

CLEARWATER | 20
45

A bright and beautiful future.

***Conservation &
Coastal Management***



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DRAFT

INTRODUCTION

This chapter offers guidance for protecting and preserving those natural resources found within the city as well as coastal areas, while also introducing sustainable and resilient techniques for development and redevelopment. The city is uniquely vulnerable to flooding as the city’s boundaries stretch between the Gulf of Mexico and Old Tampa Bay and also includes the barrier islands of Sand Key and Clearwater Beach.

EXISTING CONDITIONS

NATURAL RESOURCES

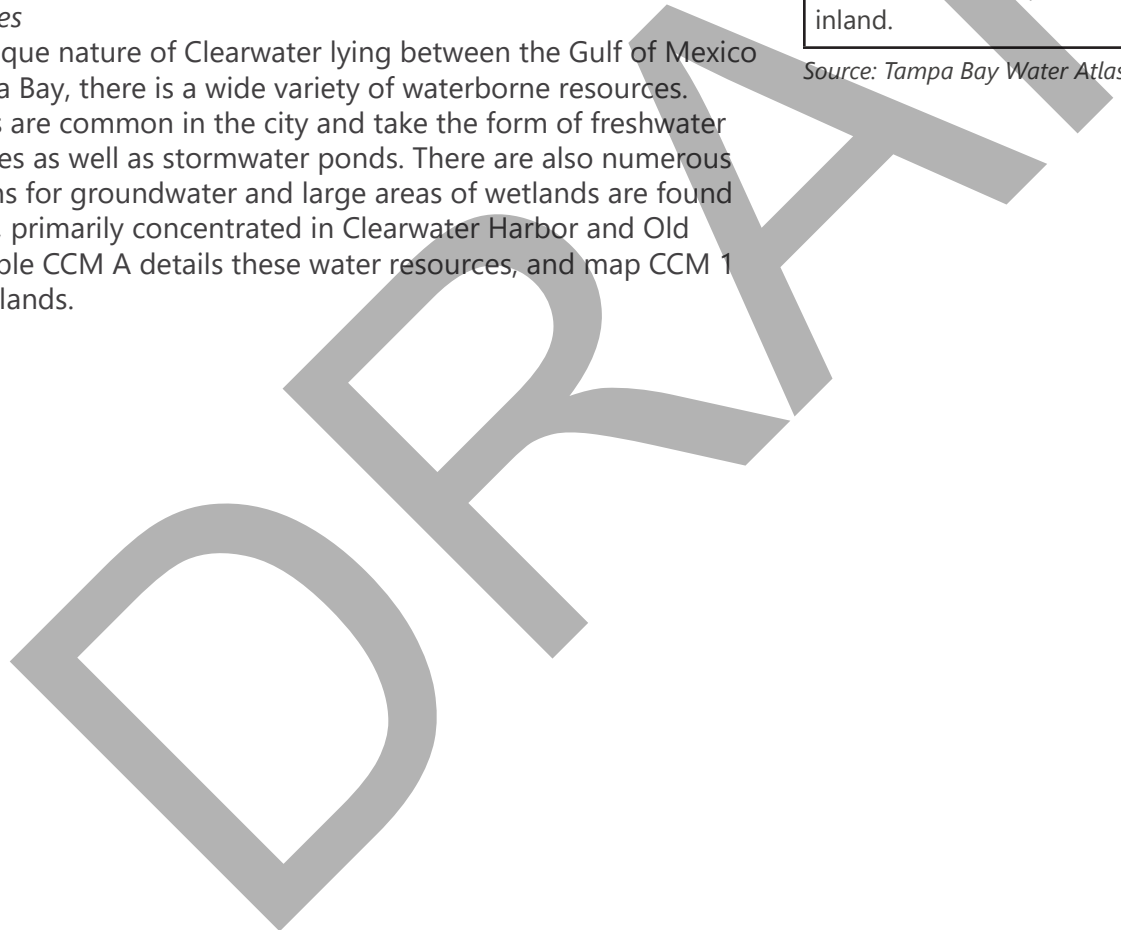
Water Resources

Due to the unique nature of Clearwater lying between the Gulf of Mexico and Old Tampa Bay, there is a wide variety of waterborne resources. Surface waters are common in the city and take the form of freshwater ponds and lakes as well as stormwater ponds. There are also numerous drainage basins for groundwater and large areas of wetlands are found within the city, primarily concentrated in Clearwater Harbor and Old Tampa Bay. Table CCM A details these water resources, and map CCM 1 shows the wetlands.

Table CCM A. Water Resources

Surface Waters
Surface waters consist mostly of freshwater ponds and lakes in addition to stormwater ponds.
Groundwaters
The Tampa Bay/Anclote River watershed is the only watershed in the city. There are 13 different drainage basins in the city: Bishop Creek, Alligator Creek, Long Bayou, Jerry Branch, Stevenson Creek, Mullet Creek, Belleair Golfclub Run, Curlew Creek, Allen Creek, Lake Tarpon Canal, Tampa Bay, Direct Runoff to Gulf and Direct Runoff to Bay.
Wetlands
Estuarine and marine wetlands are prevalent in Old Tampa Bay and in Clearwater Harbor, but a mix of other types of wetlands are located more inland.

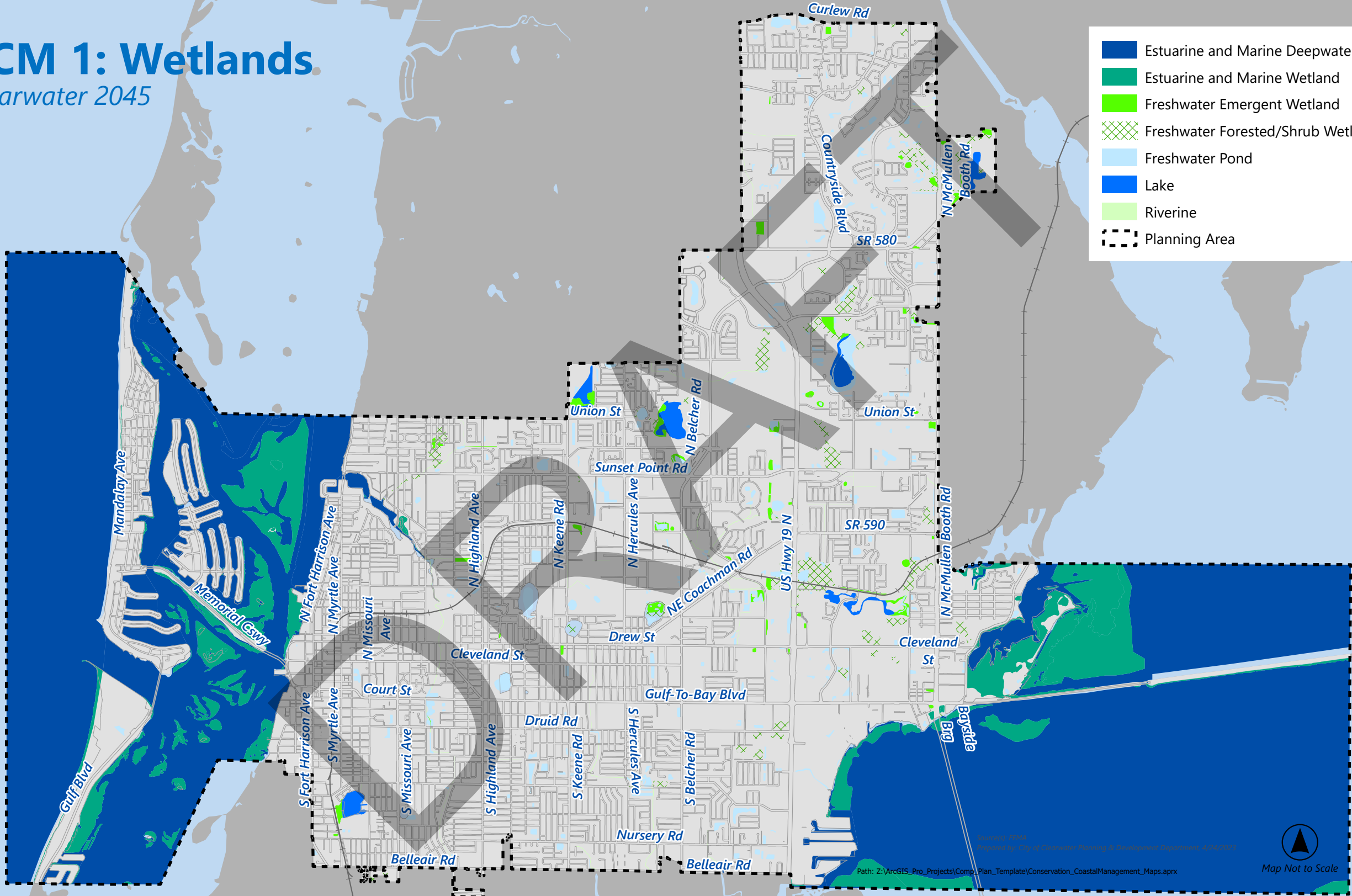
Source: Tampa Bay Water Atlas, USF Water Institute



CCM 1: Wetlands

Clearwater 2045

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine
- Planning Area



Source: FPM
 Prepared by City of Clearwater Planning & Development Department, 4/24/2017

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Soil Resources

Not including water or submerged lands, there are 30 types of ground coverings found in the city, with the most popular being soils and urban lands which account for approximately 54.6% of the total acreage. Other ground coverings include different sands and muck, and there are no commercially valuable minerals that are extracted within the city. Additionally, there are no hazardous waste sites within the city. Map CCM 2 shows the distribution of ground coverings within the city, with Table CCM B detailing the breakdown of the ground coverings.

Table CCM B. Soil Types

Classifications	Acres	Percent
Adamsville soils and Urban Land, 0 to 5 percent slopes	1,571.8	2.1
Anclote fine sand, depressiona	251.2	0.7
Astatula soils and Urban Land, 0 to 5 percent slopes	767.8	2.2
Astatula soils and Urban Land, 5 to 12 percent slopes	8.4	0.0
Basinger fine sand-Urban land complex, 0 to 2 percent slopes	28.3	0.1
Basinger fine sand, frequently ponded, 0 to 1 percent slopes	44.6	0.1
Beaches	538.5	1.6
Dumps	51.4	0.1
EauGallie soils and Urban land	72.6	0.2
Felda soils and Urban land	45.7	0.1
Felda fine sand, frequently ponded, 0 to 1 percent slopes	29.5	0.1
Immokalee soils and Urban land	1,571.8	4.6
Kesson fine sand, very frequently flooded	179.1	0.5
Manatee loamy fine sand, frequently ponded, 0 to 1 percent slopes	33.8	0.1
Matlacha and St. Augustine soils and Urban land	2,406.1	7.0
Myakka soils and Urban land	6,398.8	18.6
Okeechobee, frequently ponded, 0 to 1 percent slopes	20.0	0.1
Palm Beach fine sand, 0 to 8 percent slopes	111.2	0.3

Table CCM B. Soil Types (con't)

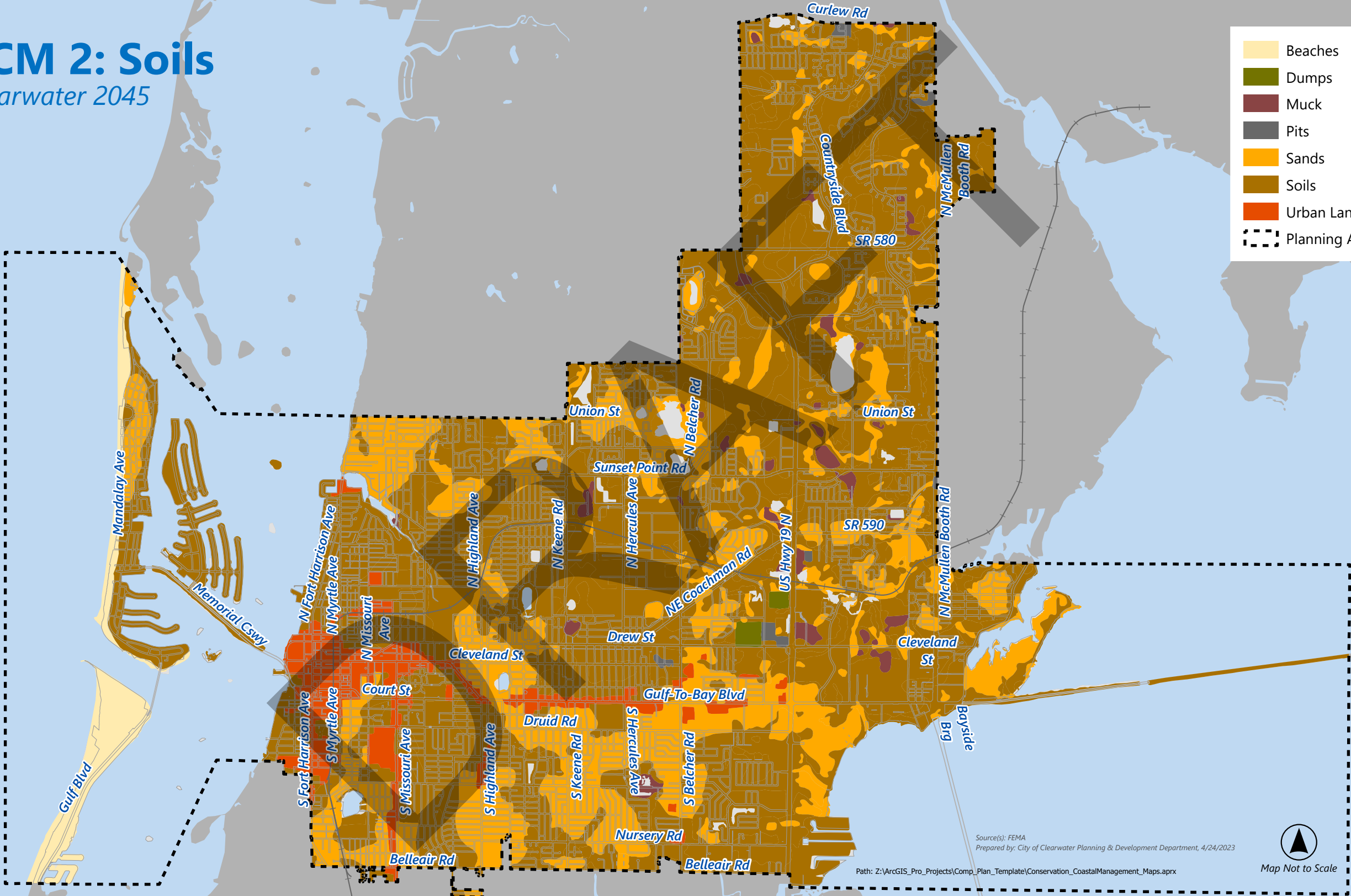
Classifications	Acres	Percent
Paola and St. Lucie soils and Urban land	156.9	0.5
Paola and St. Lucie soils and Urban land, 5 to 12 percent slopes	9.1	0.0
Pineda soils and Urban land	3.8	0.0
Pits	56.6	0.2
Placid fine sand, frequently ponded, 0 to 1 percent slopes	219.8	0.6
Pomello soils and Urban land, 0 to 5 percent slopes	1,007.5	2.9
Samsula muck, frequently ponded, 0 to 1 percent slopes	222.8	0.6
Seffner soils and Urban land	183.5	0.5
Tavares fine sand-Urban land complex, 0 to 5 percent slopes	3,801.0	11.1
Urban land, 0 to 2 percent slopes	886.6	2.6
Wabasso soils and Urban land	727.4	2.1
Wulfert muck, tidal, 0 to 1 percent slopes	3.3	0.0
Water/Submerged Land	13,825.3	40.1
Totals for Study Area	34,398.1	100.0

Source: National Resources Conservation Service, US Department of Agriculture, 2021

CCM 2: Soils

Clearwater 2045

- Beaches
- Dumps
- Muck
- Pits
- Sands
- Soils
- Urban Land
- Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023

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Map Not to Scale

Natural Ecosystems

While the city is mostly an urban ecosystem with built out infrastructure, many natural ecosystems exist. The Gulf of Mexico, Clearwater Harbor, Stevenson Creek, and Old Tampa Bay provide a vast amount of habitat and wildlife, including mangrove forests, beach and dune systems, and seagrasses. In addition to natural habitats, marine wildlife exists within and around the city, including oysters and manatees. Seagrasses, mangroves, and oyster beds perform essential functions such as filtering pollutants from water and also provide erosion control. Map CCM 3 shows the living marine resources within the city, and map CCM 4 shows the vegetative areas within the city.

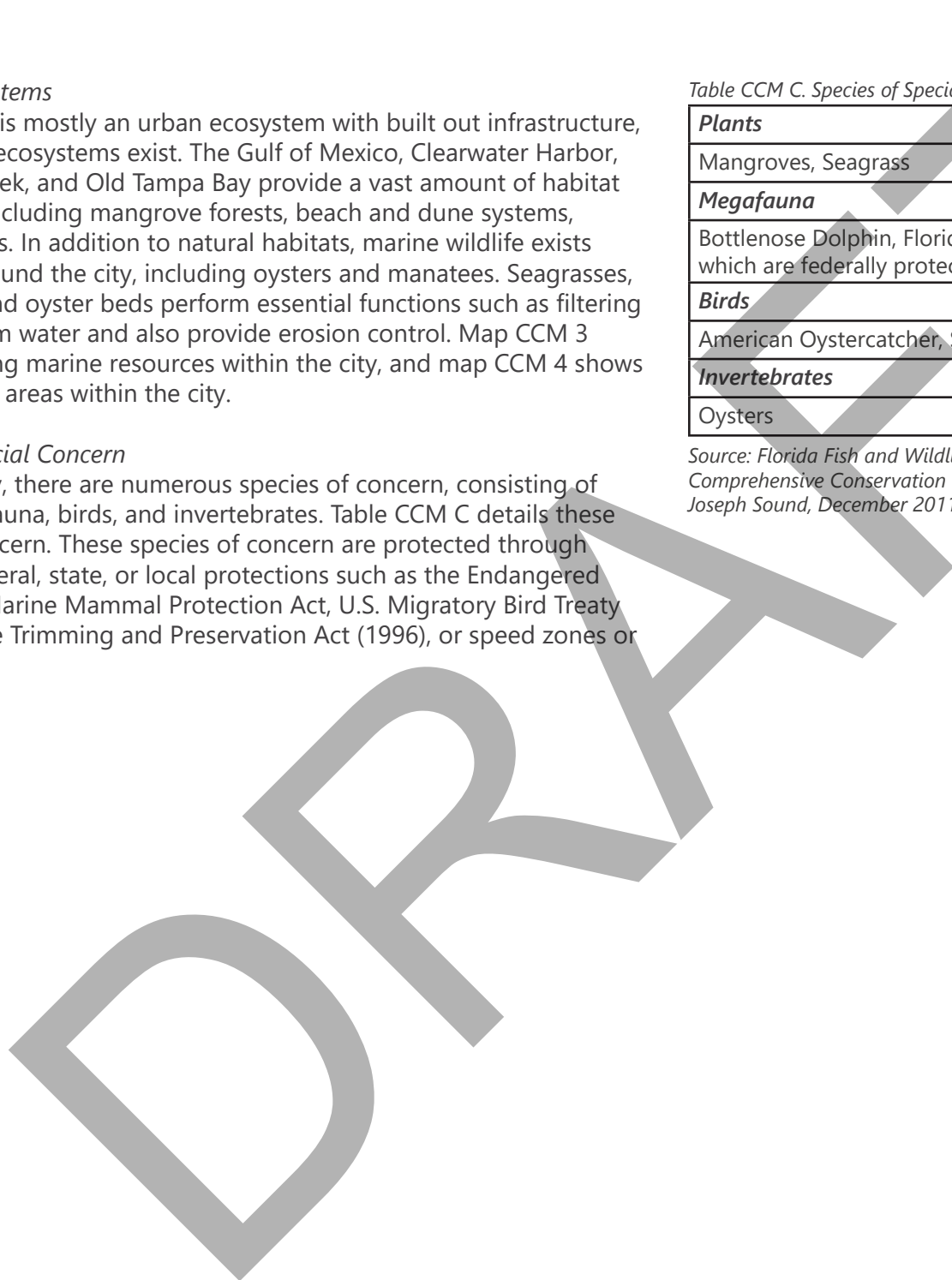
Species of Special Concern

Within the city, there are numerous species of concern, consisting of plants, megafauna, birds, and invertebrates. Table CCM C details these species of concern. These species of concern are protected through numerous federal, state, or local protections such as the Endangered Species Act, Marine Mammal Protection Act, U.S. Migratory Bird Treaty Act, Mangrove Trimming and Preservation Act (1996), or speed zones or fines.

Table CCM C. Species of Special Concern





Plants
Mangroves, Seagrass
Megafauna
Bottlenose Dolphin, Florida Manatee, and five species of sea turtles, all of which are federally protected under the Endangered Species Act
Birds
American Oystercatcher, Snowy Plover, Black Skimmer, Least Terns
Invertebrates
Oysters

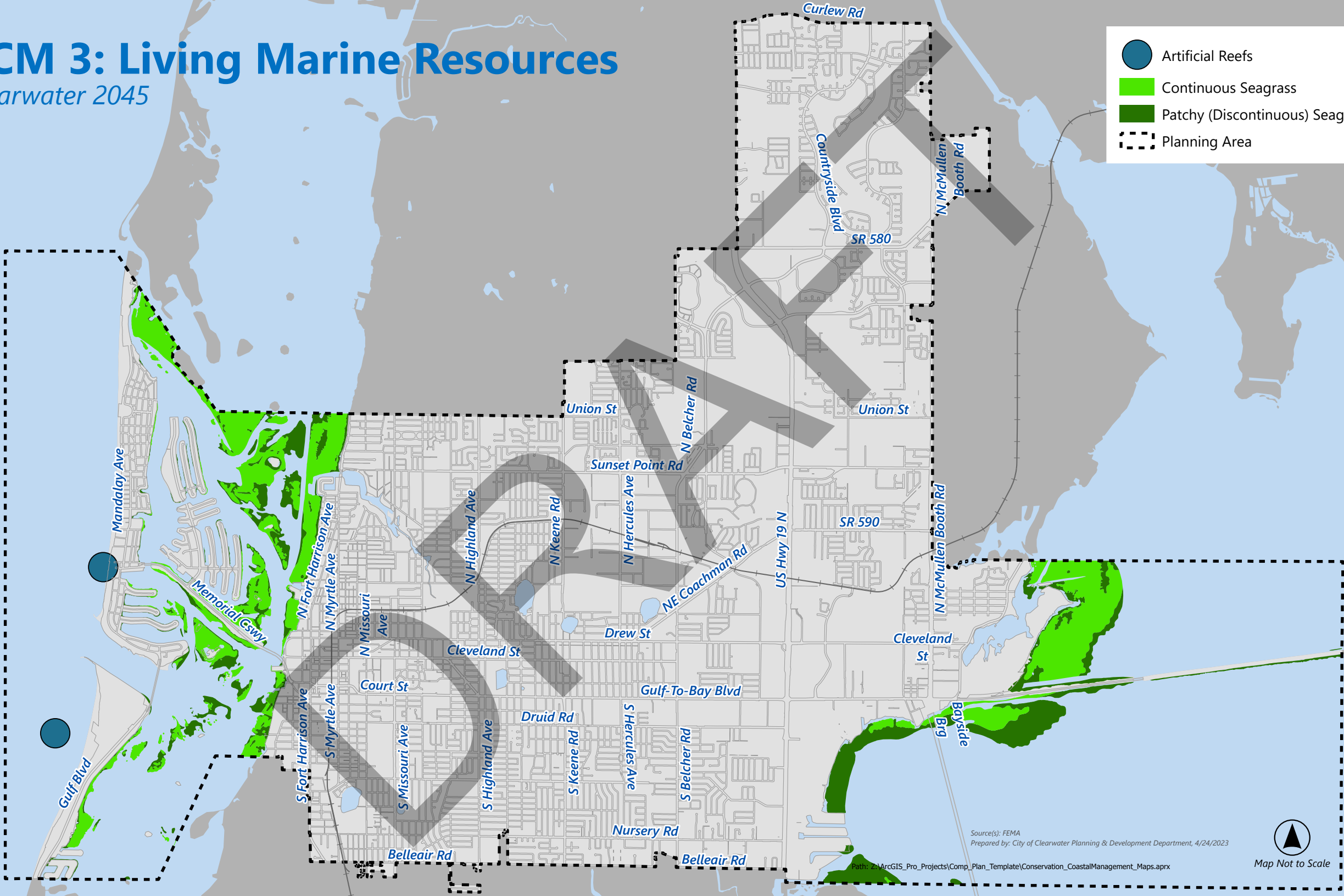
Source: Florida Fish and Wildlife Conservation Commission Shore Mapper; Comprehensive Conservation and Management Plan for Clearwater Harbor and Saint Joseph Sound, December 2011



CCM 3: Living Marine Resources

Clearwater 2045

-  Artificial Reefs
-  Continuous Seagrass
-  Patchy (Discontinuous) Seagrass
-  Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023

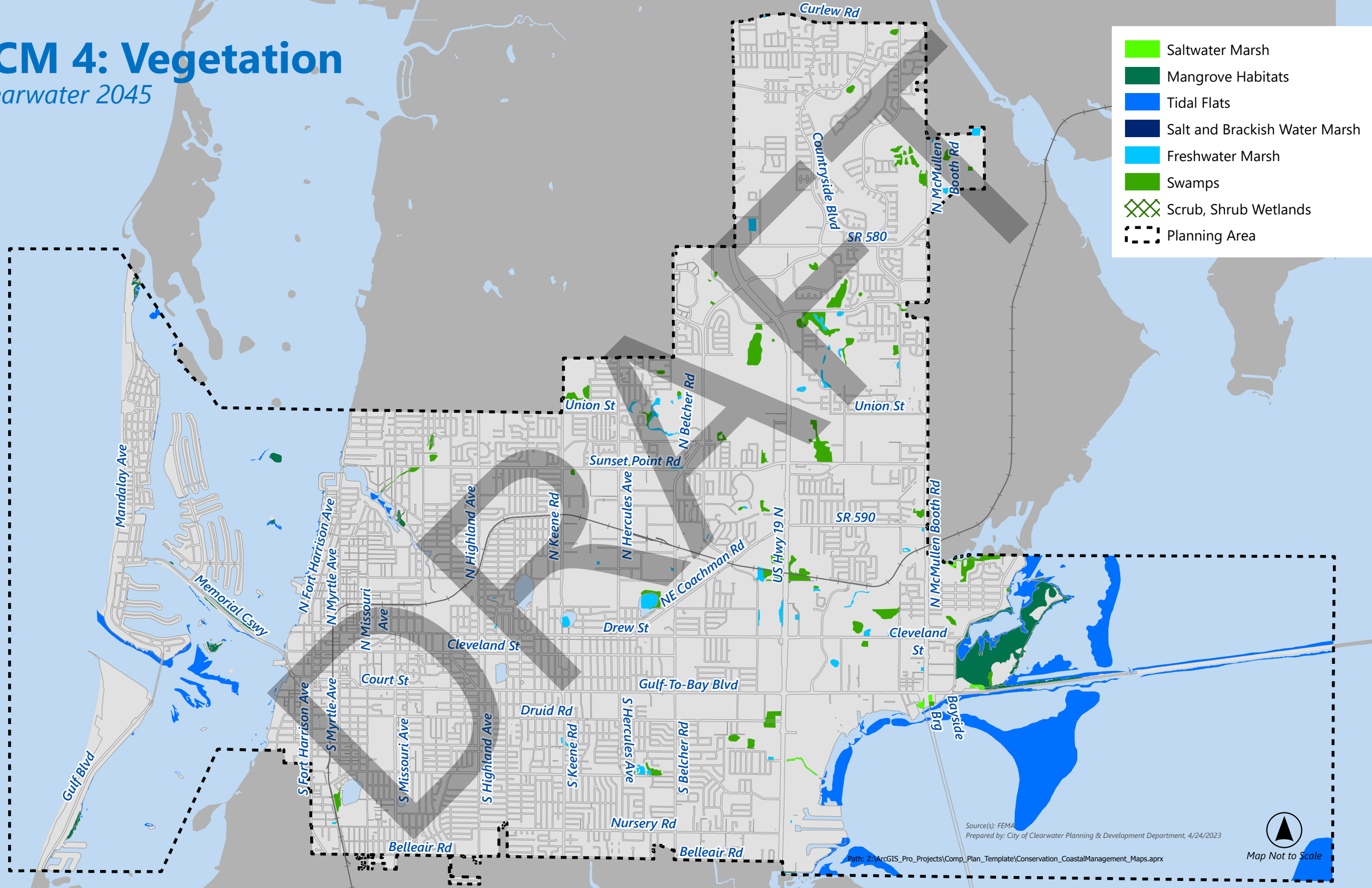
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Map Not to Scale

CCM 4: Vegetation

Clearwater 2045



- Saltwater Marsh
- Mangrove Habitats
- Tidal Flats
- Salt and Brackish Water Marsh
- Freshwater Marsh
- Swamps
- Scrub, Shrub Wetlands
- Planning Area

Source(s): FEMA
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COASTAL RESOURCES INVENTORY

Commercial Important Coastal Resources

The most commercially important coastal resource of the city is Clearwater Beach, which service as the economic driver of the city through tourism. The beach supports numerous commercial activities, and maintaining the environmental conditions of the beach is vitally important for the economic health of the city. In addition to Clearwater Beach, Coachman Park is another important coastal resource of the city. Currently under renovation and expected to open during the summer of 2023, Coachman Park will include an expansive park and recreational space, including a new 4,000 covered-seat amphitheater, and is anticipated to become a gateway to Downtown from the intracoastal waterway.

Culturally Important Coastal Resources

There are three means to recognize important properties or places; the first is through the National Register of Historic Places (NRHP), the second is through the Florida Mater Site File, and the third is through a local historical designation. Within the coastal areas of the city, there are only Master Site File locations that still survive. Three of these locations are located on Clearwater Beach, 333 and 351 South Gulfview Boulevard and 827 Mandalay Avenue, and six locations are located near Old Tampa Bay, 517, 520, 603, 707, and 725 South Bayview Avenue and 3204 Gulf to Bay Boulevard. Map QP 7 found within the Quality Places Chapter shows locations of all of the historical sites within the city.

Ecologically Important Coastal Resources

Some of the many ecologically important resources within the city include mangroves, seagrasses, salt marshes, mangroves, oyster beds, and the beach. Mangroves, seagrasses, and salt marshes are considered blue carbon resources and these act as carbon sinks, resources that store carbon dioxide from rising into the atmosphere. Mangroves, in addition to oyster beds, also aid in filtering pollutants from the water which can help to reduce red tide levels while supporting natural habitats and erosion control. Lastly, the beach is a natural site for sea turtle nesting, and continued efforts need to be made to protect sand amounts and turtle nests.

Recreationally Important Coastal Resources

Boat Access






The city has two boat ramps, the largest and recently updated Seminole Boat Ramp, as well as the Clearwater Beach Public Boat Ramp. Both ramps are open 24/7, and additionally, there are numerous public boat slips located at Clearwater Beach Marina, Clearwater Harbor Marina, Island Estates, and Clearwater Recreation Center. In addition to boat ramps, there are numerous canoe and kayak launching points within the city, located at both boat ramps in addition to Mandalay Park, Sand Key Park, Cooper's Bayou Park, Lake Chautauqua Park, the south sides of the Courtney Campbell and Memorial Causeways, and at the southern terminus of Bayview Avenue.

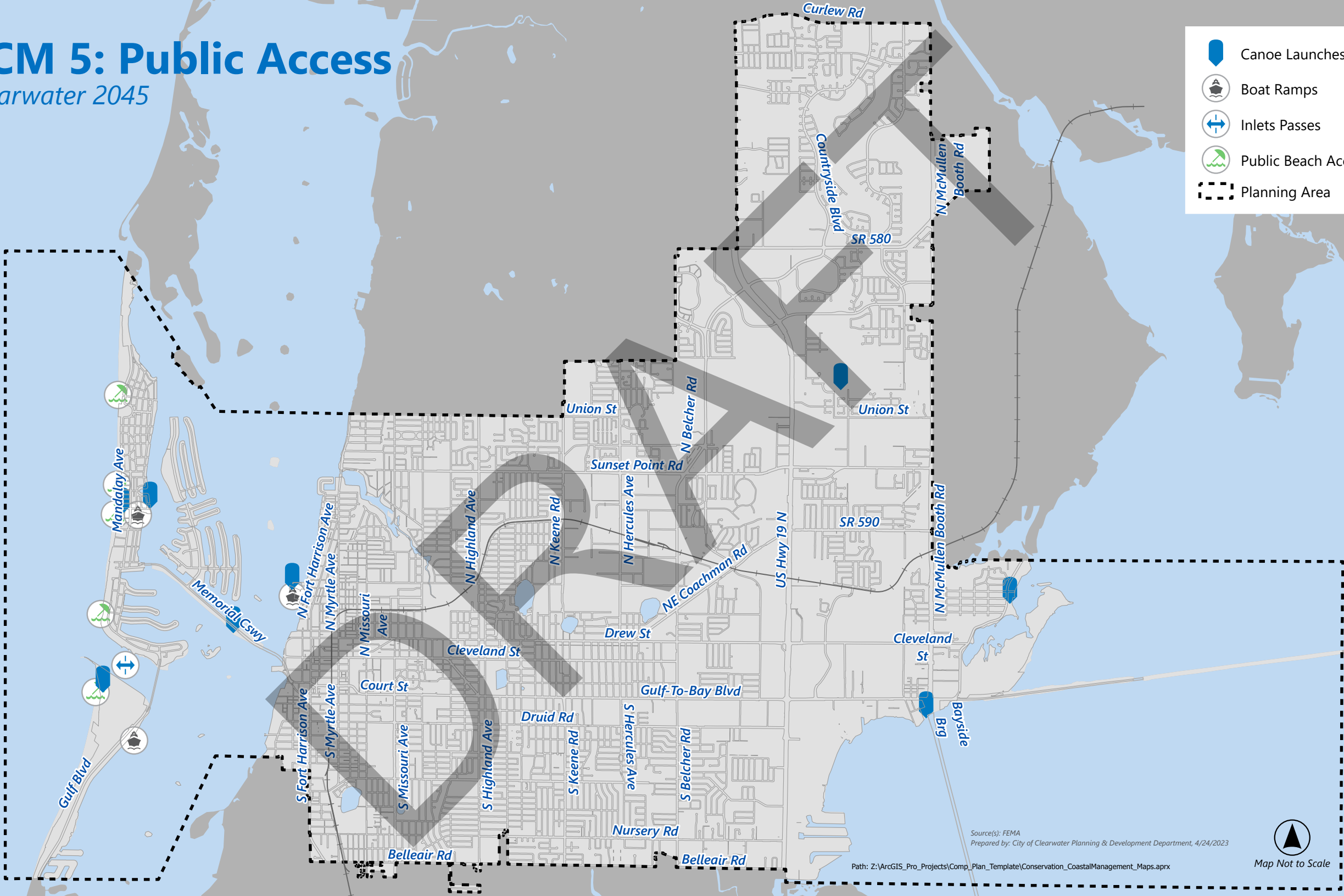
Beach Access & Parking

Clearwater Beach has multiple public access points, Map CCM 5, along Mandalay Avenue, Coronado Drive, and South Gulfview Drive, and Sand Key Park has additional public access points. Clearwater Beach has both public and private parking for a cost. In parking lots or garages, there are 587 public spaces, with an additional 289 on-street parking spaces. Additionally, there are 346 parking spaces at the Clearwater Beach Marina for marina activities.

CCM 5: Public Access

Clearwater 2045

-  Canoe Launches
-  Boat Ramps
-  Inlets Passes
-  Public Beach Access
-  Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023

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SUSTAINABLE USE AND MANAGEMENT OF NATURAL RESOURCES

Surface Waters & Groundwater

Most of the surface waters in the city are lakes and stormwater ponds. The city owns some of the stormwater ponds, and others have drainage easements over them so that maintenance can be performed. Maintenance includes removal of soils, plant overgrowth, and nuisance plant species as these can restrict water flow if not regularly maintained. Additionally, several stormwater ponds and lakes within the city have contracts with private firms to remove or spray for invasive plant growth.

The only watershed in the city is the Tampa Bay/Anclote River Watershed which is fed by 13 drainage basins: Bishop Creek, Alligator Creek, Long Bayou, Jerry Branch, Stevenson Creek, Mullet Creek, Belleair Golfclub Run, Curlew Creek, Allen Creek, Lake Tarpon Canal, and Tampa Bay, all of which direct runoff to the Gulf of Mexico and Tampa Bay.

Wetlands

The city's wetlands provide ecological, economic, and social benefits through providing habitats for fish, wildlife, and plants; recharge groundwater; reduce flooding; provide clean drinking water; and support cultural and recreational activities. The U.S. Fish and Wildlife Services (FWS) is tasked with mapping all wetlands in the United States. Within the city, there are 83 wetlands which are divided into seven major categories based on the dominant vegetative cover.

Drinking Water

Residents in Clearwater use approximately 11.1 million gallons of drinking water per day, with about 8% originating from a city-owned and operated groundwater well. The balance is purchased from Pinellas County Utilities.

Cooper's Point Water Quality Improvements

A project to construct a 350 foot wide bridge opening in the Courtney Campbell Causeway, a 120 foot bridge opening in Cooper's Point, and the dredging of approximately one foot of Cooper's Bayou is expected to be permitted in the first half of 2023. This project would allow for the restoration of a historical channel through the bayou, creation of a multihabitat community including salt marsh, seagrass, and mangroves, and improved tidal exchange and circulation which will reduce the likelihood of algae blooms.

Biophilic Planning

The use of biophilic planning, which attempts to tie in the phenomena of the natural environment with the built environment together. The use of natural objects such as trees, waterways or plants in addition to using curves or irregular arcs within the built environment can help improve mental health and air and water quality.

Urban Agriculture

The use of urban agriculture can help reduce transportation costs, reduce runoff associated with heavy rainfall, and lead to better air quality. It can also help increase resiliency through reducing inefficiencies caused by transporting food over long distances.

RESILIENCE TO SEA LEVEL RISE, FLOODING, AND STORMS

Coastal High Hazard Area (CHHA)

The Coastal High Hazard Area is the area below the elevation of a category 1 storm surge line as established by the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. This is required to be in the comprehensive plan per F.S. 163.3178; however, the city has established the Coastal Storm Area (CSA) which is based on the CHHA. The CSA includes the CHHA as well as parcels where the CHHA covers 20% or more of a parcel, portions of islands not inundated by the CHHA, and areas of the FEMA Velocity Zone (VE Zone) that are not included in Evacuation Level A. There are approximately 2,532 acres included in the CSA, and density and intensity increased are prohibited within the CHHA and CSA, and certain uses such as hospitals cannot locate within the CHHA or CSA. Map CCM 6 shows the CHHA, and Map CCM 7 shows the CSA.

Floodplain Management

FEMA maintains floodplain maps, which were updated in 2021, to depict areas of the city where flood risks are greatest. There are three flood zones defined as follows and shown on map CCM 8:

- VE – Special Flood Hazard Area with water surface elevations determined and with velocity, that is inundated by tidal floods (CHHA);
- AE – Special Flood Hazard Area subject to inundation by the 1-percent-annual-chance flood event with water surface elevations determined; and
- A – Special Flood Hazard Area without water surface elevations determined.

The city has adopted and enforces floodplain management ordinances and regulates construction as it related to flood zones pursuant to Florida Building Code standards.

Clearwater Greenprint 2.0

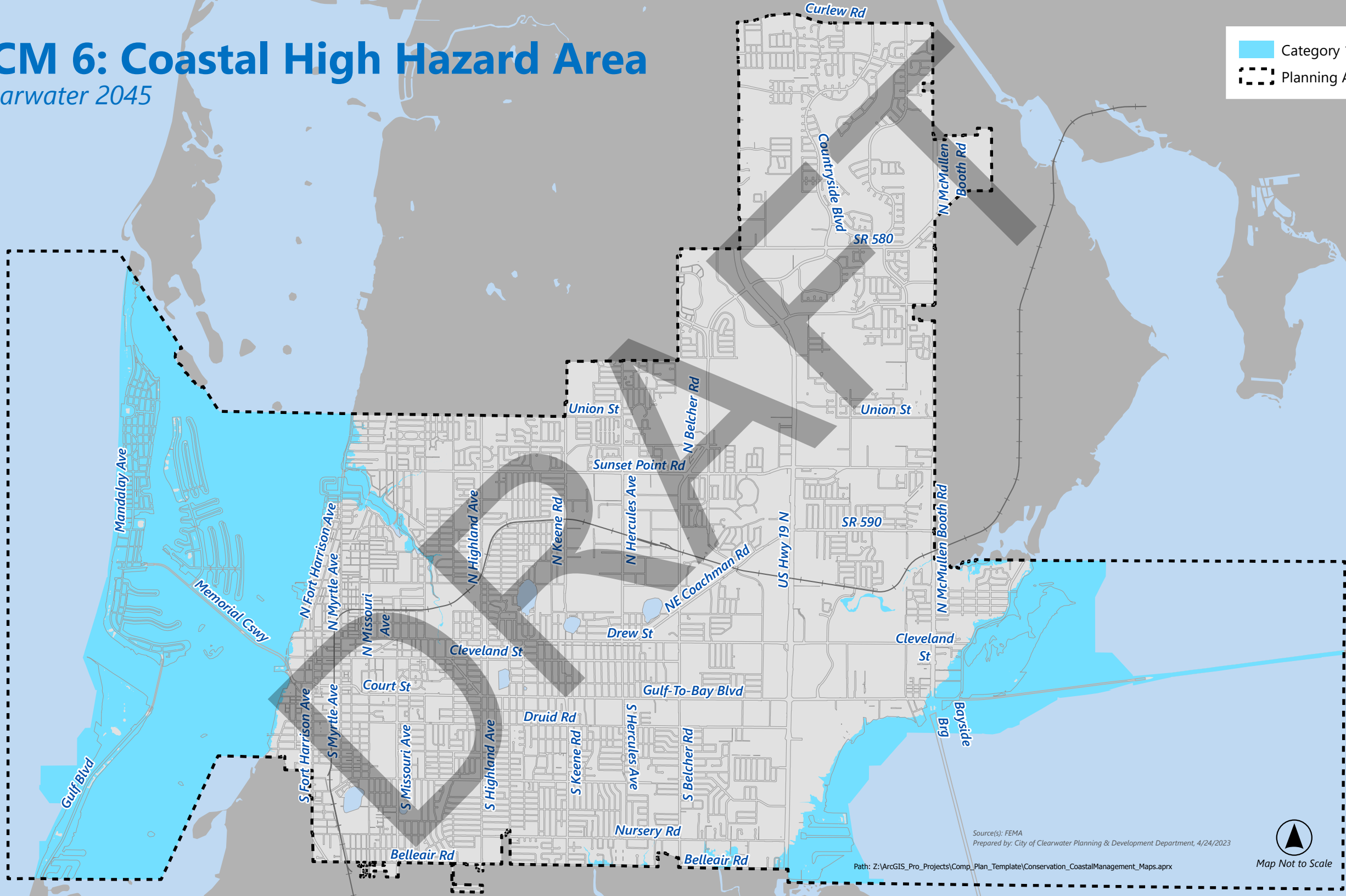
- In August of 2021, the city adopted Clearwater Greenprint 2.0 to help advance the community's goal to reduce greenhouse gas (GHG) emissions. The two overarching goals are:
- Reduce citywide GHG emissions 25% below 2007 levels by the year 2035; and
- Reduce citywide GHG emissions 80% below 2007 levels by the year 2050.

The expansion of electric vehicles (EV) and EV infrastructure, as well as expanding the use of low-to-zero emission vehicles, will help move the city towards the goals stated above. The city has committed to expanding the city's fleet to EV or low-to-zero emission vehicles.

CCM 6: Coastal High Hazard Area

Clearwater 2045

Category 1
Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023





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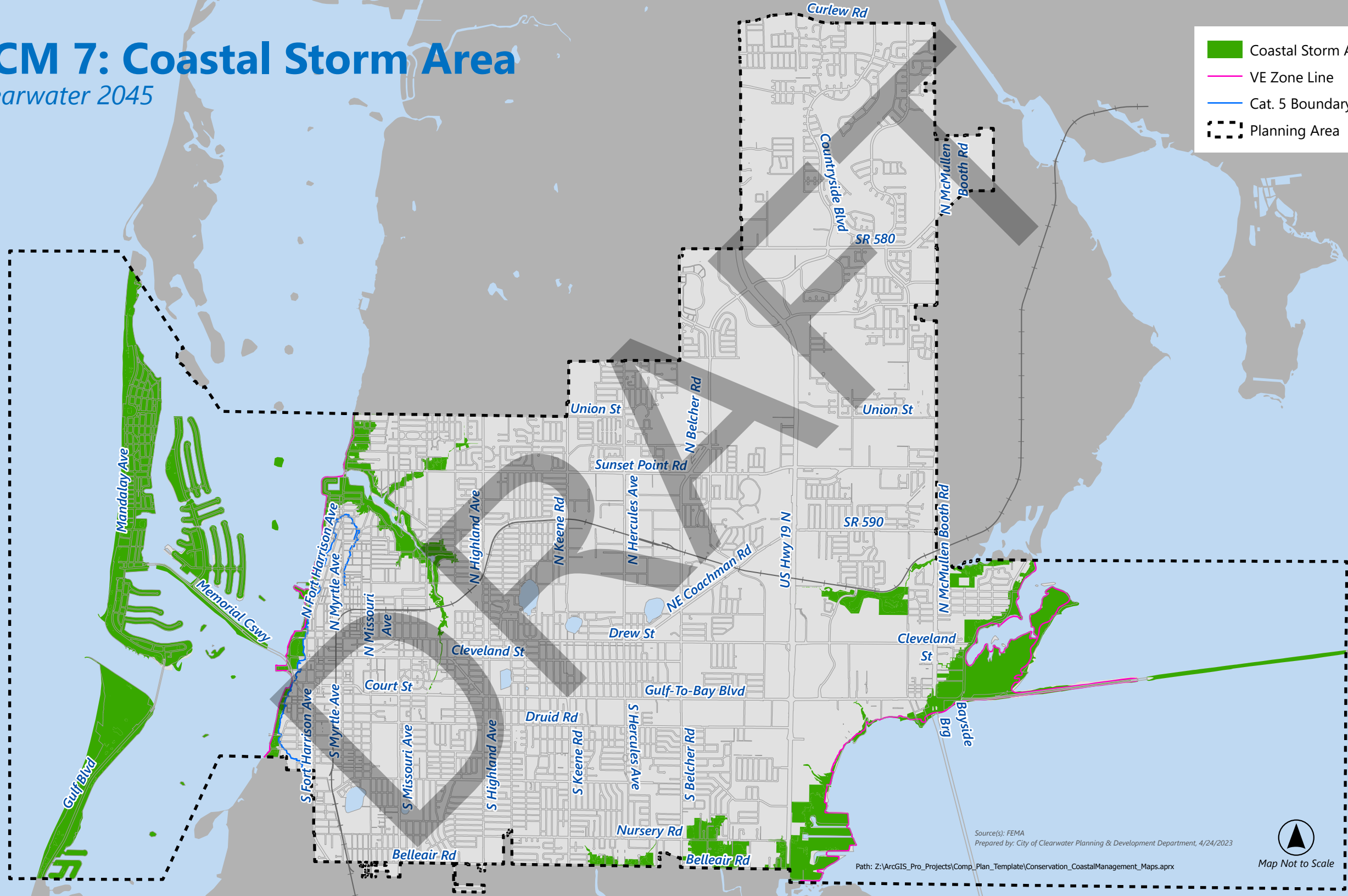


Map Not to Scale

CCM 7: Coastal Storm Area

Clearwater 2045

-  Coastal Storm Area
-  VE Zone Line
-  Cat. 5 Boundary
-  Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023





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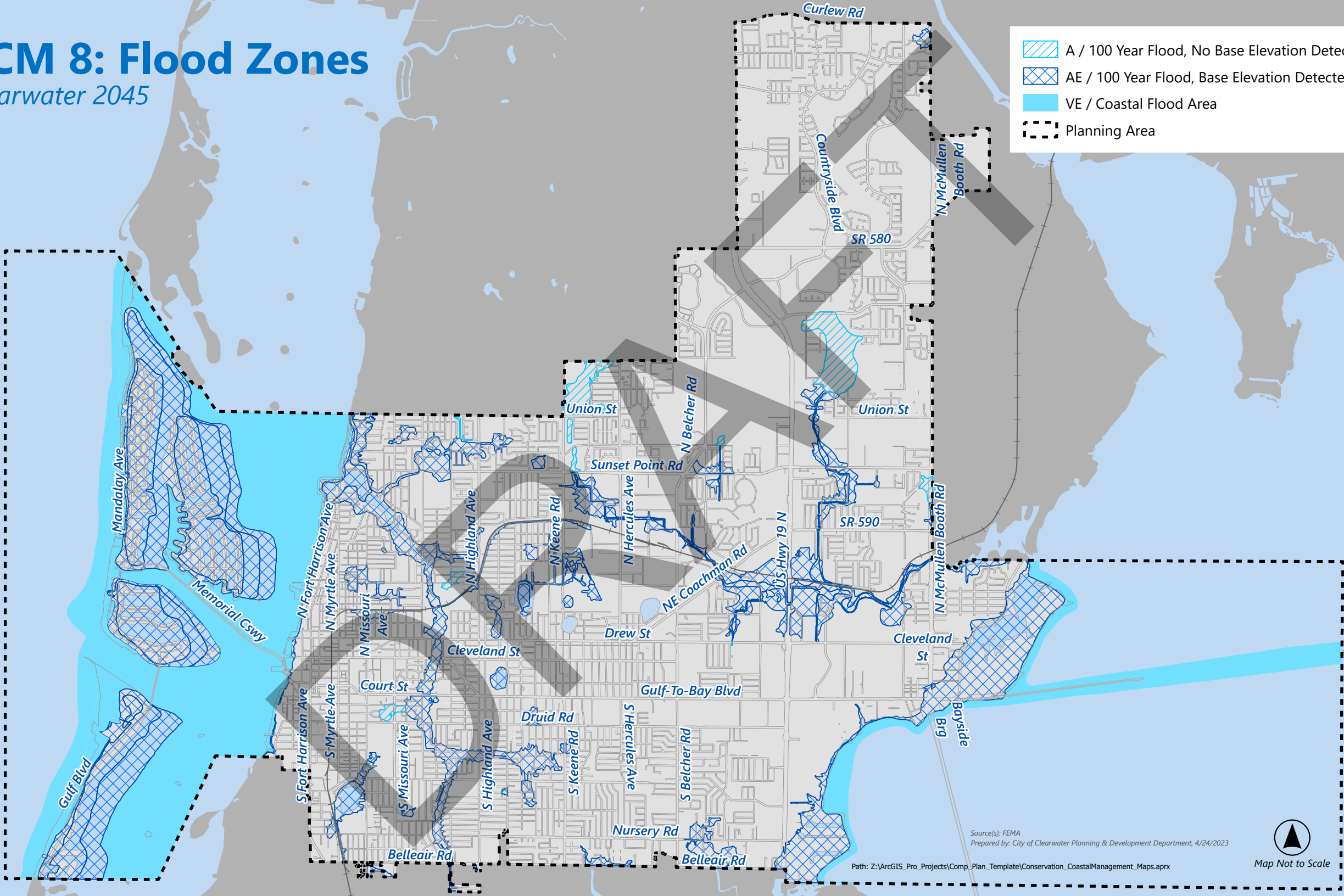


Map Not to Scale

CCM 8: Flood Zones

Clearwater 2045

-  A / 100 Year Flood, No Base Elevation Detected
-  AE / 100 Year Flood, Base Elevation Detected
-  VE / Coastal Flood Area
-  Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023

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Map Not to Scale



GOAL CCM 1

Continue to protect, enhance, and conserve natural resources within the city to provide for the long-term accessibility, enhancement, safety, economic viability, and environmental integrity of those resources.

OBJECTIVE CCM 1.1

Continue to protect dunes, beaches, floodplains, drainage ways, and all other natural resources from encroachment and development.

POLICIES

CCM 1.1.1

Continue to protect and improve ambient air quality through administration of applicable standards in the Florida Administrative Code, Florida Department of Environmental Protection (FDEP), or other codes.

CCM 1.1.2

Continue to restrict development density or intensity and prohibit development seaward of the Coastal Construction Control Line unless approved by the FDEP and the city.

CCM 1.1.3

Continue to restore, preserve, and enhance disturbed or degraded dune and beach areas using native vegetation plantings such as sea oats, seagrass, or mangroves, or other natural materials in lieu of hardened structures.

CCM 1.1.4

Continue to minimize the disturbance of natural shorelines, dunes, and beaches which provide stabilization and protect landward areas from storm impacts through the use of local ordinances. Continue to prohibit the disturbance or destruction of beach and beach dunes from any form of construction except for access to and from the beach utilizing elevated wooden boardwalks

CCM 1.1.5

Ensure the use of natural and native beach vegetation is prioritized during beach and dune maintenance to help beach stabilization, shoreline protection, and erosion control.

CCM 1.1.6

Research and implement resilient standards for dune, shoreline, and seawall protection within the city's Community Development Code.

CCM 1.1.7

Guide proposed development or redevelopment away from environmentally sensitive areas and ensure that proposed development or redevelopment does not encroach on, disturb, or remove natural wetlands or beaches without appropriate and approved mitigation techniques.

CCM 1.1.8

Continue to require proposed development or redevelopment to use stormwater facilities or natural filtration techniques to improve the quality of and slow the amount stormwater runoff into drainage basins.

CCM 1.1.9

Continue to restore and enhance disturbed or degraded drainage systems and estuaries through upstream detention of stormwater, maintenance of existing drainage channels, widening of bridges, culverts and other stormwater conveyance systems limiting impacts to wetlands and controlling operations of water-dependent uses.

CCM 1.1.10

Ensure that any construction within the 100-year floodplain (Zones A and AE, Map CCM 8) complies with all applicable building requirements and codes.

CCM 1.1.11

Continue to prohibit unauthorized vehicles from driving or parking on beaches and dunes within the city, unless within designated areas.

CCM 1.1.12

Continue to prohibit marinas or similar uses near areas of environmental significance unless they provide appropriate and approved mitigation techniques.

CCM 1.1.13

Require mitigation plans for alteration of non-jurisdictional wetlands, dunes, floodplains, or lakes at not less than a 1:1 ratio as approved by the Public Works Department and in coordination with the Southwest Florida Water Management District (SWFWMD).

CCM 1.1.14

Continue to use erosion control management programs during site development or redevelopment to contain site runoff and protect water quality.

Dunes on Clearwater Beach



OBJECTIVE CCM 1.2

Continue to protect, maintain, enhance, and manage wetlands, estuaries, wildlife habitats, conservation areas, and city-owned land that are in their natural state from unnatural disturbances or adverse impacts from development in the city.

POLICIES

CCM 1.2.1

Protect and conserve wetlands by directing incompatible future land uses away from wetlands.

CCM 1.2.2

Continue to protect natural and mitigated wetlands, conservation lands, marine life, shoreline vegetation, and wildlife habitats, especially threatened or endangered species, through professional wildlife management and habitat restoration techniques.

CCM 1.2.3

Continue to prohibit development that needlessly disturbs or destroys native vegetation.

CCM 1.2.4

Continue to maintain and protect the city's wetland inventory as previously identified by prohibiting the dredging or filling of wetlands other than by natural phenomena.

CCM 1.2.5

Continue to recognize the importance of natural ecosystems and city parks as integral parts to the city's urban environment and continue to protect these facilities and their functions.

CCM 1.2.6

Continue to protect and preserve mangroves and riverine floodways from disturbance and destruction through application of the Community Development Code.

CCM 1.2.7

Continue to designate environmentally sensitive wetlands, floodplains, or other environmentally significant areas with the Preservation (P) Future Land Use Map category and zoning district.

CCM 1.2.8

Continue to administer regulations providing for the protection of threatened and endangered species and species of special concern.

CCM 1.2.9

Continue to review standards for sea turtle lighting and update as needed.

CCM 1.2.10

Support the Cooper's Point water quality project consisting of a new bridge opening in the Courtney Campbell Causeway and the restoration of a channel through Cooper's Bayou.

Staff participating in a cleanup event



OBJECTIVE CCM 1.3

Continue to protect all city-owned and maintained potable water wells from contamination and conserve current and future water sources.

POLICIES

CCM 1.3.1

Continue to administer a wellfield protection ordinance to protect potable water wells and wellfields from contamination and continue to prohibit uses with hazardous materials or waste from locating within protection zones or within the 25-year floodplain.

CCM 1.3.2

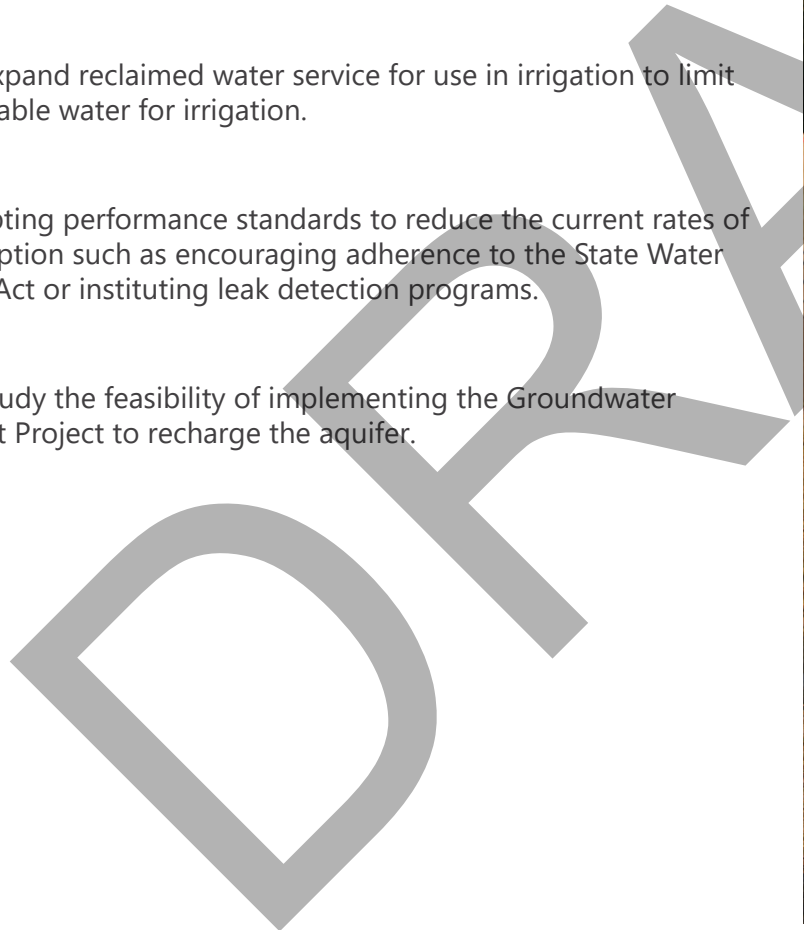
Continue to expand reclaimed water service for use in irrigation to limit the use of potable water for irrigation.

CCM 1.3.3

Consider adopting performance standards to reduce the current rates of water consumption such as encouraging adherence to the State Water Conservation Act or instituting leak detection programs.

CCM 1.3.4

Continue to study the feasibility of implementing the Groundwater Replenishment Project to recharge the aquifer.



OBJECTIVE CCM 1.4

Manage stormwater discharges for flood protection and to preserve, protect, and enhance the water quality of stormwater runoff into receiving waterbodies.

POLICIES

CCM 1.4.1

Update the stormwater manual and Community Development Code to provide additional low-impact development techniques.

CCM 1.4.2

Consider requiring stormwater plans to utilize natural features, low impact development techniques, the preservation of native vegetation, techniques that trap stormwater sediments, and the reduction of impervious surfaces to reduce and improve stormwater runoff from developments.

CCM 1.4.3

Incorporate water quality protection and enhancement criteria into city stormwater management plans.

CCM 1.4.4

Continue to utilize stormwater fees and stormwater ordinances to protect and enhance stormwater runoff for private developments and to fund public improvements.

CCM 1.4.5

Review and update waterbody management plans in accordance with the Surface Water Improvement and Management (SWIM) program and develop plans for waterbodies with known or suspected water quality problems as needed.

CCM 1.4.6

Develop water quality specific level of service criteria as required within the provisions of the National Pollution Discharge Elimination System (NPDES) permit issued to Pinellas County.

CCM 1.4.7

Incorporate water quality protection and enhancement criteria into the city stormwater management plans.

CCM 1.4.8

Include the use of natural alternatives, conservation of natural stormwater management systems, and protection and improvement of the quality of receiving waters in city stormwater management plans.

CCM 1.4.9

Continue to develop management plans on an ongoing basis for waterbodies with known or suspected water quality problems in the city including Tampa Bay, Clearwater Harbor, Stevenson Creek, Allen's Creek, and Alligator Creek.

CCM 1.4.10

Prepare watershed or waterbody specific management plans including both water quality and flood control considerations and recommended funding sources and update them as necessary for waterbodies within the city.

CCM 1.4.11

Implement city-approved watershed management plans as appropriate and feasible.

CCM 1.4.12

Seek to meet applicable goals, guidelines, and regulations established to provide flood protection and pollution abatement in all stormwater management improvements.

GOAL CCM 2

Protect development, redevelopment, and public facility investment from storm events and flood risks related to flooding, high-tide events, and sea level rise to reduce property losses.

OBJECTIVE CCM 2.1

Ensure proposed development or redevelopment includes strategies to reduce risk and losses due to flooding events, stormwater runoff, and impacts of sea level rise.

POLICIES

CCM 2.1.1

Ensure proposed development or redevelopment within floodplains is consistent with applicable city plans, the Community Development Code, the Florida Building Code, and the National Flood Insurance Policy (NFIP) Community Rating System (CRS) Program.

CCM 2.1.2

Continue to bring non-compliant structures into conformance with FEMA standard, applicable building codes and the Community Development Code.

OBJECTIVE CCM 2.2

Identify city infrastructure and facilities that are susceptible to the impacts of flooding and sea level rise and evaluate city funded projects to assess vulnerabilities to maximize effective life spans.

POLICIES

CCM 2.2.1

Prepare a report that identifies public facilities and infrastructure that is at risk from sea level rise.

CCM 2.2.2

Utilize vulnerability assessments to determine if a public facility or infrastructure should be built, rebuilt, modified, or relocated.

CCM 2.2.3

Evaluate incorporating stabilization or armoring of roadway shoulders or embankments where flood waters tend to wash roads out during construction or reconstruction.

CCM 2.2.4

Evaluate the feasibility of elevating roadways above base flood elevations to limit roadway flooding and allow roadways to be used during flooding events.

CCM 2.2.5

Consider implementing the use of a specific sea level rise scenario to use when designing critical city infrastructure to ensure that infrastructure lifespans are maximized to the fullest extent possible.

OBJECTIVE CCM 2.3

Research and implement standards for resilient protection within the city's Community Development Code to address flooding, sea level rise, and storm events for all development in flood-prone and coastal areas of the city.

POLICIES

CCM 2.3.1

Evaluate requiring additional freeboard, elevated finished floors, and wet/dry flood proofing for new development or substantial improvements.

CCM 2.3.2

Consider revising the city's substantial improvement and substantial damage regulatory threshold to reduce the number of non-compliant structures.

OBJECTIVE CCM 2.4

Continue to protect and conserve public access to public beaches.

POLICIES

CCM 2.4.1

Enhance access to public beaches through development of recreational lands, land acquisition, or easements, and maintenance of public access and parking to beaches renourished with public funds.

CCM 2.4.2

Continue to enforce the Coastal Zone Protection Act of 1985, prohibit vacations of existing or future beach access ways, and recognize that all public access ways, street ends, waterfront parks, and parking areas are beach access easements.

OBJECTIVE CCM 2.5

Direct permanent populations and certain uses away from the Coastal Storm Area as show in (Map CCM 7), which includes the Coastal High Hazard Area, to protect public health and limit public expenditures to only those necessary to serve existing and planned development and the restoration or enhancement of natural resources.

POLICIES

CCM 2.5.1

Prohibit the location or expansion of hospitals, nursing homes, assisted living facilities, or other similar uses within the Coastal Storm Area.

CCM 2.5.2

Continue to allow development and redevelopment consistent with adopted densities and intensities and standards within the Community Development Code and Beach by Design: A Preliminary Design for Clearwater Beach and Design Guidelines.

CCM 2.5.3

Limit residential densities on those portions of properties within the Coastal Storm Area in the US 19 Corridor to those that were in place prior to implementation of the US 19 Future Land Use Map categories as shown on Map CCM 9.

CCM 2.5.4

Prioritize public expenditures that restore or enhance natural resources including program improvements.

CCM 2.5.5

Ensure that necessary infrastructure improvements are constructed in a phased approach to coincide with development demands to reduce the risk of loss.

OBJECTIVE CCM 2.6

Ensure that adequate hurricane evacuation times are maintained and evaluate ways to reduce evacuation times.

POLICIES

CCM 2.6.1

Continue to use 16-hours as the adopted level of service standards for out-of-county hurricane evacuation clearance time for a category 5 storm-event.

CCM 2.6.2

Require disaster plans for hospitals, nursing homes, assisted living facilities, or other similar uses as required by law, to be kept on file with the Emergency Management Coordinator.

CCM 2.6.3

Require new or redeveloped overnight accommodation uses located within the Coastal Storm Area to have a city-approved hurricane evacuation plan for all guests.

CCM 2.6.4

Prohibit development on Clearwater Beach or Sand Key if it is evident that such development will impede adopted evacuation times.

CCM 2.6.5

Continue to utilize the hurricane evacuation zones, Map CCM 10, during storm warnings and update the map as needed.

CCM 2.6.6

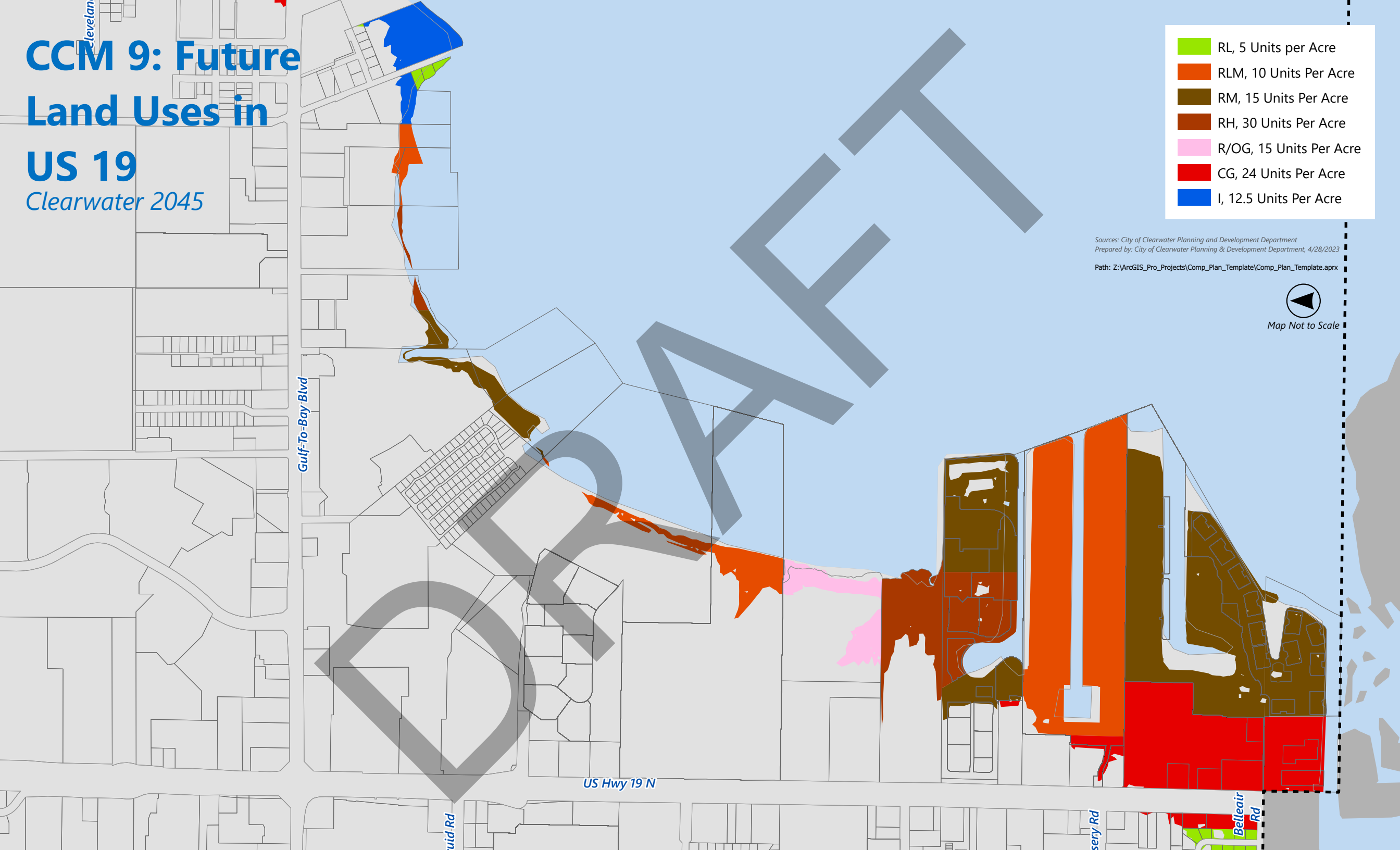
Continue to review and update Map CCM 11, Evacuation Routes as necessary to ensure populations can safely evacuate during storm events.

CCM 2.6.7

Ensure that all appropriate efforts are made to evacuate vulnerable populations during storm events.

CCM 9: Future Land Uses in US 19

Clearwater 2045



- RL, 5 Units per Acre
- RLM, 10 Units Per Acre
- RM, 15 Units Per Acre
- RH, 30 Units Per Acre
- R/OG, 15 Units Per Acre
- CG, 24 Units Per Acre
- I, 12.5 Units Per Acre

Sources: City of Clearwater Planning and Development Department
Prepared by: City of Clearwater Planning & Development Department, 4/28/2023
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Gulf-To-Bay Blvd

US Hwy 19 N

uid Rd

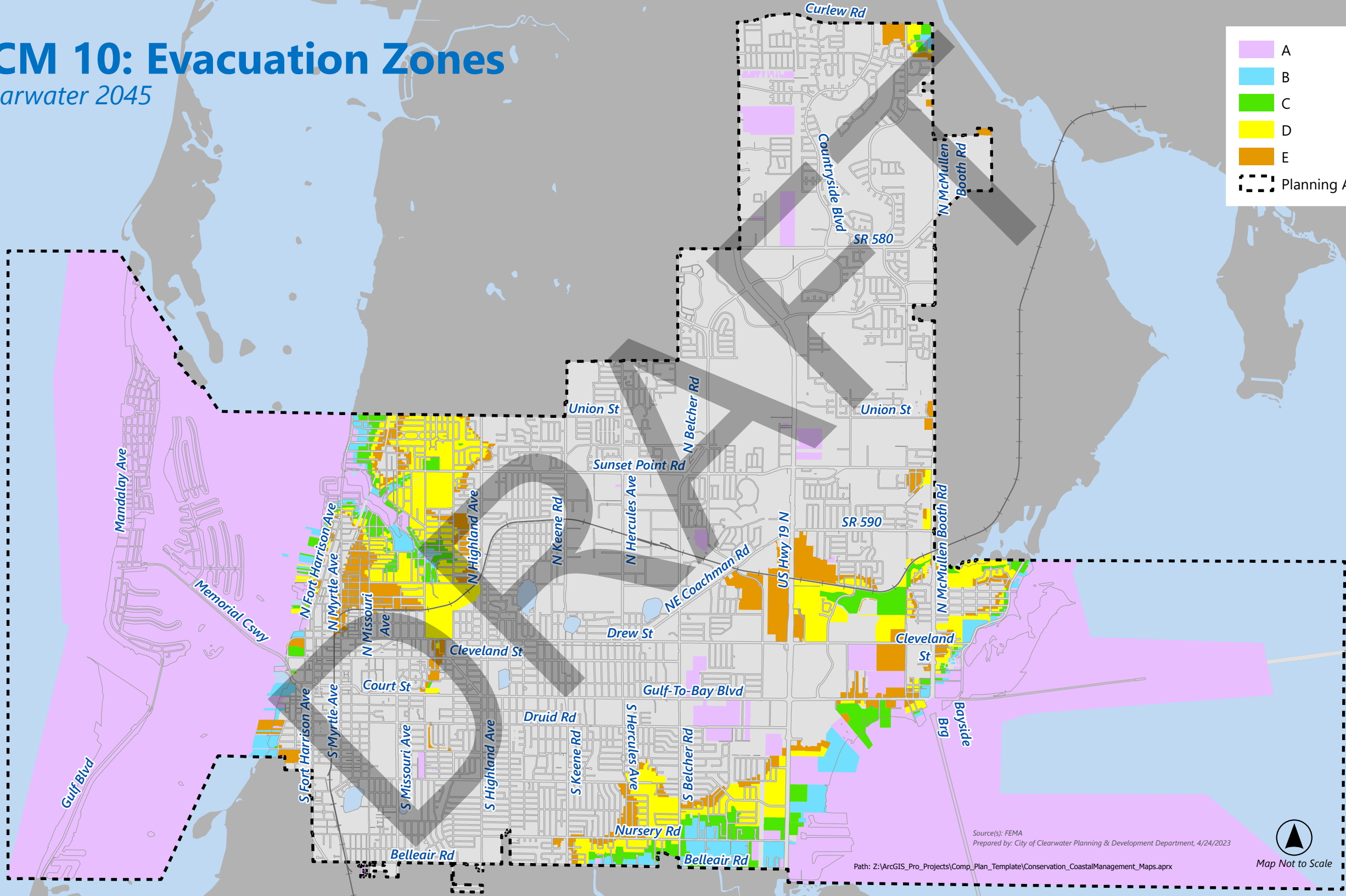
esery Rd

Belleair Rd

CCM 10: Evacuation Zones

Clearwater 2045

- A
- B
- C
- D
- E
- Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023

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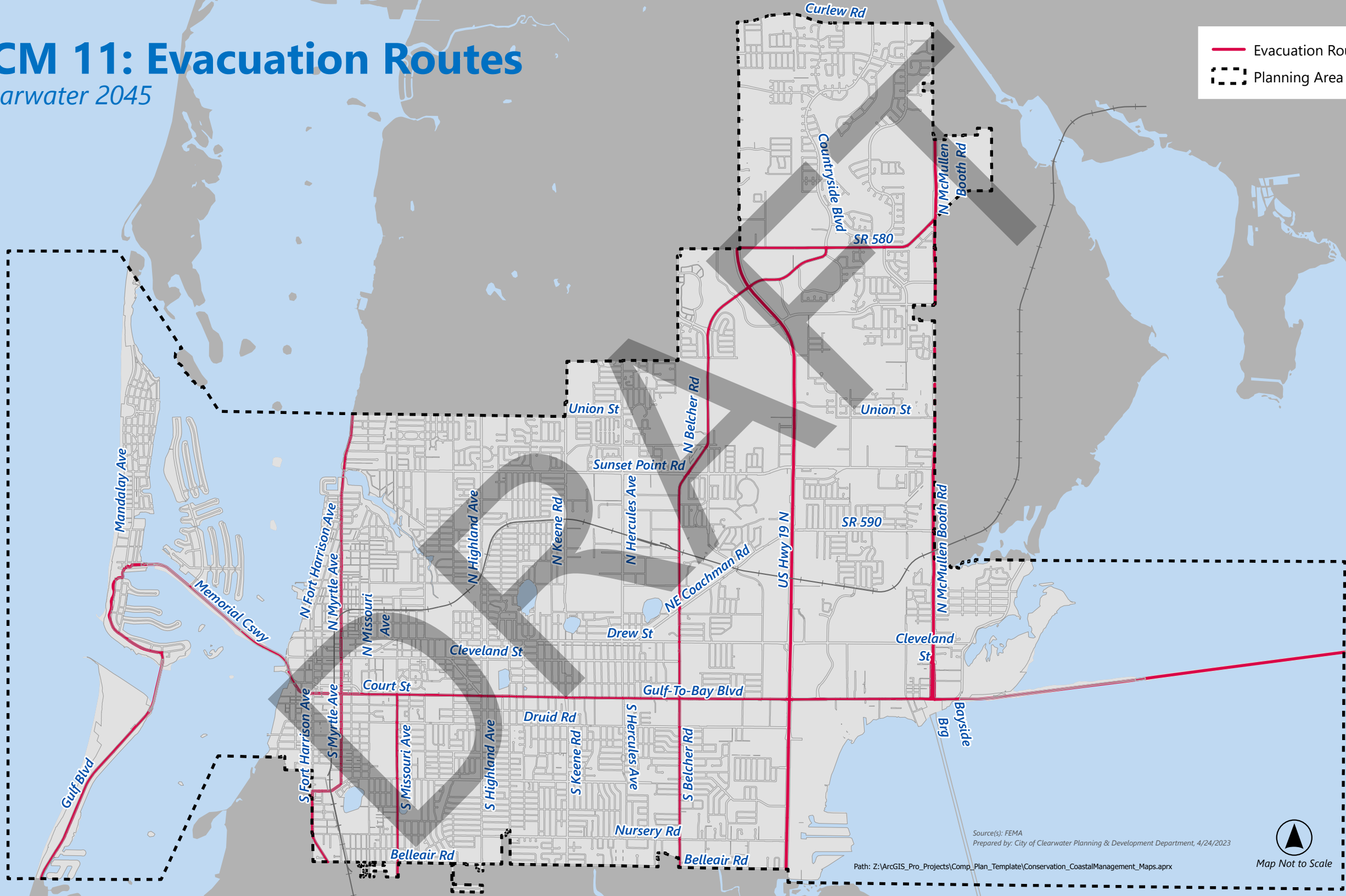


Map Not to Scale

CCM 11: Evacuation Routes

Clearwater 2045

— Evacuation Routes
- - - Planning Area



Source(s): FEMA
Prepared by: City of Clearwater Planning & Development Department, 4/24/2023

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Map Not to Scale

OBJECTIVE CCM 2.7

Identify areas vulnerable to flooding and sea level rise impacts and designate these areas as Adaptation Action Areas.

POLICIES

CCM 2.7.1

Map Adaptation Action Areas (AAAs) and define strategies applicable to development, redevelopment, and investment in public facilities, infrastructure, and utilities.

CCM 2.7.2

Evaluate the costs and benefits of adaptation alternatives in the design and siting of new infrastructure or the fortification or retrofitting of existing infrastructure.

CCM 2.7.3

Evaluate strategies after adoption and mapping to ensure the use of the most up-to-date data for vulnerability assessments in AAAs.

CCM 2.7.4

Evaluate findings from the Pinellas County Sea Level Rise and Storm Surge Vulnerability Assessment, Tampa Bay Climate Science Advisory Panel Report, or other similar assessments and consider implementing recommendations into the Comprehensive Plan or Community Development Code.

GOAL CCM 3

Ensure post-disaster redevelopment occurs in a manner that minimizes public and private vulnerability to future disasters.

OBJECTIVE CCM 3.1

Ensure that post-disaster redevelopment is governed by all applicable building, construction, and development codes and consider relocation to limit future damages and repetitive losses.

POLICIES

CCM 3.1.1

Allow for redevelopment of structures in AE and V Zones where damage is greater than 50% of the assessed value prior to damages, consistent with adopted densities or as-built densities at the time of storm damage in accordance with applicable building codes, the Community Development Code, and FEMA requirements.

CCM 3.1.2

Require that structures, where damages are greater than 50% of the assessed value, upgrade to reduce future damages by meeting current building codes, Community Development Code provisions, and FEMA requirements.

CCM 3.1.3

Consider declaring building moratoriums when 50% or more of the homes in the Coastal Storm Area have been destroyed to evaluate impacts and feasibility of redevelopment.

CCM 3.1.4

Establish criteria to limit future development or redevelopment in areas that experience repeated damage or properties that suffer repetitive losses.

CCM 3.1.5

Continue to review FEMA repetitive loss properties and consider acquiring such properties for removal to limit future losses.

OBJECTIVE CCM 3.2

Limit public expenditures to only necessary infrastructure needed to serve populations, and study the relocation and development of new infrastructure outside of flood-prone areas.

POLICIES

CCM 3.2.1

Continue to manage, repair or rebuild damaged critical infrastructure and facilities that are necessary to serve populations and minimize storm and flooding damages.

CCM 3.2.2

Evaluate relocating non-critical public infrastructure and facilities outside of flood-prone areas as part of redevelopment efforts.

GOAL CCM 4

Integrate sustainable and resilient techniques into land use, transportation, housing, and infrastructure planning, decision making, and development.

OBJECTIVE CCM 4.1

Evaluate and amend the Community Development Code to encourage the use of sustainable and resilient uses.

POLICIES

CCM 4.1.1

Consider allowing community gardens to locate within all zoning districts.

CCM 4.1.2

Evaluate amendments to the Community Development Code to allow for urban agriculture and food production activities.

CCM 4.1.3

Consider developing a pilot program for commercial composting.

CCM 4.1.4

Continue to support residential composting through the Clearwater Creates Compost online course.

CCM 4.1.5

Consider creating and implementing Energy Conservation Corridors, site design standards, and development incentives for projects within the Energy Conservation Corridors.

Butterfly Garden



OBJECTIVE CCM 4.2

Promote the use of sustainable and resilient building techniques and renewable energy sources in development, renovation, and rehabilitation.

POLICIES

CCM 4.2.1

Establish Green Building standards by using resources such as those available through Global Green USA.

CCM 4.2.2

Encourage affordable housing projects that are constructed consistent with US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) principles or the Florida Green Building Coalition's (FGBC) Green Land Development and Building Standards.

CCM 4.2.3

Transition city-owned operations to 100% renewable, zero-emission, clean energy electricity by 2040, and citywide operations by 2050.

CCM 4.2.4

Consider requiring energy-efficient appliances and fixtures for all new residential development and all renovations where investments are greater than 50% of the original structure value.

CCM 4.2.5

Consider creating and implementing development incentives for energy-efficient infill development or redevelopment within activity centers and commercial corridors.

CCM 4.2.6

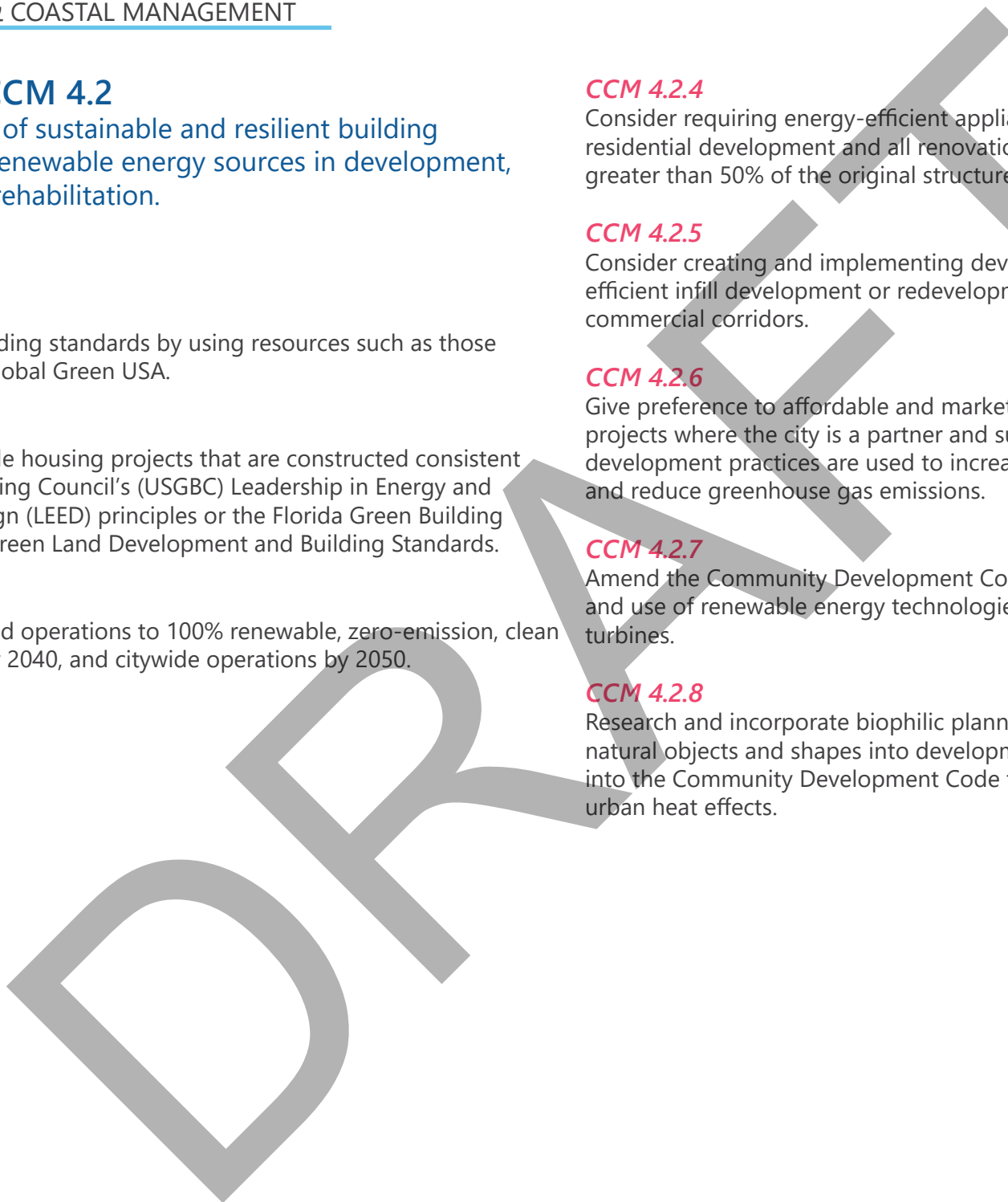
Give preference to affordable and market-rate residential development projects where the city is a partner and sustainable designs and land development practices are used to increase the supply of residential units and reduce greenhouse gas emissions.

CCM 4.2.7

Amend the Community Development Code to permit the installation and use of renewable energy technologies such as solar or scaled wind turbines.

CCM 4.2.8

Research and incorporate biophilic planning, the strategy of including natural objects and shapes into development, development standards into the Community Development Code to improve air quality and reduce urban heat effects.



OBJECTIVE CCM 4.3

Continue to implement and evaluate Clearwater Greenprint 2.0 to increase the city's resiliency and sustainability.

POLICIES

CCM 4.3.1

Transition the city's fleet into alternative fuel vehicles by 2040 as vehicles are replaced.

CCM 4.3.2

Evaluate the findings from the Solar Feasibility Study and implement solar installations on municipal buildings.

CCM 4.3.3

Continue to implement an energy management and conservation programs by reducing energy demand and maximizing efficiency in all city facilities and operations..

CCM 4.3.4

Encourage the restoration and reuse of buildings as an alternative to demolition.

CCM 4.3.5

Inventory and identify public and semi-public lands that would be suitable for food production pilot projects.

DRAFT

GOAL CCM 5

Educate the public on storm hazard-related risks, flood insurance, the natural environment, and sustainability initiatives and best practices.

OBJECTIVE CCM 5.1

Continue to conduct community outreach and education campaigns on flood risks, Community Rating System (CRS) score, recreational facilities, and sustainability initiatives best practices.

POLICIES

CCM 5.1.1

Continue to communicate about flood-related risks and hazards and conduct NFIP community workshops on the benefits of acquiring flood insurance.

CCM 5.1.2

Promote educational programs at parks and recreation facilities that deal with the natural environment and encourage the preservation of the natural environment.

CCM 5.1.3

Create and provide clear, credible, and compelling information on sustainability in a wide variety of venues and formats.

CCM 5.1.4

Continue to promote environmental education through various programs and communications channels including social media, websites, television, brochures, lectures, and other innovative methods.

CCM 5.1.5

Provide "green building information" to local area housing providers.