*Ongoing; General Government and Police Department*)

Goal 3.6: Improve air quality on the island.

Strategy 3.6.1: Pursue development of ordinances, education and awareness programs to improve air quality, such as smoking regulations and support of public transportation.

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4.0 RESILIENCY

Resilience is defined as the community's capacity to withstand and recover from natural disasters and long-term changes as a result of sea level rise rather than simply reacting to impacts (National Ocean Service, NOAA).

Existing Conditions

The topography of the island is relatively low and flat, with average ground elevations of 7 to 10 feet above mean sea level (MSL). There are several areas as high as 17 feet above MSL along a ridge on the ocean side of the island.

The tide range, low tide to high tide, is 5.2 feet with the spring tide range increasing to 6.1 feet.

Because of low ground elevations, most of the island lies within a Special Flood Hazard Area of the National Flood Insurance Program. The most common flood zone designations on the island are AE and VE zones, which delineate the statistical threat of flooding from a "100-year storm," for which there is a one percent probability of occurring in any given year. Low elevations, coupled with storm drainage that is significantly influenced by the ebb and flow of the tides, are causes for serious accumulations of storm water, whether generated by heavy rainfall or storm surge.

During severe storm events water levels can be much higher, with the potential for reaching an elevation of 12 feet MSL and wave crests up to 18 feet MSL. In 1989 the storm surge from Hurricane Hugo covered most of the island with peak water levels ranging between 15.5 feet above MSL along the beach and 12.5 feet above MSL along the back of the island.

The City's drainage system is comprised of portions owned and maintained the South Carolina Department of Transportation (SCDOT), the City, Charleston County, and private owners. Some drainage infrastructure is 70 years old, undersized and deteriorating, but other sections are newly constructed and well-functioning.

Considering the City's vulnerability to natural hazards and the increasing severity of flooding events over the past several years, it has become readily

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apparent that the City must plan and identify strategies to make the community more resilient. Specifically, the city must devise a resiliency plan to address the impacts of flooding, beach erosion, and sea level rise on public infrastructure, businesses, and the community.

Flooding

To minimize the potential for property damage due to flood conditions, the City adopted a comprehensive set of regulations in 1983. The City is in compliance with the requirements of the National Flood Insurance Program (NFIP) which allows its citizens to secure federally backed flood insurance policies. Furthermore, the City participates in the Community Rating System (CRS), which is a program that rewards communities that are doing more than meeting the minimum requirements of the NFIP. The City is presently designated as a “Class 5” CRS community, which entitles its citizens to a 30% discount on flood insurance rates. The goal of the CRS is to reduce the loss of life and property in the event of a flood and to protect the natural and beneficial functions of the floodplain.

The City adopted more stringent standards than the minimum flood elevations required by the Flood Insurance Rate Maps (FIRMs) that require the lowest floor of any new structures to be elevated to at least 13 feet above mean sea level.

Since 2010, the City has completed several large-scale drainage projects between 29th and 57th Avenues to reduce the likelihood of flood damage. The City began a major project in 2022 to improve the outfalls between 30th and 41st Avenues to allow water to flow off the island quicker and to seal the tidal waters out of the system.

In 2021 the City engaged Davis and Floyd Engineering to develop a drainage masterplan to identify the areas of need and create a capital improvement program to allow the City to prioritize future drainage projects.

Beach Erosion

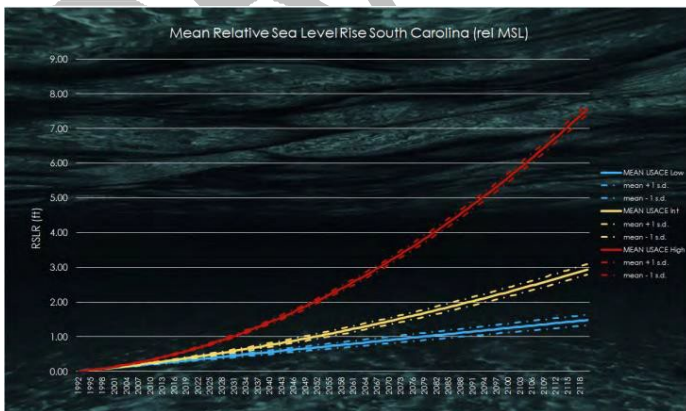
The dune system of the beach creates the first natural barrier against storm surge, flooding, and rising tides. The Isle of Palms shoreline is healthy and

generally accreting, but the shoreline has cyclical erosional episodes particularly around the unstable inlet zones on the two ends of the island.

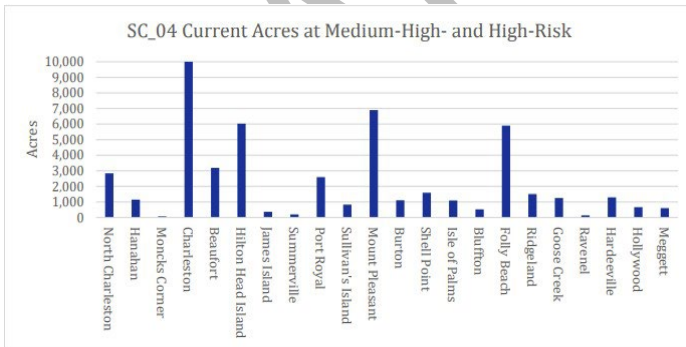
As a result of erosion on the northeastern end of the island near Dewees Inlet, a \$10M beach restoration project was undertaken in 2008 and a \$14M project was undertaken in 2018. These projects consisted of an offshore dredge pumping sand onto the shore and subsequent monitoring. The projects were funded by private and public funds. The City continues to monitor erosion on the entire shoreline and occasionally undertakes projects to address affected areas. It is expected that the City will need to facilitate a major restoration project on a 10-year cycle.

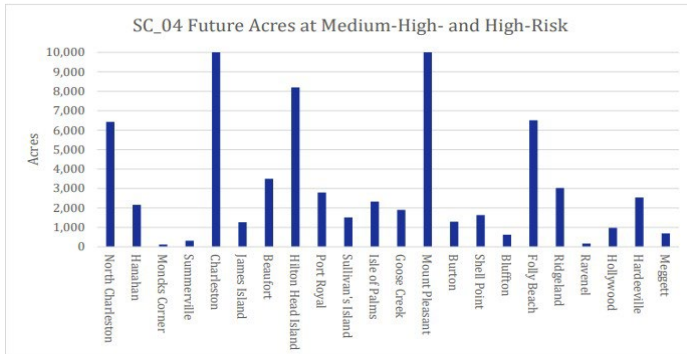
Sea Level Rise

Sea level rise poses a significant threat to homes, private property, public infrastructure and services, natural resources, and ultimately, public safety and welfare. In Charleston, the sea level has risen 10 inches since 1950, and is now accelerating at a rate of 1 inch every 2 years. Further, based on data from three South Carolina compliant gauges, the Army Corp of Engineers South Atlantic Coastal Study (SASC) estimated that mean relative sea level rise will increase anywhere from 1.39 to 7.47 feet by 2120.



While the extent and severity of the influence sea level rise will have on the island remains relatively under-examined, due to the low-lying nature of the island and the proximity to the ocean and marshlands, the City of Isle of Palms is extremely vulnerable to the impacts of rising seas. In particular, sea level rise will likely continue to exacerbate flooding from storm surge, high tides, and stormwater. According to the Army Corp of Engineers' SACS that identified risks and vulnerabilities of coastal areas to increased hurricane and storm damage as a result of sea level rise, the primary impact to the Isle of Palms will likely be structural and infrastructural damage. Their modeling found that over 2,000 acres of Isle of Palms' total 3,481 acres are at medium-high risk of exposure and probability of hazard occurrence, more than twice the acreage currently at medium-high risk. Many of the City's roads are low and at risk of being damaged by high tides and storm surge. Additionally, utilities are installed below ground within the roadway rights-of-way would be impacted by scouring and storm surge.





In 2022 the City requested grant funding to construct an elevated berm on the backside of the island to prevent minor storm surges from being able to inundate the neighborhoods on the inland side of Waterway Boulevard. These neighborhoods are some of the lowest on the island and most susceptible to the increased sunny day flooding associated with sea level rise.

Key Issues

- ³⁶₁₇ Maintain healthy beach and shoreline
- ³⁶₁₇ Encourage elevation of low existing structures
- ³⁶₁₇ Work with utility providers to improve resilience of infrastructure
- ³⁶₁₇ Seal tidal canals
- ³⁶₁₇ Support renourishment
- ³⁶₁₇ [Ensure a solid well funded Healthy](#)-disaster recovery account
- ³⁶₁₇ Budget for large scale drainage improvements identified in the Davis and Floyd [Master Pplan, August 2021](#)

Goals and Implementation Strategies

Goal 4.1: Continue to manage and promote a healthy beach.

Strategy 4.1.1: Support beach renourishment projects

Strategy 4.1.2: Encourage private dune restoration projects

Goal 4.2: Continue efforts to seal the low areas of the back side of the island, including drainage systems, to reduce tidal intrusion into the highland of the island.

Strategy 4.2.1: Support efforts to build berms along the back side of the island to keep abnormally high tides from entering the highland areas, including elevating the multiuse path adjacent to Waterway Boulevard.

Strategy 4.2.2: Support OCRM in administering measures that protect marshes on the backside of the island.

Goal 4.3: Continue to work closely with state, federal, and local partners and coordinate resiliency efforts.

Goal 4.4 Work with utility providers to ensure infrastructure on the island is constructed to be as resilient as practical.

Goal 4.5 Ensure that the City's code of ordinances allow future construction projects to be constructed to be resilient.

StrategyGoal 4.5.1 Review and implement recommendations from the City's consultant working on a drainage masterplan, which includes a task to review and recommend improvements to the City's development standards.

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5.0 CULTURAL RESOURCES

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Historic Sites and Buildings

~~Although the Isle of Palms served a variety of purposes prior to its development as a residential community with a resort community, very little remains in the~~

~~way of~~

~~Although the Isle of Palms served a variety of purposes prior to its development as a residential community with a resort, very little remains in the~~ historic buildings or archeological sites. Currently, there are no sites on the island listed in the National Register of Historic Places. A marker in the first block of Charleston Boulevard tells of Lord Cornwallis and the British troops who briefly occupied the island during the American Revolution.

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The Ocean Boulevard commercial district, ~~known as or "Front Beach,"~~ ~~area was once the original site of the 1920s open-air pavilions and amusement rides. Unfortunately, although none of these buildings remain.~~

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~~buildings remain.~~

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~~Avenue~~

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The existing office building at the corner of 10th ~~avenue~~^{PP}

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~~and Palm Boulevard was~~ ~~was~~ once a hotel. ~~The existing house adjacent to the current City Hall was the,~~ ~~and the existing house located next to City Hall was original site of by the trolley station which for the trolley that connected the island Isle of Palms to Sullivan's Island. Also Furthermore, the building on the northeast side of J.C. Long Boulevard near the intersection with Ocean Boulevard, which has been used recently as a gift shop, was for many years the 2nd U.S. Post Office on the island.~~

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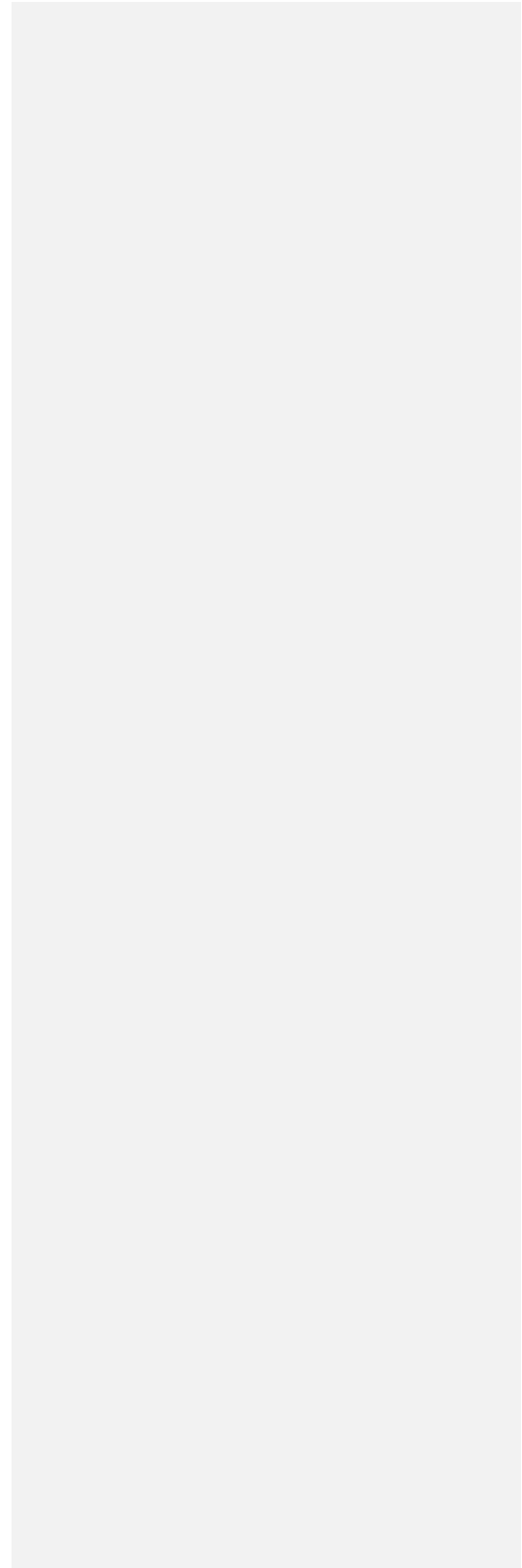
Events

The City hosts a number of cultural events on the island. The City's Recreation Department organizes several events each year including a Holiday Street Festival, Front Beach Fest, Music in the Park, Sand Sculpting Competition, an Easter Egg Hunt, a Halloween Carnival, a Golf Cart Parade, and Doggie Day. In March of 2003, the City commemorated its 50th Anniversary by holding numerous events including a street dance, a play, a nickel carnival, a Ferris wheel on Ocean Boulevard and two historical displays.

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The Isle of Palms has become a popular site for sporting events in recent years. Wild Dunes plans to continue hosting a number of amateur golf and tennis tournaments.

Key issues



Awareness of the island's history

Goals and Implementation Strategies

Goal 4.5.1: Promote awareness of the history of the island

Strategy 4.5.1.1: Explore the possibility of establishing a commemorative exhibit online and/or in one of the City's buildings including the collection of historic photographs and documents compiled in 2003 for the City's 50th Anniversary celebration. (2008; General Government)

Strategy 4.5.1.2: Investigate the possibility of permanently marking sites of historical significance on the island and ensuring their preservation. (2008; General Government)

Goal 4.5.2: Establish a physical and digital archive to serve as repository for resident's historical documents

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6.0 COMMUNITY FACILITIES

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Public Safety

Isle of Palms is currently served by a police force of twenty sworn officers, eleven auxiliary staff, a canine unit, twenty-one patrol cars (five of which are four wheel drive SUVs for patrol supervisors,), one animal control truck, one all-terrain beach patrol truck, and one all-terrain golf cart for parking enforcement. Additionally the police department adds six part-time beach officers for the summer season for parking enforcement and beach patrol. The heavy volume of vehicular traffic, parking, and the safety of bicyclists and pedestrians are currently problematic. Also, the increasing numbers of boats and jet skis on the waters around the island may warrant future regulatory measures necessary in the future to ensure that the City's waterways remain safe.

The island has two fire stations which house a total of five apparatus (two fire engines, two ladder trucks and one ladder service vehicle), four pickup trucks and four rescue boats. The Fire Department consists of thirty-five paid firefighters and ten volunteers. The City's current Insurance Service Organization classification is three.

In 2013 the City transitioned from handling emergency calls and dispatching services from within the City to the Charleston County Consolidated 9-1-1 Center (CCCD 9-1-1 Center), which is a state-of-the-art facility located in North Charleston that handles emergency dispatch services for most of the municipalities in the Charleston area. The City continues to maintain public safety personnel to answer administrative phone lines, transferring emergency calls to the CCCD 9-1-1 Center and monitor radio transmissions

Currently there are no advance care Emergency Medical Service (EMS) vehicles stationed on the island; however, the EMS station is less than four miles away on the Isle of Palms Connector. More than 75 percent of the calls for assistance are medically and/or safety related, and the City has at least four trained first responders on duty each day. First responders are emergency medical technicians who are authorized to provide basic life support services, including the use of an automated defibrillator. In contrast to County EMS paramedics, City first responders do not transport patients or administer drugs.

In an effort to provide immediate emergency medical response to City residents and visitors, the City will need to ensure that training and funding continues to be available to the Fire Department for this purpose. Concurrently, the City must continue to work with the County EMS authorities to facilitate optimum response to medical emergencies.

An emergency preparedness plan was developed following Hurricane Hugo which requires annual review and assessment.

Water Sources

The Isle of Palms Water and Sewer Commission, established as an independent entity by the City Council in 1992, is responsible for supplying the public water on the island. Prior to its establishment, the utility was privately owned by The Beach Company and was acquired by the City in 1991.

The public water on the island is provided by the Isle of Palms Water and Sewer Commission, which was established as a separate entity by City Council in 1992. Previously the utility was privately owned by The Beach Company; it subsequently was purchased by the City in 1991.

The Isle of Palms has developed a two-pronged approach to meet current and future needs for providing potable water in compliance with -that satisfies- the Environmental Protection Agency's (EPA) drinking water standards: ground source water on the island is combined with surface water from the Charleston Commissioners of Public Works (CPW), the largest water and sewer utility in the area. Although abundant on the Isle of Palms, ground source water from wells has high, naturally occurring concentrations of fluoride and minerals. To improve ground source water quality and meet EPA standards, a reverse osmosis water treatment facility was constructed and placed into service in 1993. However, Since, this facility provides only a portion of the potable water needed for the community. Therefore, in 1994 the Isle of Palms Water and Sewer Commission in conjunction with and the adjacent the Town of Sullivan's Island initiated a project to buy potable surface water from the Charleston CPW.

A water main was constructed under Charleston Harbor from Fort Johnson to Sullivan's Island, across Sullivan's Island, and under Breach Inlet to connect with the Isle of Palms Water and Sewer Commission lines. In conjunction with this project, a new water main with fire hydrants was installed across Isle of Palms to enhance fire suppression capabilities and provide a major service connection between the two water systems on Isle of Palms. Also, construction of a new ground storage tank to provide extra water storage capacity for the Wild Dunes area of the island was completed in 1997. The Water and Sewer Commission plans to continue upgrading

older, small diameter lines with new, larger diameter pipes to increase water distribution capabilities for the entire island.

To encourage conservation of water, the Water and Sewer Commission uses a conservation rate structure. The Commission uses 300 gallons per day as the average amount used per household.

Wastewater Treatment

A significant portion of development on the Isle of Palms is served by septic tanks. Although all of the development in the gated section of Wild Dunes is served by a sewer treatment system, which incorporates a 7 day waste water holding pond and uses a portion of the holding pond water for spray irrigation of the golf courses, only some 40 percent of the development outside the boundaries of Wild Dunes is served by a sewer system. Over the years, septic tanks have been permitted in areas where the soils are only marginally suitable for this type of waste treatment.

The City's Planning Commission spent considerable time during 2015-2017 analyzing the feasibility and desirability of expanding the public sewer system to every property not currently served. Ultimately, the Planning Commission concluded that the City needed to plan to expand the sewer system, but that it was cost prohibitive to do the entire project at one time. Therefore, they suggested that triggers be established that would lead to a gradual expansion of the system, when interest or need prompted an expansion.

The City partnered with the Water and Sewer Commission to fund a sewer masterplan in 2018 and entered into a Memorandum of Understanding in 2020 that memorialized the shared goal of ultimately expanding the sewer system to every property.

Installation of public sewers in areas prone to flooding near the beach between 42nd and 53rd Avenues, adjacent to the Recreation Center from 26th to 29th Avenues, and other low areas of the island is supportable from a public health standpoint and should be prioritized. The Forest Trail Wastewater Treatment Plant was replaced in 2014 and was designed to be expanded, when necessary.

To improve the accuracy of water quality monitoring at the Forest Trail wastewater treatment plant, new monitoring equipment was installed in 1994 during a major rehabilitation of the plant. In 2000, a new blower building and new blowers were installed to reduce the amount of noise generated by the facility.

Electrical/ Telephone

[Similar to other jurisdictions, the City benefits from electrical power and telephone service provided by reputable public utility companies.](#)

~~Like most jurisdictions, the City is provided with satisfactory electrical power and telephone service by professional and responsive public utility companies.~~—As with many older communities, the majority of these distribution systems are above ground and aging. Wild Dunes has successfully undertaken a project to place all of the utility lines within their community underground. In an effort to reduce outages due to storms and to provide for a more pleasing appearance for the City, those utility providers should be encouraged to replace above ground systems with underground distribution. The City should encourage other utility providers (cable, internet, etc.) to provide a full array of options to City residents.

In 2013, SCE&G installed a second transmission line from the mainland of Mount Pleasant to the Isle of Palms to increase reliability of service in inclement weather and times of high demand. The line was installed by burrowing under the marshes and waterways on the back side of the island.

Stormwater Drainage

During the spring of 1995, an engineering firm hired by the City conducted a comprehensive study of drainage problem areas and recommended how to best drain the areas in question. Cost estimates were also provided in anticipation of a bond referendum to fund these capital improvements. The areas studied included:

53rd Avenue
23rd Avenue and Waterway Boulevard
Sparrow and Waterway Boulevard
41st Avenue and Hartnett Boulevard
3rd Avenue and Charleston Boulevard
56th Avenue and Palm Boulevard

The drainage improvement project was estimated to cost ~~in the vicinity~~ approximately of \$7 million. On November 7, 1995 the referendum to fund this project was soundly defeated by a margin of 9 to 1. Without the authorization of funding, these major drainage improvements are not contemplated for the foreseeable future.

During 2001 Wild Dunes undertook a major drainage project to accommodate the run-off of an upcoming project. The City was able to work in conjunction with Wild Dunes and agreed to pay to upgrade the size of the drainage pipe to accommodate additional drainage from an abutting neighborhood.

In the fall of 2011, the City collaborated with Wild Dunes and completed a \$1.1M drainage project that alleviated many of the drainage problems between 53rd Avenue and 57th Avenue.

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In 2018, the City completed a \$2.4M second phase of drainage improvements that provided relief to the areas between 45th Avenue and 52nd Avenue.

In 2020, the City's engineering consultant developed plans for a third phase of drainage improvements that will seal the back side of the island off from tidal inundation between 41st Avenue and 30th Avenue and improve the 30 outfalls to allow stormwater to discharge quickly.

In addition to the routine maintenance of existing drainage facilities, which is done with the assistance of the Charleston County Public Works Department and the SC Department of Transportation (SCDOT), the City has been employing an innovative rehabilitation technique that utilizes a water jet and sewer vacuum truck to re-grade and re-sculpt ditches while simultaneously removing spoil material and vegetation. This process has been successful in shaping ditches that were previously difficult to access with heavy equipment. The City plans to continue funding for future maintenance using this same technique.

In 2007 the City developed a stormwater management program to satisfy the requirements of the federal Clean Water Act and participate in the National Pollutant Discharge Elimination System (NPDES). The program includes a series of regulations aimed at controlling stormwater runoff in an effort to reduce pollution and sedimentation. Charleston County is handling the

compliance and administration of the program through an inter-governmental agreement with the City.

Parks and Recreation

In addition to the seven-mile-long public beach, Isle of Palms is served by a centrally located, 9.8-acre Recreation Center bounded by 27th and 29th Avenues, just north of Hartnett Boulevard. The site includes softball, baseball and soccer fields, tennis and basketball courts, a children's playground, a dog park and a recreation building that was constructed in 2003, housing offices, large multipurpose rooms and a gymnasium.

The Charleston County Parks and Recreation Commission (PRC) owns and operates a regional park on a nine-acre tract located between 14th Avenue and the Beachside residential community along the Atlantic Ocean. Like other PRC parks on Folly Beach and Kiawah Island, the Isle of Palms Park has 350 parking spaces with restroom, shower, changing, picnic and volleyball facilities, life guard services, children's play area and beach access for the handicapped. Limited food and beverages are available for sale and chairs and umbrellas can be rented. The Park site is buffered from the Beachside neighborhood by a landscaped berm and is accessible by car only from 14th Avenue. There is a parking fee.

Two 18-hole championship golf courses and a ~~first-class world-class~~ tennis facility, which are available to the public for a fee, are located on the island within the Wild Dunes gated community.

In 2013, the City acquired a one acre tract of land at Palm Boulevard and 18th Avenue. The property is a passive park and has been named Carmen R. Bunch Park. A portion of the funding used to purchase the land came from the Charleston County Greenbelt Program, which dictates that the land always be used as a park.

Public Properties

In January 1999 as a result of a referendum, the City purchased the 5.5 acre marina site and facilities at the north end of 41st Avenue for \$4.25M. The City arranged financing for the purchase through a 20-year bond. The site is bordered by the Intracoastal Waterway and Morgan Creek, providing a premier location for marina, entertainment, and recreational activities. This

complex offers a full-service marina and overnight berthing, a convenience store, restaurant, boat storage area, a boat launching ramp and other privately operated water-sport businesses.

Prior to purchase, the City contracted for a complete inventory and facilities baseline assessment to ensure that the condition of the facilities was known. In general, the facilities include the marina proper with docks, piers, headwalls, and boat refueling equipment; the convenience store that includes restrooms, offices, and gasoline pumps; the boat launching ramp with a small utility building/restroom abreast of the ramp; and a large two-story restaurant with some built-in food service equipment. In recent years, the City has undertaken major maintenance projects on the marina site including bulkhead replacement, dredging and dock replacement and improvement.

Because of the timing and conditions of the purchase, leases to various businesses vary in length and circumstance. In general, turnover in the marina tenants is extremely rare and vacancies have been filled quickly. In fact, in 2022, the marina changed tenants and the current tenant is in the process of improving the facilities and working with the City in reconfigure the parking to be more conducive to island residents. The restaurant also changed tenants who have recently concluded a major renovation and are back open serving the public.

While lease revenue is stable, it is not sufficient to fund 100% of the marina cash needs including debt service on both the bond issued to purchase the marina and the subsequent bond issued to replace the bulkhead. The funding gap between marina revenues and expenditures has historically been filled using tourism revenues such as Municipal Accommodations Taxes, Hospitality Taxes and/or State Accommodations Taxes. ~~Once the bonds are satisfied in 2019 and 2016, respectively, the marina is expected to be financially self-sustaining.~~

~~The marina is expected to provide the desired level of marina services to the population and operate on a fiscally sound basis from year to year. Moving forth, services will continue but not without close attention to modernization, on-going maintenance, and monitoring of the site's impact on neighboring residential areas. Future capital improvements and some major maintenance costs will surface in future years. These expected costs~~

~~will be mitigated to a significant extent as the balance owed on the purchase bond decreases and is satisfied in 2019.~~

In addition to the Marina and recreation facilities, the City owns various buildings on the island. City Hall at 1207 Palm Boulevard is a two story-6,800 square foot building completed in December of 1991. At the base of the connector, a 3,500 square-foot Public Works building was finished in April of 1991, which replaced the original building that did not survive Hurricane Hugo. The City owns two vacant parcels behind the Public Works property. The City's two fire stations, #44-41st Avenue and 30 J.C. Long Boulevard, were built in 2007 and 2008 respectively, with the latter undergoing structural repairs in 2018. These stations replaced structures that were built in 1991, but had to be demolished because of extensive mold infestation. The Water and Sewer Commission's facilities at 1300 Palm Boulevard were owned by the City until 2014, when the City transferred ownership of this and other properties with a contingency clause that the property would come back to the City if it ceased to be used for the provision of public water and sewer service. The City constructed a public restroom facility at 1118 Ocean Boulevard in 1991 along with a walkway to the beach to ensure that the physically challenged have access to public restrooms and the beach. Any renovation or replacement of this facility be contemplated as the need arises.

Water access

Public beach access is provided at 56 points between Breach Inlet and 53rd Avenue. Fifteen additional beach access points are provided within Wild Dunes community for residents and guests of Wild Dunes.

Public access to tidal creeks and marsh on the northwest side of the island is limited. At several locations, streets were originally platted to extend to the edge of the marsh but never constructed. The City has formally accepted The Beach Company's dedication of several of these streets to the public.

Five marinas are located on the island: two are located at Breach Inlet, and the remainder are on 41st Avenue- the Isle of Palms Marina, Wild Dunes Yacht Harbor and Dewees Island Marina. The Isle of Palms Marina has

received approval by the Board of Zoning Appeals to construct a boat storage building with a 192 dry-stack storage capacity but no action on this approval is imminent.

Two City-owned boat ramps are located on the island: a boat ramp near Breach Inlet is available for an annual fee, and a boat ramp at the Isle of Palms Marina is available ~~on-for~~ either an annual fee or a ~~fee-per~~ launch fee.

Key issues

- Maintenance and improvement of public safety
- Maintenance and improvement of water and sewer facilities
- Expansion of recreational opportunities for island residents
- Improvements of storm water management
- Continued operation and overall stewardship of the City marina facilities

Goals and Implementation Strategies

Goal ~~65~~.1: Improve public safety.

Strategy ~~65~~.1.1: The City ~~should~~ continues to work with County officials to ensure optimum EMS services on the island and maintain basic medical emergency

services through the Fire Department. *(Ongoing; Fire Department)*

Strategy 65.1.2: Develop and implement a method of distribution for the Disaster Preparedness Plan. *(Ongoing; General Government and Fire Department)*

Goal 65.2: Support the installation of sewer services where these services do not currently exist.

Strategy 65.2.1: The City ~~should~~ meets periodically with the Water and Sewer Commission ~~and striving~~ for a “team approach” ~~to~~ in addressing waste water and water issues that will arise in future years. *(Ongoing; General Government and City Council)*

Strategy 65.2.2: In conjunction with the Water and Sewer Commission, the City should take those steps appropriate to facilitate additional sewer service on the island. *(Ongoing; General Government and City Council)*

Goal 65.3: Improve recreational opportunities for all island residents.

Strategy 65.3.1: Develop a plan to improve alternate modes of transportation on the island including bikeways and sidewalks with an emphasis on installing sidewalks and improving pedestrian safety ~~(see also Strategy 8.1.3).~~ *(2008; Building Department and Recreation Department)*

Strategy 65.3.2: Inventory unimproved rights-of-way extending to the creeks or marsh for possible use as passive recreational sites not unlike the street ends in the Old Village of Mount Pleasant along the Harbor. *(2008; Building Department and Recreation Department)*

Strategy 65.3.3: Consider additional improvements to the Recreation Center to offer a wider spectrum of leisure activities for pre-school children to senior adults (see also Strategy 1.1.2). *(Ongoing; Recreation Department)*

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Goal 65.4: Improve the appearance of the island.

Strategy 65.4.1: The City should continue to support tree-planting programs along streets and develop a long-term plan which prioritizes streets and identifies the types of trees to be used. *(Ongoing; General Government and Building Department)*

Strategy 65.4.2: Consider additional ways of reducing littering on the island. *(Ongoing; Police Department and City Council)*

Strategy 65.4.3: Consider ways of restricting the construction of structures at the ends of docks working in conjunction with the OCRM and the U.S. Corps of Engineers. *(Ongoing; Building Department, General Government and City Council)*

Strategy 65.4.4: Encourage new or replacement electrical distributing systems to be constructed underground. *(Ongoing)*

Strategy 65.4.5: Seek funding sources to place electrical distributing systems underground. *(Ongoing)*

Goal 65.5: The City should take initiatives to address drainage and storm water runoff on the island.

Strategy 65.5.1: Continue to work closely with County and State agencies to properly maintain existing storm water and drainage systems. Clearly delineate the City's areas of responsibility and take appropriate action where feasible. *(Ongoing; General Government and City Council)*

~~Strategy 5.5.2: Consider funding for a comprehensive drainage study that would isolate the highest priority areas and provide engineering options and costs. *(Ongoing; General Government, Public Works and City Council)*~~

Strategy [65.5.23](#): Consider funding options, including grants and NPDES fees to address drainage problems.
(Ongoing; General Government and City Council)

Strategy [65.5.34](#): The City should continue to work to remain in compliance with the National Pollution Discharge Elimination System Phase II as a small MS4 community. *(Ongoing; Building Department, General Government and City Council)*

Goal [65.6](#): Protect and enhance the City's investment in real property.

Strategy [65.6.1](#): Periodically review and update the Baseline Facilities Assessment of the Marina complex to ensure the conditions of the facilities are monitored for safety, physical condition, and utility. *(Ongoing; General Government and City Council)*

Strategy [65.6.2](#): Set aside funds for future year maintenance and capital improvements that will be required to protect and maximize the City's investment in all real properties. *(Ongoing; General Government and City Council)*

Strategy [65.6.3](#): Aggressively pursue grants or other external funding sources that will enhance the safety, environmental conditions, facilities, or other features of all real properties. *(Ongoing; General Government and City Council)*

Strategy [65.6.4](#): Develop plans for continuous maintenance/repair of various City buildings such as City Hall, the Public Safety building, Fire Station 2, the Recreation Center and the Public Works building. *(2008; General Government and City Council)*

Goal [65.7](#): Optimize financial return on all real properties.

| Strategy 65.7.1: Encourage imaginative proposals using City properties that will enhance revenues to the City. *(Ongoing)*

| Strategy 65.7.2: Constantly monitor compliance with existing lease terms to ensure revenues are consistent . *(Ongoing; General Government and City Council)*

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7.0 HOUSING

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Characteristics

Over the years the island has attracted those seeking a permanent residence, a vacation home, an investment opportunity or a retirement home. At the present time, approximately 36% of the housing units on the island are owner-occupied, year-round residential units.

Homes original to the island are being replaced with more expansive and updated dwellings consistent with current market trends and in compliance with current building codes. Because of many factors including the current growth and cost of materials, residents are seeing a significant increase in insurance costs.

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Many homes on the island are on a septic system. Some of these septic systems have no problems and would pass all present requirements for a new system. However, some septic systems that pre-date health regulations do not meet the current requirements. The Community Facilities element of this plan includes information on the need to expand public sewer services on the island.

Key issues

- Maintain a high quality of life for the island residents.
- Balance the increasing property values with community livability

Goals and Implementation Strategies

Goal 76.1: Continuously monitor the effect of development upon the quality of life of the existing permanent residents.

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Strategy 76.1.1: Continue to track construction trends including: the number of houses demolished each year and the number of square feet, bedrooms and bathrooms of new houses. (2008; Building Department)

Strategy 76.1.2: Continually assess ordinances which limit the size and width of houses and the amount of impervious surface on the island. (Ongoing; Building Department)

Goal 76.2: Improve water quality associated with residential properties (see also Goal 3.2).

Strategy 76.2.1: Amend the zoning ordinance to limit the density of development allowed on property not serviced by a public wastewater system. (2008; Building Department and City Council)

Strategy 76.2.2: Educate the owners of septic systems in the proper maintenance and encourage owners to have their septic systems checked and serviced according to established standards. (Ongoing; Building Department)

Strategy 76.2.3: Monitor the amount of impervious surface on residential lots. The City defines impervious material as any material through which water cannot penetrate, including buildings, roads, and parking lots. (Ongoing; Building Department)

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8.0 LAND USE

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Characteristics

The island has a long history of being [a residential bedroom community of greater Charleston while still maintaining its charm, natural beauty, and desirability as a summertime getaway destination. In addition to its residential elements, it has also been used for recreational and resort activities, used for recreational and resort activities.](#) Residential construction has continued, and today it is estimated that 4,4420 dwelling units are located on the island. The majority of commercial development is located in the center of the island, generally fronting on Palm and Ocean Boulevards in the vicinity of 10th and th Avenues. Additional commercial activities are

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located in Wild Dunes, at Breach Inlet and the City marina.

Planning and Zoning- Historical Perspective

From the early development of the Isle of Palms, there have been quasi-planning/zoning attempts. Generally, these attempts designated some areas for commercial use, for apartment use and for residences. Until recent years the only controls were plat and deed restrictions. Charleston County provided planning and inspection services for the island.

The City of Isle of Palms was incorporated in 1953 and zoning was established on October 25, 1956. Among other elements, the 1956 zoning ordinance addressed non-conforming uses and provided for the lawful continuation of these uses. The 1956 version of zoning was codified along with other City ordinances in 1970. The entire zoning code was subsequently repealed and readopted in April 1975, due to questions about the legal validity of the adoption of the 1956 zoning code.

Repeal and re-adoption, or substantial amendment, occurred again in 1981, 1989, and 1992-1993. The Planning and Zoning Commission was created on December 10, 1986. The City also adopted an ordinance in 1981 creating a

Board of Adjustment, which has since been renamed the Board of Zoning Appeals.

In 1975 City Council approved a Planned Residential Development (PRD) zoning district for the eastern, then undeveloped, end of the island. Today this area includes the gated resort community of Wild Dunes and several adjacent residential areas. The PRD was the first zoning agreement of its type in the State of South Carolina. Under the PRD zoning, the eastern end of the island was developed to include a wide variety of housing types: low to high density single-family detached units, townhouses, and low-rise and high-rise condominium multi-family units. Within the gated section of Wild Dunes many of the approximately 2,067 residential units (have Wild Dunes ARC verify new number) are used as seasonal rental properties. Wild Dunes also includes offices and conference facilities and various resort amenities.

In the PRD zoning district, the use, subdivision, and development of property is governed through deed restrictions enforced by the Wild Dunes Community Association. Several residential areas outside the gated Wild Dunes community, such as 57th Avenue and certain properties on 43rd through 45th Avenues, that are also zoned PRD and also governed by the Wild Dunes Community Association. In 2016 the area between 53rd and 56th was rezoned from PRD to SR3 and P-3, to account for the expiration of deed restrictions in this area and provide land use controls.

In 2000 the name of the zoning district for planned developments changed from Planned Residential District (PRD) to Planned Development District (PDD). The new designation more accurately describes the land use activities.

By 2022, the City created a Conservation- Recreation District (CR). The goal of this new district focuses on the future protection of current recreational land, preserve vital resources, scenic easements, and lessen any potential hazards to loss of property, life and public safety from flooding. This CR district now overlays parcels located in the northern most part of the island vulnerable to the effects of erosion and flooding.

Land Use Activity – Overview

Detached residential dwelling units represent the principal land use on the island. Medium and low-density dwellings are the most predominate form of housing. In 2023, 36% are owner-occupied with the remaining 64% being either second homes or rental units. While there are properties scattered throughout the island that contain two or three residential units, the major multiple unit complexes are located within either the “Front Beach” area or Wild Dunes.

Commercial development is limited in terms of the total island acreage. Less than 2% of the island is zoned commercial, excluding the resort amenities within the gated section of Wild Dunes. Commercial uses are primarily oriented to providing for the immediate needs of the local population and the resort/seasonal activities. Only a small portion of commercially zoned land remains undeveloped. Major shopping facilities are located off the island.

Public uses include those normally associated with a small community. City Hall houses the City Council, administration and the Building Department.

The Fire Department, Police Department, Recreation Department, and the Public Works Department are located in separate facilities. The Isle of Palms Water and Sewer Commission (separate from City Government) maintains an office building, a sewage treatment plant and various water storage/distribution facilities.

Municipal recreational uses include a City Recreation Center, a City Marina, a beachfront County Park, and two boat landings. Within the Wild Dunes complex are golf, tennis, and swimming facilities with publicly controlled access to the latter two amenities. Additionally, a private marina is located at Breach Inlet. The island is surrounded by water access opportunities inclusive of the ocean, beach and back creeks. Part of the island borders directly on the Intracoastal Waterway.

The island does not have any presence of industrial, agricultural, and mining activities. Due to a limited transportation system, the high demand for residential property, increasing land values, and the risks inherent on a barrier island, it is unlikely that these uses will occur in the future.

Plan Concept

In accord with the Vision Statement, the primary planning concept is ~~that of~~ “enhance the existing character of the island as a quality place to live and protect the environment both on and around the island.” The existing development pattern, both in terms of the land use types and ~~their~~ geographic allocations ~~of these uses~~, is viewed as being the desired future pattern. The objective of the plan is to preserve the existing land use relationships.

In order to preserve the island character, it is important to identify some of the underlying considerations:

1. The Comprehensive Plan is a statement defining a desired future. Zoning and other municipal regulations provide the implementation tools that allow the Plan to be achieved. The color-coded map in Appendix ~~DA-B~~ is the Land Use Plan and the color-coded map in Appendix ~~EB-C~~ is the current Zoning District Map. Both can be amended through procedures prescribed by law. The maps must always remain compatible and not in conflict.
2. The primary land use activity has been and should continue to be low and medium density residential uses.
3. The scale and density of new development and the expansion of existing development should not disrupt the neighborhood "family" atmosphere of the island.
4. The design of structures and the placement of these structures should maintain a sense of open space and utilize vegetation to soften the effects of impervious surfaces.
5. Dwelling units are rented to guests visiting the island and, within reason, this is an accepted practice. Each dwelling has a maximum occupancy level that is intended to limit activity to a level that is not disruptive to the neighborhood.
6. Commercial uses provide important services to the community. Some characteristics associated with commercial activity, such as traffic, parking, noise and light, can cause conflict with adjoining residential uses. Potential conflicts can be minimized through the use of good site design and buffers where appropriate. Parking for commercial uses should be accommodated on-site or in designated areas in close proximity to the business. On-street parking in areas not designated for parking is not a satisfactory solution.

7. The core of the City is generally defined as being the intersection of the IOP Connector and Palm Boulevard encompassing the major commercial, governmental and “Front Beach” areas. The most significant visual impression of the island occurs when one enters on the IOP Connector. It is important that the appearance of this core area continues to convey both civic image and commercial viability. Efforts to coordinate the continuity of design of both structures and the streetscape are deemed important to promote island identity.
8. It is recognized that the beach and other recreational opportunities on the island are of exceptional quality and draw many non-residents during peak periods. The City is responsible for their basic care and protection during their visit. As such, it is necessary to ensure that the public safety and other basic services are maintained commensurate with the increased demands.
9. Portions of the island are served by septic tank disposal systems. In some instances, these systems operate marginally and at certain times may be dysfunctional. It is important that these areas be identified and action taken to educate the owners about properly maintaining the septic systems or to provide public sewer. Areas with poor drainage should be considered as the first priority for the installation of public sewer.
10. The protection of the natural resources both on and around the island is of critical importance especially with respect to water quality. The preservation and enhancement of this asset requires increased sensitivity to the amount and nature of runoff that moves from the island into the water.
11. Periodic natural disasters occasionally occur. Local government will be faced with immediate demands for recovery and reconstruction. The Land Use Plan provides the guide for reconstruction. While temporary regulatory procedures may be required, the Plan and the underlying zoning codes should not be compromised during the reconstruction period.
12. The island fronts to the Atlantic Ocean, backs to the estuaries, and is subject to the forces of wind and wave. Much of the island is in flood zones established by the

federal government. The availability of flood insurance is directly tied to compliance with federally required building standards. It is important that strict compliance be maintained.

Key Issues

- ³⁵₁₇ Protection of the Public Health, Safety and Welfare.
- ³⁵₁₇ Ensure compatibility between the Comprehensive Plan and the regulatory ordinances.
- ³⁵₁₇ Appearance of the commercial and “Front Beach” areas.
- ³⁵₁₇ Ensure the adequacy of the infrastructure to support continued development, expanded uses and demands created by seasonal peaks.
- ³⁵₁₇ Preservation and protection of natural resources.

Goals and Implementation Strategies

Goal [87.1](#): Improve zoning regulations to protect the established character of the island.

Strategy [87.1.1](#): Make appropriate amendments to the zoning ordinance which reflect the goals and strategies of the Comprehensive Plan. (2008; Building Department and City Council)

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Goal 87.2: Protect residential areas from adverse impacts of commercial development.

Strategy 87.2.1: Develop plans and policies which use public improvements to prevent or mitigate adverse impacts of commercial development upon residential properties. (2008; Building Department and City Council)

Goal 8.3: ??

Goal 87.34: Ensure the adequacy of the infrastructure to support continued development and expanded uses.

Strategy 87.34.1: Evaluate and continue to improve the drainage system to alleviate the problems in those areas that drain poorly. (Ongoing; Building Department and Public Works Department)

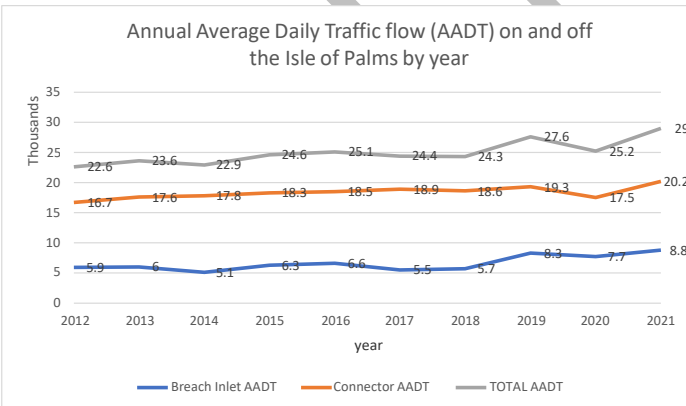
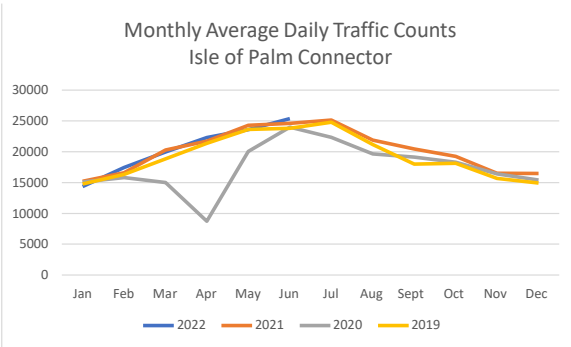
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9.0 TRANSPORTATION

The Isle of Palms is accessible by two routes. First, SC 703 connects the island to Sullivan's Island by way of the Breach Inlet bridge as well as Sullivan's Island to Mount Pleasant by way of the Ben Sawyer Intracoastal Waterway bridge. Second the Clyde M. Dangerfield Highway SC 517 (Isle of Palms Connector) provides a fixed span, direct connection to Mount Pleasant. The illustration below is based on the traffic counts coming on and off the island on the Connector from the years of 2019 to 2022. As expected, the traffic increases dramatically in the summer months as a result of seasonal visitors (additional traffic counts are available in Appendix [DC-1](#)).

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The total length of roads on the island is estimated to be 35 miles. Most roads outside Wild Dunes are under the jurisdiction of the SCDOT. The total miles of state roads on the island is estimated to be 21.75 miles. A few roads or sections of roads have been accepted by the City. Some roads, however, have never been formally accepted by any government jurisdiction. Roads within the Wild Dunes gates total 12 miles and are privately owned and maintained.

Maintenance for roads within the State system is provided through an agreement between Charleston County and the SCDOT. The City is responsible for Ocean Boulevard between 10th and 14th Avenues, 18th

Avenue, part of Hartnett Boulevard, most of Forest Trail, the cul-de-sac on Pavilion Boulevard, and 27th, 28th, and 29th Avenues between Hartnett and Waterway Boulevards.

Currently, bikeways and sidewalks are provided in only a few areas outside Wild Dunes. These existing bikeway/sidewalk facilities are not interconnected and some are in need of repair. There is a recognized need to fund bikeways and sidewalks to facilitate non-vehicular traffic on the island to reduce vehicular/pedestrian/bike conflicts. Various projects have recently been undertaken in the Charleston area including the Battery-to-Beach bike route that connects the Isle of Palms to downtown Charleston and ultimately Folly Beach.

In the summer months, traffic on the island increases significantly and causes congestion. Rainstorms on a weekend afternoon can cause hours of gridlock and raises concerns about response time for Emergency Medical Services and other essential public safety needs. While this is a longstanding issue for the community, the problem has become more acute with the increased population of the Charleston area. The problems are predictable, measurable, and should be able to be lessened with proper adjustments to the roadways.

In June of 2015, the SCDOT approved a beach parking management plan that the City developed through a collaborative effort between the City Council, the Isle of Palms community, traffic engineers, City staff, and SCDOT. The goal of the plan was to strike a balance between the concerns of residents and the needs of beach visitors. Modifications to the island's parking facilities were made pursuant to the plan including the creation of beach parking areas close to the beach and resident only parking areas in the remaining areas of the island.

The City and SCDOT agreed in 2022 to initiate studies of the Isle of Palms Connector bridge and the Connector's corridor to identify alternatives, including lane configurations, that would allow traffic to flow more efficiently and provide safer facilities for cyclist and pedestrians.

In 2022 the Planning Commission held a series of meetings with a traffic consultant for the purpose of studying traffic related issues and identifying key projects or programs that could improve traffic flow on the island. The final presentation of that effort is included in Appendix ~~ED~~ of this plan and several Goals and Implementation Strategies below were identified during these meetings.

Key Issues

- Improvements in transportation facilities.
- Planning for a parking system that would balance the needs of visitors and residents.

Goals and Implementation Strategies

Goal ~~98~~.1: Improve traffic flow and reduce congestion on the roadways of the island.

Strategy ~~98~~.1.1: Include funding in the 2023-2024 budget to initiate a comprehensive traffic study for the island to improve traffic flow and reduce congestion. This study should done in close collaboration with the SCDOT staff to ensure the solutions that are developed can be implemented within their network. (2023; *Public Safety*)

Strategy ~~98~~.1.2: Evaluate the lane configuration of the Isle of Palms Connector to identify more efficient and safer alternatives (See ~~Appendix E~~ consideration #1 in ~~Appendix CD~~). (*Ongoing; Public Safety*)

Strategy ~~98~~.1.3: Evaluate the intersection of the Isle of Palms Connector and Palm Boulevard to determine in an alternative design

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and/or phasing could increase operational efficiency ([See Appendix E, consideration #2](#)~~See consideration 2 in Appendix CD~~). (2023; Public Safety)

Strategy 98.1.4: Evaluate the Charleston County Park and municipal parking lots traffic routing, payment, and ticketing to identify more efficient methods for ingress and egress ([See Appendix E, consideration #3](#)~~See consideration 3 in Appendix CD~~). (2023; Public Safety)

Strategy 98.1.5: Evaluate providing real-time beach parking space availability data to the public to improve efficiency for ingress and egress for beach visitors ([See Appendix E, consideration #6](#)~~See consideration 6 in Appendix CD~~). (2023?; Public Safety)

Strategy 98.1.6: Continually assess stop sign locations on the island to determine proper and legal placement. (Ongoing; Public Works)

Strategy 98.1.7: Ensure an adequate number of speed limit signs on all streets to encourage compliance and improve safety. (Ongoing; General Government and Police Department)

Strategy 98.1.8: Develop a plan to improve alternate modes of transportation on the island including bikeways, golf carts and low speed vehicle facilities and sidewalks while improving pedestrian safety. (2008; Building Department and Recreation Department)

Goal 98.2: Discourage non-resident parking and traffic in residential neighborhoods.

Strategy 98.2.1: Encourage appropriate measures including signs, traffic restrictions and parking restrictions. (Ongoing; Police Department and City Council)

Goal 98.3: Improve accuracy of data collection related to traffic patterns.

Strategy 98.3.1: Encourage appropriate measures to collect accurate traffic counts including the installation of new hardware at the key points of ingress and egress of the island. (Ongoing; Police Department and City Council)

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10.0 PRIORITY INVESTMENT

PRIORITY INVESTMENT

As required by the Priority Investment Act of 2007, an analysis of upcoming projects and likely federal, state and local funds available for these projects was conducted. Projects can include roads, parks, government facilities, pathways, drainage and stormwater infrastructure improvements, or beach renourishment.

Overview

In creating this element of the Comprehensive Plan, the Planning Commission began by assembling a list of all capital improvement projects listed or referenced throughout all elements of this plan.

The Commission also reviewed the current practice of developing the 10-Year Capital Improvement Plan (Ten-Year CIP) and identified that Plan as the key document to tie to this element.

The current process for creating the Ten-Year CIP involves the City staff and Committees of Council reviewing initiatives and prioritizing expenditures based on need, anticipated funds, staff to manage projects, funding sources, project seasonality, and organizational prioritization. The Ten-Year CIP is reviewed and modified on an annual basis and approved as

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part of the fiscal planning cycle. This process is well-established and has been successful for the City.

In the goals and strategies section of this plan, there are suggestions on how this process might be improved by having the Planning Commission review the status of projects identified in this element and compared against the draft Ten-Year CIP to ensure the two are aligned.

Funding

A summary of the traditional revenue sources are shown in the chart below. Most of the revenue for the City comes from property taxes (25%), building permits and business/ rental licenses (22%) and accommodations taxes (19%).

In addition to these three major sources of funding, ~~the following are~~ other common revenue sources for the City include a Beach Preservation Fee, Hospitality Tax, bond proceeds, parking fees, marina leases, and debt proceeds.

~~Beach Preservation Fee.... Bond Proceeds....~~

~~Hospitality Tax....~~

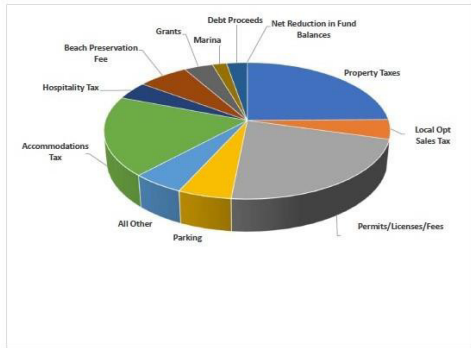
~~Fund Balance....~~

~~Local Option Sales Tax.... Parking Fees....~~

~~Marina....~~

~~Debt Proceeds....~~

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| Revenue Source | Amount | Percentage |
|---|-------------------|-------------|
| Property Taxes | 4,806,000 | 25% |
| Local Opt Sales Tax | 895,000 | 5% |
| Permits/Licenses/Fees | 4,307,000 | 22% |
| Parking | 1,019,250 | 5% |
| All Other | 992,484 | 5% |
| Accommodations Tax | 3,872,863 | 19% |
| Hospitality Tax | 813,300 | 4% |
| Beach Preservation Fee | 1,274,663 | 7% |
| Grants | 726,000 | 4% |
| Marina | 960,000 | 5% |
| Debt Proceeds | 523,000 | 3% |
| Net Reduction in Fund Balances | - | 0% |
| Total Revenues + Use of Fund Bal | 19,413,940 | 100% |

Outside of these common revenue sources, the City will need to look at less traditional funding sources to accomplish the goals established in this plan. Recently It is expected more grants funds have could become available than have traditionally been and the City should position itself to take advantage of those funds. Specific funds that could be targeted include:

— **U.S. Department of Commerce, Economic Development Administration (EDA)**- In April of 2018, a notice of funding opportunity was issued by EDA for Disaster Supplemental Funds related to the many disasters that occurred in recent years. This funding is for \$587M in grants to assist communities in TX, LA, FL, GA, SC, PR, & VI. These funds are available until they are all spent. Regionally, the Atlanta office, which serves SC, was allocated \$147,362,000 of the \$587M.

— **Federal Emergency Management Agency (FEMA), Pre-Disaster Mitigation Program (FEMA PDM)**- On August 21, 2018, FEMA released the Notice of Funding Opportunity for the 2018 Pre-Disaster Mitigation Program (PDM). This funding is a national competition, so any project submitted must successfully compete against other projects submitted from

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all over the United States. (Note: The City of Isle of Palms and the Isle of Palms Water and Sewer Commission successfully received funding under this program several years after Hurricane Hugo.) The funding is for \$150M in grants spread among all 50 states and territories. PDM grants are awarded on a competitive basis and without reference to state allocations, quotas, or other formula-based allocation of funds.

FEMA- Building Resilient Infrastructure and Communities (BRIC) Building Resilient Infrastructure and Communities (BRIC) will support states, local communities, tribes and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program.

Department of Housing and Urban Development (HUD) Urban Entitlement, Funding Grant Administered by Charleston County In approximately December or early January each year, Charleston County publicly notices the availability of funds under this program. These are funds appropriated by Congress and then allocated to the States and administered by Charleston County.

South Carolina Rural Infrastructure Authority (RIA)- The South Carolina Rural Infrastructure Authority operates both grant and loan programs which may be used for water, wastewater and drainage. Grants are for basic infrastructure or Economic Development Infrastructure and information disseminated for FY18 showed \$25,000,000 in funds available.

Place holder for other grants County road grants are missing here including the Charleston Area Transportation Study (CHATS) and Transportation Sales Tax (TST)

Priority Investment list and potential funding sources

Install new and repair existing stormwater infrastructure

Because the island is relatively low in elevation and prone to drainage problems, the City will need to identify the most problematic drainage areas and find solutions to move stormwater to the appropriate outfalls. In the Public Facilities element of this plan, several drainage projects are

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identified. In addition to these projects, many other areas drain poorly, which should be addressed by future drainage projects.

Synopsis of issue and potential funding source- to be added.

Install sewer lines to every property not currently served

Installation of public sewers in areas served by septic systems and having marginal soils should be considered a priority for future projects. Specifically, septic tank systems in the areas near the beach between 42nd . 53rd. Avenues, adjacent to the Recreation Center from 26th to th Avenues 29.

and in low areas of the Forest Trail subdivision are affected by flooding and seasonal high water and would benefit from public sewer service.

Synopsis of issue and potential funding source- to be added.

Renourish beach

Synopsis of issue and potential funding source- to be added.

Underground electrical lines

Synopsis of issue and potential funding source- to be added.

Because many of the projects included in this element are roadway and drainage improvements, they could be funded by the Charleston County RoadWise program. Other infrastructure projects will probably need to be funded in a traditional manner because the Isle of Palms does not qualify as low-income, making grant money unlikely.

A large portion of the City's electrical distribution service, which is provided by South Carolina Electric and Gas, is provided through lines running above ground. It would be desirable from a maintenance and appearance standpoint to have all of the lines transferred to an underground distribution system.

Providing a safe and efficient system for cyclists, pedestrians, golf carts and low speed vehicles to circulate the island will reduce roadway congestion and parking problems and should be a priority.

Key Issues

- Improve transportation and drainage facilities
- Improve public health by extending the public sewer system to areas service by septic systems in marginal soils

Goals and Implementation Strategies

Goal 109.1: Improve drainage in those areas that drain poorly.

Strategy 109.1.1: Identify problem areas and appropriate funding sources.

Goal 109.2: Improve traffic flow and reduce congestion on the roadways of the island.

Strategy 109.2.1: Expand the system of bike lanes and walking-paths.

Goal 109.3: Improve public health by extending the public sewer system to areas service by septic systems in marginal soils.

Strategy 109.3.1: Identify problem areas and appropriate funding sources.

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APPENDIX A

Summary of Meetings

1998 Update

- 8/2/93 Discussed idea of updating the island's Comprehensive Plan.
- 9/20/93 Discussed outline of plan and types of information needed.
- 11/22/93 Discussed land use, transportation, parking, recreation, and public safety issues.
- 12/8/93 Discussed land use and other issues and made recommendations.

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- 7/13/94 Revisited the issue of updating the island's Comprehensive Plan with the Commission which included four new members.
- 9/28/94 Work session to discuss each of the seven elements of a comprehensive plan as listed in the new state enabling legislation.
- 10/26/94 Work session including presentations by Police Department and Water and Sewer Commission.
- 12/1/94 Work session including presentation by IOP Public Works Department, Chief Building Official and City Administrator.
- 12/14/94 Work session by County Public Works Department on road and drainage maintenance.
- 2/2/95 Work session including presentation by Charleston County Parks and Recreation Commission on proposed park.
- 5/24/95 Work session including presentations by the Recreation Department and Councilmember Allen, and the Charleston Area Convention and Visitors Bureau.
- 6/28/95 Work session with Earl Hewlette of Destination Wild Dunes, Janice Ashley and Lori Bennett, the incoming and outgoing presidents of the Commerce Association, respectively, and John Darby, Vice President of the Beach Company.
- 7/26/95 Work session with Debra Hernandez of the Office of Ocean and Coastal Resource Management and Ed Haselden, Chief Building Official and Zoning Administrator for the Isle of Palms.
- 8/23/95 Work session with Robert Clark of the SC Department of Transportation and Police Chief Tommy Buckannon.
- 9/27/95 Work session to discuss the Wild Dunes PRD and other aspects of the current Zoning Ordinance.

- 10/25/95 Work session with attorney Roy Bates to get a legal overview of the “planned residential district” type of zoning and the island’s PRD zoning district in particular.
- 11/26/95 Work session to continue discussions of the PRD district and other aspects of the Zoning Ordinance and land use map.
- 1/31/96 Work session to review the January 28, 1996 draft of the Comprehensive Plan.
- 2/28/96 Work session to review the February 24, 1996 draft of the Comprehensive Plan.
- 3/13/96 Review of the March 4, 1996 draft of the Comprehensive Plan following the regular meeting.
- 3/27/96 Review of March 21, 1996 draft of the Comprehensive Plan and future land use map referenced in Strategy 1.4 of the Land Use section. The Commission agreed to give final review to the revisions to this draft and the recommended future land use map at their April 10, 1996 regular meeting.
- 4/10/96 Review of the April 2, 1996 draft and future land use map changes. The Commission agreed to refer this draft and future land use map to City Council with request for a joint meeting of the City Council and Commission at which the Commission would present the plan to Council.
- 7/10/96 Public hearing on April 19, 1996 draft of plan before the Planning Commission.
- 7/30/96 The Planning Commission reviewed all comments received in writing and at the July 10, public hearing and agreed upon all changes to the April 19, 1996 draft.
- 8/14/96 The Planning Commission reviewed the final copy of the Comprehensive Plan and referred it to the City Council for adoption.

- 9/11/96 The Planning Commission agreed upon revisions to the plan concerning changes to the PRD zoning district.
- 12/11/97 The Planning Commission agreed upon revisions to the plan concerning the sewerage of the island.
- 2/20/97 The Planning Commission agreed upon revisions to water quality section and the goals and implementation strategies concerning water quality.
- 3/3/97 A special meeting of City Council and the Planning Commission was held to introduce the Council to the Plan and explain the process of preparing and adopting the plan.
- 3/20/97 A special meeting of City Council and the Planning Commission was held to begin a page-by-page review of the plan.
- 5/14/97 A special meeting of City Council and the Planning Commission was held to continue the review of the plan.
- 6/11/97 The Planning Commission reviewed revision suggested during the Commission's work session with City Council and adopted a resolution recommending the Comprehensive Plan and Future Land Use Plan to City Council for adoption.
- 10/28/97 Public hearing on the June 11, 1997 draft of plan before City Council.
- 12/ /97 City Council adopts the June 11, 1997 Comprehensive Plan and Future Land Use Plan with the exception of implementation time frames which are to be recommended to the Council by the Planning Commission for their adoption.
- 3/11/98 The Planning Commission reviewed the proposed time frames for implementing strategies contained in the plan and approved a resolution recommending the Comprehensive Plan and Future Land Use Plan, as revised by the addition of implementation time frames, to City Council for final adoption.

2004 Update

- 6/13/01 The Planning Commission discussed the 1994 Planning Legislation's requirement to review the plan every five years and agreed to begin the review.
- 7/18/01 The Planning Commission discussed the confusion of the Wild Dunes PDD; as well as the need for new statistics for review (Census, SCDOT traffic counts and County Assessor's Office data).
- 9/12/01 Commission member Dick Cronin reported on findings of the PDD issues.
- 11/14/01 The Commission reviewed and discussed the statistics relating to the Population Element.
- 1/23/02 The Commission held a workshop with the BCD Council of Government to discuss their possible involvement in the review or drafting of the plan.
- 2/13/02 The Commission held a workshop with the Director of the Recreation Department, Norma Jean Page, to discuss the Cultural Resources Element. They also reviewed a draft of the Community Facilities Element.
- 3/13/02 The Commission reviewed public safety issues and the Community Facilities and Cultural Resources Elements of the plan.
- 4/10/02 The Commission discussed statistics relating to the Housing Element and general trends noticed in the housing market.
- 5/8/02 The Commission discussed amendments to the Housing and Natural Resources Elements of the plan.
- 11/11/02 The Commission discussed amendments to the Land Use Element of the plan.

- 1/8/03 The Commission discussed amendments to the Land Use Element of the plan.
- 2/12/03 The Commission held a brainstorming session on the Economic Element of the plan.
- 3/12/03 The Commission held a work session with Fire Chief Ann Graham to discuss EMS needs on the island and related public safety issues.
- 4/16/03 The Commission agreed to send the draft plan to the Council of Governments for their review and asked for a legal opinion on whether or not the amount of re-drafting constituted a review of the plan or an update.
- 7/9/03 The Commission discussed the revisions to the plan suggested by the Council of Governments.
- 10/15/03 The Commission held a workshop with City Council to explain the changes that the Commission was recommending and gather feedback from Council members.
- 11/19/03 The Commission reviewed comments, written and oral, made by City Council members during and after the workshop.
- 1/14/04 The Commission reviewed the draft changes to the plan with particular attention given to the repetition of issues.
- 2/11/04 The Commission reviewed the draft plan and agreed to advertise a public hearing for the plan in April 2004.
- 3/10/04 The Commission reviewed the revised Land Use Map prepared by Charleston County Planning Department.
- 4/14/04 The Commission reviewed the final draft of the plan and passed a resolution to recommend the adoption of the plan by City Council.

2008 Review

- 4/9/08 The Planning Commission discussed the 1994 Planning Legislation's requirement to review the plan every five years and agreed to begin the review.
- 5/14/08 The Planning Commission went through each element and agreed that the plan should be reviewed and did not need to have a full update. 8/13/08 The Planning Commission met and discussed the newly required Priority Investment Element.
- 9/10/08 The Planning Commission met and reviewed the plan in its entirety and discussed the newly required Priority Investment Element.
- 10/8/08 The Planning Commission met and agreed to add the development of a parking management plan as a strategy in the Community Facilities Element.
- 11/12/08 The Planning Commission met discussed EMS response and how to improve the description of this in the Plan.
- 1/21/09 The Planning Commission recommended the amended document be adopted by City Council.
- 8/12/09 The Planning Commission recommended that the title of the document be changed to the "Amended Comprehensive Plan".
- 2015 Update*
- 3/20/13 The Planning Commission discussed the fact that a new census had been completed since the last review of the plan. The census showed that the population had decreased slightly and the number of housing units had increased slightly. The Commission reviewed the Vision Statement and the Population Element of the Plan.
- 4/10/13 The Planning Commission reviewed and edited the Population and Economic Elements.
- 5/8/13 The Natural Resources Element was discussed. Information regarding erosion and loggerhead turtles was added.

- 6/12/13 The Planning Commission discussed the Cultural Resources Element of the plan and agreed that the Plan should better describe the events and services offered by the City's Recreation Department.
- 7/10/13 The Community Facilities Element was discussed and the Commission agreed to elaborate on the electrical distribution system and the additional transmission line that is being added and highlight efforts to place lines underground.
- 8/14/13 The Planning Commission discussed the Housing Element of the Plan. Particular attention was paid to the effects of the Biggert-Waters Act.
- 9/11/13 The Land Use Element of the Plan was discussed. It was noted that the Plan had excessive information about the areas that are controlled by Wild Dunes, but outside of the gate and edits were suggested. The Commission also agreed to eliminate strategies dealing developing a GIS system as Charleston County was providing this service.
- 10/9/13 The Planning Commission discussed the Transportation Element of the Plan and agreed to expand the strategies involving alternate modes of transportation to include golf carts and low speed electric vehicle. Particular attention was paid to the traffic count graphs included in the plan.
- 11/13/13 The Transportation Element and the Priority Investment Elements of the Plan were discussed. It became apparent that the traffic counts being collected were inaccurate and therefore the data included in the plan should be deleted as it would be outdated and not useful.
- 4/30/15 A joint workshop was held with the Planning Commission and the City Council to discuss the proposed amendments to the Plan.

[NEED 2015- 2023](#)

APPENDIX B
Land Use Map

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APPENDIX C
Zoning District Map

APPENDIX D
Traffic Counts

APPENDIX E
Traffic Consultant Meeting Outcome

-

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APPENDIX F
List of Sources

Clemson Study, May 1987

1989 & 1993 Isle of Palms Comprehensive Plan
[2015 Isle of Palms Amended Comprehensive Plan](#)

[2020](#) U.S. Census

1990 Housing Atlas, Berkeley- Charleston- Dorchester Council of Governments

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Metropolitan Charleston 1990-2015, Planning for Change, BCD Council of Governments, Spring 1995

Stormwater management System, Isle of Palms Flood Plain Management Study, U.S. Soil Conservation Service, June 1990

Isle of Palms Local Comprehensive Beach Management Plan, 1993, [2023](#)

OCRM non-point source pollution study, 1994

Charleston Convention and Visitors Bureau

Wild Dunes Community Association Residential Status Report

Comprehensive Planning Guide for Local Governments, Municipal Association of South Carolina, August 2001

[the Army Corp of Engineers South Atlantic Coastal Study \(SASC\)](#)

[Title 5, Chapter 4, Article 2, Section 5-4-0](#)

CITY OF ISLE OF PALMS

SEA LEVEL RISE ADAPTATION PLAN

2024



SW 
SEAMONWHITESIDE



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ACKNOWLEDGMENTS

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The Nature Conservancy

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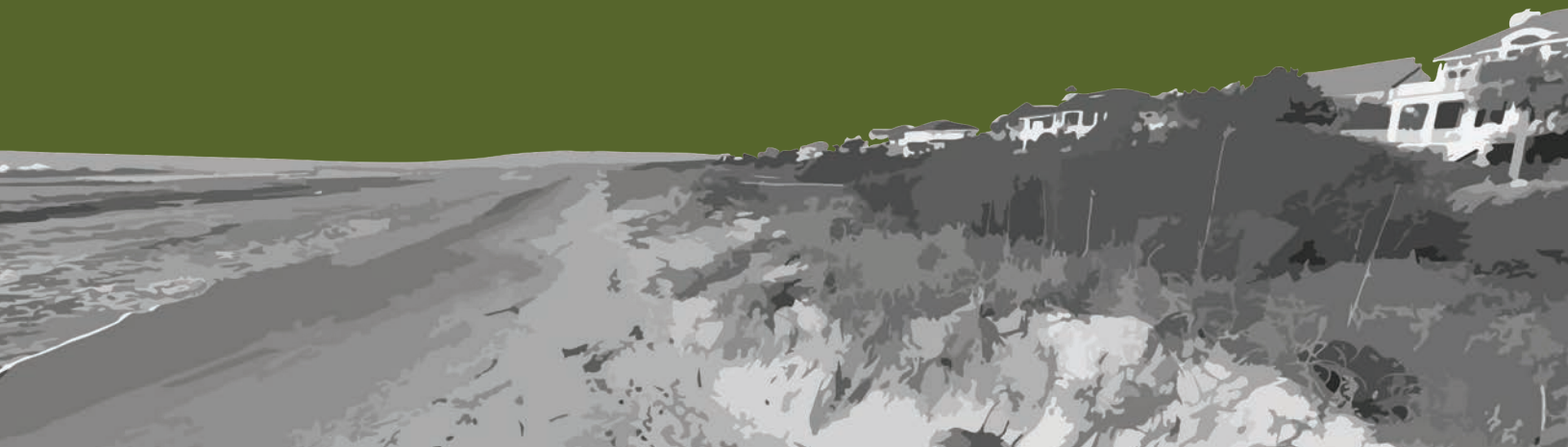
Lucia Spiotta

Environmental Advisory Committee

Steve Traynum

Coastal Science & Engineering

INTRODUCTION



EXECUTIVE SUMMARY



The City of Isle of Palms is a focal point for the Charleston area, is home to thousands of residents, and serves as a vacationing playground for millions around the globe. Life on Isle of Palms depends on a pristine landscape and flowing coastal waterways. However, sea level rise may cause those recreational waterways to become the City's greatest threat if ignored. Based on the premonition of future flooding from sea level rise, the City has made an instrumental decision to begin planning for the future.

The purpose of this Sea Level Rise Adaptation Plan is to outline the potential risk due to sea level rise and outline strategies to mitigate against its effects.



The sea level rise and vulnerability analysis completed for this plan determined that an appropriate elevation target to mitigate/protect against future sea level rise is 7 feet NAVD88 (~10 feet MLLW) which should provide protection for the vast majority of tidal events (~99.5% based on statistical data; excluding hurricanes and/or tropical storm events) experienced in the year 2050.

Adaptation strategies that the City should consider implementing to help mitigate the impacts of sea level rise are assessed in this plan (along with suggested implementation timelines) and divided into three categories: Policies, Projects, and Programs. "Policies" cover adaptation strategies that can be initiated at an administrative level or through City Council (i.e., updates to zoning or building ordinances, additional plans or studies needed, etc.). "Projects" are physical construction projects that the City can implement to help bolster the resiliency of the island against future sea level rise (i.e., perimeter protection, green infrastructure/LID, stormwater improvements, septic to sewer conversion, etc.). "Programs" are educational opportunities and incentivization strategies aimed at engaging citizens and leveraging their assistance on private property to bolster their community's resiliency.



This sea level rise adaptation plan should be considered a "living document" and as such should be reviewed and updated every 5 years to ensure continued relevance and effectiveness.

CURRENT & ONGOING PROJECTS

1 DRAINAGE STUDY & MASTER PLAN

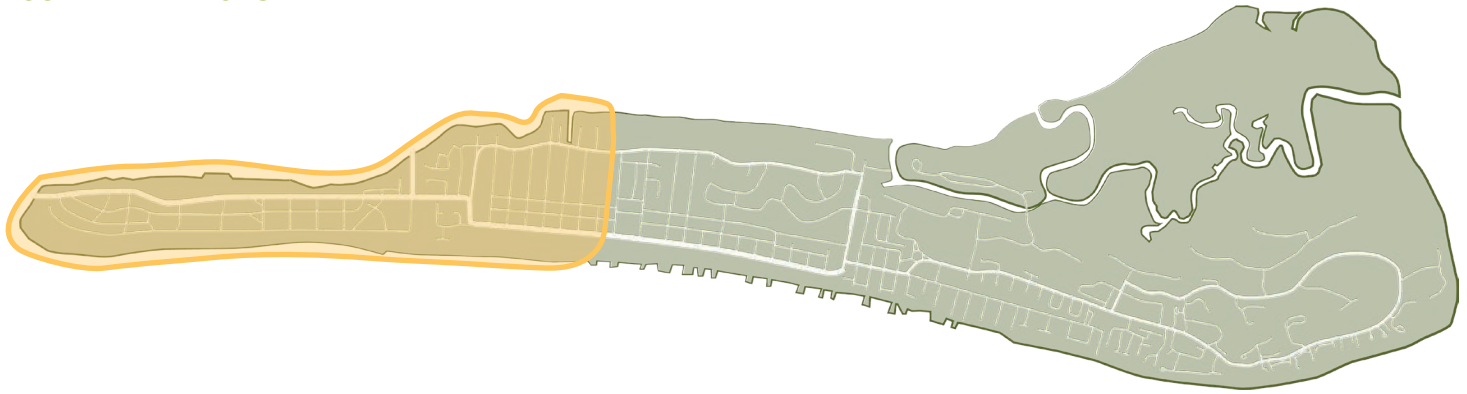
2 WATERWAY BLVD. IMPROVEMENTS

3 BEACH PRESERVATION



1 DRAINAGE STUDY & MASTER PLAN

COMPLETED 2023



A comprehensive drainage study was recently (2023) completed for the area between Breach Inlet and 29th Avenue. The purpose of this study was to complete a full inventory and assessment (including documentation and recommendations of immediate maintenance priorities) of existing drainage infrastructure and develop solutions to address systemic rainfall and tidal-driven flooding.

Additional components included providing resilience planning to address future climate change conditions in project recommendations, public engagement and involvement using stakeholder meetings and web-based tools, deploying real-time monitoring stations to calibrate/validate hydraulic analyses, reviewing and recommending changes to existing stormwater ordinances, and assessing potential funding avenues/sources (i.e., state or federal grants) for recommended projects.

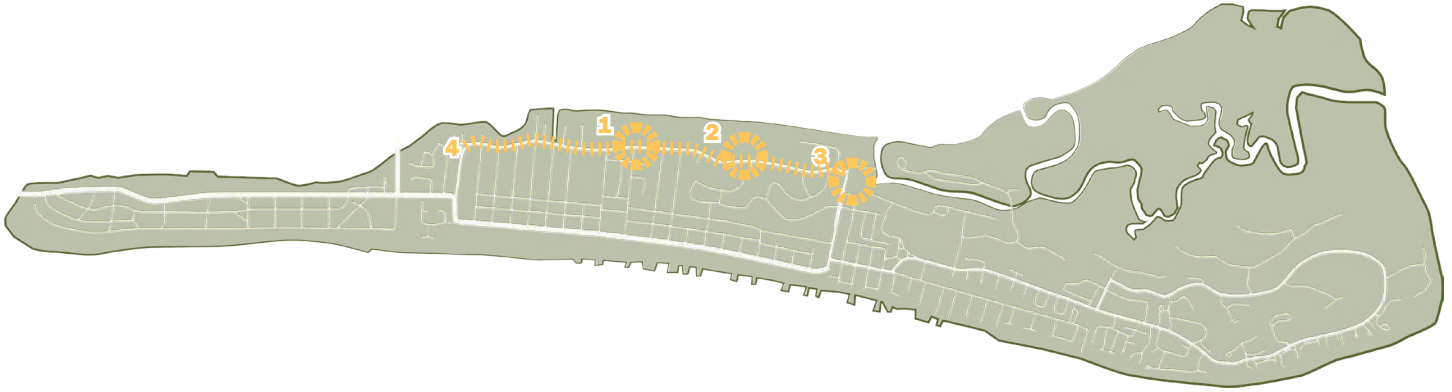
This study resulted in approximately 31 drainage improvement projects (with priority established) being recommended to mitigate flooding and sea level rise. These projects included a diverse mix of infrastructure improvements including low impact development, green infrastructure, pipe upgrades, cleaning out interior canals/ditches, installation of tide gates, dune infiltration systems, and vegetated berms. The next step will be for the City to secure funding for the design and construction of the high priority improvements (primarily the outfall and major improvements seen in Figure 1).



Figure 1
Approximate locations of project recommendations (Davis & Floyd, 2023).

2 WATERWAY BLVD. IMPROVEMENTS

ONGOING + FUTURE



1 30th Street Improvements



Originally initiated by City Council in 2017, a drainage study was completed for the area between 29th Avenue and 41st Avenue. Outfall improvements recommended as part of this study have been completed for the drainage systems at 30th Avenue, 36th Avenue, and 41st Avenue. These outfall improvements will provide significant mitigation against tidal flooding as well as provide ancillary benefits to the performance of the upstream drainage infrastructure.

Additional smaller drainage improvements are also planned for areas around Sparrow Drive, Forest Trail, Cross Lane, and 32nd Avenue.

2 Forest Trail Improvements



4 WATERWAY BLVD. MULTI-USE PATH ELEVATION PROJECT

The City is currently working on the design and engineering of the 1.7 mile Waterway Boulevard Multi-Use Path, which seeks to raise the path, while also improving local drainage and adding tide gates and valves to eliminate tidal intrusion.

The original study recommended a plan to improve tidal flooding protection to elevation 6 feet (NAVD 88), which would protect the City from most king tides. The City is evaluating the feasibility of increasing the level of protection by elevating the path an additional foot and pursuing grant funding to implement this project.

3 41st Avenue Improvements



3 BEACH PRESERVATION

ONGOING



Beach preservation and stabilization will be critical to the long-term resiliency of the City of Isle of Palms. While the majority of the island’s beachfront is stable or even naturally accretional, there are portions (i.e., Breach Inlet and the north end) which are highly dynamic and erosional. As such there have been several beach renourishment projects over the past few decades to help stabilize some of these areas.

The city sponsors periodic monitoring and analysis of the shoreline to assess stability and determine if interventions are necessary. The most recent study was completed by Coastal Science & Engineering in May of 2024 and makes several recommendations to address current and future beach erosion. The majority of these recommendations focus on renourishment efforts to the north end of the island as well as Breach Inlet.

Analysis of the north end concluded that while shoal migration events have generally added to the sand supply, episodic erosional patterns have resulted in a net loss, typically migrating sand supply downcoast that helps to maintain the rest of the island. It was recommended that periodic addition of sand (approximately 100,000 cubic yards of sand per year on average) occur at this location, sourced from offshore nourishment projects.



Breach Inlet, conversely, has experienced accelerated erosion over the past few years resulting in critically eroded areas. A historically accretional area, increased storm activity and impacts of sea level rise are contributing factors to the increased erosion rate. Unless these recent trends reverse, it was recommended that the area be re-nourished at a rate of approximately 68,000 cubic yards of sand per year on average.



Overall, the study recommends that the City plan on completing these recommended renourishment efforts every 8-10 years (on average) after initial stabilization efforts are completed. Costs for completing these initial renourishment efforts were estimated at approximately \$22 million, with future efforts assuming a 3% increase per year to account for inflation. It was recommended that the City of Isle of Palms does not solely bear the full cost of these improvements, and instead should seek cost-sharing opportunities (i.e., with Wild Dunes or Sullivan’s Island), state beach nourishment assistance, and federal funding.

COMMUNITY & ENGAGEMENT



PUBLIC SURVEY

As part of this Sea Level Rise Adaptation Plan, community feedback was gathered via an online survey with the following questions:

PART 1: SEA LEVEL RISE IMPACTS & STRATEGIES

1. How concerned are you about the long term impacts of sea level rise on Isle of Palms?

1. Not at all concerned
2. Somewhat concerned, but other issues feel more pressing
3. Concerned - this is as important as many other issues facing IOP
4. Very concerned - this is the most critical issue
5. Other/Need more information

2. Please select the concerns related to increasing water levels you are most worried about:

1. Storm and tidal flooding
2. Road closures and infrastructure damage from flooding
3. Loss of native ecological habitat
4. Septic and wastewater contamination
5. Displacement of residents
6. Other

3. Please select the sea level rise strategies you would like to see on Isle of Palms:

1. Dune re-nourishment
2. Improved storm drains
3. Underground stormwater storage
4. Living shorelines
5. Tidal control structures on drainage pipes
6. Vegetated berms along the marsh
7. Clean out interior canals for better drainage
8. Low impact drainage (rain gardens and bioswales)
9. Other/Need more information

4. The following are potential incentive programs targeted at encouraging homeowners and residents to bolster their property and neighbors' property from sea level rise. What, if any, would you consider participating in?

1. Using rain barrels (to capture runoff for yard irrigation)
2. Adding rain gardens or bioswales in flood prone yards
3. Replacing lawn with native planting
4. Increasing tree canopy
5. Upgrading from septic to sewer
6. Reducing impervious surfaces
7. Installing a green roof
8. Adding a pollinator garden
9. Other



PART 2: SITE SPECIFIC CONCERNS

1. Which of the following categories best describes your concerns:

1. Flooding
2. Septic tank concern
3. Natural/critical habitat concern
4. Beach erosion
5. Damage to structures
6. Damage to infrastructure (including pipes, drains, sidewalks, roads)
7. Other

2. Please locate on this map your area(s) of concern:



3. Severity of concern:

1. Nuisance
2. Minor
3. Severe

4. Photo upload and additional comments:

Upload Photos of Flooding (If Available)
Please upload photos of flooding. A maximum of 5 uploads are allowed per submission.

1 Drop image here or select image (maximum number of files allowed: 5)

Additional Comments
Please provide any additional details that you would like to include in your submission.

500

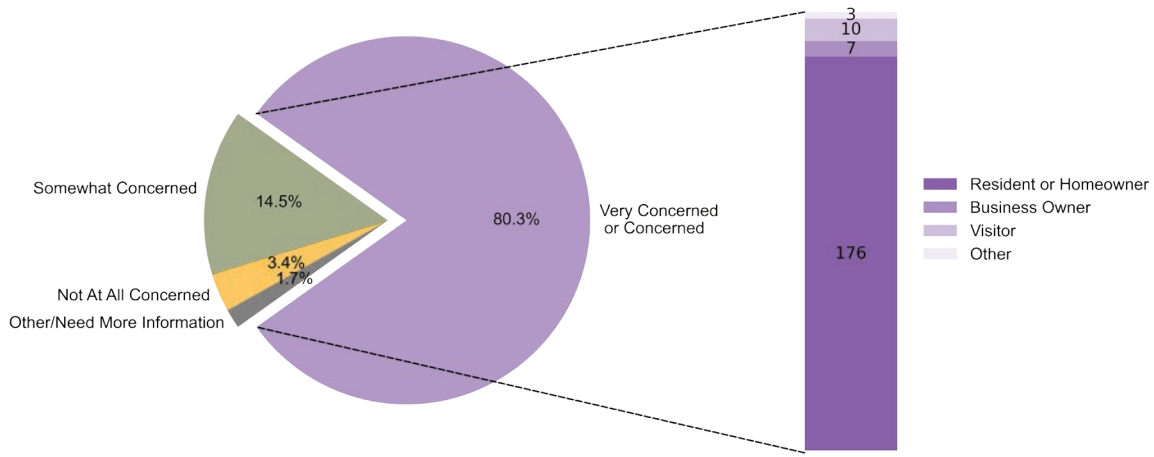


SURVEY RESULTS

Level of Concern

Of the 233 responses, the vast majority of respondents were very concerned or concerned about the impacts of sea level rise. Of those respondents who were concerned or very concerned, most were residents or homeowners. A small fraction of the respondents were somewhat or not at all concerned.

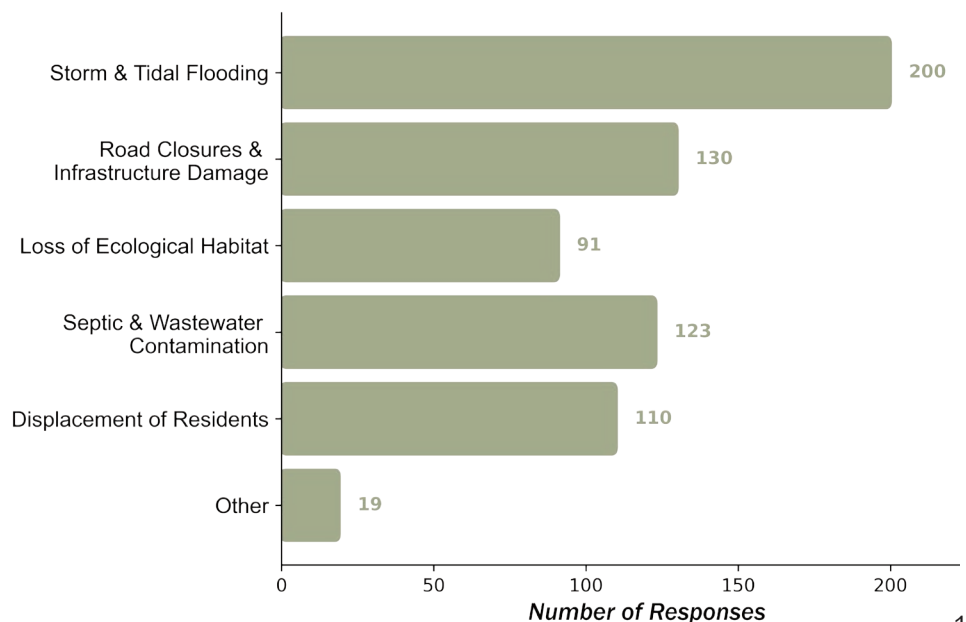
233 RESPONSES
221 Residents/Homeowners
9 Business owners
10 Visitors
4 Other



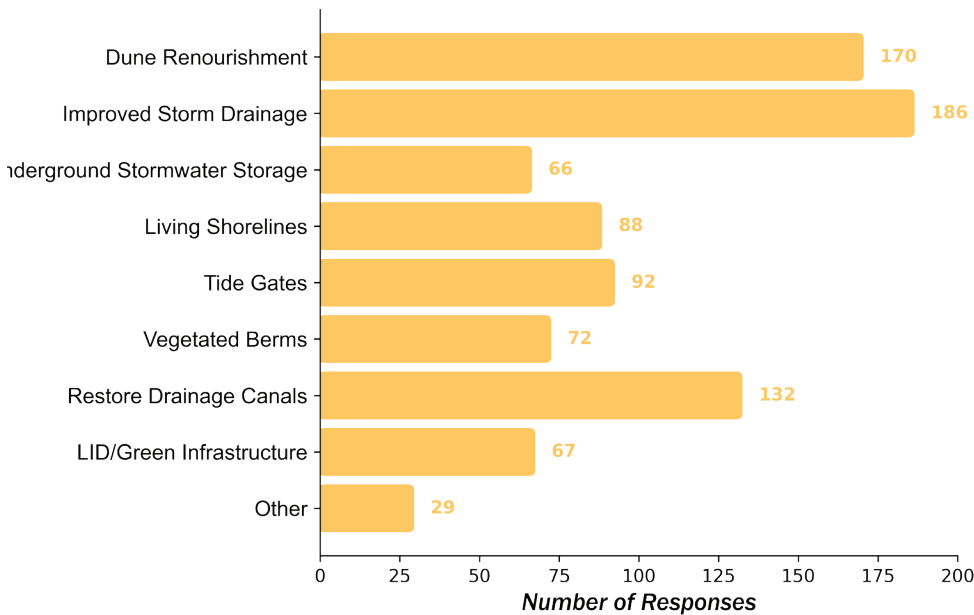
“We are worried about the long-term viability of living on the island. It’s our home and we don’t want to go anywhere else...”

Areas of Concern

Respondents were asked to choose what sea level rise impacts they were most concerned about. Storm and tidal flooding were identified as the highest area of concern amongst respondents. Road and infrastructure damage as well as septic contamination received the next most selections.

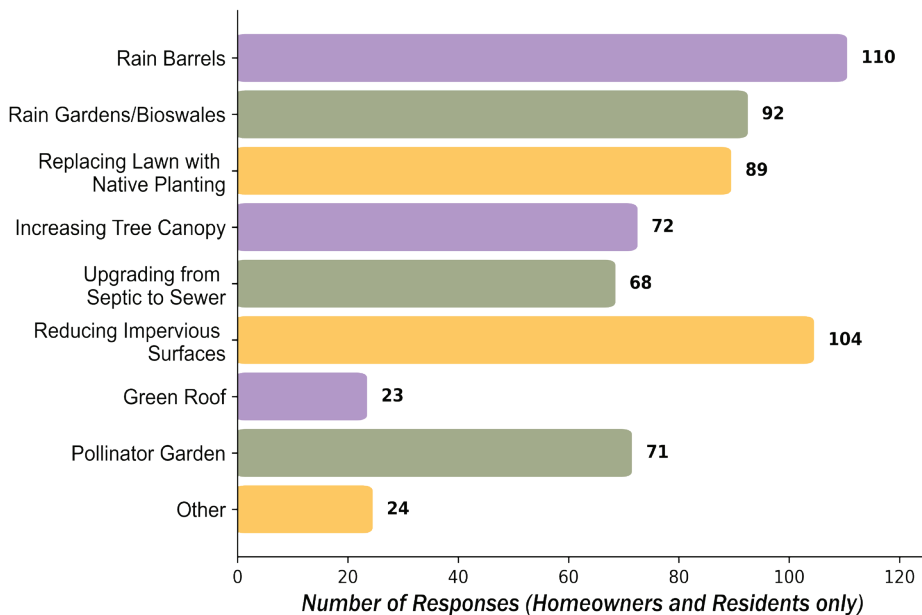


SURVEY RESULTS



SLR Strategy Interest

Respondents were asked to select the adaptation strategies they would most like to see the City implement. Improving storm drainage and dune renourishment were top selections. While green infrastructure strategies were not selected as frequently, they should still be considered for a holistic adaptation approach.



Incentive Program Interest

Respondents were asked to select incentive programs they would be interested in participating in that would involve strategies to help mitigate the impacts of sea level rise on their properties. The top selections were rain barrels, reducing impervious surfaces, rain gardens/bioswales, and replacing turf with native planting. These strategies should be considered if the City were to adapt incentive programs moving forward.

“Extremely concerned about flooding in our area. The extent of water intrusion into our yard and garage has increased significantly over the past few years...”

COMMITTEE MEETINGS

The following meetings happened during the spring of 2024 to help guide the creation of this planning document and establish known concerns regarding sea level rise on Isle of Palms.

TECHNICAL REVIEW COMMITTEE

2/22/2024

The Isle of Palms Technical Review Committee discussed the goals and strategies for the Sea Level Rise Adaptation Plan, emphasizing actionable steps to protect infrastructure, and maintain community livability amidst rising sea levels and coastal flooding.

The committee reviewed existing data, completed and ongoing projects, and considered strategies from other communities like Folly Beach and Charleston to guide their efforts.

The meeting concluded with plans for future community engagement and coordination with the Planning Commission.

PLANNING COMMISSION

5/08/2024

During the Isle of Palms Planning Commission workshop on the Sea Level Rise Adaptation Plan, the Planning Commission reviewed the project background, sea level rise projections through 2050, and discussed actionable strategies.

The workshop focused on the results from a preliminary vulnerability analysis and potential policies, programs, and projects which may mitigate these risks.

ENVIRONMENTAL ADVISORY COMMITTEE

5/09/2024

During the Environmental Advisory Committee meeting, the same feedback was generated as the Planning Commission Workshop. See the Planning Commission Meeting for details.

Additionally, the Environmental Advisory Committee provided valuable feedback on environmental issues facing the island including subsidence, areas of known flooding, and the importance of low-impact development. Their feedback was instrumental in guiding the key elements of the plan.



SEA LEVEL RISE AND VULNERABILITY ANALYSIS



INTRODUCTION OF TIDAL DATUMS

Tidal datums are the elevation reference used for measuring local water levels and communicating this data to the public. The specific elevation reference used to establish common tidal datums is based on different statistical interpretations of observed tidal data within the most recent tidal epoch, or 19-year observation window. The current established tidal epoch is from 1983 through 2001 and is considered for revision every 20-25 years.

Tidal data is commonly presented as a height relative to Mean Lower-Low Water (MLLW). MLLW is a tidal datum whose reference elevation is set as the average of the daily lowest tide measurements observed during the most current tidal epoch. For example, if it is forecasted that an 8-foot tide will occur, this water level is equivalent to 8 feet above the MLLW reference elevation for a location. Given that the current tidal epoch ended in 2001, an updated tidal epoch and subsequent reference elevations are possible. Therefore, tides expressed in MLLW today may not be equivalent to tides expressed in MLLW in the future.

To provide consistency for this sea level rise adaptation plan and simplify planning and engineering design efforts, tidal data presented herein are benchmarked to a fixed reference of the North American Vertical Datum 1988 (NAVD 88).

For additional information regarding tidal datums please visit the following NOAA webpage: [Tidal Datums](#)

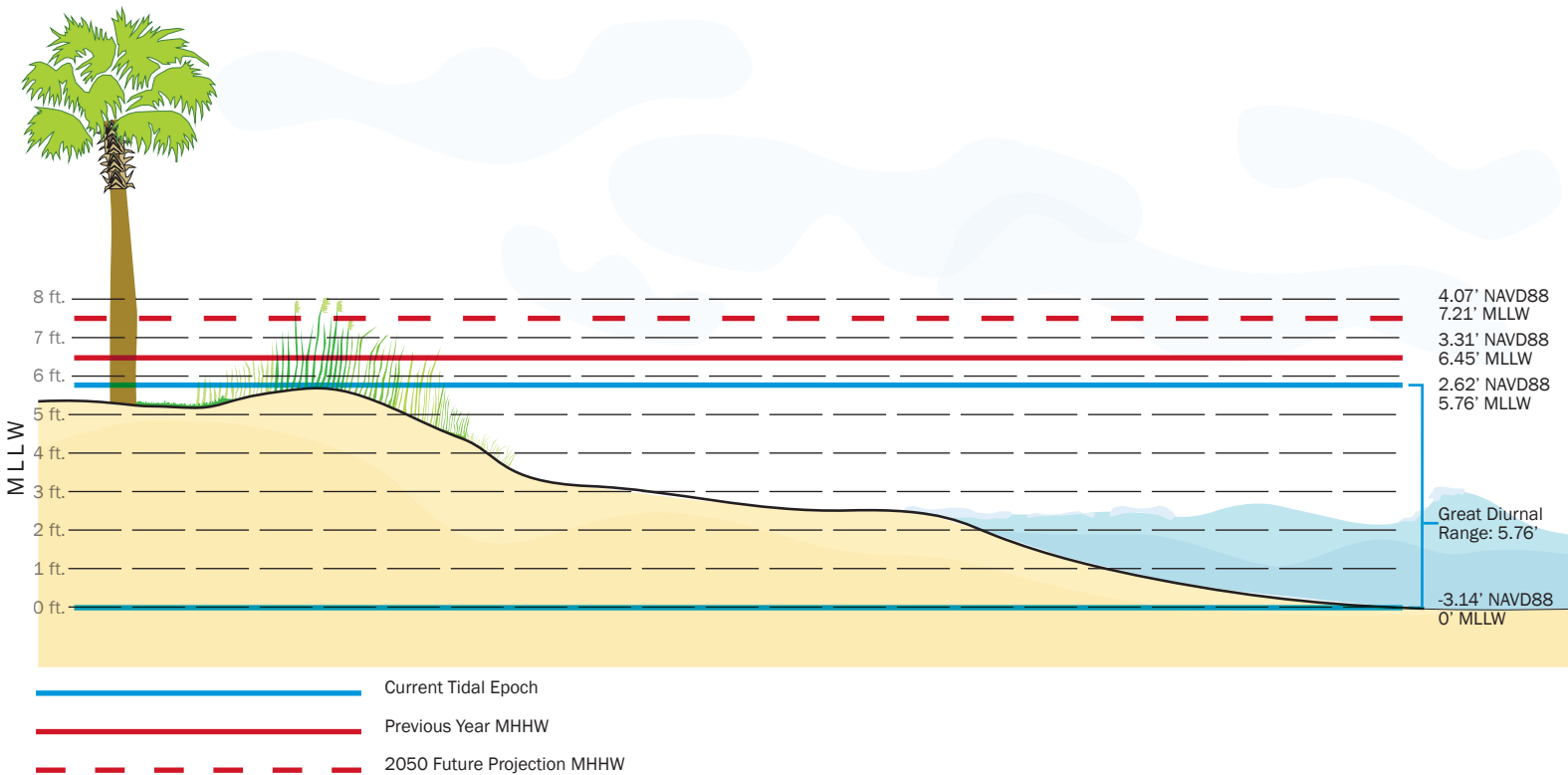


Figure 2
Historic and projected tidal datums based on the Charleston Harbor NOAA Station (Station 8665530).

SEA LEVEL RISE

A sea level rise analysis was performed to establish baseline tidal conditions and determine the target elevation that the City, planners, and engineers should use as guidance when developing flood mitigation solutions.

Baseline Tidal Conditions

The baseline tidal conditions for this analysis were established using observations from the Charleston Harbor NOAA Station (Station 8665530). This station has been collecting high-resolution tidal water level data for several decades over which increases in sea level can be observed (see Figure 3).

The baseline tidal elevation for this sea level rise analysis was based on statistical interpretations of the observed daily higher-high tides for 2023 (see Figure 4). This year represents an excellent baseline for quantifying future sea level rise because: 1) it is the most recent observation year, 2) the mean higher-high tide for the year aligns with long-term data trends, and 3) several extreme tidal events occurred during 2023 with the most extreme occurring outside of a hurricane or tropical storm event. To provide a conservative baseline for providing coastal protection, the 99.5% daily higher-high tide (5.97 ft NAVD 88) for the year 2023 was selected as the baseline tidal elevation for this analysis.

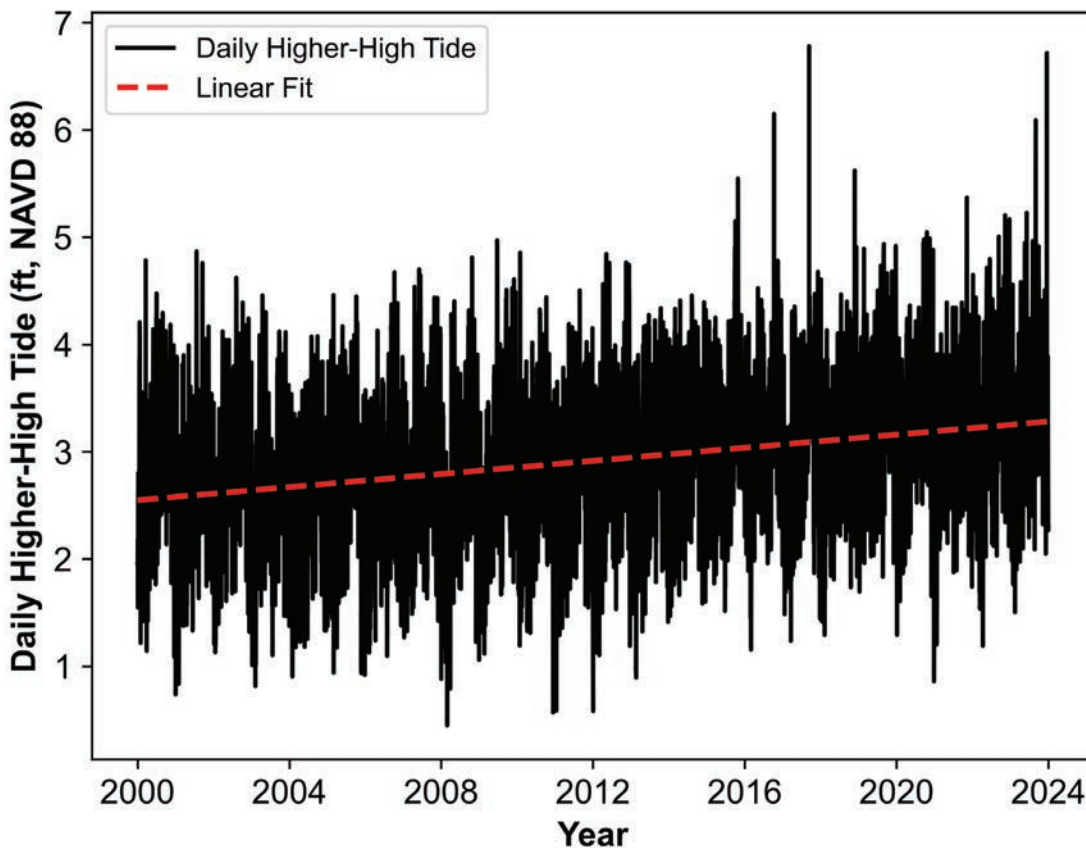


Figure 3
Daily higher-high tide from 2000-2023 for Charleston, SC (NOAA Station ID 8665530) along with a linear fit of the data.

Sea Level Rise Projections

Projections of future sea level rise have been established by the Sea Level Rise and Coastal Flood Hazard Scenarios and Tools Interagency Task Force. The projections and scenarios presented by this task force represent the most comprehensive and current (last updated 2022) information when investigating the impact of sea level rise along the U.S. coastline.

Overall, sea level rise projections presented by the task force represent the results of scenarios based on climate models which result in varying levels of risk and probability. Individual components included in these projections include sterodynamic sea level change (changes in ocean circulation, temperature, and salinity), impacts from glaciers, changes in land water storage (variability in the global water cycle), changes to the Greenland and Antarctic ice sheets, and estimates for land subsidence. For the purposes of this planning document, the intermediate projection for the year 2050 was selected as the sea level rise scenario to determine the local impact of future sea level rise.

For additional information regarding sea level rise scenarios please visit: [Sea Level Rise Projections](#)

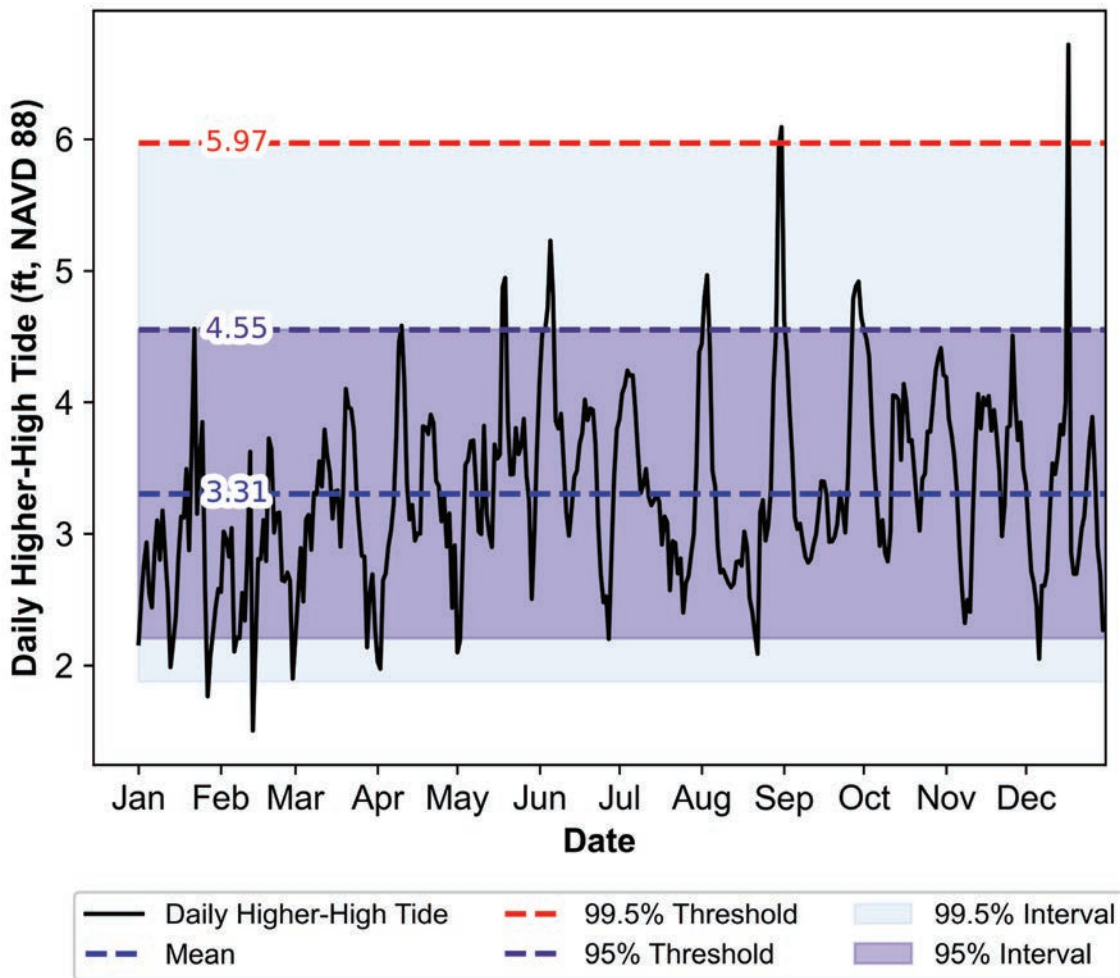


Figure 4
Daily higher-high tide for Charleston, SC (NOAA Station ID 8665530) during 2023 along with quantile thresholds.

Localized Vertical Land Subsidence

An additional hazard affecting coastal communities is vertical land subsidence, or the rate at which the surrounding landscape is sinking. It is hypothesized that the major contributors to this phenomenon include ground-water extraction and soil compaction in urban areas. While sea level rise projections from the Interagency Task Force do account for some level of vertical land subsidence, these estimates are not based on localized, higher-resolution data. The full interagency report recommends integrating higher-resolution data when available to be able to assess the impact of vertical land motion at finer scales (i.e., at the community level) whose rates may not be representative (i.e., communities with increased vertical land motion rates) of what is approximated in the sea level rise projections.

Higher resolution data for the City of Isle of Palms is available. Research has quantified these rates for the entirety of the U.S. eastern coastline based on vertical land motion data from 2007 to 2020 published by the United States Geological Survey. Analysis of the data points available within the municipal boundary for the City of Isle of Palms concluded that on average the landscape was sinking at a rate of approximately 0.15 inches/year. This rate far outpaces what is estimated in the interagency sea level rise projections. Therefore, this data was incorporated into this study as a supplemental sea level rise component (in addition to the vertical land motion rates included in the projections) to provide more conservative sea level rise projections for the City.

For additional information regarding this research on vertical land subsidence please visit:

[Vertical Land Subsidence Research](#)

2050 Sea Level Rise Mitigation Target

The previous datasets were used in the development of a sea level rise mitigation target for the City of Isle of Palms for the year 2050. Based on this analysis, the elevation target to mitigate/protect against future sea level rise is 7 feet NAVD88 (see Table 1; ~10 feet MLLW) which should provide protection for the vast majority of typical tides (excluding hurricanes and/or tropical storm events) experienced in the year 2050.

Table 1

Development of elevation target to mitigate future sea level rise

| Individual Components | Value |
|--|--------------------------|
| Current MHHW (2023; 99.5% Threshold) | 5.97 feet NAVD88 |
| Projected Sea Level Rise (Intermediate Scenario; Projected 2024 to 2050) | 0.763 feet |
| Vertical Land Subsidence (Average Observed; Projected 2024 to 2050) | 0.329 feet |
| Sea Level Rise Target (2050) | 7.061 feet NAVD88 |

Sea Level Rise Target (2050) is elevation 7' NAVD88

VULNERABILITY ANALYSIS

To assist planning efforts of potential mitigation projects, a vulnerability analysis was performed to identify impacted critical infrastructure and areas at risk of tidal flooding.

This vulnerability analysis was performed using a 2D HEC-RAS model developed to simulate overland flow processes and the island’s response to tidal-driven flooding. Several tidal boundary conditions were analyzed within this analysis representative of the tidal elevations for the years 2023, 2030, 2040, and 2050 (developed using the previously discussed methodology; see Table 2) to allow this analysis to identify which areas/infrastructure would be most immediately impacted.

Each tide cycle was developed based on an idealized tide cycle with a frequency of 12.5 hours wherein the peak and amplitude were determined using the MHHW (2.62 feet NAVD 88) and MLLW (-3.14 feet NAVD88) tidal values from the Charleston Harbor NOAA Station (Station 8665530) and shifted vertically to match the peak tide elevation for each target year.

Table 2

Development of additional elevation targets used to develop tide cycles for the vulnerability analysis.

| Target Year | Individual Components | Value |
|-------------|--|--------------------------|
| 2023 | Current MHHW (2023; 99.5% Threshold) | 5.97 feet NAVD88 |
| | Projected Sea Level Rise | N/A |
| | Vertical Land Subsidence | N/A |
| | Sea Level Rise Target (2023) | 5.97 feet NAVD88 |
| 2030 | Current MHHW (2023; 99.5% Threshold) | 5.97 feet NAVD88 |
| | Projected Sea Level Rise (Intermediate Scenario; Projected 2024 to 2030) | 0.153 feet |
| | Vertical Land Subsidence (Average Observed; Projected 2024 to 2030) | 0.076 feet |
| | Sea Level Rise Target (2030) | 6.199 feet NAVD88 |
| 2040 | Current MHHW (2023; 99.5% Threshold) | 5.97 feet NAVD88 |
| | Projected Sea Level Rise (Intermediate Scenario; Projected 2024 to 2040) | 0.442 feet |
| | Vertical Land Subsidence (Average Observed; Projected 2024 to 2030) | 0.202 feet |
| | Sea Level Rise Target (2040) | 6.614 feet NAVD88 |

Post-processing of the results from the vulnerability analysis allowed for maximum flood inundation boundaries to be developed for each tidal scenario. These flood inundation boundaries are useful tools for communicating flood risk at different timescales across the island.

However, it is important to note that inaccuracies in the simulated flood boundaries are possible due to model limitations. For example, the model does not account for recent projects which may mitigate tidal flow paths as well as stormwater networks which through tidal backflow may allow tides to ingress further into the island. Additionally, this model assumes stagnant topographic elevations and does not evaluate erosional and accretional forces which may impact the City. It should be assumed for the purposes of this analysis that continued preservation of the beach and dune systems occur as outlined in the beach management plan.

Therefore, these flood boundaries and results should be considered for planning purposes only. An example of this can be found in Figure 5 which depicts the results of the vulnerability analysis for an area near the intersection of Palm Boulevard and 4th Avenue. Please reference Appendix A for the results of this analysis across the entire island.

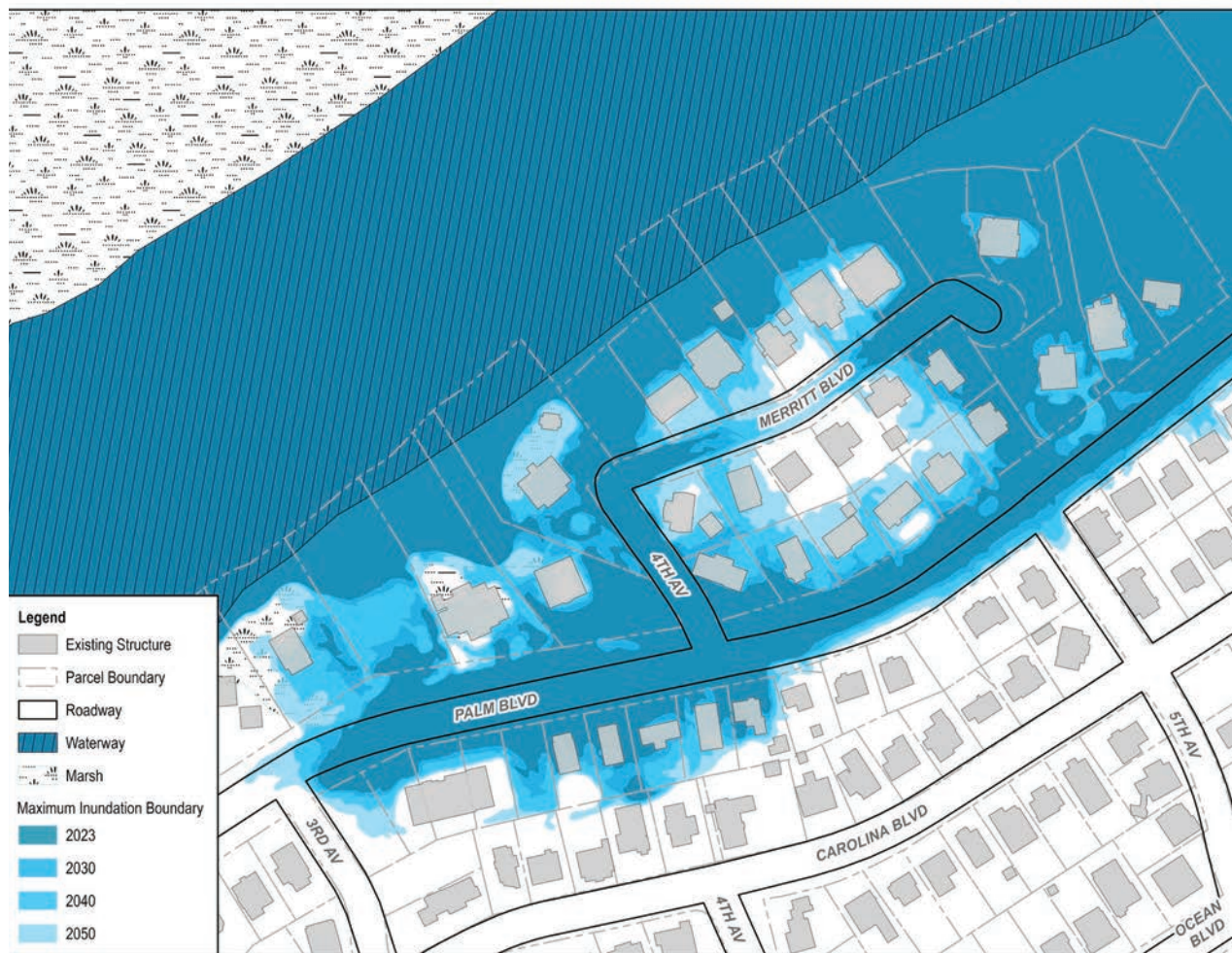


Figure 5
Example results from the vulnerability analysis near Palm Boulevard and 4th Avenue.

A summary of the impacts at each projection year observed in the vulnerability analysis can be found below in Table 3. Specifically, the linear miles of roadways inundated and how parcels may be impacted (i.e. septic impacts and assessed value) are quantified below.

Overall, it can be interpreted from these results that the year 2040 is a critical year for the City, with the observed impacts substantially increasing from 2040 to 2050 at a rate greater than any other year-to-year comparison in this analysis.

Table 3
Summary of sea level rise impacts observed in the vulnerability analysis.

| Year | Parcels Impacted | Appraised Value of Impacted Parcels (\$million) | Parcels Impacted on Septic | Roadways Impacted (miles) |
|-------------|------------------|---|----------------------------|---------------------------|
| 2023 | 1041 | 1415.28 | 235 | 3.37 |
| 2030 | 1221 | 1530.45 | 289 | 4.53 |
| 2040 | 1556 | 1791.70 | 410 | 6.95 |
| 2050 | 2011 | 2115.69 | 524 | 13.88 |



ADAPTATION STRATEGIES



ADAPTATION STRATEGIES OVERVIEW



Policies

- A** Elevated Tide and Emergency Response Program
- B** Zoning and Ordinance Updates for Redevelopment
- C** Create Design Tool for Redevelopment
- D** Develop Water Quality Assessment Plan and Marsh Management Plan



Projects

- A** Grey/ Rigid Infrastructure
- B** Infrastructure Maintenance
- C** Green Infrastructure
- D** Perimeter Protection



Programs

- A** Purchasing Flood Prone Property
- B** Incentivizing Private LID Stormwater Systems
- C** Educational Programs
- D** Create Demonstration LID Sites

POLICIES

A Elevated Tide and Emergency Response Program

The City can adopt an operations policy to address storm surge and elevated seasonal tides as they happen more frequently. This policy should address:

- Advanced warning timeline strategy of when to inform the public and when to require public action as needed (evacuation, road closures, etc.)
- Timeline and implementation of barricades and signage for public safety
- Coordination with other agencies and municipalities
- Debris cleanup following a storm event

B Zoning and Building Ordinance Updates for Redevelopment

As growth continues on Isle of Palms, it is imperative that the City Ordinance require new development and redevelopment to assist with the mitigation of sea level rise and increased flooding.

Updates to the Zoning Ordinance in addition to what exists in the City Ordinance may include:

- On all new development and any redevelopment, an engineer must review and sign off on grading plan and drainage report to ensure compliance
- Development to prioritize routing runoff to adjacent drainage infrastructure (where applicable) within the right-of-way
- Increase volume/flow offset for stormwater control
- Increase allowed fill on developed parcels that fall under the projected sea level rise plan elevation target
- Prohibiting new septic fields/tanks on sites where there is an available sewer tie-in or on parcels that are lower than elevation 7' NAVD88
- Increase setbacks on septic fields from the OCRM critical line and areas prone to flooding
- Limit/restrict new development in flood prone areas
- Maintain and strengthen marsh setbacks and add elevation considerations in setback requirements
- Increase tree canopy requirements to help better stabilize soil and slow the rate of runoff. Currently, the only required tree planting in the zoning ordinance is in the buffer yard requirements for commercial properties. This planting requirement should be expanded to require interior parcel tree planting for commercial and residential properties as well as require tree save minimums.
- Tree replacement for removal of historic trees currently requires half the DBH caliper inches of the removed tree. The replacement requirement can be increased up to the entire DBH in caliper inches to help restore a stabilizing root system and further deter the unnecessary removal of historic trees.
- Clarify the code to better define pervious paving. Sec. 5-4-13 (c) states that all newly installed hardscape elements be pervious, but does not define (or limit) what those materials are.
- Restrict the construction of bulkheads or revetments on the marsh side of the island. In February 2024, the City passed an emergency ordinance allowing property owners to erect protective bulkheads on beach front property between 100 and 914 Ocean Blvd. That allowance should not extend to the marsh fronting properties as bulkheads can cause long term erosion and degradation of the marsh ecosystem. Instead, fill or vegetated berms outside of the critical area should be allowed to provide adequate tidal protection.

POLICIES

C Create Design Tool for Redevelopment

The City can create and deploy an apparatus to facilitate LID practices on any new redevelopment. This can come in the form of any of the following:

- A points-based certification program that rewards developers for incorporating sustainable design practices. The program combines required levels of flood mitigation and Low Impact Development (LID) strategies with additional incentives for exceeding these standards.
- Tiered certification system that works similarly to the points based system that provides a hierarchy (gold, silver, bronze, etc.) of sustainable strategies. This would be structured similar to LEED or SITES certifications.
- A digital graphic or model that calculates LID requirements as required by any redevelopment. This will help guide developers through the process more effectively.

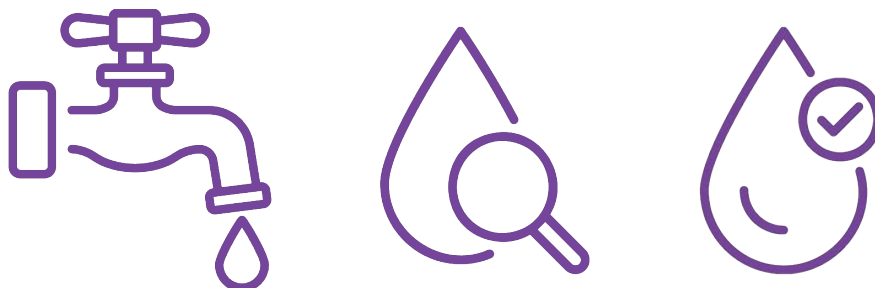
Any of these tools will require the City to develop the LID strategies desired for redevelopment. Some of these strategies can include:

- Requiring redevelopment to transition to sewer (if applicable)
- Increasing canopy cover
- Bioswales and rain gardens
- Rain cisterns
- Setting limitations on irrigation and utilizing stormwater for irrigation
- Grey water recycling
- Establishing a living shoreline (if site applicable)
- Installing vegetated inland berm for flood mitigation (if site applicable)

D Develop Water Quality Assessment Plan and Marsh Management Plan

The Water Quality Assessment Plan would be a strategic document that evaluates and analyzes the health and quality of water in the City. This plan could identify pollutants, understand sources of contaminants, monitor environmental and human health risks, and guide water management efforts. The structure of the water quality assessment plan could start with site and scope selection, then select water quality indicators and parameters, create and outline sampling, analyze and interpret data, and provide management and mitigation recommendations as needed.

Marsh management is one of the most critical aspects to combating sea level rise on Isle of Palms as the most impactful tidal flooding comes through the Intracoastal Waterway marsh. The City can prepare a study and plan that establishes concerns with sea level rise and increased flooding impacts on the marsh ecosystem and make recommendations to monitor, protect, and restore the marsh as necessary. This study can provide site specific solutions and implementation strategies, which may include living shoreline strategies.



PROJECTS

A Grey/Rigid Infrastructure

Built infrastructure can help capture, store, and control storm and tidal water through improvements to the stormwater systems.

- **Upgrading and replacing pipes** to increase flow capacity and ensure positive drainage
- **Installing tide gates** on stormwater outfalls to prevent tidal backflow through stormwater networks.
- **Providing underground storage** for stormwater such as chamber systems or dune infiltration systems. Dune Infiltration Systems are a type of underground detention system that relies on the naturally high infiltration of sandy soils to infiltrate stormwater into the dunes.
- **Transitioning properties** to sewer will reduce risk of contamination during flood events.



Check valves on marsh outfall



Improved drainage structure



Increase storm pipe size and structure



Dune infiltration system

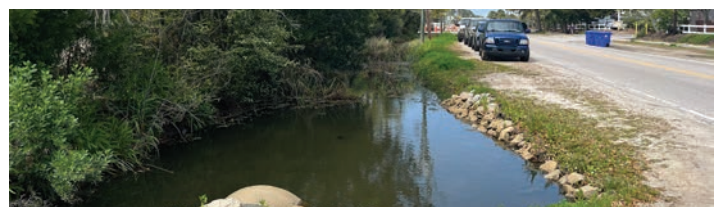
B Infrastructure Maintenance

Maintenance and upkeep of existing systems will help mitigate flooding impacts by restoring existing systems.

- **Cleaning and upkeep** of public storm drains, pipes, ditches, and swales. This effort can be directed by the results from the drainage masterplan and public feedback of clogged utilities. This will require coordination with SCDOT if infrastructure lies within SCDOT right-of-way.
- **Continue beach renourishment** efforts to add sand and stabilize the City's beachfront.



Beach nourishment at Breach Inlet



Cleaned and reinforced existing ditch in the right-of-way

PROJECTS

C Green Infrastructure

Using low impact development practices, the City can help mitigate the impacts of increased flooding and sea level rise using more natural and less invasive practices. Many of these strategies can also create a more planted and aesthetically interesting space.

- **Living shorelines** reinforce marsh and coastal shorelines by decreasing bank slopes and using natural materials to not only help mitigate damage from flooding and erosion, but re-create and bolster a natural ecosystem. These living materials can range from native plants, oyster beds and shell bags, coir logs (biodegradable coconut fiber), rocks (riprap is prohibited as beach erosion control method per City zoning ordinance), and any combination of those elements. Living shorelines are created at or below the critical line.
- **Creating bioswales and rain gardens** in the right-of-way and public space can utilize space that is either empty and/or prone to flooding to capture runoff. Both of these strategies will require native plantings to slow the flow of runoff and stabilize from erosion. Low maintenance plant species should be selected.



Living Shorelines



Living Shorelines



Public Rain Garden



Right-Of-Way Bioswale

PROJECTS

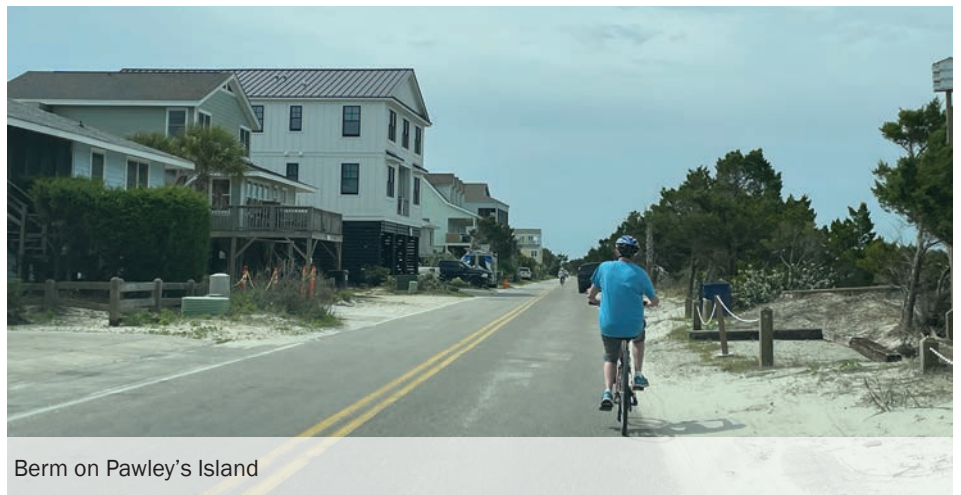
D Perimeter Protection

As Isle of Palms is a barrier island, protecting its edges from flooding and sea level rise will be critical to its long-term resiliency.

- **Raising Waterway Boulevard** to elevation 7 feet NAVD88 will provide a barrier for the interior of the island against tidal flooding from the Intracoastal Waterway, as most of flooding comes through the ICW.
- In addition to the ongoing dune restoration project on the south end of the island, further **dune/beach renourishment projects** will likely be necessary along the beach front. The placing and shaping of the new sand will help protect the beach from further erosion and serve as a physical barrier along the oceanside.
- **Constructing vegetated berms** can provide flooding protection in site specific applications.



Waterway Boulevard



Berm on Pawley's Island



Dune renourishment efforts at Ocean Isle Beach, NC



PROGRAMS

A Purchasing Flood Prone Property

As grant funding becomes available, properties that continuously flood could be considered for land acquisition. Once acquired, they can be utilized as open green spaces that host flood mitigation projects.

B Incentivizing Private LID Stormwater Systems

Property owners can help overall water management through the implementation of strategies on their properties. Using tax credits, water and utility rebates, group purchasing, and other incentives, the City can encourage property owners to install and maintain LID stormwater projects to manage on-site stormwater. These strategies can help alleviate the volume of stormwater the City's storm system captures during storm events and help stabilize the soil to reduce erosion.

Examples of the LID strategies can include:

- Rain gardens
- Bioswales
- Replacing lawn with native planting
- Rain cisterns
- Increased tree canopy
- Green roof installation



Rain Gardens with Cistern



Bioswales



Replacing sod with native planting



Rain Cisterns



Tree canopy to stabilize soil



Green roof installation on Kiawah

PROGRAMS

C Educational Programs

The City can develop educational programs aimed at empowering developers and residents with knowledge and practical strategies for resilience. These programs will cover topics such as sustainable building techniques, nature-based solutions like living shorelines, and low impact development strategies. By collaborating with environmental scientists, urban planners, and engineers, the City can offer workshops, webinars, and hands-on training. These sessions and workshops will be designed to help teach residents how to protect their homes and properties while encouraging developers to adopt resilient building standards.

Examples can include:

- Resilient building and retrofitting seminars for builders and developers
- Flood-resilient landscaping workshops
- Rain garden and cistern workshops
- Volunteer based living shoreline demonstration project with educational information and signage online
- Emergency preparedness workshops



South Carolina Oyster Recycling and Enhancement (SCORE) Volunteer Program

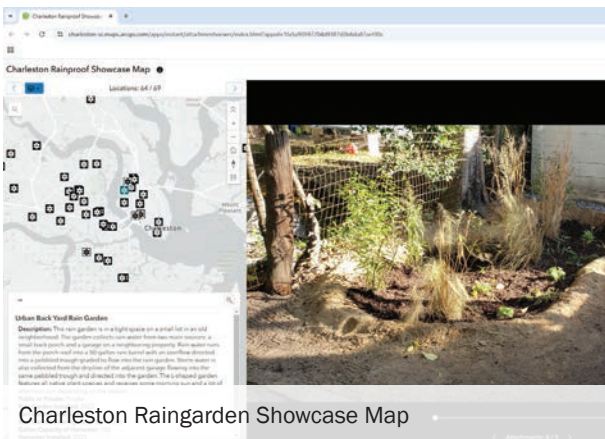


MUSC hosts Rain Garden installation class in Downtown Charleston

D Create Demonstration LID Sites

To showcase sustainable strategies, the City can create a demonstration rain garden, living shoreline, and dune infiltration system as educational pilot projects. These demonstration sites could be located in key waterfront areas and paired with educational programs to provide in-ground examples of active resiliency strategies.

To begin, the City can partner with environmental organizations (like Clemson’s Master Rain Gardener, SC Department of Natural Resources, or the Lowcountry Landtrust) to provide design guidance and engage local volunteers for planning and installation.



Charleston Raingarden Showcase Map



Local families installing rain gardens to bring beauty to their yards and help manage stormwater naturally



MOVING FORWARD



IMPLEMENTATION STRATEGIES

| | POLICIES | PROJECTS | PROGRAMS |
|---|--|--|---|
| Short Term Goals (Immediate Action) | <ul style="list-style-type: none"> Implement elevated tide and emergency operations. Update zoning ordinances for redevelopment. Begin Development of Redevelopment Design Tool. | <ul style="list-style-type: none"> Begin design and permitting of outfall improvements recommended as part of the Phase 4 Masterplan. Initiate Pilot Projects including: <i>Living shorelines</i> <i>Bioswales and rain gardens.</i> Continue dune and beach nourishment projects. Begin implementation of vegetated berms for perimeter protection. | <ul style="list-style-type: none"> Launch a pilot program for private Low Impact Development (LID) stormwater management. Develop a public education program on resilient strategies. |
| Intermediate Goals (Achievable by 2030) | <ul style="list-style-type: none"> Implement Redevelopment Design Tool. Conduct a comprehensive water quality assessment. Develop a comprehensive marsh management plan. Update and enforce zoning ordinances. | <ul style="list-style-type: none"> Finalize outfall improvements recommended as part of the Phase 4 Masterplan. Install tide gates as recommended. Begin installation of underground storage solutions. Transition high-risk properties from septic to sewer systems. Complete Waterway Boulevard enhancements. | <ul style="list-style-type: none"> Establish educational and volunteer programs to promote community involvement. |
| Long Term Goals (Achievable by 2050) | <ul style="list-style-type: none"> Incorporate recommended improvements from the water quality assessment. Incorporate marsh management plan. | <ul style="list-style-type: none"> Transition all at-risk properties from septic to sewer systems. Finish construction of all required perimeter protection. Complete additional stormwater projects recommended as part of the Phase 4 Masterplan. | <ul style="list-style-type: none"> Purchase flood-prone property to preserve and or demonstrate conservation practices. |

Review Cycle: This plan will be re-evaluated every 5 years to ensure continued relevance and effectiveness.

RESOURCES



RESOURCES

PREVIOUS PLANS AND STUDIES FOR THE CITY OF ISLE OF PALMS

Comprehensive Plan

From the Isle of Palms Comprehensive Plan: “This Comprehensive Plan is intended to document the history of development on the Isle of Palms, identify the community’s problems and needs, and articulate a vision for its future. The Plan is also intended to help guide future decision making in matters affecting the physical, social, and economic growth, development and redevelopment of the community. This plan is not a final product; it is part of a continuing planning process and should be updated and revised as new information becomes available or as new problems and needs arise”.

This planning document is typically reviewed and revised every 10 years with the last update in 2015. The most recent update can be accessed by [clicking this link](#).

Phase 4 Drainage Masterplan – Drainage Study and Recommendations for Improvements

From the Phase 4 Drainage Masterplan: “In a proactive approach to improve long-term community resiliency, the city has been completing stormwater master plans and improvement projects on a phase-by-phase approach. The City began the Phase 4 masterplan in the fall of 2021 with an overall purpose to analyze and assess the capacity and condition of drainage infrastructure serving the city identified within the Phase 4 footprint [bound by 29th Avenue to the east and Breach Inlet to the west]. As a result, the overall purpose of this report is to summarize an in-depth drainage study completed wherein existing flood conditions were identified, solutions to mitigate existing flood conditions were developed, costs to implement such solutions were estimated, and potential funding to finance solutions were identified.” The study was completed in 2023 and makes several recommendations that would assist with flood mitigation efforts to combat sea level rise. A draft of the report can be accessed by [clicking this link](#).

Isle of Palms Beach Management Planning Scenarios

Completed in May of 2024, this study analyzed the stability of the City’s beachfronts and makes several recommendations to address current and future beach erosion. The report can be accessed by [clicking this link](#).

Local Comprehensive Beach Management Plan – 5-Year Review

From the plan: “The City’s LCBMP [Local Comprehensive Beach Management Plan] represents considerable effort, inventory, and deliberation on the part of the City, and establishes a strategy for the management of the Isle of Palms beach for the sustainable enjoyment by residents and visitors. This LCBMP is intended for incorporation into the State Beachfront Management Plan in accordance with the provisions of the State Beachfront Management Act.

The plan is reviewed and updated every 5 years with the most recent updated completed in 2023. The most recent update can be accessed by [clicking this link](#).

TIDAL DATUMS AND DATA RESOURCES

Tidal Datums

Descriptions and definitions of tidal datums used to describe the relative water level of the tides can be accessed by [clicking this link](#).

Charleston NOAA Tide Gauge

Current and historic tidal data for the Charleston, SC NOAA tide gauge can be accessed by [clicking this link](#).

SEA LEVEL RISE RESOURCES

Sea Level Rise Projections

Sea level rise scenarios for Charleston, SC were based on the information contained within the 2022 Sea Level Rise Technical Report (as developed by the Sea Level Rise and Coastal Flood Hazard Scenarios and Tools Interagency Task Force). These projections

provide the most comprehensive and up-to-date information for planning for the impacts of sea level rise. Projections are classified into five risk scenarios and all values are relative to a baseline year of 2000. These projections can be accessed by [clicking this link](#).

The full Sea Level Rise Technical Report as well as an application guide for assisting decision makers with applying the information contained within the report can be accessed using the following links: [Global and Regional Sea Level Rise Scenarios for the United States](#) and [Application Guide for the 2022 Sea Level Rise Technical Report](#).

Sea Level Rise Viewer

This tool, developed by the National Oceanic and Atmospheric Administration, allows users to view the potential for flooding under future sea level rise scenarios. These inundation levels are meant to be used for high-level planning purposes only as the methodology used to develop this tool and associated flood inundation layers does not account for additional factors such as erosion, subsidence, future construction, or stormwater infrastructure.

The tool can be accessed by [clicking this link](#).

Vertical Land Subsidence

This reference was used to determine higher-resolution, local vertical land subsidence rates for the City of Isle of Palms. The research analyzed vertical land subsidence rates at a 50 meter scale across the entirety of the US east coast. The research article can be accessed by [clicking this link](#).

OTHER COMMUNITIES

Sea Level Rise Adaptation Plans

Several other coastal communities within South Carolina have developed similar sea level rise adaptation plans to assist with long-term community and resiliency planning.

These plans/resources can be accessed below:

[City of Charleston](#), [Town of Pawleys Island](#), [City of Folly Beach](#), and [Town of Edisto Beach](#)

PHOTO CREDITS

Charleston Rainproof

Rainproof images on page 31 of this document were sourced from the Charleston Rainproof Showcase Map. This map features both private and public rainproof gardens installed throughout the Charleston metropolitan area. You can access the map by [clicking this link](#).



SW 
SEAMONWHITESIDE



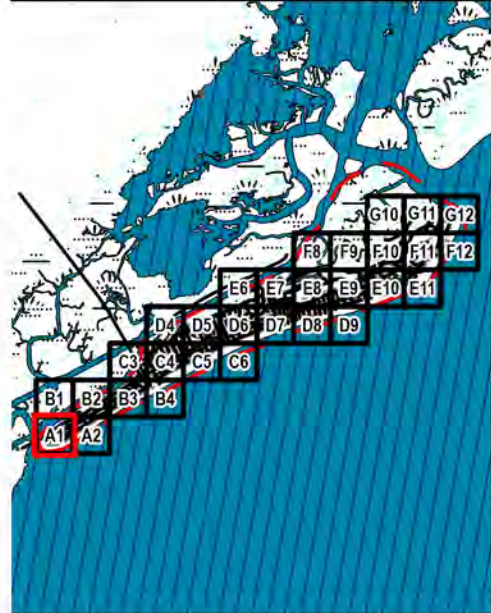
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector A1

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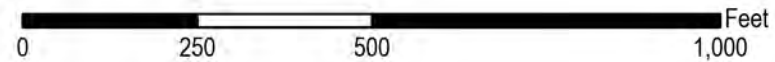
NOTES:

1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
2. Tidal boundaries conditions were developed for each target year based on projected sea level rise and vertical land subsidence (following methodology discussed in the Sea Level Rise Adaptation Plan).
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



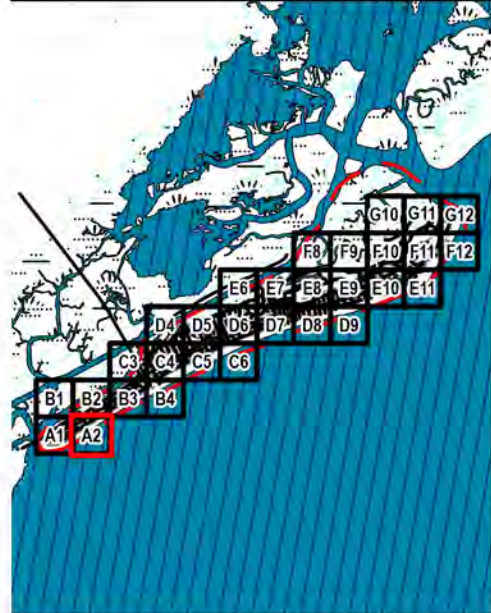
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector A2

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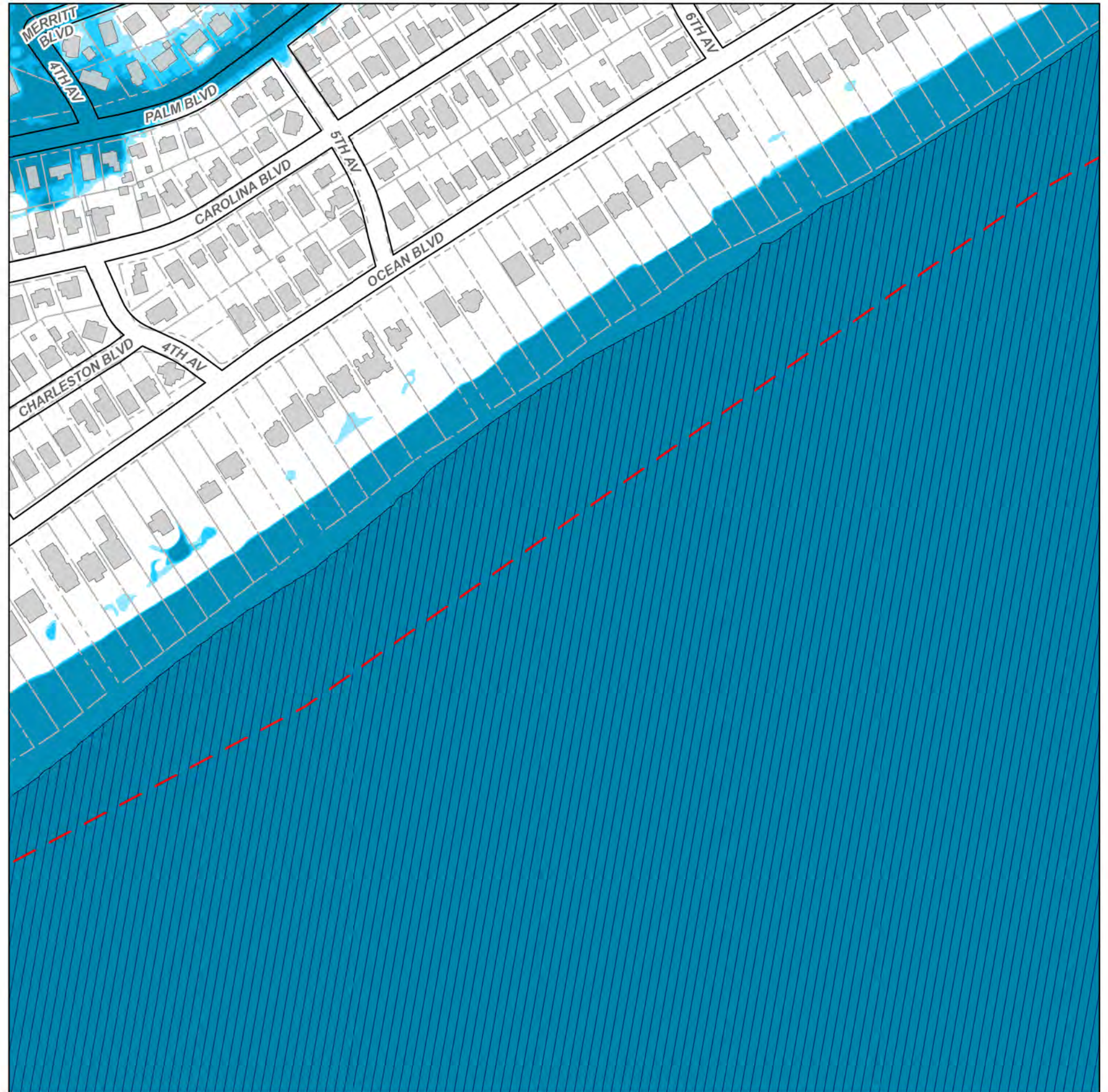
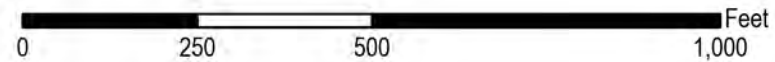
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



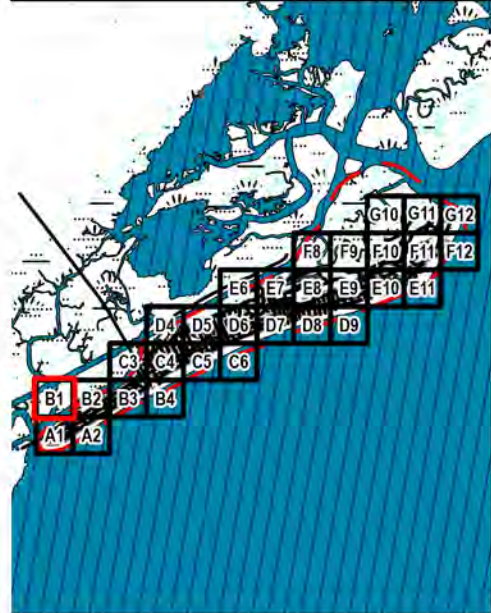
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector B1

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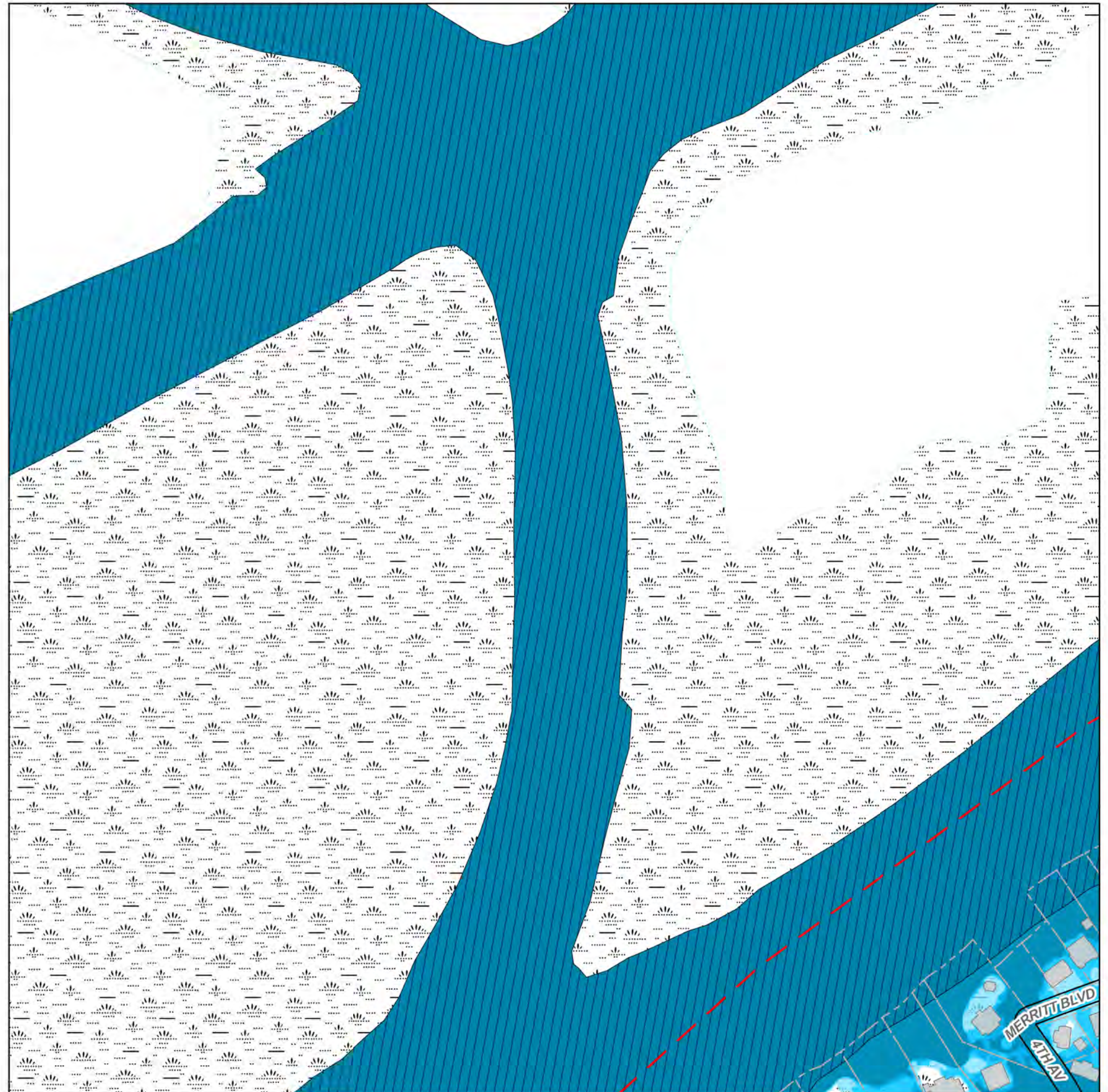
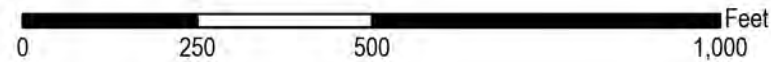
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



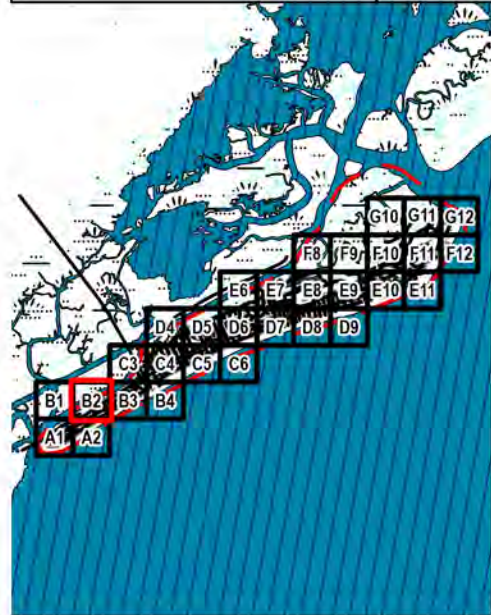
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector B2

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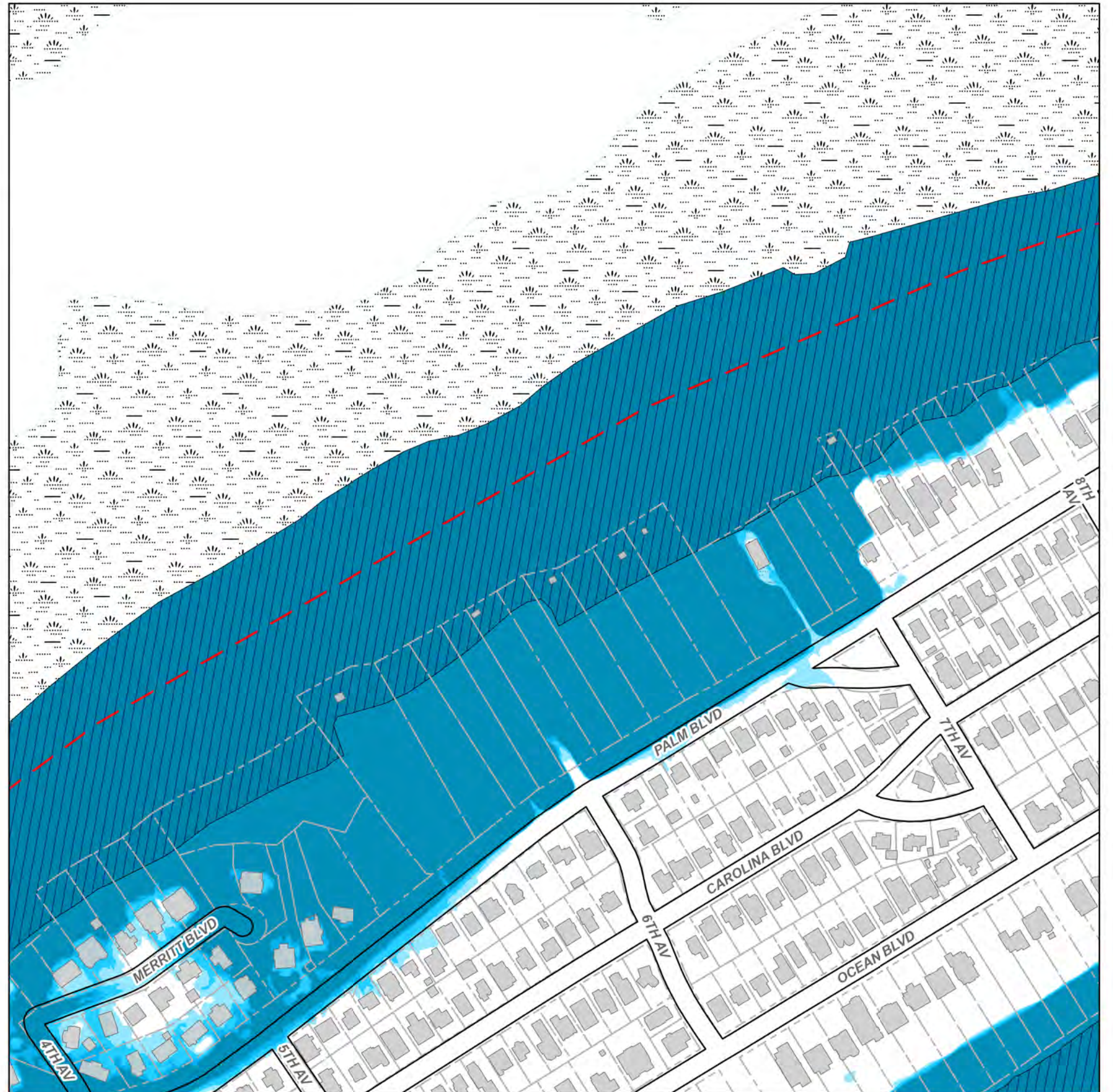
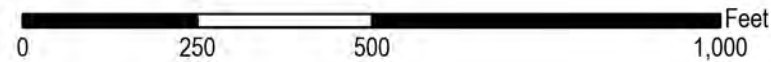
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



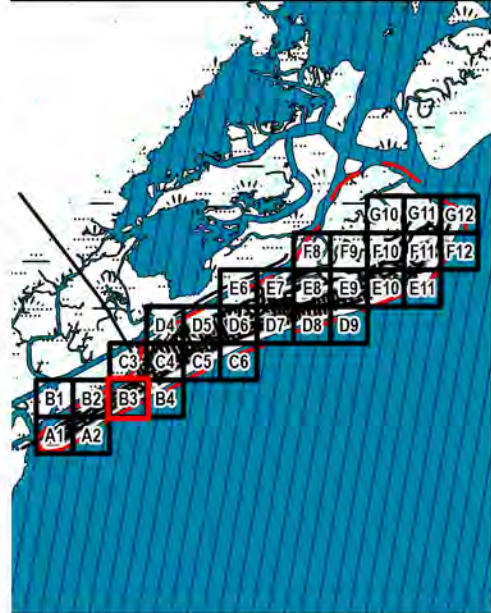
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector B3

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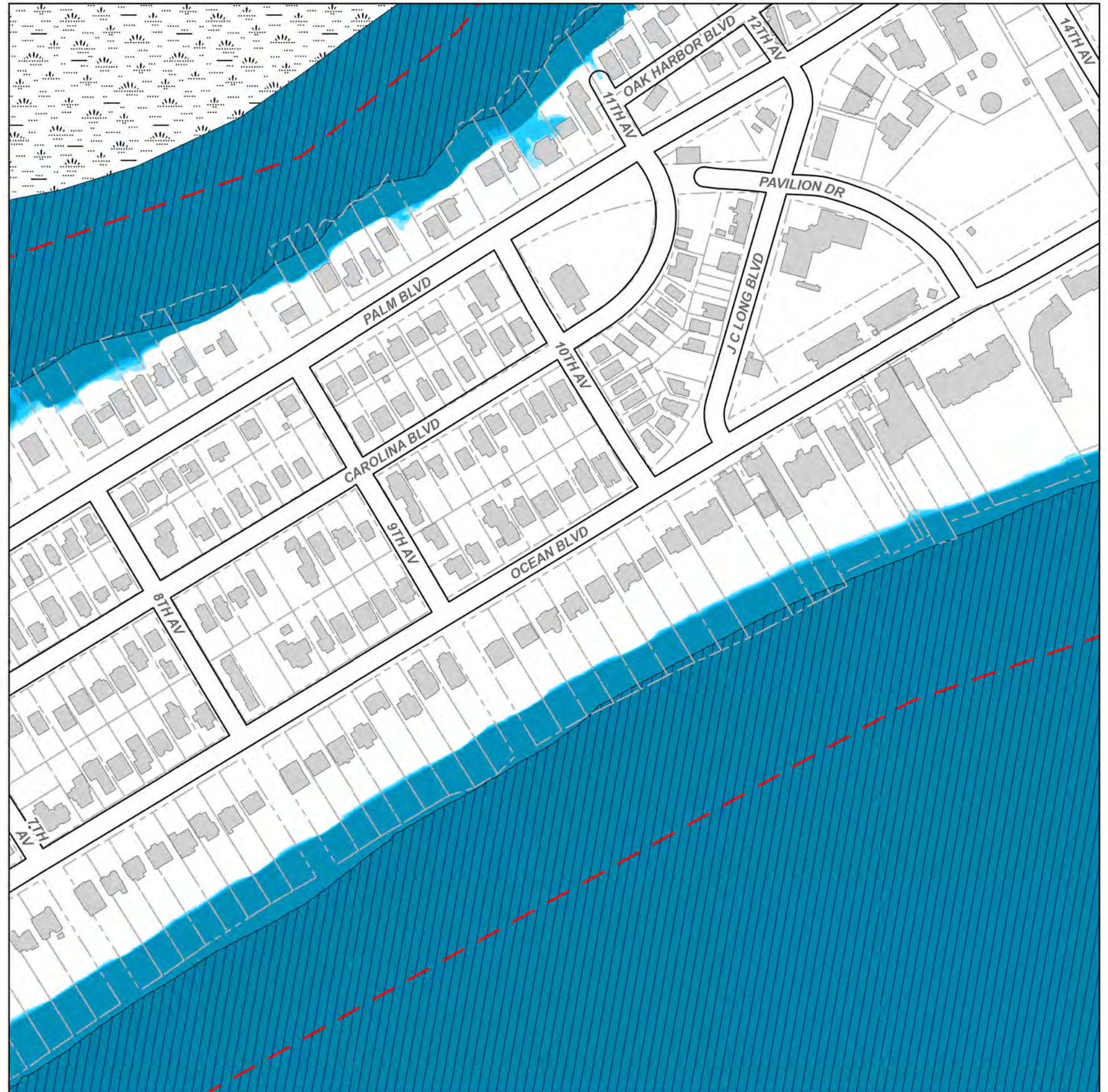
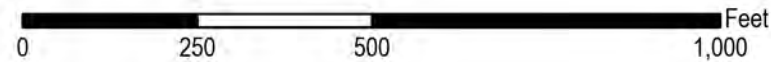
NOTES:

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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



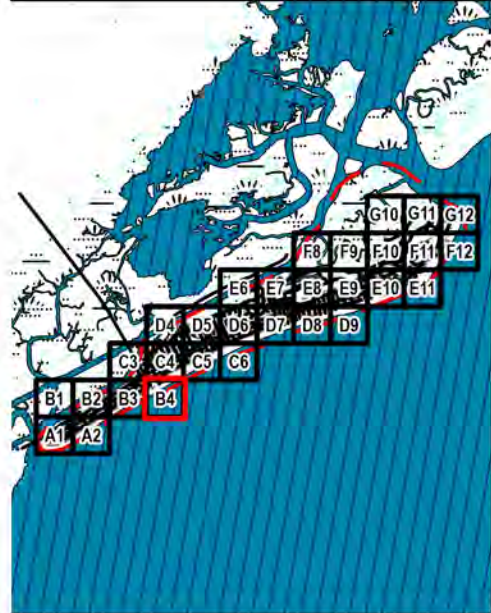
**City of Isle of Palms, South Carolina
Sea Level Rise Adaptation Plan**

Vulnerability Analysis

Appendix A

Sector B4

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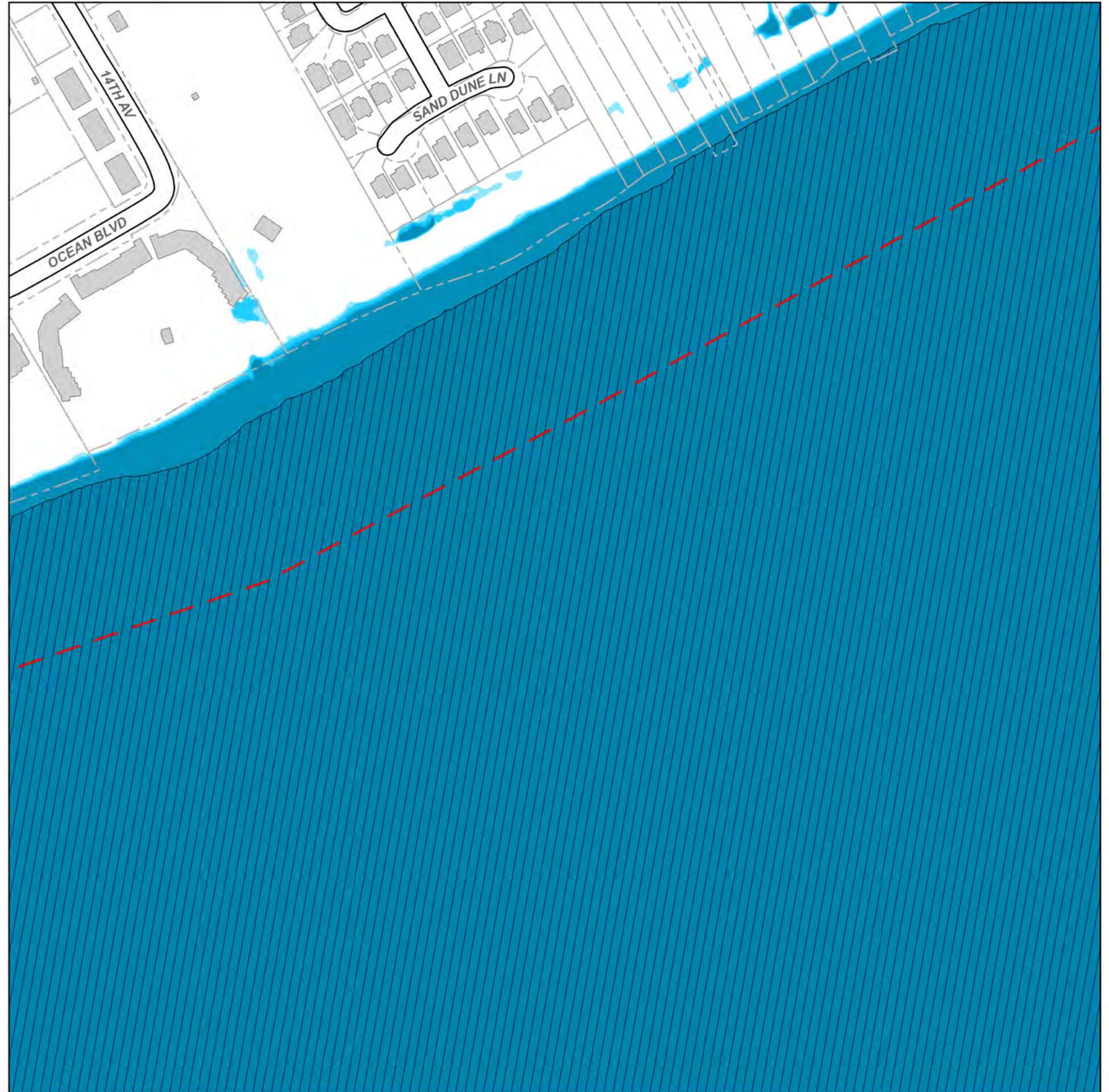
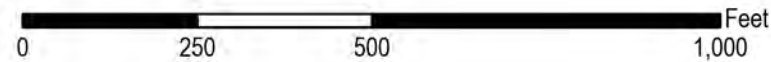
NOTES:

1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



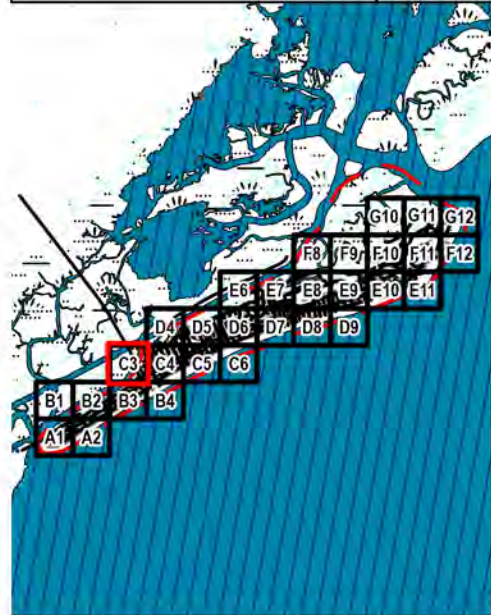
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector C3

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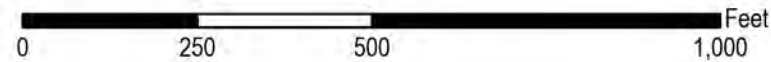
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



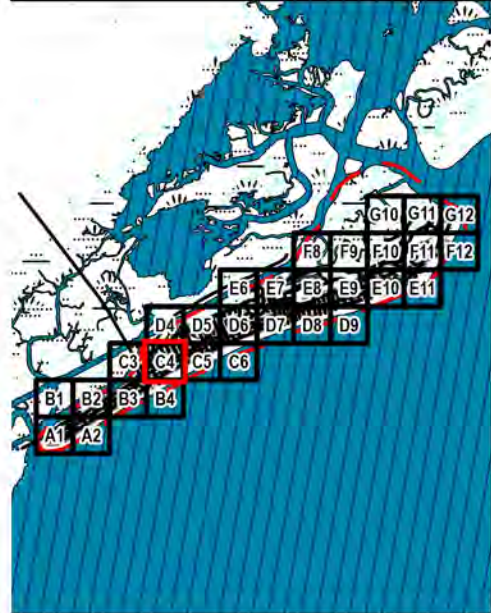
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector C4

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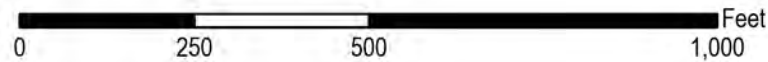
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- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



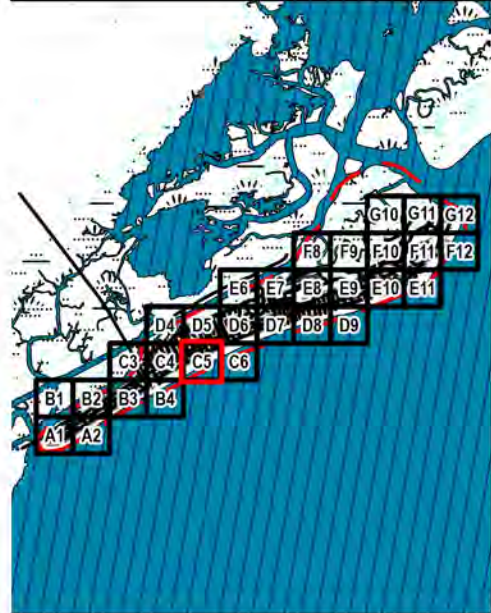
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector C5

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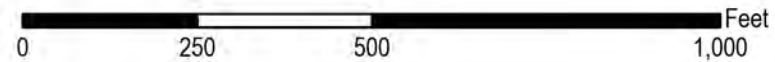
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- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



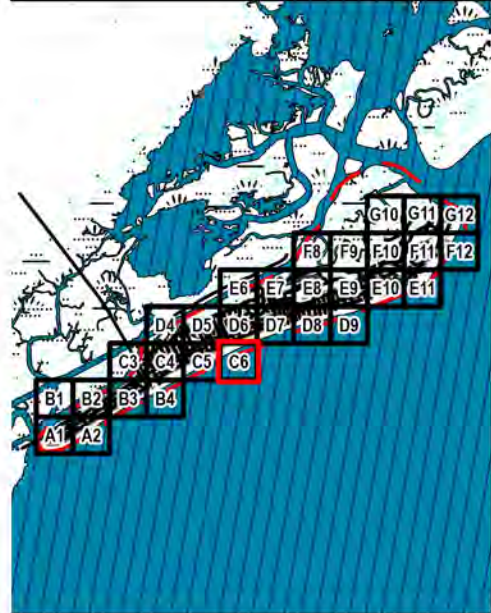
**City of Isle of Palms, South Carolina
Sea Level Rise Adaptation Plan**

Vulnerability Analysis

Appendix A

Sector C6

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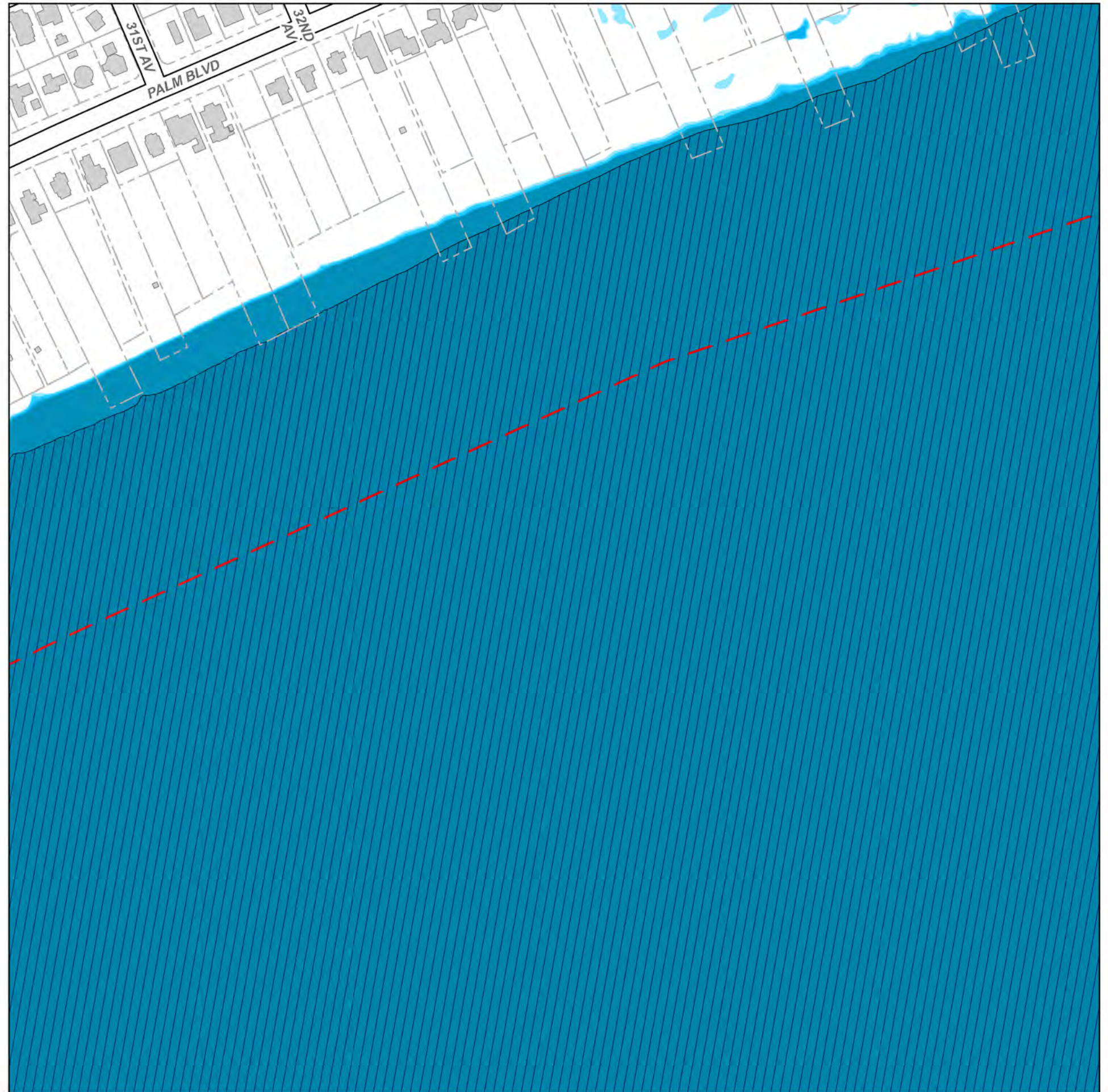
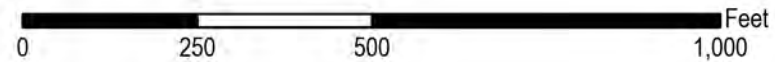
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- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



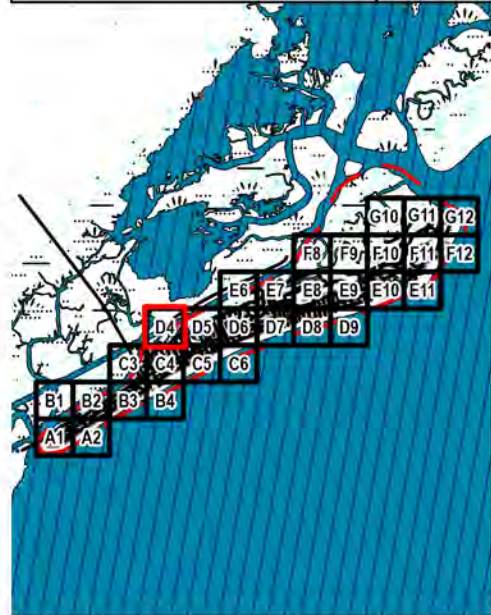
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector D4

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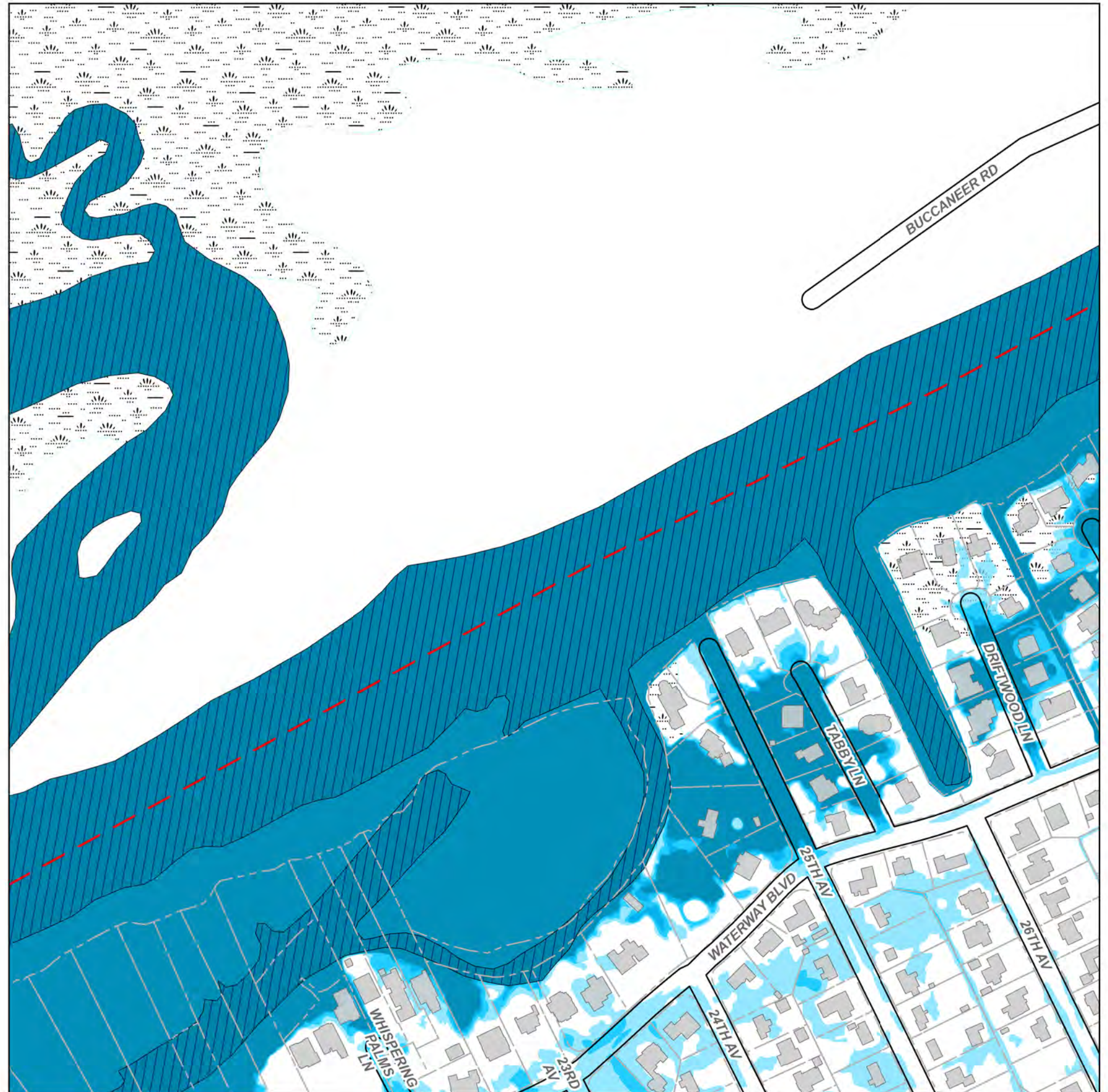
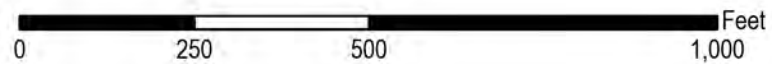
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- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



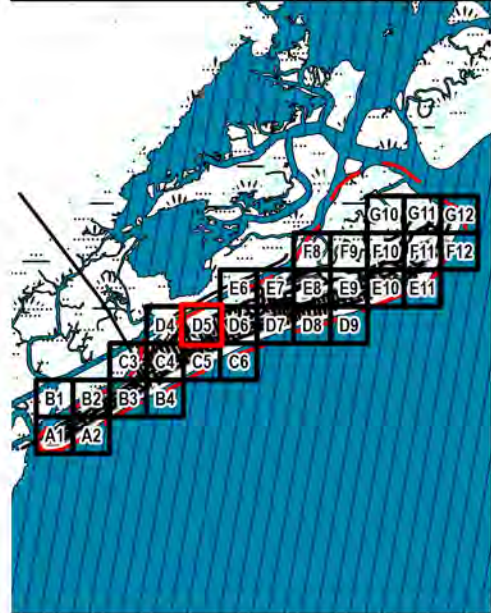
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector D5

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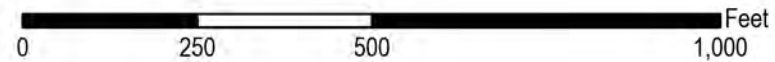


- NOTES:
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



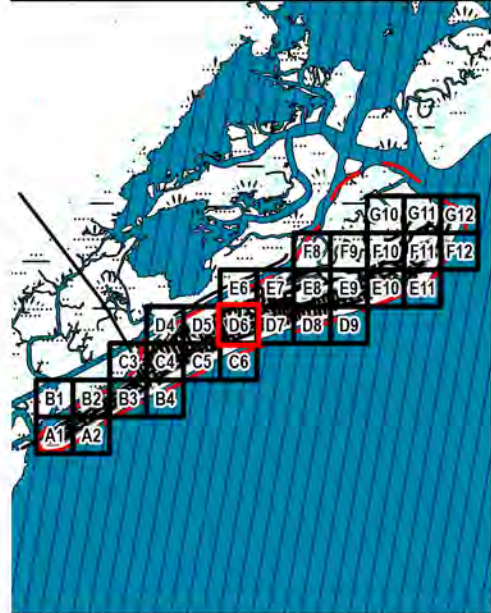
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector D6

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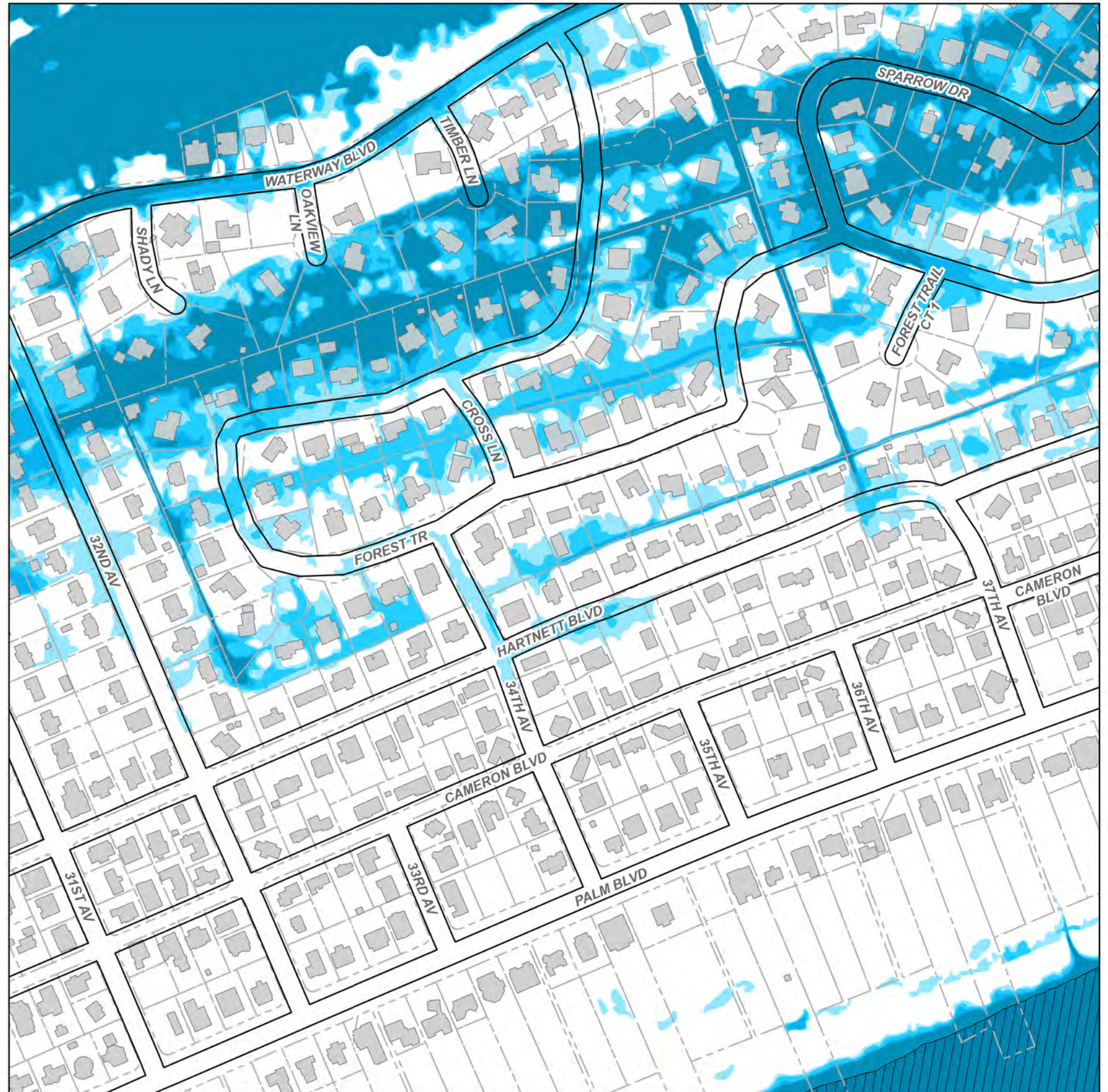
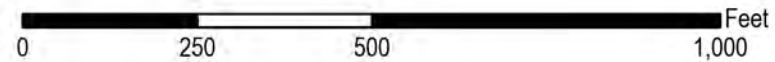


- NOTES:
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



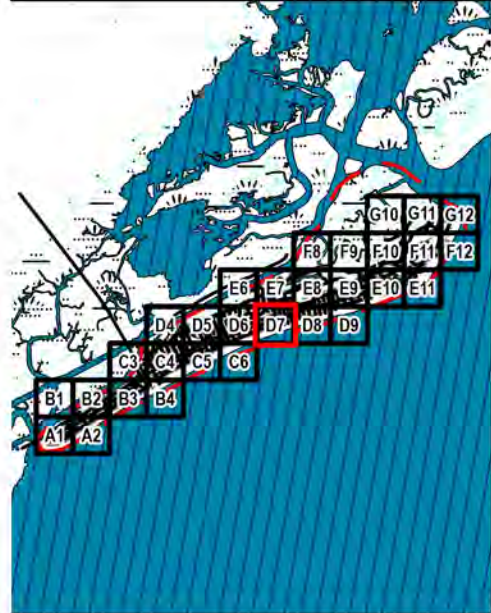
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector D7

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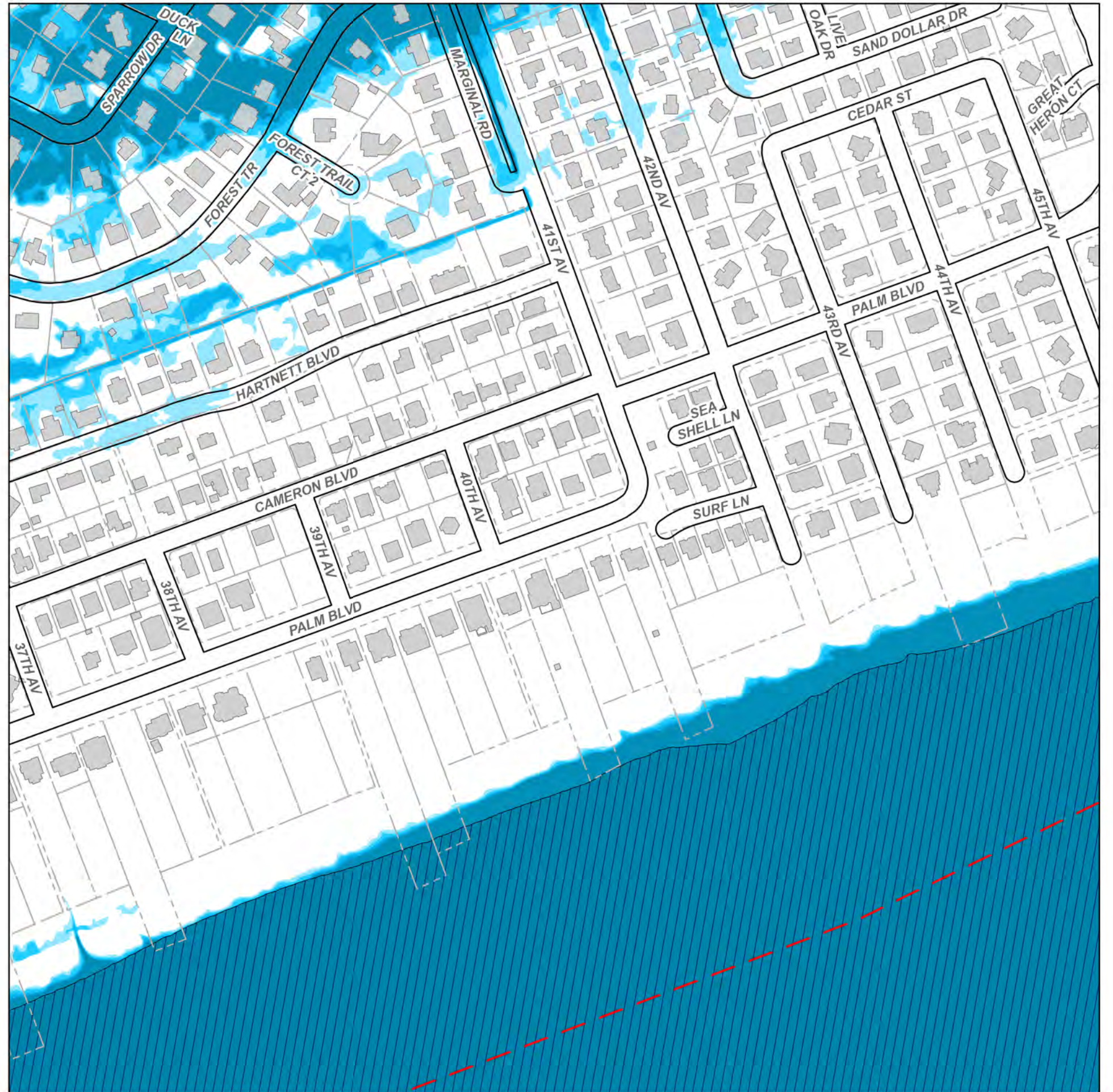
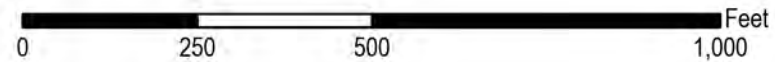
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



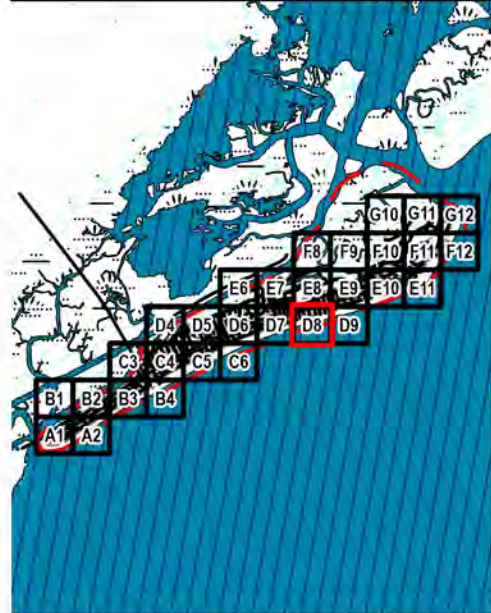
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector D8

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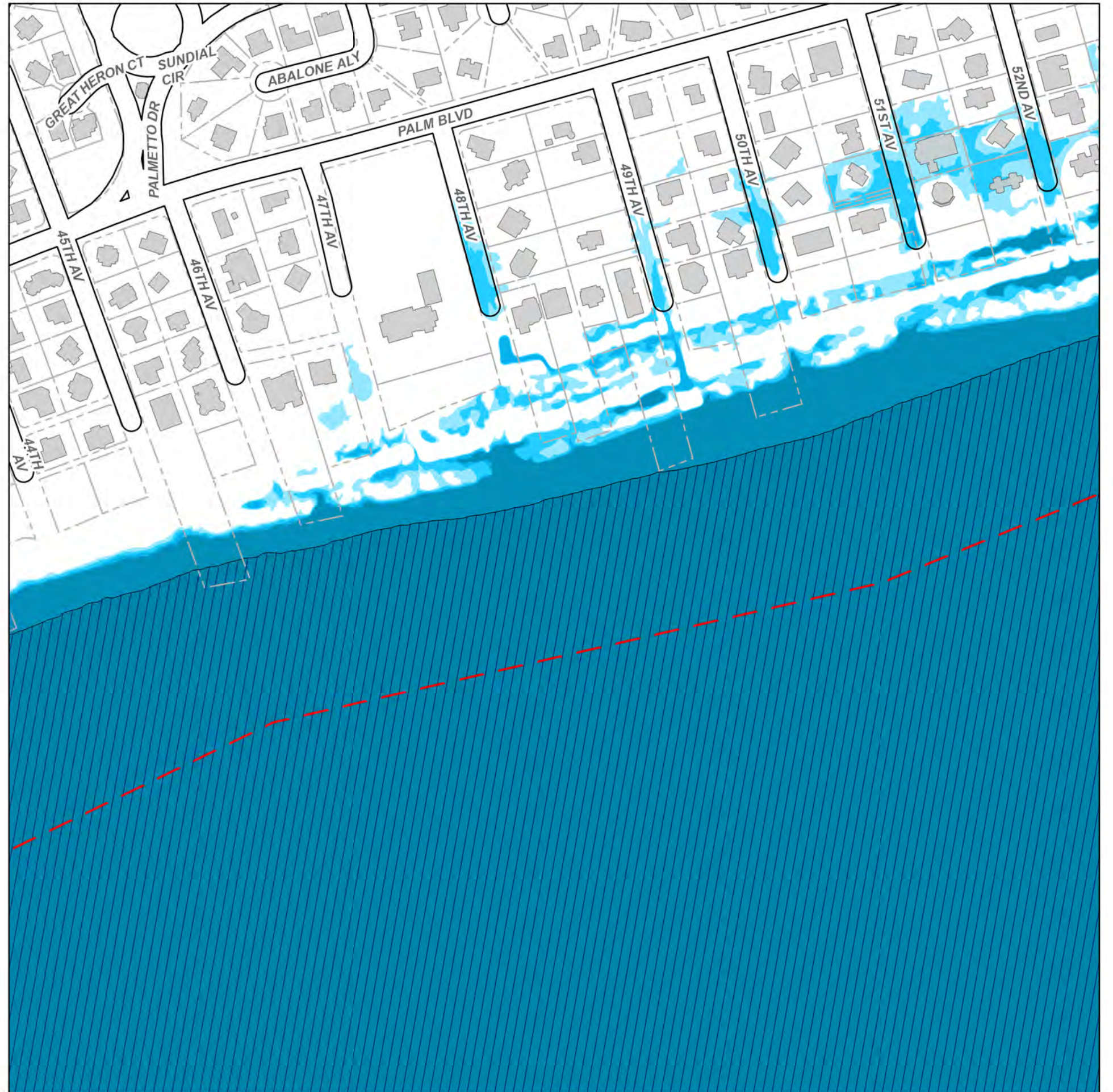
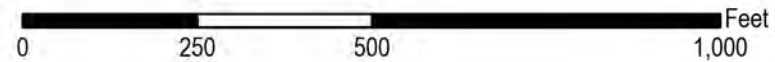
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1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
2. Tidal boundaries conditions were developed for each target year based on projected sea level rise and vertical land subsidence (following methodology discussed in the Sea Level Rise Adaptation Plan).
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7. These results assume topography is stationary within the the study area. No erosional or accretional (i.e., beach erosion, shoal migration, etc.) forces were considered within this study. Stabilization or continued preservation of the beaches is assumed.

Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



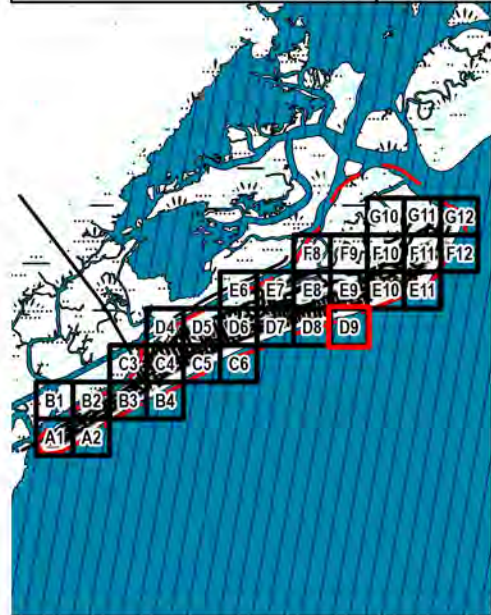
**City of Isle of Palms, South Carolina
Sea Level Rise Adaptation Plan**

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Appendix A

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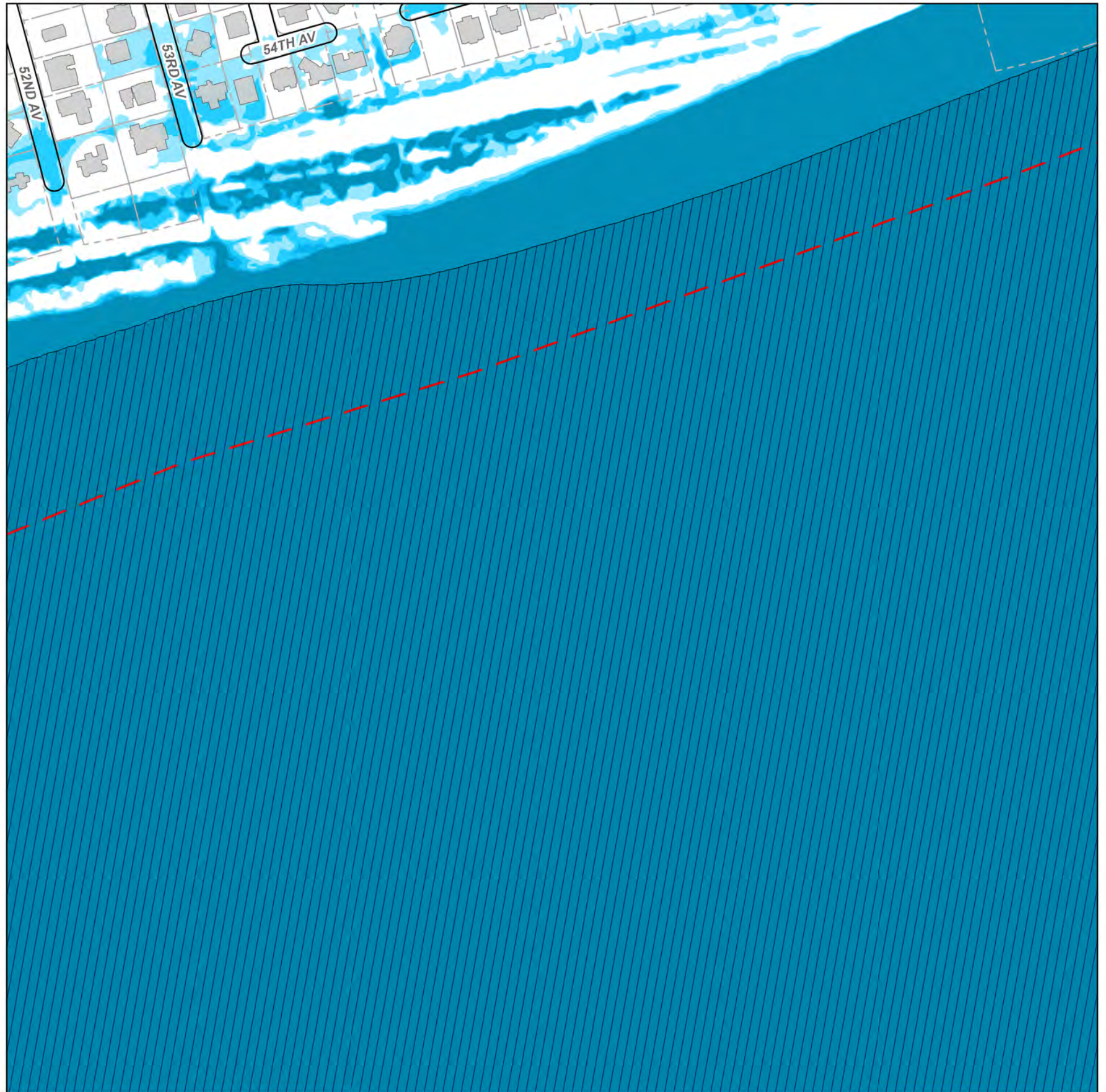
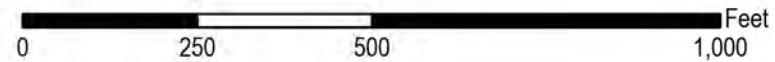
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



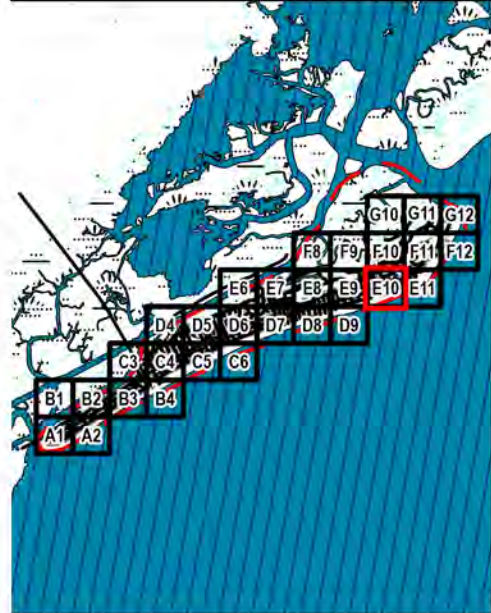
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

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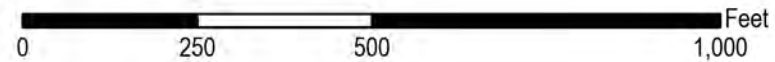
NOTES:

1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



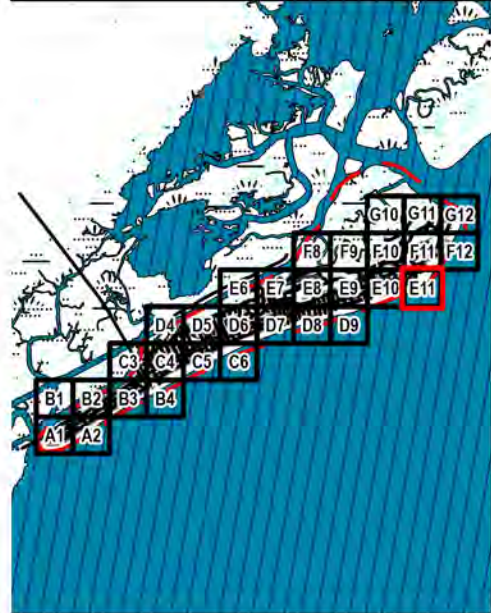
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

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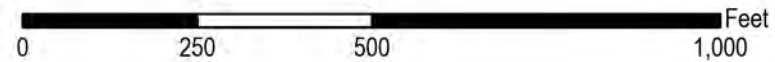
NOTES:

1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



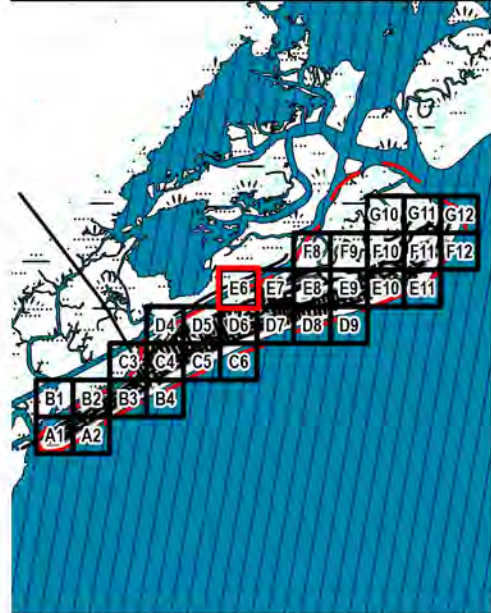
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

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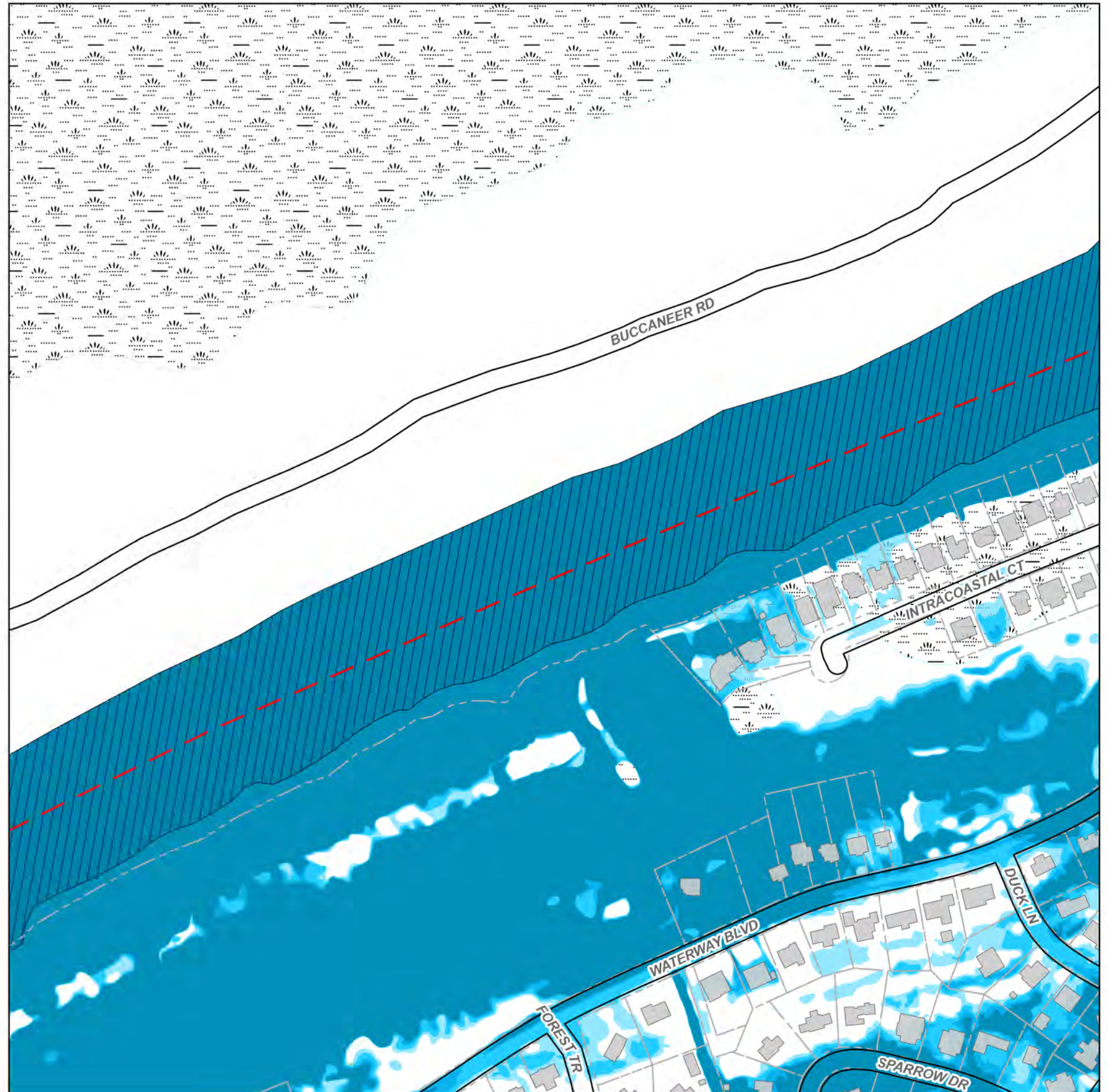
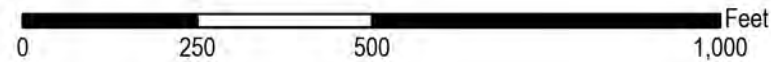
NOTES:

1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
2. Tidal boundaries conditions were developed for each target year based on projected sea level rise and vertical land subsidence (following methodology discussed in the Sea Level Rise Adaptation Plan).
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



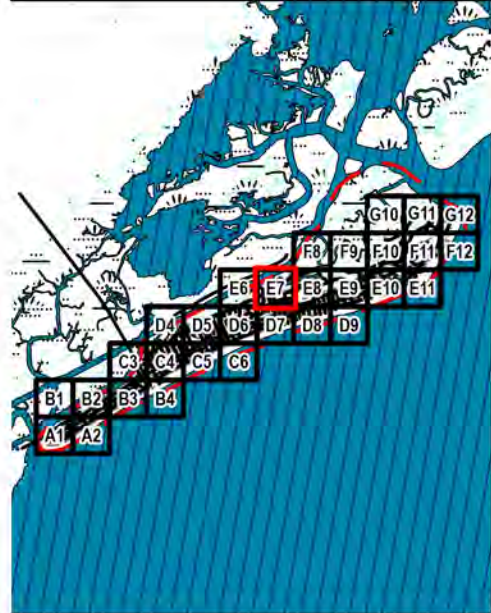
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

Appendix A

Sector E7

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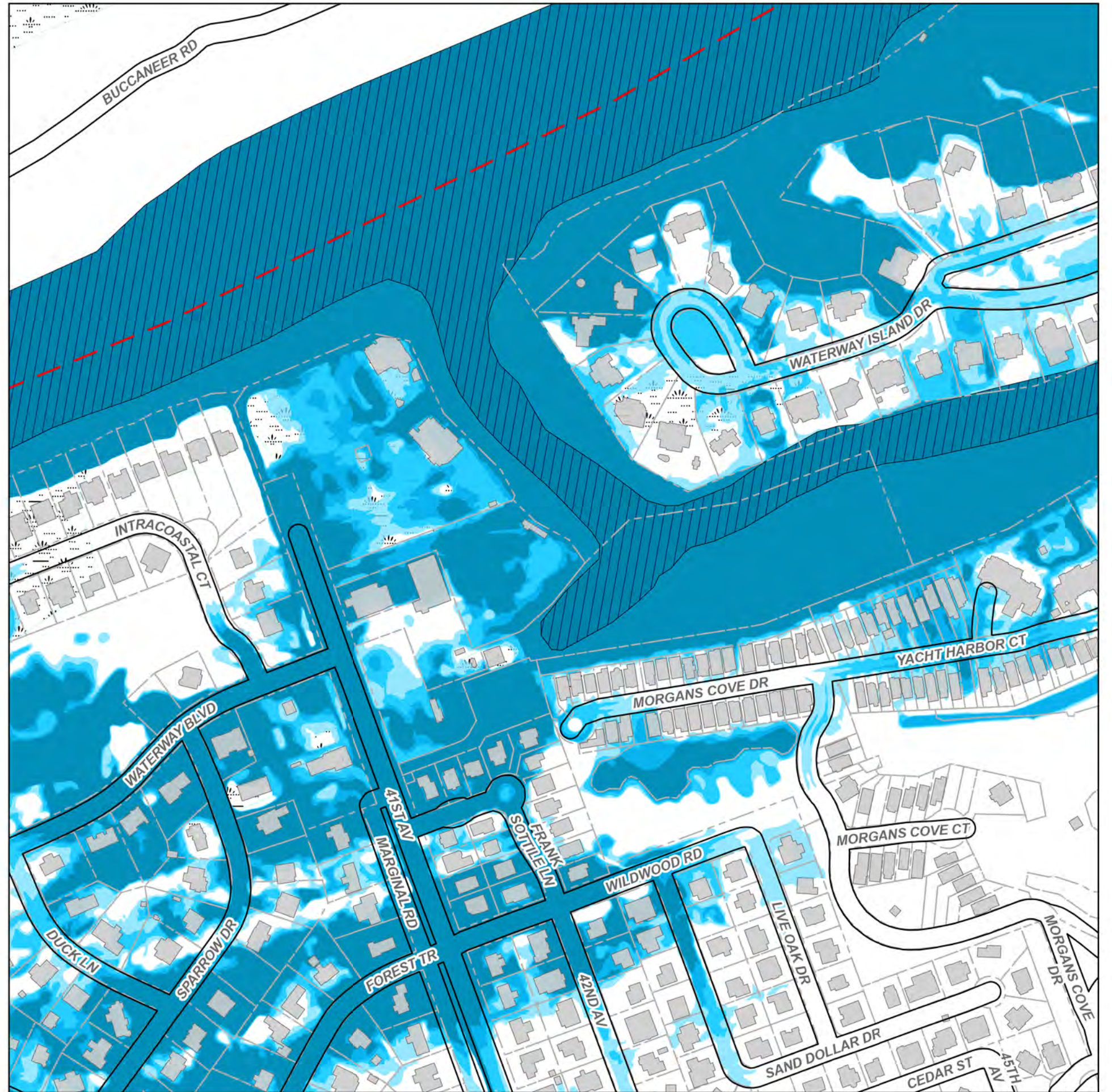
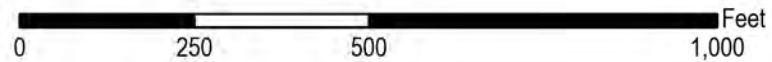


- NOTES:
1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
 2. Tidal boundaries conditions were developed for each target year based on projected sea level rise and vertical land subsidence (following methodology discussed in the Sea Level Rise Adaptation Plan).
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



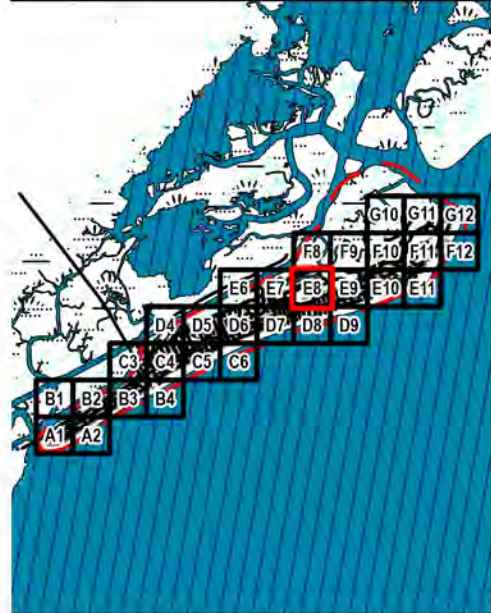
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

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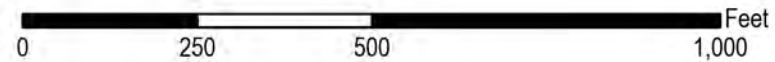


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1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



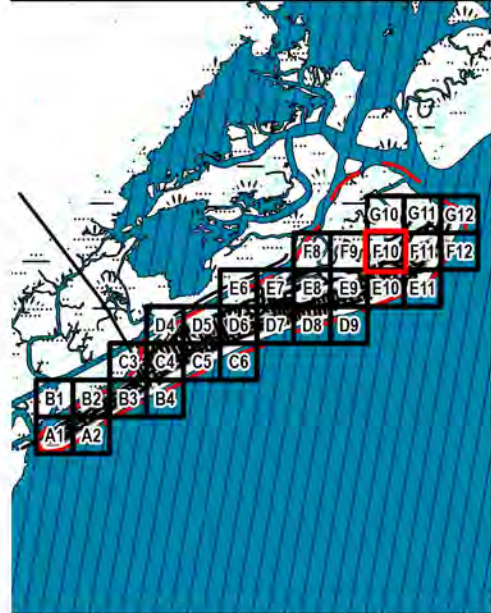
**City of Isle of Palms, South Carolina
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Vulnerability Analysis

Appendix A

Sector F10

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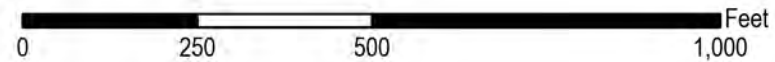


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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary
- 2023
 - 2030
 - 2040
 - 2050



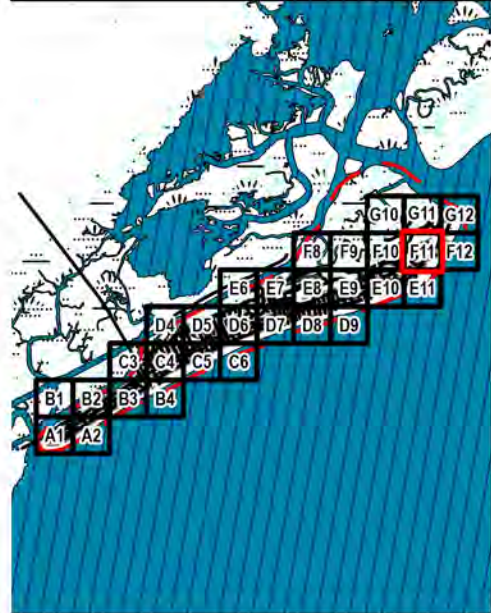
**City of Isle of Palms, South Carolina
Sea Level Rise Adaptation Plan**

Vulnerability Analysis

Appendix A

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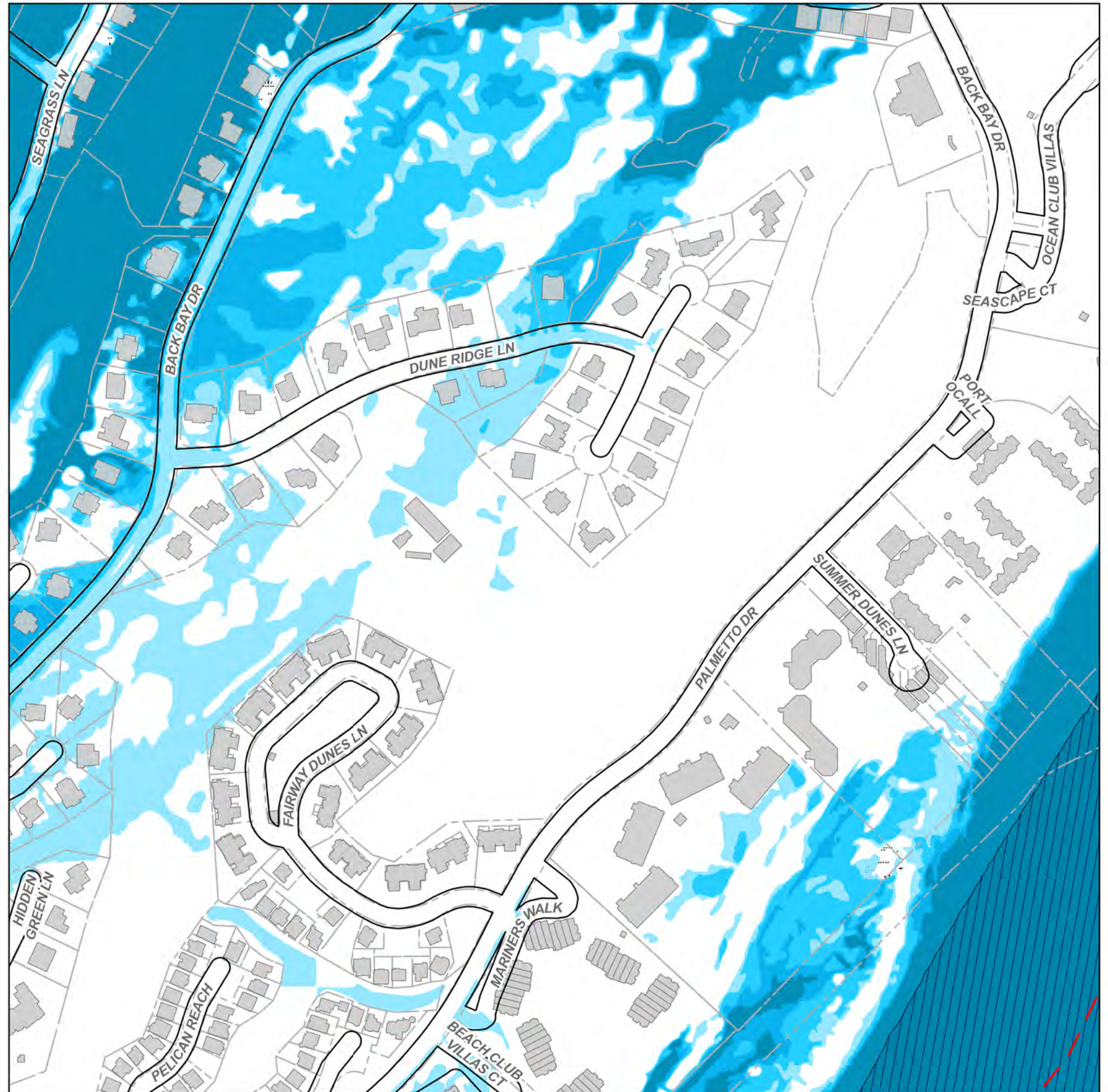
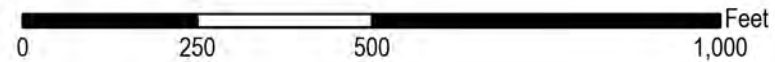


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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



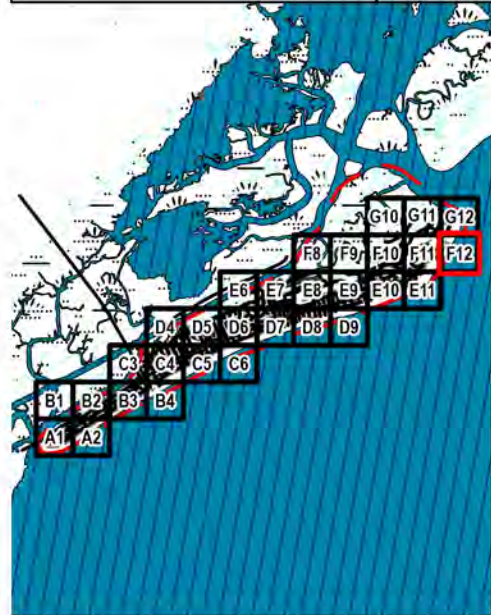
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

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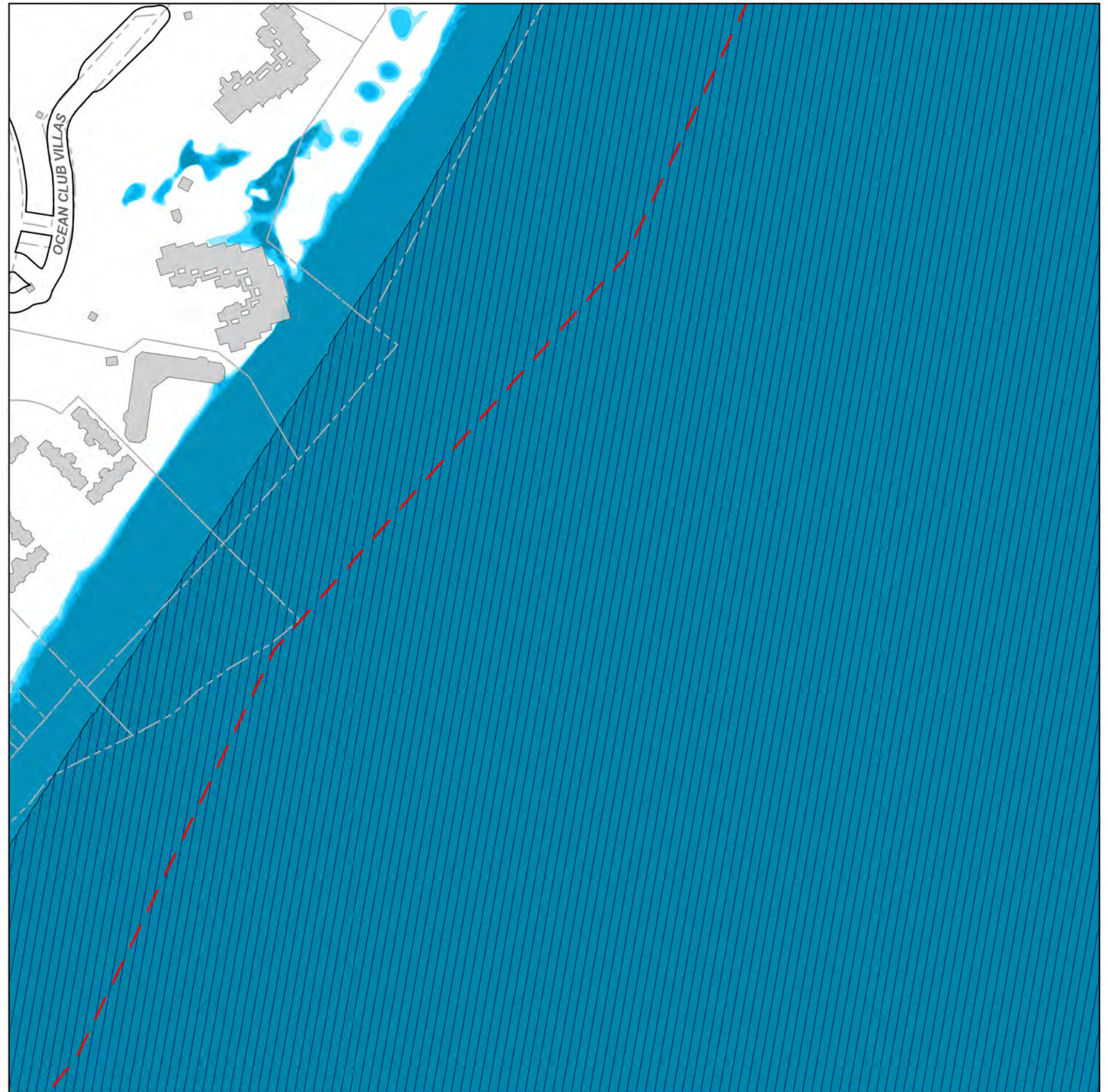
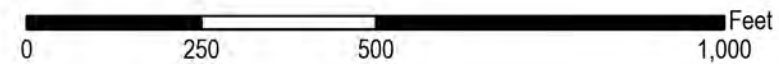
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



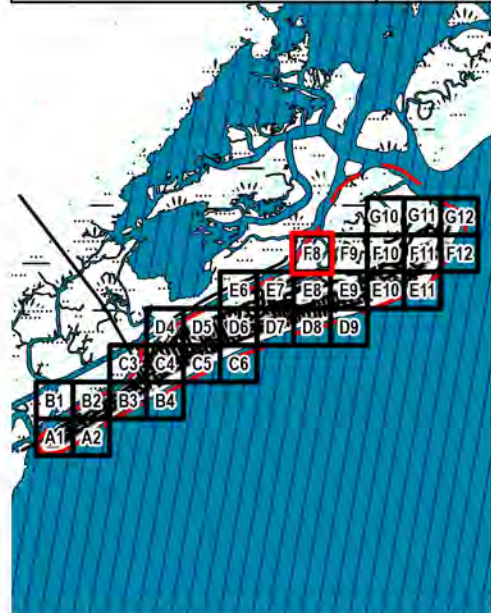
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis

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Sector F8

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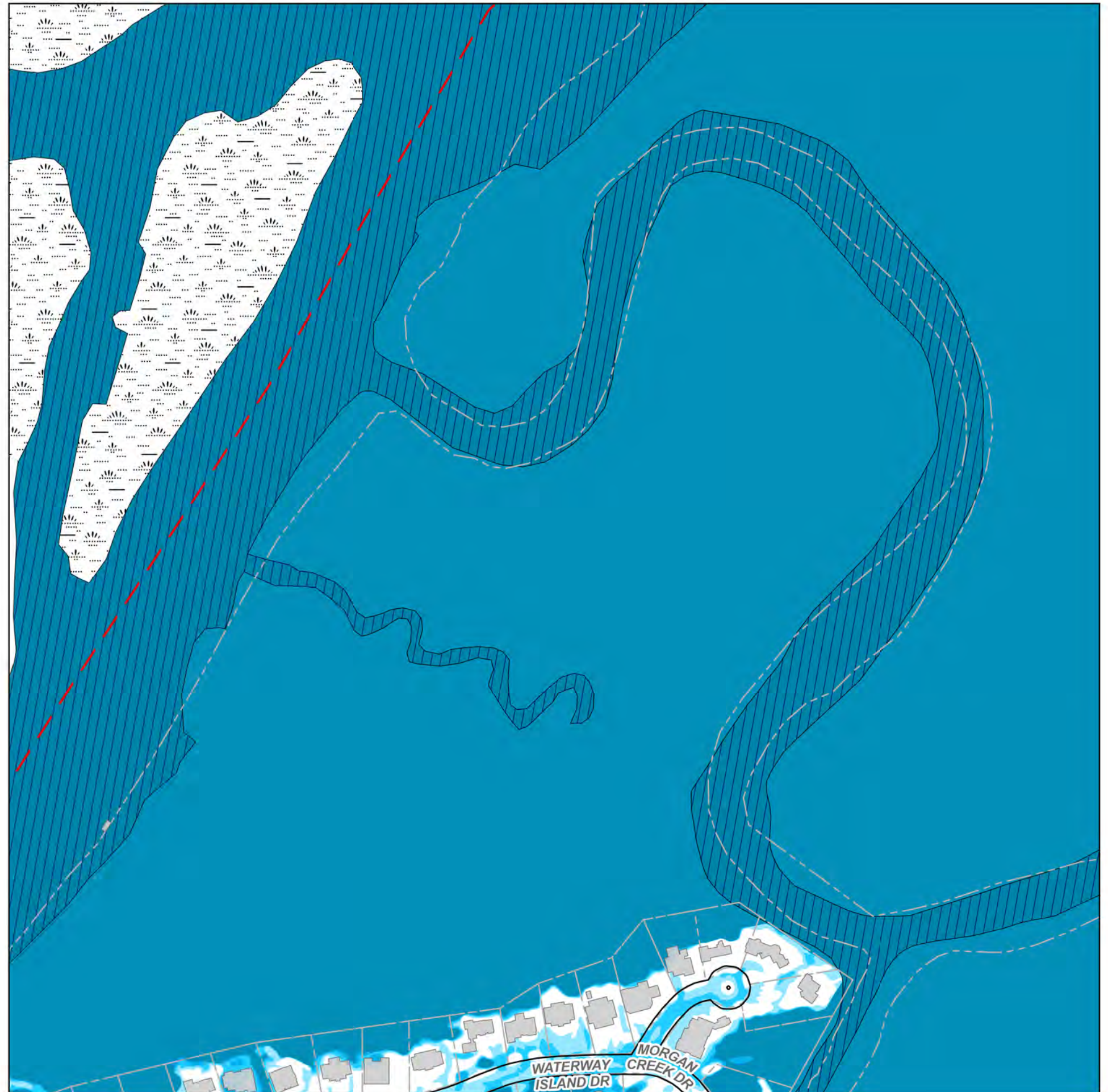
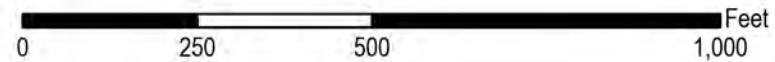
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



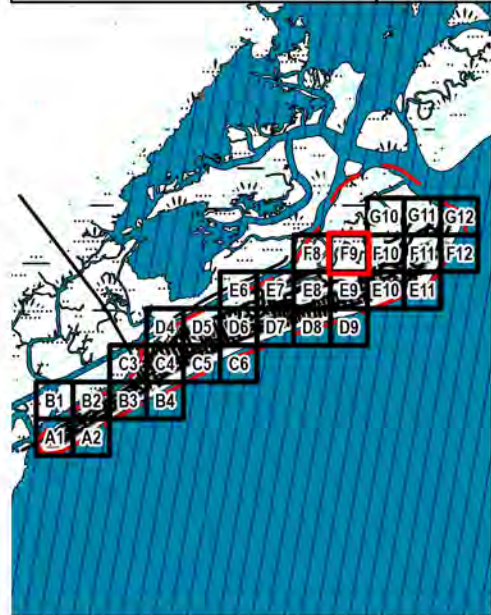
**City of Isle of Palms, South Carolina
Sea Level Rise Adaptation Plan**

Vulnerability Analysis

Appendix A

Sector F9

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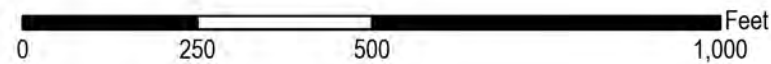
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



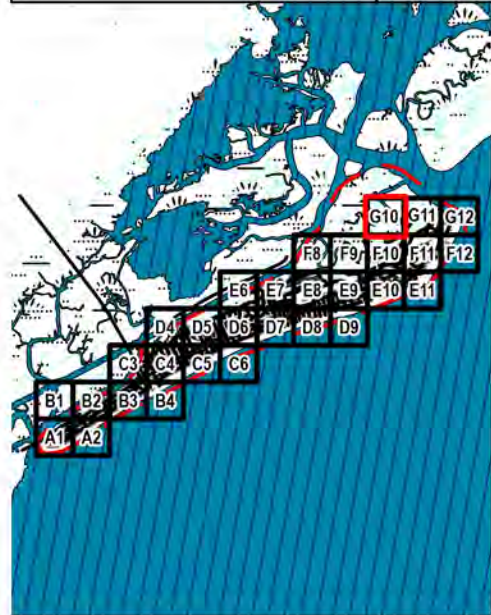
**City of Isle of Palms, South Carolina
Sea Level Rise Adaptation Plan**

Vulnerability Analysis

Appendix A

Sector G10

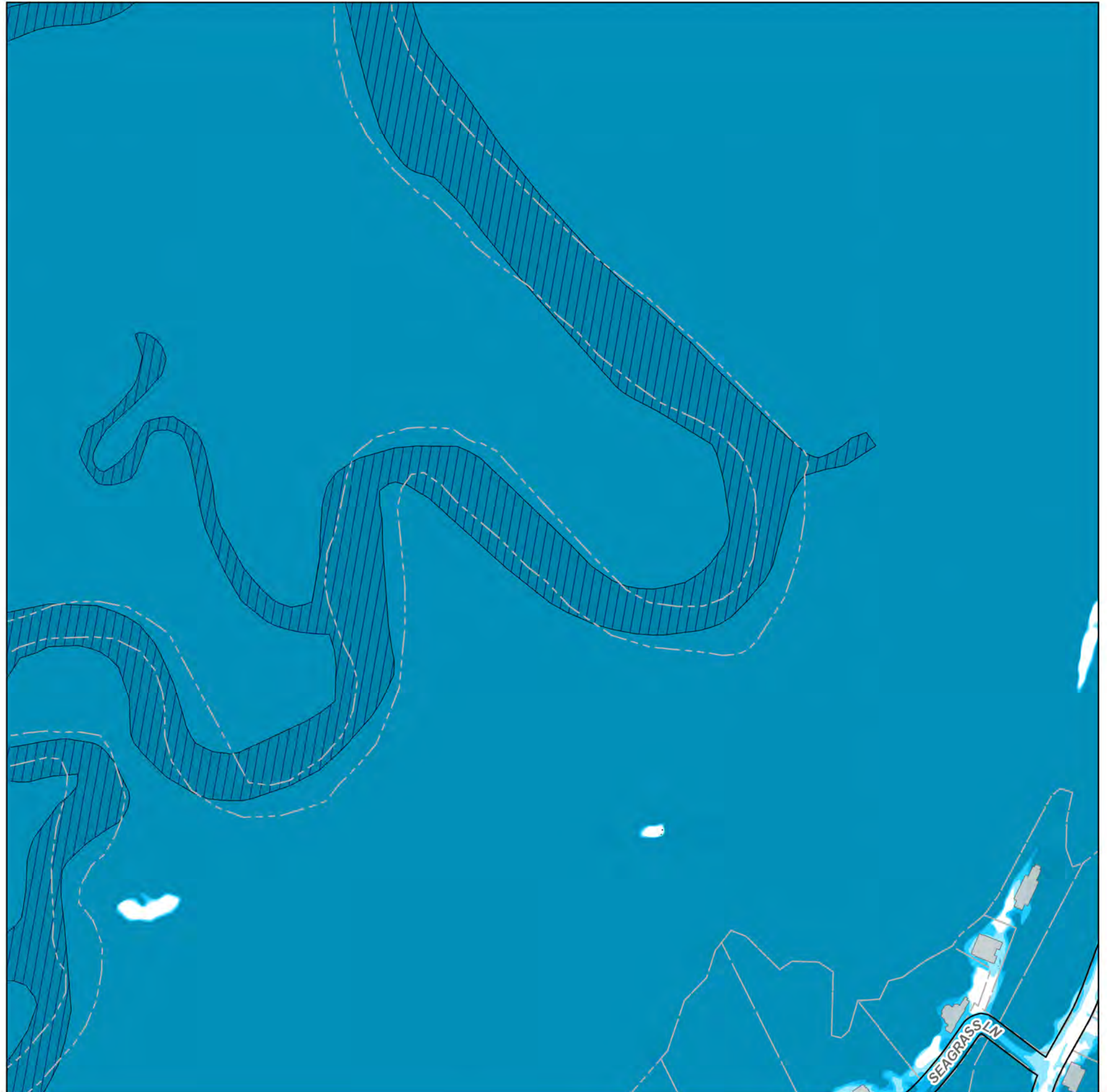
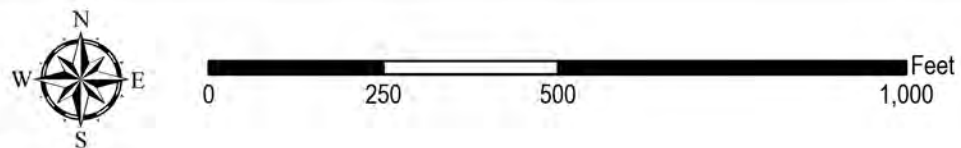
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- NOTES:
1. Flood inundation boundaries created using a 2D HEC-RAS model of the study area.
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Legend

- | | |
|--------------------|----------------------------------|
| Study Boundary | Maximum Inundation Boundary 2023 |
| Existing Structure | 2030 |
| Parcel Boundary | 2040 |
| Roadway | 2050 |
| Waterway | |
| Marsh | |



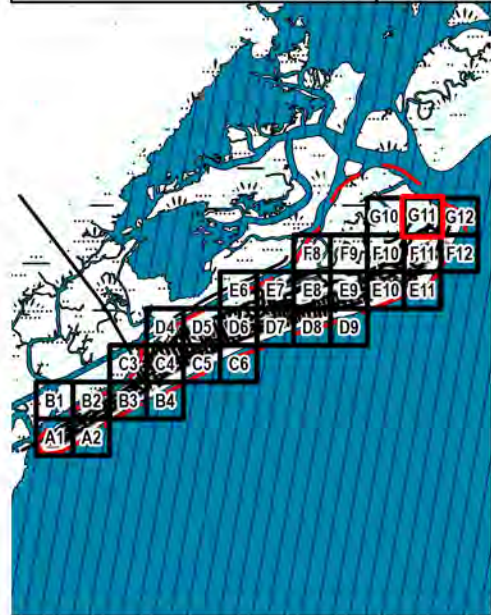
**City of Isle of Palms, South Carolina
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Vulnerability Analysis

Appendix A

Sector G11

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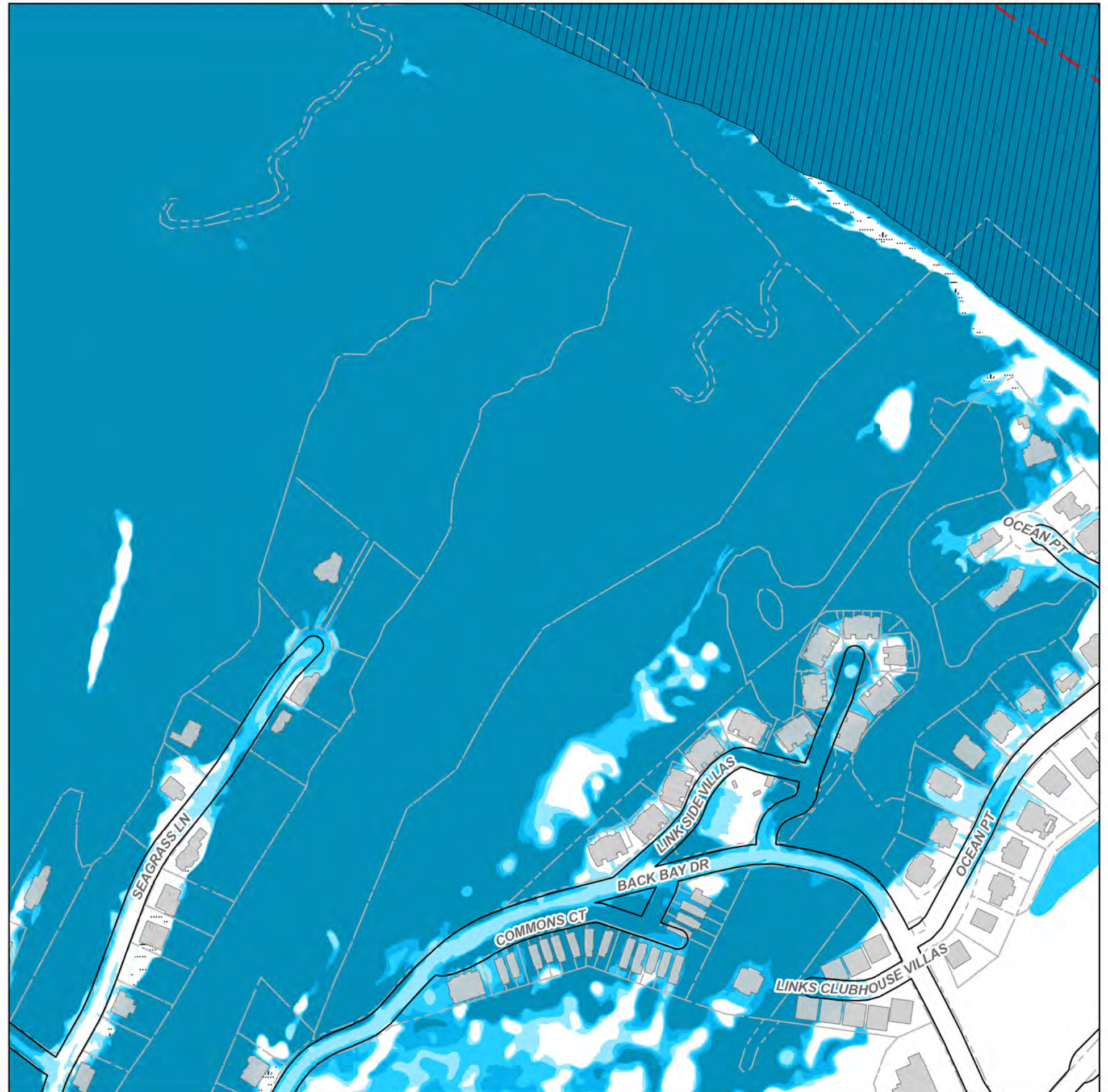
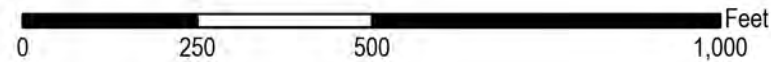
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



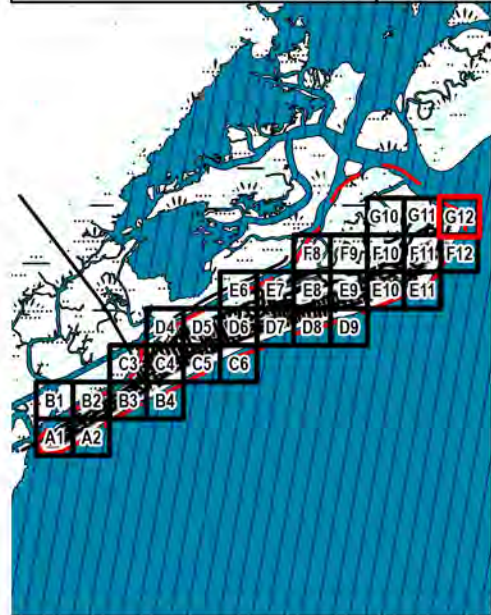
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

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Appendix A

Sector G12

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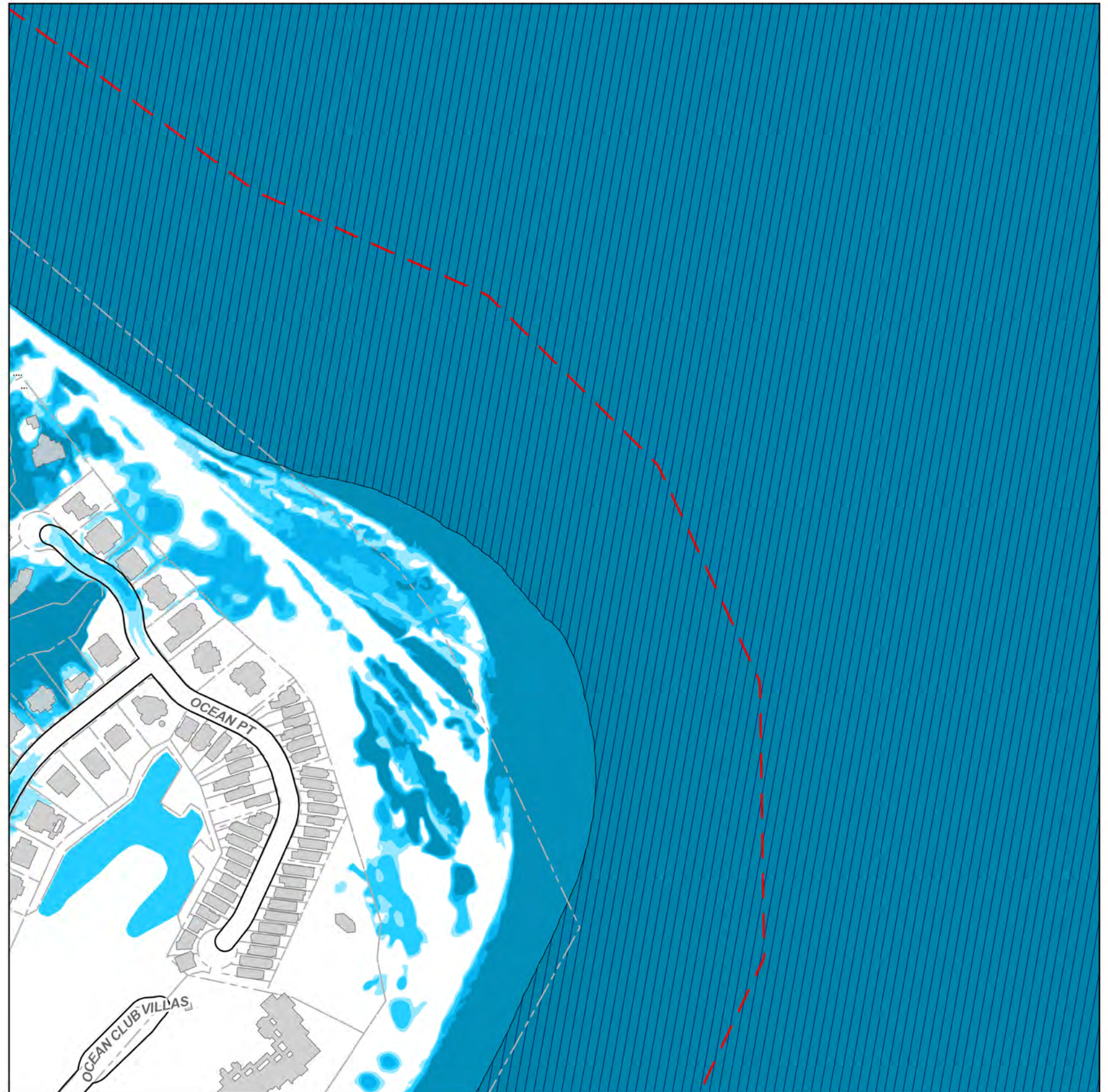
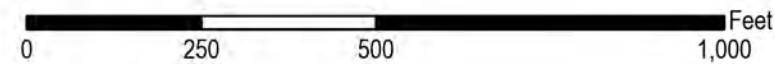
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Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Roadway
- Waterway
- Marsh

- Maximum Inundation Boundary**
- 2023
 - 2030
 - 2040
 - 2050



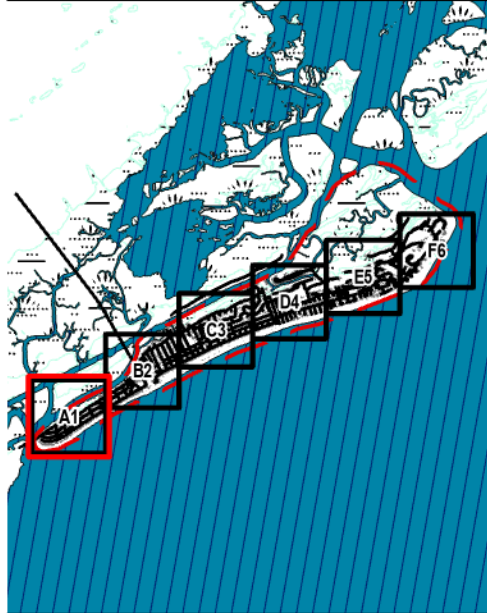
City of Isle of Palms, South Carolina Sea Level Rise Adaptation Plan

Vulnerability Analysis Sewer Master Plan Supplementary Data

Appendix B

Sector A1

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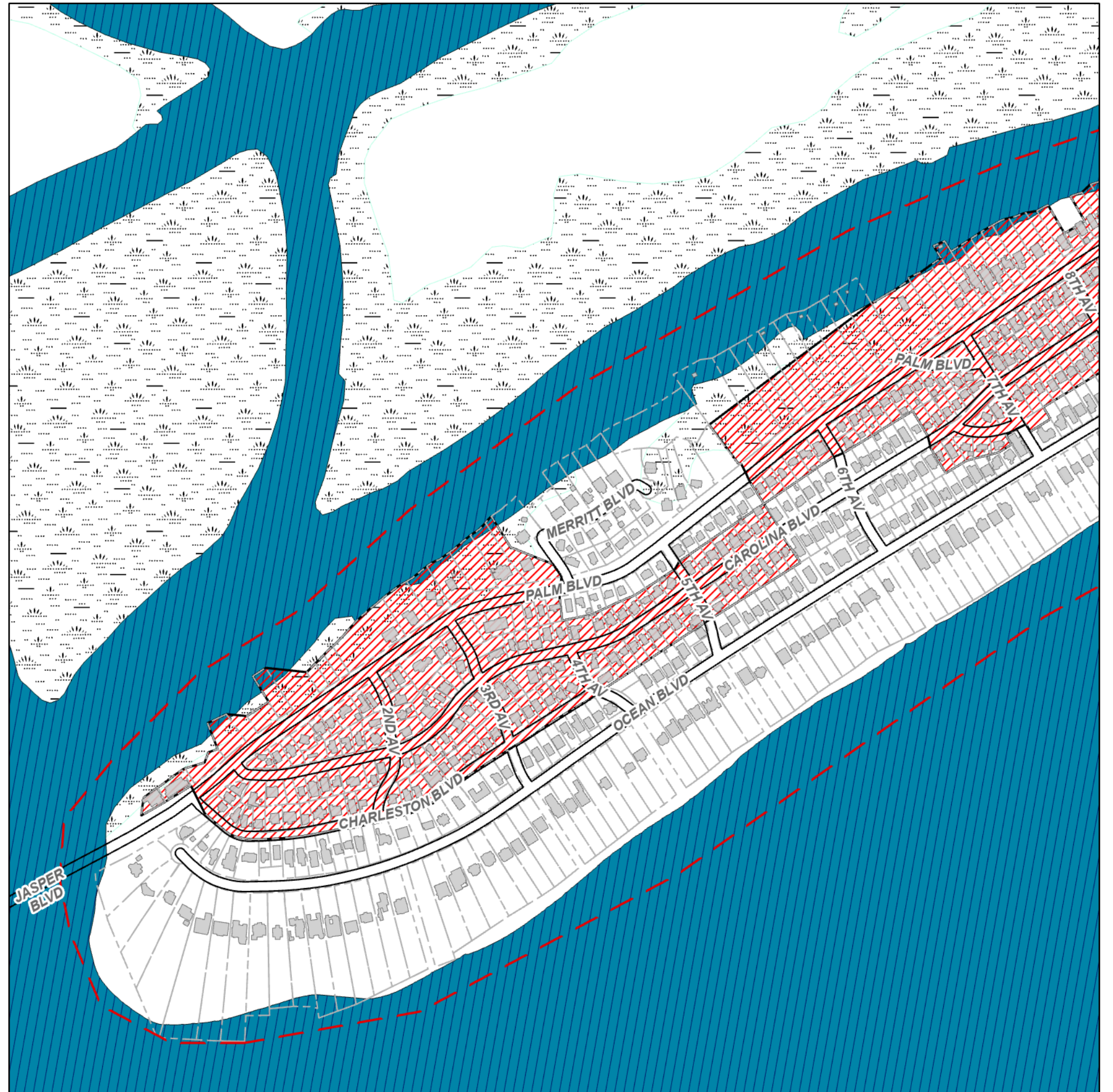
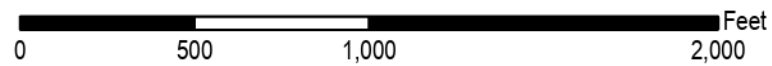


NOTES:

1. Existing structure and parcel boundary locations are approximate.
2. Septic service boundaries delineated based on 2018 Sewer Master Plan and may not account for recent improvements.

Legend

- Study Boundary
- Existing Structure
- Parcel Boundary
- Areas on Septic
- Roadway
- Waterway
- Marsh



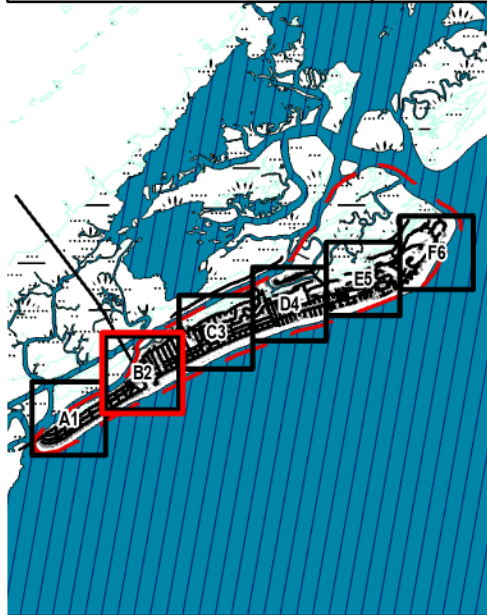
**City of Isle of Palms, South Carolina
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Appendix B

Sector B2



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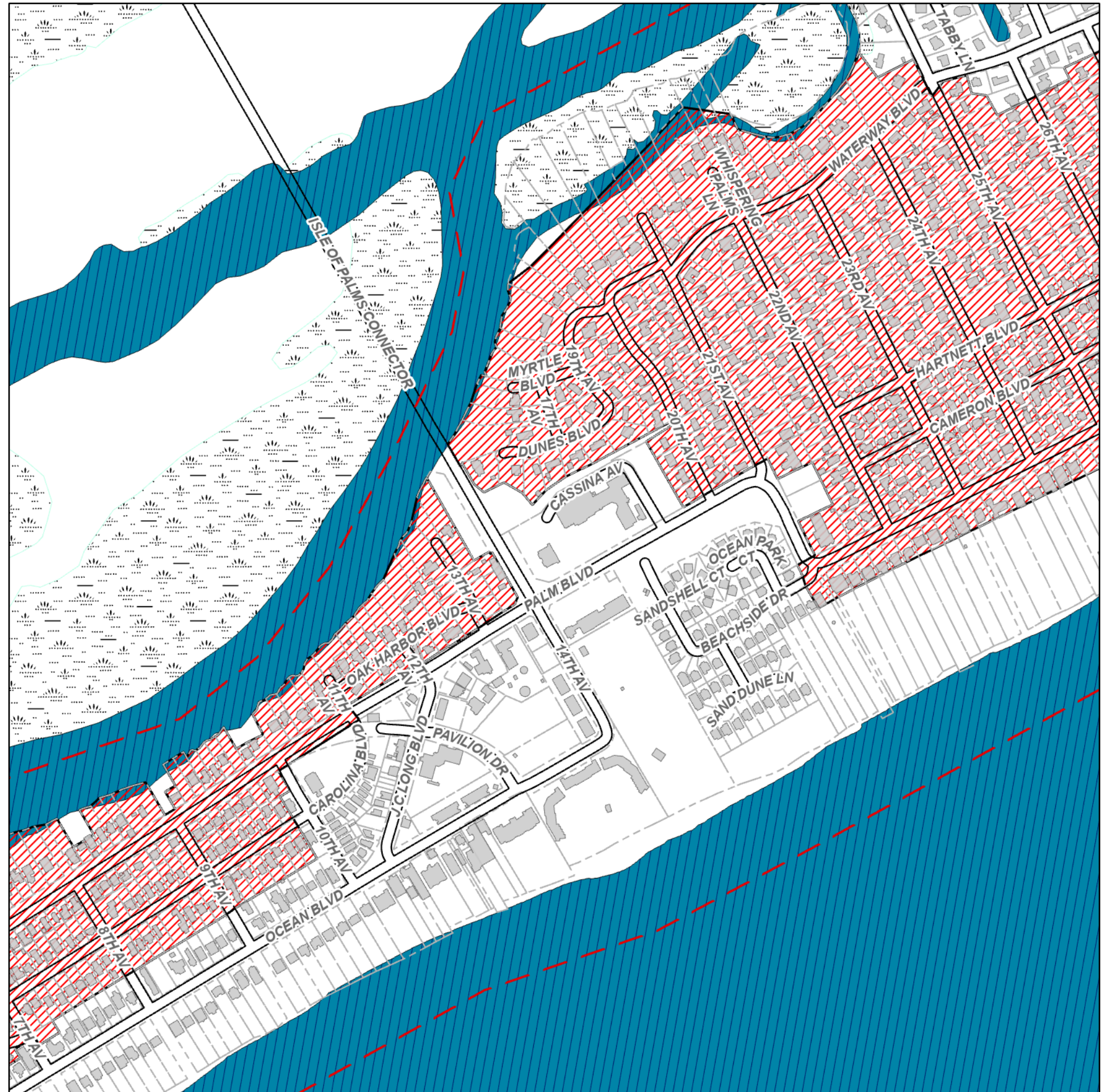
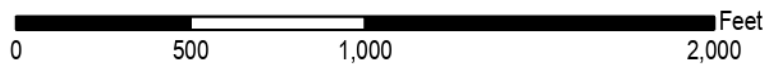


NOTES:

1. Existing structure and parcel boundary locations are approximate.
2. Septic service boundaries delineated based on 2018 Sewer Master Plan and may not account for recent improvements.

Legend

-  Study Boundary
-  Existing Structure
-  Parcel Boundary
-  Areas on Septic
-  Roadway
-  Waterway
-  Marsh



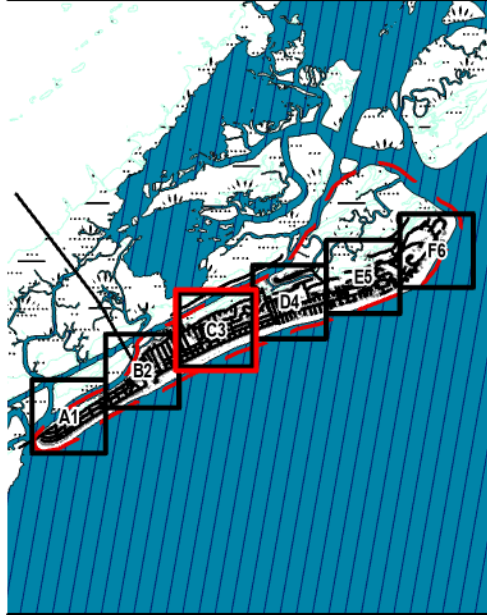
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Appendix B

Sector C3


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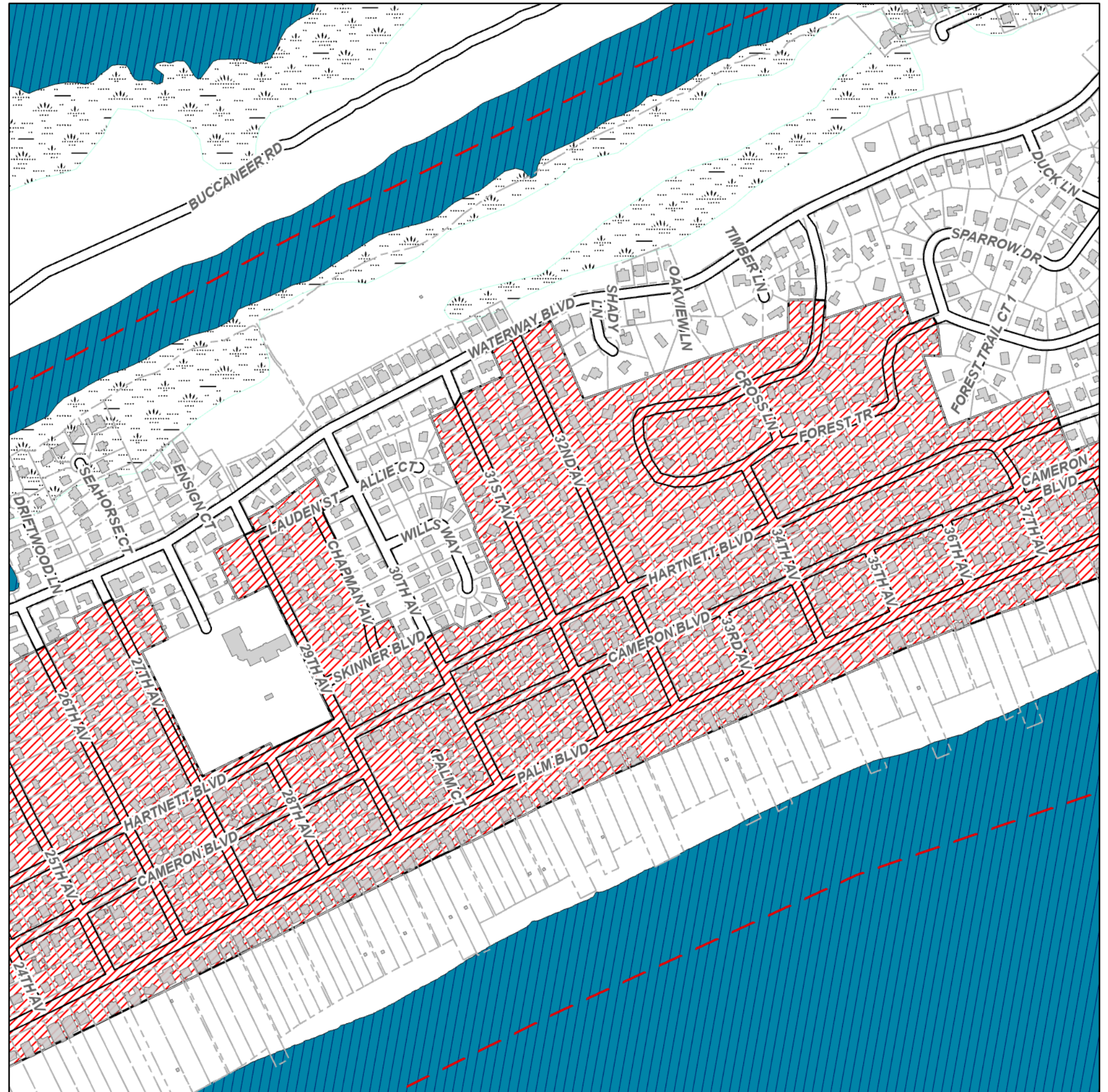
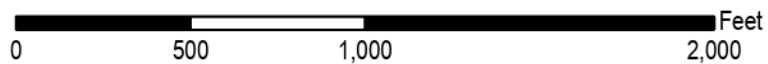


NOTES:

1. Existing structure and parcel boundary locations are approximate.
2. Septic service boundaries delineated based on 2018 Sewer Master Plan and may not account for recent improvements.

Legend

-  Study Boundary
-  Existing Structure
-  Parcel Boundary
-  Areas on Septic
-  Roadway
-  Waterway
-  Marsh



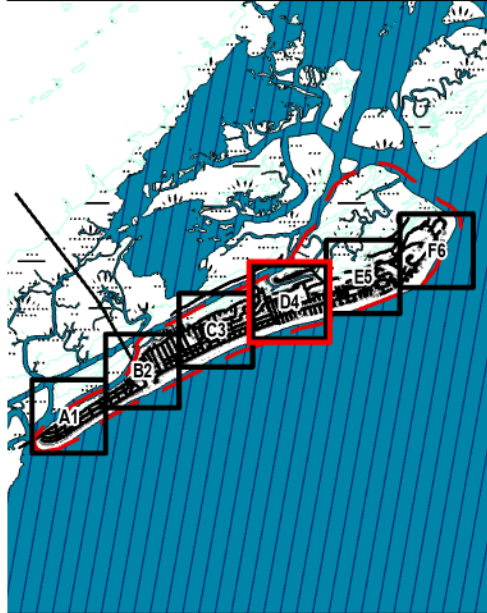
**City of Isle of Palms, South Carolina
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Sector D4


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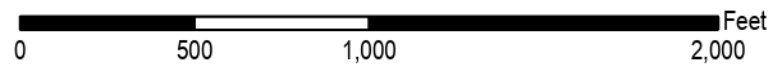


NOTES:

1. Existing structure and parcel boundary locations are approximate.
2. Septic service boundaries delineated based on 2018 Sewer Master Plan and may not account for recent improvements.

Legend

-  Study Boundary
-  Existing Structure
-  Parcel Boundary
-  Areas on Septic
-  Roadway
-  Waterway
-  Marsh



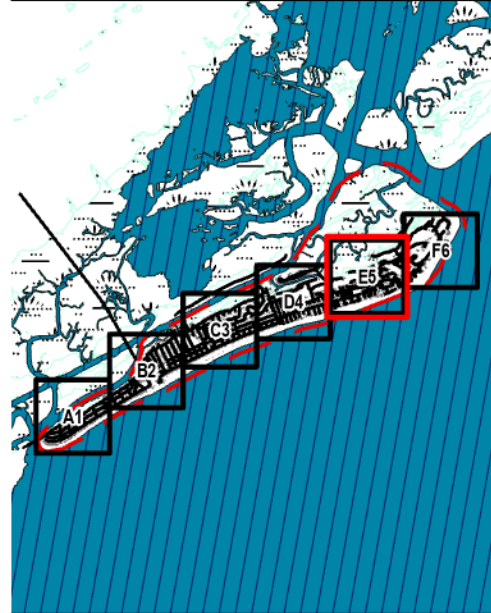
**City of Isle of Palms, South Carolina
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Sector E5

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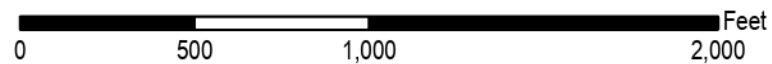


NOTES:

1. Existing structure and parcel boundary locations are approximate.
2. Septic service boundaries delineated based on 2018 Sewer Master Plan and may not account for recent improvements.

Legend

-  Study Boundary
-  Existing Structure
-  Parcel Boundary
-  Areas on Septic
-  Roadway
-  Waterway
-  Marsh



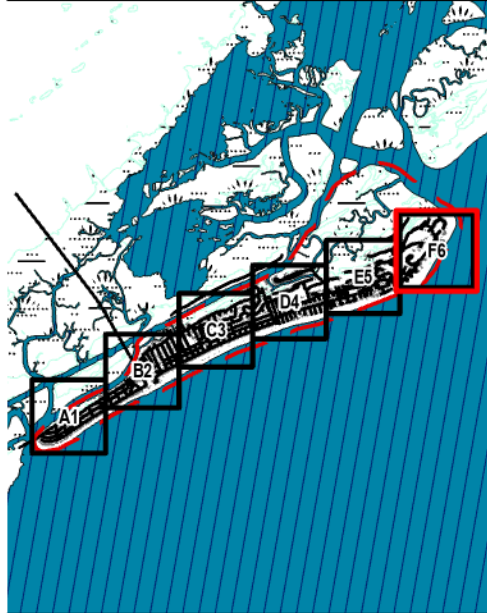
**City of Isle of Palms, South Carolina
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Appendix B

Sector F6


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NOTES:

1. Existing structure and parcel boundary locations are approximate.
2. Septic service boundaries delineated based on 2018 Sewer Master Plan and may not account for recent improvements.

Legend

-  Study Boundary
-  Existing Structure
-  Parcel Boundary
-  Areas on Septic
-  Roadway
-  Waterway
-  Marsh

