



Town of Surfside

Public Works Department

Dune Plan

SUMMARY

Understanding that the Town of Surfside is a coastal community that is vulnerable to tidal and atmospheric erosion, the Town takes a strong part in the responsible maintenance of the dune ecosystem. The Town's dunes system is a mile long located along the eastern coast which extends from 87th Street to 96th Street. On average, it is approximately 80 linear feet in width. Refer to **Exhibit A** - "*Dune Aerials*" for a full depiction of the Town's dune system. The Dune Plan has four parts which are as follows:

- Eradication
- Trimming
- Replanting
- Improvements

ERADICATION

The Town plans to remove all invasive species within the dune ecosystem. Removal is to include root removal in order to mitigate future growth. Refer to **Exhibit B** - "*Dune Resiliency Initiative*", which depicts in detail the various invasive species currently present within the Town's dune ecosystem.

TRIMMING

The Town will trim all sea grapes in a manner consistent with Florida Department of Environmental Protection (FDEP) guidelines and Florida Fish and Wild Life Conservation Commission (FWCC). Sea Grape Trimming Guidelines are found in **Exhibit C** - "*Sea Grape Trimming Guidelines*". The intent of the trimming is to remove lower canopy limbs in order to promote sea oat growth around the base of each sea grape. Seedlings that are a result of a main tree will be transplanted on the eastern-most in order to reinforce dune at the most vulnerable location to tidal impact. Refer to **Exhibit D** - "*Invasive Removal and Relocation of Sea grape Seedlings*".

REPLANTING

The Town will seek approval for the planting of native species as outlined **Exhibit B** - "*Dune Resiliency Initiative*". Replanting also includes relocating sea grape seedlings that are in congested pods to the east of the dune system. Areas where invasive species have been removed will be planted with sea oats.

IMPROVEMENTS

Even though the dune system serves as a green infrastructure to mitigate against natural hazards; it is also a recreation use area as it hosts the Town's Walking Path. The Town will seek to install minimally invasive lighting to assist pedestrian during evening hours as well as improvements to assist with washout of sand caused by rain erosion. Landscape beautification consistent with native dune species will also be explored.

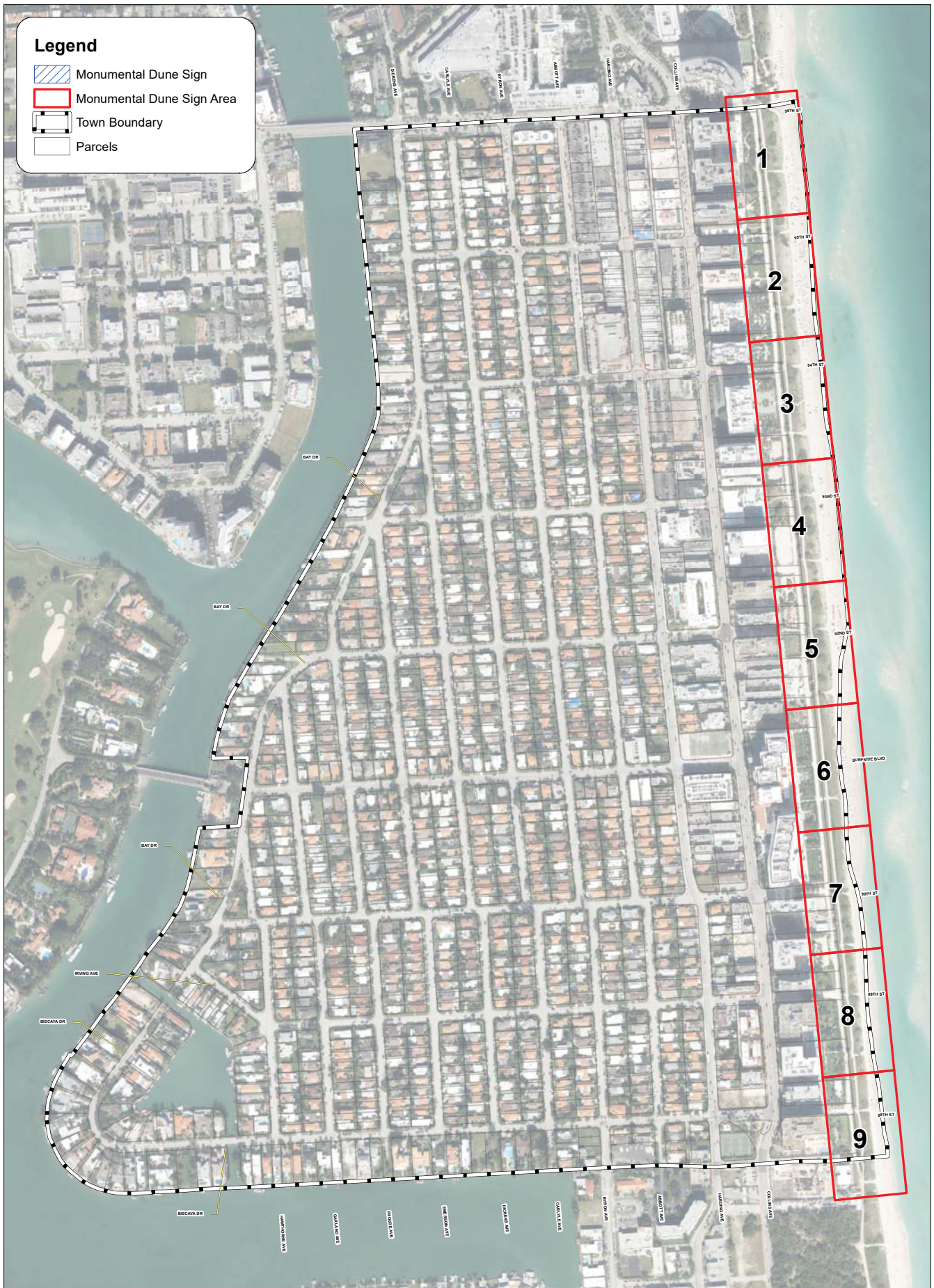


Town of Surfside
Public Works Department
Dune Plan

Exhibit A

Legend

-  Monumental Dune Sign
-  Monumental Dune Sign Area
-  Town Boundary
-  Parcels



Dune Map

Print Date: 7/28/2020



400

Feet

1 inch = 435 feet



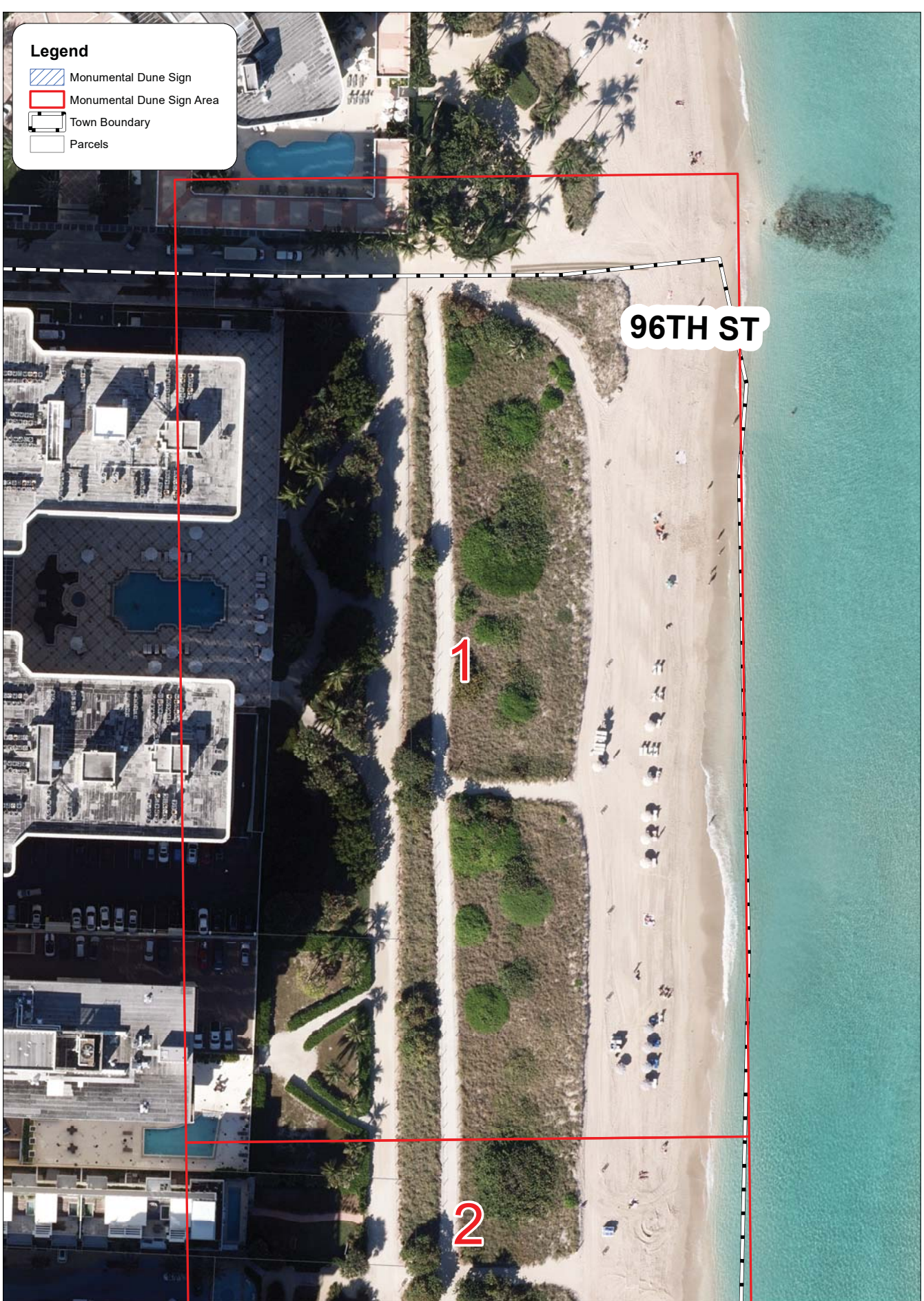
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Geographic Information Systems Services



Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS®

Legend

-  Monumental Dune Sign
-  Monumental Dune Sign Area
-  Town Boundary
-  Parcels



Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



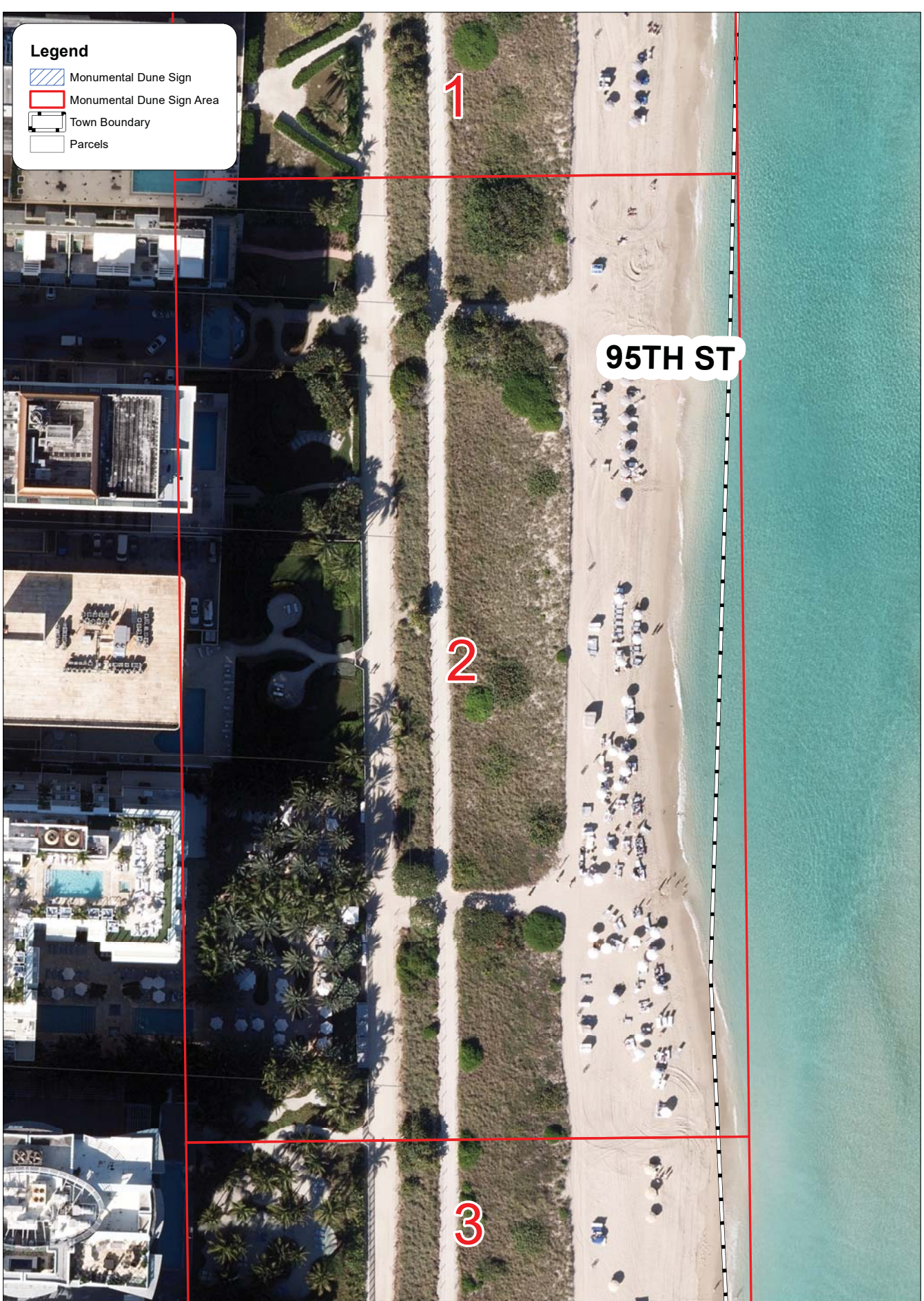
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EXCEPTIONAL SOLUTIONS

Legend

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-  Parcels



Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



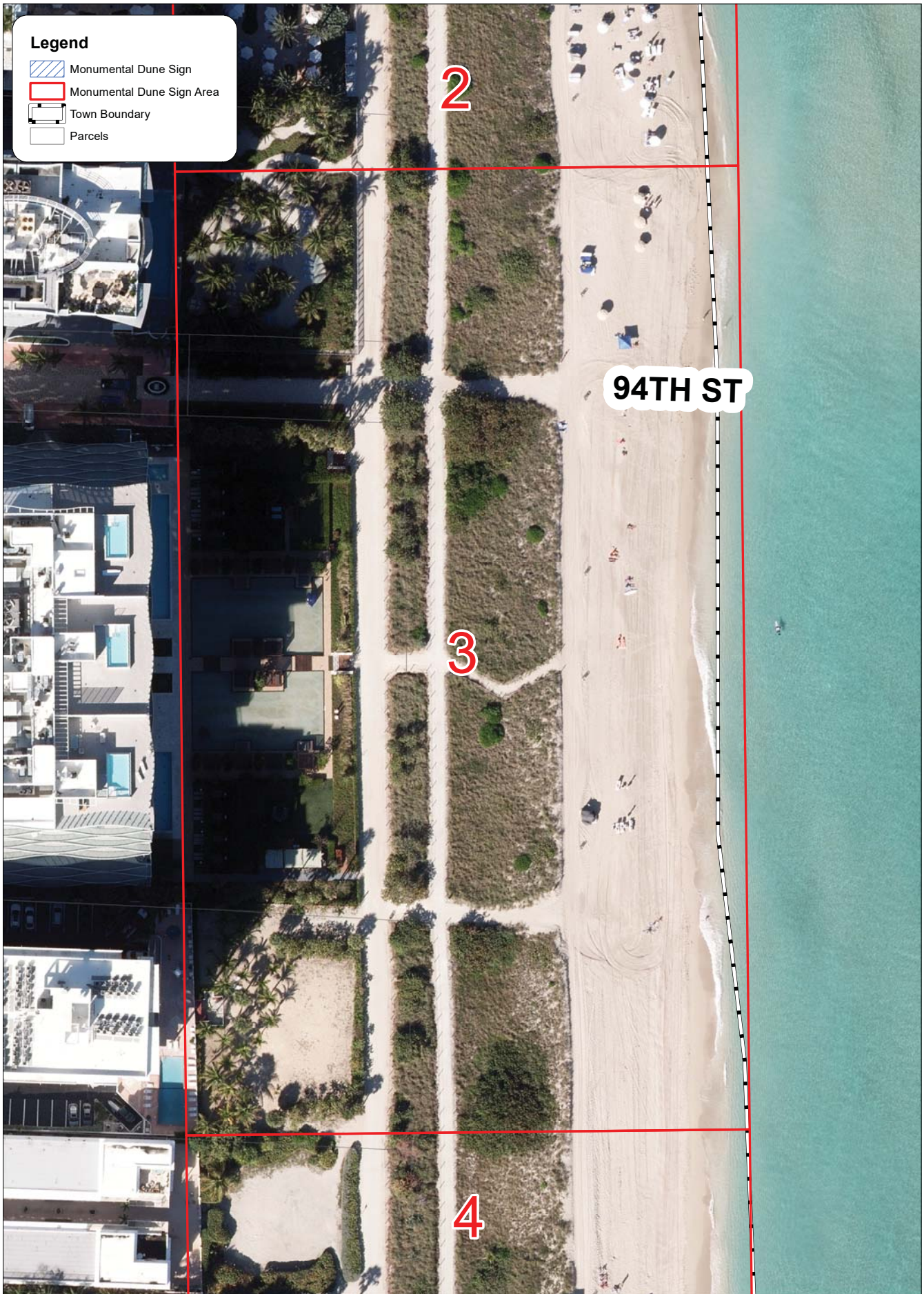
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EXCEPTIONAL SOLUTIONS™

Legend

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Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



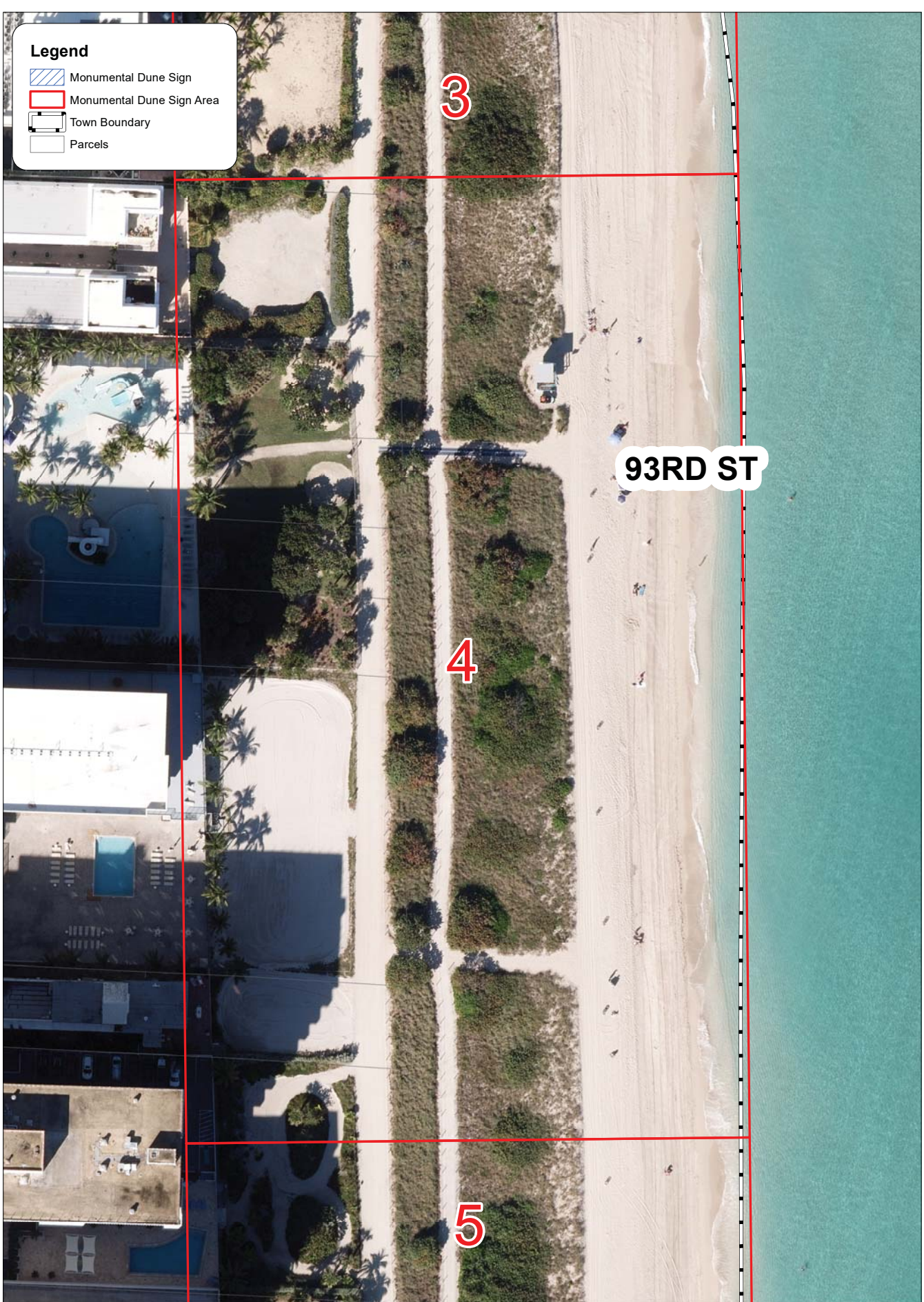
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EXCEPTIONAL SOLUTIONS™

Legend

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-  Monumental Dune Sign Area
-  Town Boundary
-  Parcels



Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



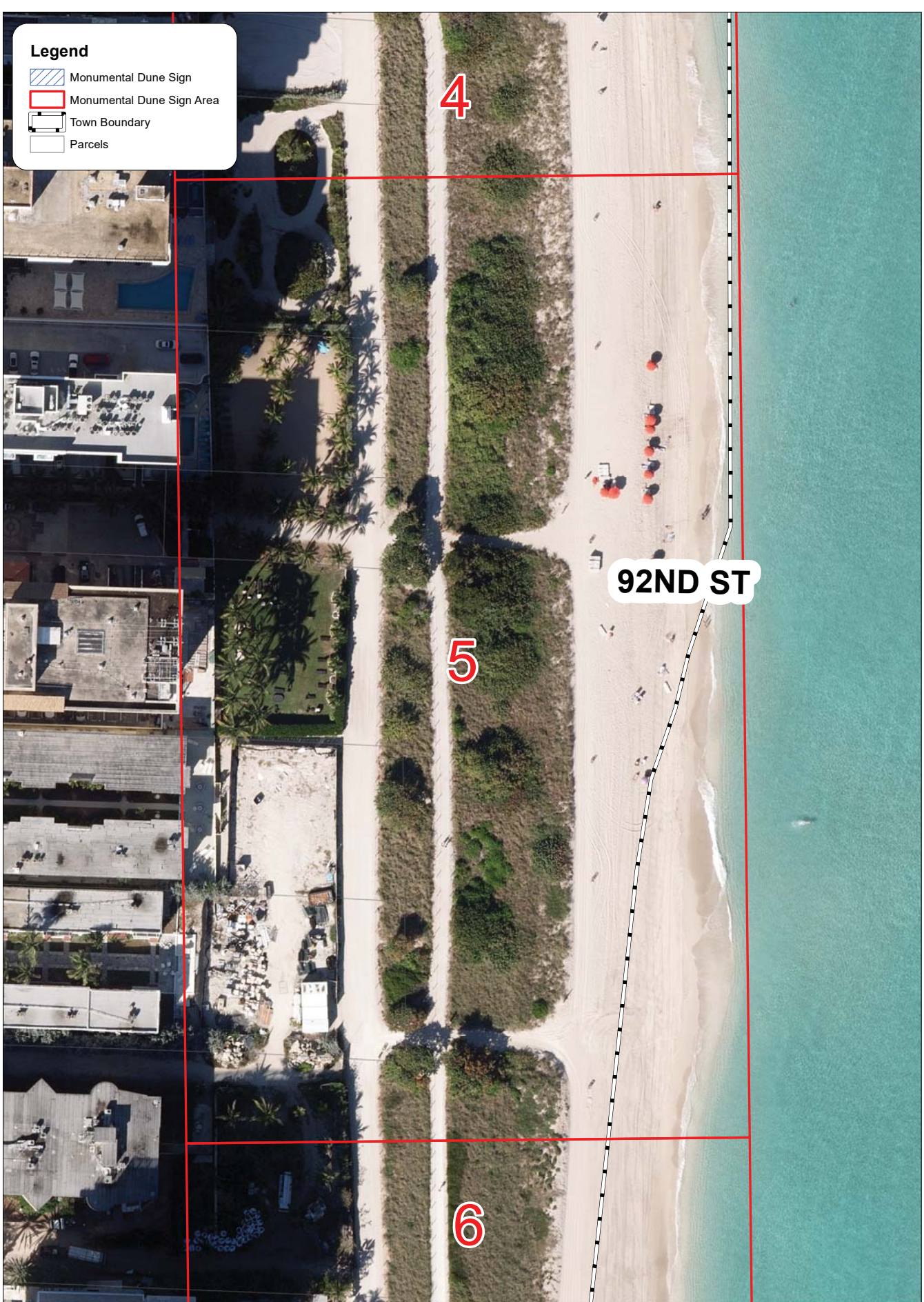
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Legend

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Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



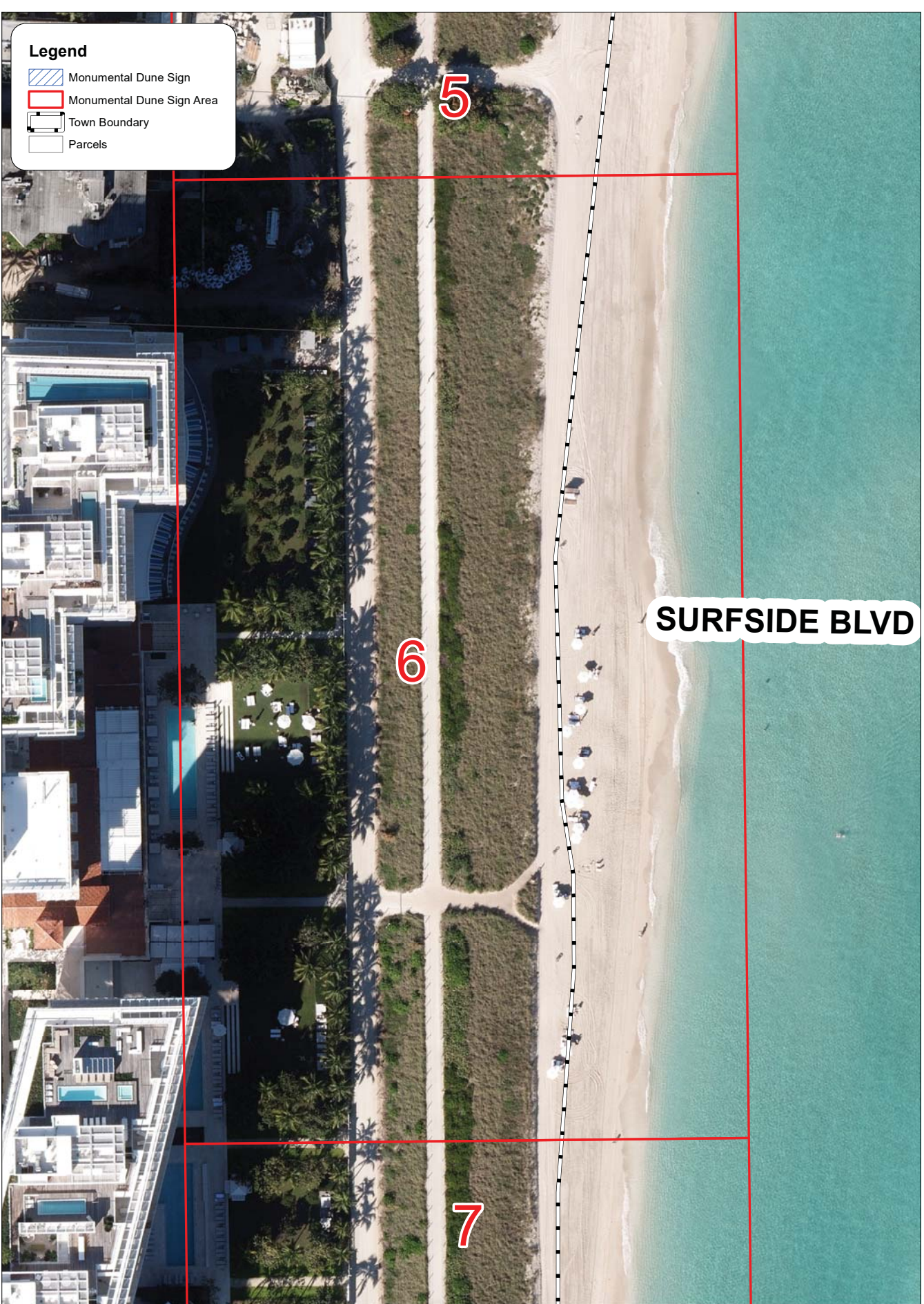
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-  Monumental Dune Sign Area
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Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



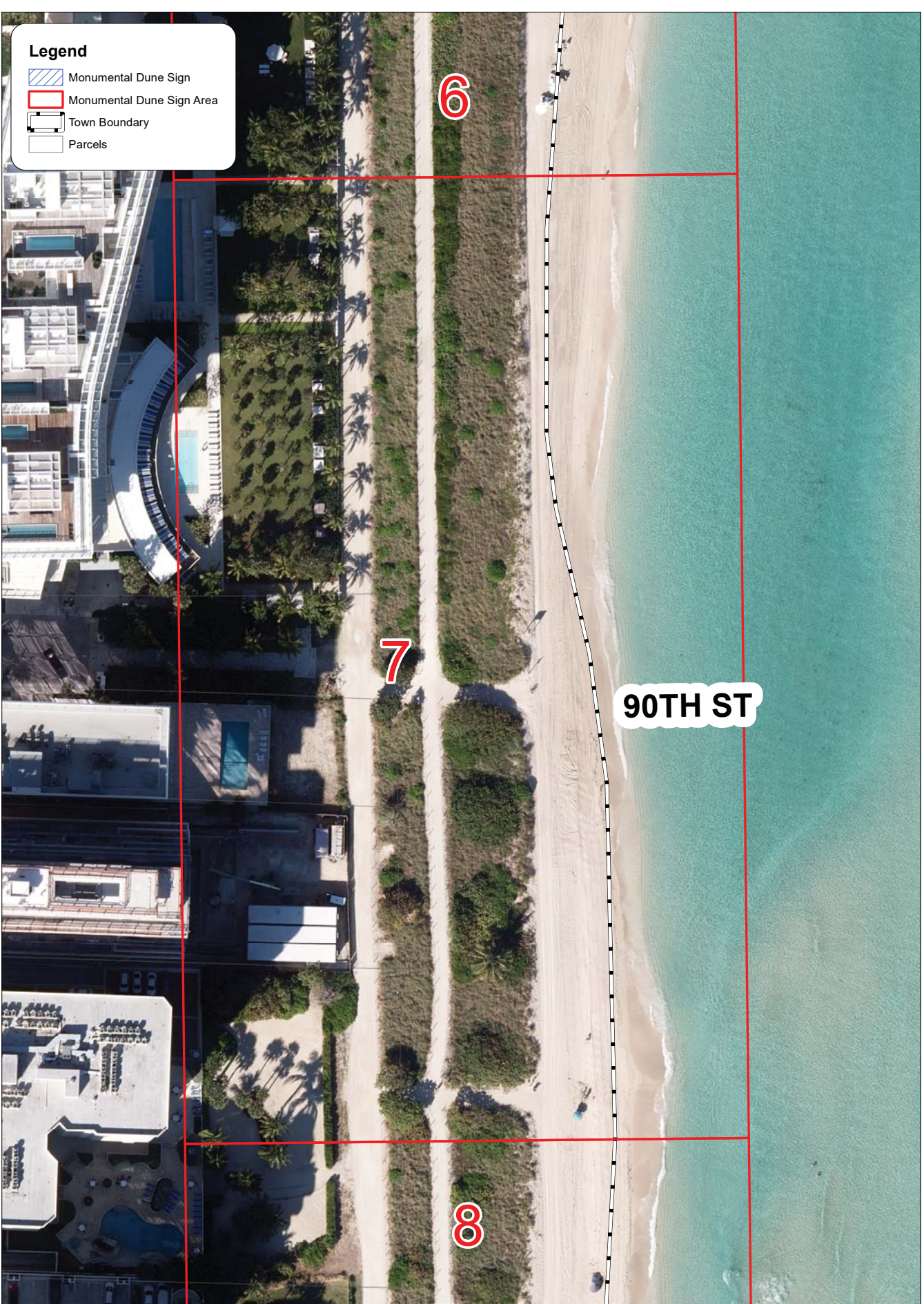
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Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



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Legend

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-  Monumental Dune Sign Area
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Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 55 feet



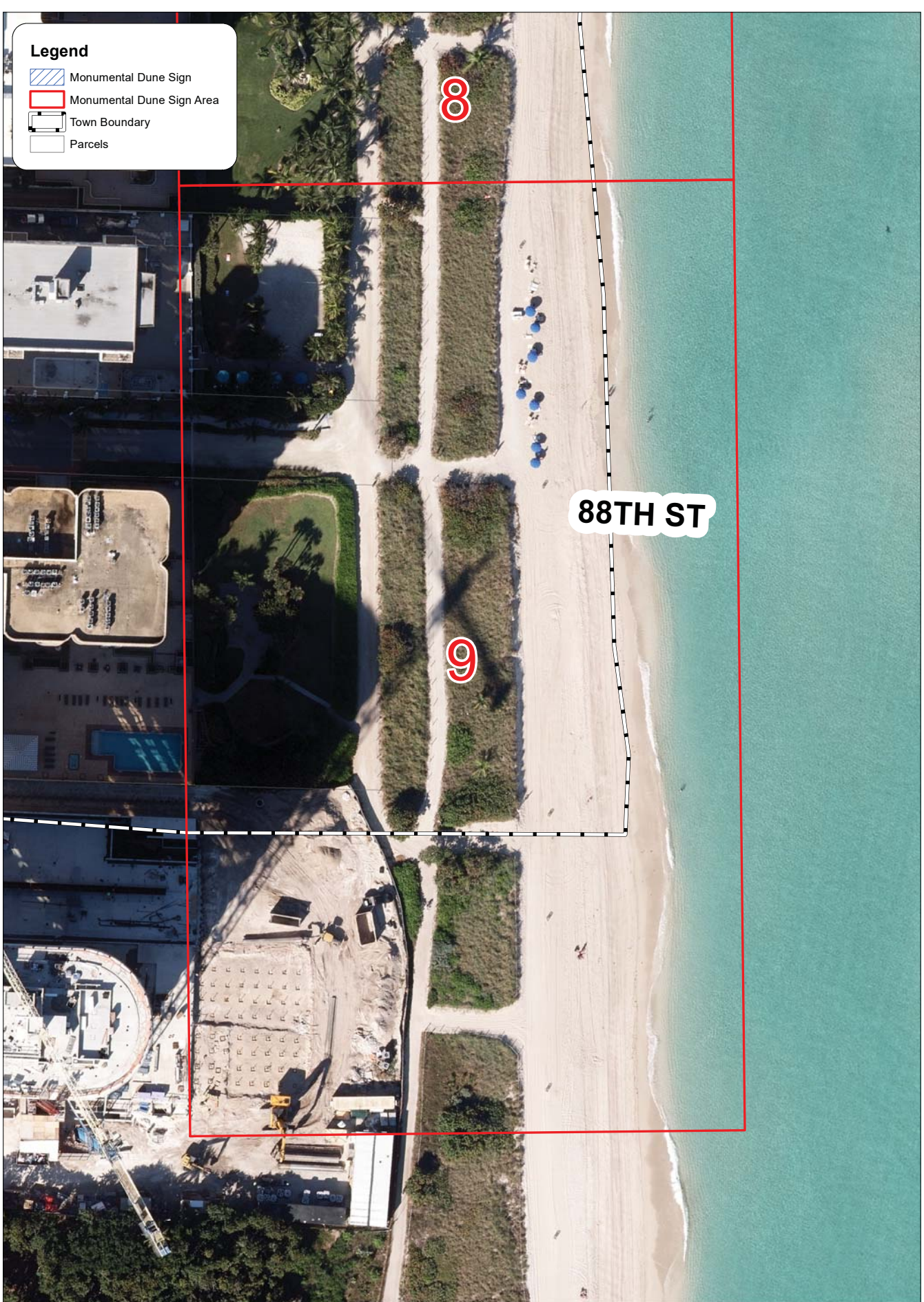
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Legend

-  Monumental Dune Sign
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-  Parcels



Dune MAP

Print Date: 7/28/2020



50

Feet

1 inch = 56 feet



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Town of Surfside
Public Works Department
Dune Plan

Exhibit B

TOWN OF SURFSIDE

Public Works Department

“Dune Resiliency Initiative”

May 6th 2021

9293 HARDING AVENUE,
SURFSIDE, FL 33154
PHONE: (305) 861-4863

Prepared By:



Public Works Department



OVERVIEW

The Town of Surfside is a coastal barrier island community that is one mile long and approximately half a mile wide. Its eastern coast is the Atlantic Ocean which is prone to natural disasters. As a mitigation strategy against storm surges, the Town has developed a barrier dune that is approximately one mile long by one hundred feet wide. The elevation of the barrier dune varies in sections but averages between 11-feet to 15-feet National Geodetic Vertical Datum (NGVD).

The dunes are landscaped with native species of plants that help maintain its integrity. The native species aid the dune ecosystem by securing the beach sand in order to minimize erosion caused by winds. The native species also assist with anchoring the dune in order to reinforce the ground from water erosion in the event of a storm surge of high tidal impacts.

Appendix A – “Dune Aerials” present the existing dune conditions as of 2020.

In order to preserve the longevity of the dunes and promote life and safety, the Public Works Department was tasked to implement a dune resiliency strategy in order to effectively remove invasive plant species, minimize canopy shading from current trees and promote visibility from emergency access road for emergency responders.

ACTION PLAN

Invasive Species Removal

Invasive plant species impede the growth of native plant species and limit visibility for safety reasons due to overgrowth. The following invasive species have been identified within the Town of Surfside dune system:

- Australian Pine (*Casuarina equisetifolia*)
- Scaevola (*Scaevola taccada*)
- Coin Vine (*Dalbergia ecastaphyllum*)
- Brazilian Peppers (*Schinus terebinthifolia*)

The Public Works Department will remove all invasive species, including root base in order to eliminate growth. When invasive species have been removed, the Town will install the following native plants in order to fill the void left behind:

- Sea Oat (*Uniola paniculate*) – Size: 3 to 5 gallons

Minimizing Canopy Shading from Current Native Species

Various native species have been identified in the dune system as follows:

- Sea grape (*Coccoloba uvifera*)



- Coconut Palm (*Cocos nucifera*)
- Cocoplum (*Chrysobalanus icaco*)
- Sea Oat (*Uniola paniculate*)
- Clusia (*Clusia rosea*)
- Beach Daisy (*Arctotheca populifolia*)

Even though these species are native, if not properly maintained, they can impede the growth of other native smaller species due to their tree canopy. Additionally, various of these species grow in hedge form that if not properly maintained, can limit the visibility required for life and safety response by first responders. **Table A – “Local Species Action Plan”** below presents a table of each native species, issue encountered with respective species and mitigation action plan:

SPECIES	ISSUE ENCOUNTERED	MITIGATION ACTION PLAN
Sea grape (<i>Coccoloba uvifera</i>)	Canopy growth shading limiting small plant growth in canopy radius	• Remove seedling clones less than 5 feet in height to avoid group development. • Trim existing trees greater than 5 feet using Florida Department of Environmental Protection (FDEP) Sea Grape Trimming Guidelines (Refer to Appendix B – “Sea Grape Trimming Guidelines”). • Raise canopy of trees greater than 6 feet by trimming lower limbs. No more than 25% to 33% of limbs to be removed.
Coconut Palm (<i>Cocos nucifera</i>)	Palm frond droppings obstruct groundcover growth	• Trim palm fronds as needed before droppings occur.
Cocoplum (<i>Chrysobalanus icaco</i>)	Group hedges growing tall and obstruct view for life and safety purposes	• Trim hedge lines per FDEP approved guidelines. Trimming to occur to allow for visibility for first responders. • Hedges can be trimmed up to 4 feet but no more than 25% to 33% of hedge branches



SPECIES	ISSUE ENCOUNTERED	MITIGATION ACTION PLAN
Sea Oat (<i>Uniola paniculate</i>)	Growth limited by invasive species and canopy shading of larger trees	- Remove invasive species and replant as a substitute sea oat. - Remove canopies creating shade and allow for sea oat cloning to occur.
Clusia (<i>Clusia rosea</i>)	Group hedges growing tall and obstructing view for life and safety purposes	- Trim hedge lines per FDEP approved guidelines. Trimming to occur to allow for visibility for first responders. - Hedges can be trimmed up to 4 feet but no more than 25% to 33% of hedge branches.
Beach Daisy (<i>Artotheca Popuulifolia</i>)	Growth limited by invasive species and canopy shading of larger trees	Remove invasive species and replant as a substitute sea oat. Remove canopies creating shade and allow for sea oat cloning to occur.

Table A – “Local Species Action Plan”

RESOURCES AND IMPACT

The Public Works Department will perform the following items internally using existing resources:

- Invasive Species removal
 - Australian Pine (*Casuarina equisetifolia*)
 - Scaevola (*Scaevola taccada*)
 - Coin Vine (*Dalbergia ecastaphyllum*)
 - Brazilian Peppers (*Schinus terebinthifolia*)
- Hedge Trimming
 - Cocoplum (*Chrysobalanus icaco*)
- Native Tree Removal
 - Sea grape (*Coccoloba uvifera*) less than 5 feet in height in clusters
 - Coconut Palm (*Cocos nucifera*) frown trimming



The Public Works Department will seek outside resource assistance with the following items:

- Sea grape (*Coccoloba uvifera*) trimming:
 - Bottom branches removal for canopy height increase
 - Top branches removal for visibility
- Planting native species
 - Sea Oat (*Uniola Paniculate*) Size: 3 to 5 gallons

The removal of invasive species is encouraged by the Florida Department of Environmental Protection (FDEP) and does not require permitting. The removal of native species does not require permitting if the thresholds permitted are maintained. The Town will notify FDEP of this plan and submit the necessary permits required to allow for the proceeding of work.



Town of Surfside
Public Works Department
Dune Plan

Exhibit C

Sea Grape Trimming Guidelines

There are a small number of plant species that can endure the extreme conditions encountered along our state's coastline. Dune species such as the Sea grapes thrive in this harsh environment. Sea grape trees and shrubs act as a continuous sand trap. The accumulation of sand by the leaves, limbs and stalks play a major role in the construction of the beach and dune system. Without the stabilizing and accreting effects of Sea grapes and other salt-tolerant plant species, the beach and dune system becomes more vulnerable to erosion. To put it simply, sand stored in the dunes provides protection to homes and other structures from the effects of coastal storms.

The Florida Legislature recognized the importance of coastal plant species. Therefore Florida law states that no person, firm, corporation, or governmental agency shall damage or cause to be damaged sand dunes or the vegetation growing on the dune system (subparagraph 161.053(2)(a), Florida Statutes). Consequently, it is the policy of the Department of Environmental Protection to protect native salt-tolerant vegetation and endangered plant communities. Property owners or their agents proposing to alter the native vegetation seaward of the Department's Coastal Construction Control Line must apply for a permit if the alteration can be expected to damage the plants.

Damage to vegetation refers to the trampling, crushing, breaking, digging up, or excessive cutting of roots, stems or branches of native salt tolerant plants naturally occurring on-site or planted for dune restoration. Excessive cutting means the removal of branches, stems and leaves in excess of the Department trimming guidelines for sea grape or the standards published in ANSI A300 Part 1: Tree, Shrub and other Woody Plant Maintenance - Standard Practices, Pruning. Damage to beach and dune vegetation will be avoided, minimized or mitigated through the permit process.

Vegetation maintenance that does not damage plants as defined above, including trimming, shearing, pruning, dead heading and other accepted horticultural practices is exempt from permit requirements. An exemption from the permitting requirements of the Department of Environmental Protection does not shield the property owner from enforcement action taken by local, state, or federal agencies. Furthermore, proper horticultural practices must be followed to ensure that the plants are not damaged or destroyed. For more information you may contact the Bureau of Beaches and Coastal Systems regulatory program at 850/487-4475.

Persons intending to maintain native vegetation seaward of the Coastal Construction Control Line must consider the impacts to sea turtles. Removal of beachfront vegetation increases the potential for disorientation and subsequent injury or mortality of hatchling sea turtles, which are attracted to light. Pruning or trimming removes vegetation that often prevents lights from shining on the beach and thus protects sea turtle nesting habitat. Vegetation maintenance that increases lighting of the beach must be in compliance with Chapter 370.12, Florida Statutes, "Marine Turtle Protection Act." The property owner must evaluate existing or potential site lighting and take appropriate measures to eliminate the potential for increased light cast on the nesting beach. For information on lighting issues see the attached information on "[Sea Grape Trimming and Sea Turtles](#)," or visit the Florida Fish and Wildlife Conservation Commission website. You may also contact the sea turtle conservation program at 850/922-4330.

Sea turtle mortality resulting from increased illumination is a violation of Chapter 370.12, Florida Statutes, and the Federal Endangered Species Act of 1973. Such a violation could subject the responsible party to prosecution by both the Department and the U.S. Fish and Wildlife Service with fines up to \$10,000.



SEA GRAPE (COCCOLOBA UVIFERA):

Is a native, salt-tolerant plant, which is an important component of the beach and dune system throughout its range. Fruit of the sea grape is a berry, which grows in grape-like clusters. The fruit is a source of food for a number of native birds and mammals. The leathery, broad leaves of

sea grape may grow to be 10 inches wide. Throughout its range, the sea grape is important to owners of oceanfront property. The large round leaves trap windblown sand and thereby help to build dunes that protect upland structures. Furthermore, thick stands of sea grape slow storm induced erosion of dunes.

Exemption Criteria: The Department will exempt maintenance of sea grapes seaward of the Coastal Construction Control Line from the permitting requirements of Chapter 161, Florida Statutes, when the maintenance will not damage or destroy the plant. The Department has determined that the maintenance will not destroy the plant when following the guidelines listed below:

Shrub(s):

Less than 72" in height.

- No more than one third of the leaf mass of each plant may be removed in a single pruning event or in a single year.

Tree(s): 6' in height, or more.

- No more than one third reduction in the height of each tree annually,
- Provided there is no more than one third of the leaf mass removed, annually.
- Pruning shall not result in plant being reduced to less than six feet in height.

Advisory Notes:

THIS DOES NOT PRECLUDE LEAF AND STEM TIP SHEARING.
REMOVAL OF DEAD, BROKEN AND DISEASED LIMBS IS NOT INCLUDED IN ESTIMATES.
CANOPY REDUCTION GRATER THAN 1/3 OF THE HEIGHT OF THE PLANT WILL REQUIRE A PERMIT.

- Maintenance of sea grapes, in accordance with the conditions described above, and not in conflict with the standards published in ANSI A300 Part 1: Tree, Shrub and other Woody Plant Maintenance - Standard Practices, Pruning, are exempt from the permitting requirements of Chapter 161, Florida Statutes, for any number of consecutive years.
- Proposed trimming that will result in reducing the plant to a height of less than 42 inches for shrubs and less than six feet for trees, or completely destroy it, will not be exempt from the permitting process. The Department will consider the site-specific information, including the possible adverse impacts to the beach and dune system from the activity, as part of its determination of whether or not to permit the proposed activity.



In addition, maintenance of sea grapes must be in compliance with Chapter 370.12, Florida Statutes, "Marine Turtle Protection Act" and should not result in additional exposure of salt-sensitive coastal hammock vegetation to increased salt spray.



SEA GRAPE TRIMMING AND SEA TURTLES

What are sea grapes and how do I know if I have them?

Sea Grape, *Coccoloba uvifera* is a remarkable native, salt-tolerant species of plant found along many of Florida's beaches. Plants may appear as low spreading bushes or tall continuous hedges along the sand dunes. This plant can be identified by its thick circular leaves 8" to 10" in diameter and its grape-like clusters of fruit. This fruit is consumed by a number of native birds and mammals, while the protective canopy provides habitat for animals including songbirds, lizards, gopher tortoise and beach mice.

In addition to providing habitat, sea grape helps to stabilize sand dunes and to protect upland structures from storm-induced erosion. In fact, this plant has been deemed important enough to protect under Florida Statute.

Does Florida really have sea turtles?

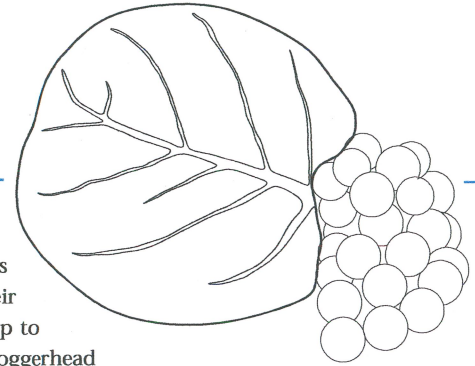
Yes. In fact, with its miles of warm sandy beaches, Florida is the single most important state for sea turtle nesting. Nesting season occurs from May 1st to October 31st throughout most of the state. From Brevard County to Broward County along the Atlantic coast, the nesting season extends from March 1st through October 31st.

Sea turtles are large air-breathing reptiles with paddle-shaped foreflippers and a number of adaptations that make them perfectly suited for a life at sea. These amazing animals once roamed the world's oceans in the millions with a surprising diversity of species. Today, only seven species remain worldwide. Five of these, the leatherback, green, loggerhead, Kemp's ridley and hawksbill, can be found in Florida's coastal waters. The first three regularly nest on Florida beaches. Sadly, all five species are listed as threatened or endangered.

It has only been in the last few centuries that demand for sea turtle meat, eggs, shell, leather and oil drastically reduced their numbers. Additional declines have continued from drowning in shrimp trawls, captures on long-lines, pollution and non-degradable debris in the ocean. One of the most devastating impacts to marine turtles has come from artificial light pollution onto nesting beaches.

Although they may live their entire life at sea, marine turtles must leave the relative safety of the ocean to nest. Usually, under cover of darkness, a female will drag her body from the ocean across the beach where she will dig a nest and deposit roughly 100 leathery eggs in the warm sand. After about 60 days of incubation, the eggs will

hatch and the hatchlings will make their way as a group to the sea. For loggerhead turtles, it may be 15 to 20 years before one of these hatchlings returns to her natal beach to nest for the first time.



How can trimming my sea grapes affect sea turtles?

In a word, light. Artificial lighting trespassing onto sea turtle nesting beaches affects sea turtles in two ways. First, artificial lighting deters adult females from emerging from the surf to nest. Two studies conducted in Florida clearly demonstrated dramatic reductions in nesting attempts by loggerhead turtles where artificial lighting was introduced. This included effects by lighted piers and roadways close to beaches.

Secondly, hatchling turtles find their way to the ocean by orienting toward the brightest horizon. On a natural beach, this is the horizon over the ocean. The dark dune silhouette behind them keeps them from heading in the wrong direction. Hatchling turtles are highly sensitive to even minute quantities of short-wavelength or white light and will orient toward the brightest direction.

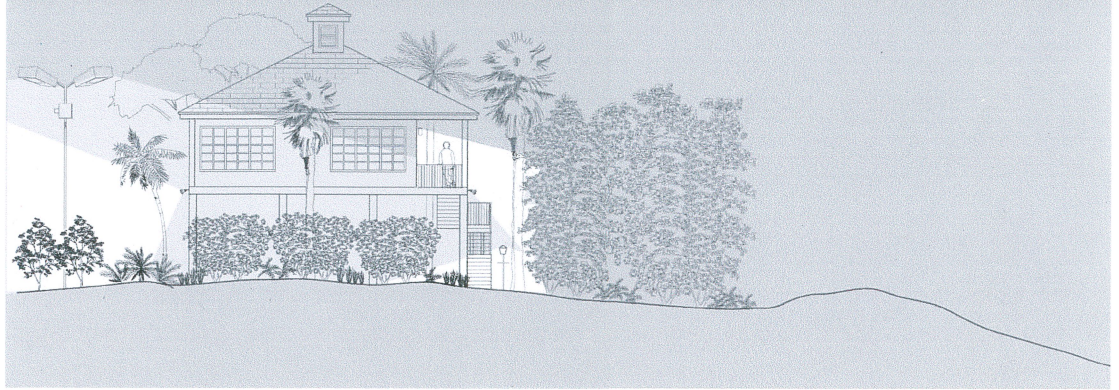
We don't often think of light as pollution. Yet when artificial light is introduced into this critical nesting habitat, the effects can be disastrous. Between 20,000 to 30,000 hatchlings disorient to artificial lights each year. Hatchlings that orient towards a streetlight, condominium light or residential porchlight usually die from exhaustion, dehydration, predation or more direct causes such as being run over by cars. Any steps taken to minimize this light trespass and direct the light only where it is needed will help protect sea turtles and restore nesting beaches.

Throughout the state, stands of sea grape act as a natural vegetative barrier blocking artificial light from nesting beaches and minimizing upland glow. Trimming or removal of this vegetative barrier can increase illumination levels on the beach and deter nesting or disorient hatchlings. This is considered interference with the normal nesting behavior of threatened and endangered species and can expose the property owner to potential fines or imprisonment under the Endangered Species Act (1973) and Florida Statutes 161 and 370.12. The following pages illustrate the best ways to minimize potential light trespass.



SEA GRAPE TRIMMING GUIDELINES

BEFORE SEA GRAPE TRIMMING



This diagram depicts a beach house with several styles of exterior lighting. These lights are shielded from the beach by a large stand of sea grape, *Coccoloba uvifera*. The homeowner would like to trim this stand of sea grape to improve the view

from the balcony but is concerned about light trespass onto a sea turtle nesting beach and potential liability should these lights cause the disorientation and deaths of protected sea turtles.

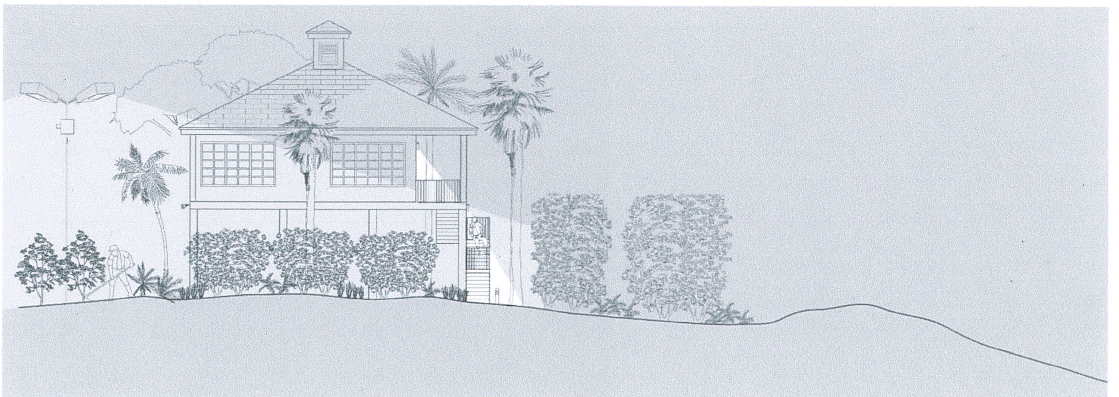
BAD SEA GRAPE TRIMMING



Here, the homeowner has over trimmed the sea grape stand. Although the homeowner now has a better view of the ocean, light pollution now shines onto the nesting beach disrupting normal sea turtle nesting behavior. Of particular concern are the poor light fixtures, plus car headlights and now the street-

light are also visible from the beach. This unpermitted trimming damages the sea grape stand, disrupts sea turtle nesting and exposes the homeowner to potential legal action including substantial fines.

APPROPRIATE SEA GRAPE TRIMMING



The trimmed seagrape stand now allows a view of the ocean from the balcony. Realizing this would make the balcony light visible from the beach, the homeowner has replaced the jelly-jar light with well shielded canister downlight equipped with a 25watt yellow "bug" bulb. The homeowner has also replaced

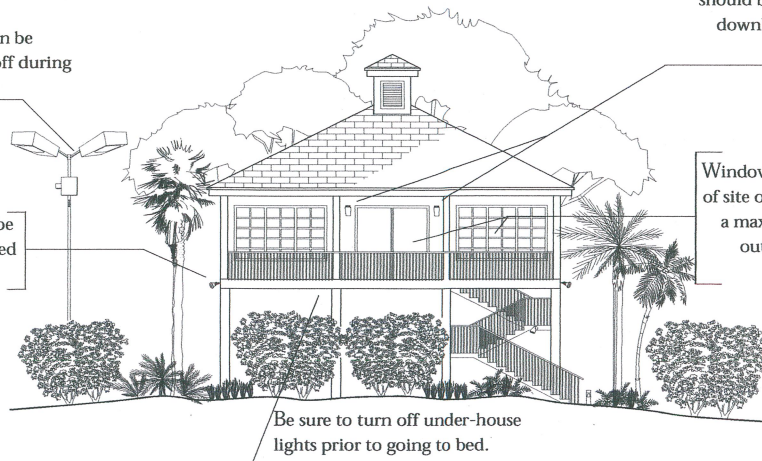
the floodlight on the beachside of the house with another canister downlight and bollard fixture with downcast horizontal louvers to illuminate the stairs for safety. Even after trimming, the homeowner has actually reduced illumination visible to the nesting beach.

REPLACING BAD LIGHT FIXTURES

A TYPICAL BEACH HOUSE AS SEEN FROM THE OCEAN

Many streetlights can be shielded or turned off during nesting season.

Floodlights should be replaced with shielded downlights.



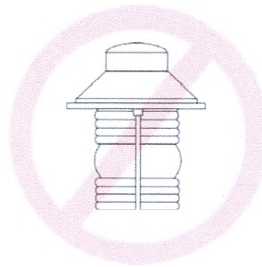
Unshielded balcony lights should be replaced with canister downlights with yellow "bug" lamps.

Windows and doors within line of site of the beach should have a maximum of 45% inside to outside light transmittance window tinting.

This diagram depicts a typical beach house with several styles of exterior light fixtures. These fixtures are inappropriate for use near sea turtle nesting beaches and should be replaced with shielded, downward directed lights. When correcting problem light fixtures, don't forget about your interior lights. Windows within line of site of the beach should be

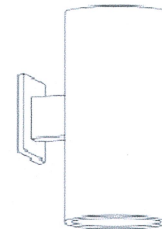
tinted with 45% inside to outside light transmittance film. Try to make it a habit to keep your window blinds closed at night during sea turtle nesting season (May 1st through October 31st) through most of the state and (March 1st through October 31st) from Brevard through Broward County on the Atlantic coast.

REPLACE POORLY SHIELDED LIGHTS PRIOR TO TRIMMING VEGETATION



"Jelly-Jar" Balcony Lights

Inexpensive unshielded balcony lights like the one shown above are visible up and down nesting beaches and cause problems for sea turtles every summer. It is not uncommon to see these poorly designed \$3 and \$4 fixtures on homes costing between \$250,000 and \$500,000.



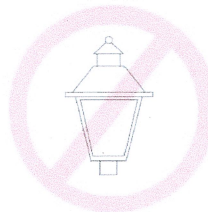
Canister Downlights

The best light fixture for beachfront property is the canister downlight using a 25watt to 40watt yellow "bug" lamp. Excellent for human safety minimum glare, these lights allow almost no light trespass to occur.

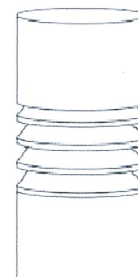
REPLACE FLOODLIGHTS AND UNSHIELDED FIXTURES WITH WALKWAY AND PATH LIGHTING



Floodlights



Carriage Lamps



Bollard Fixture

These unshielded exterior lights are poorly suited for use near sea turtle nesting beaches. These light fixtures contribute to light trespass onto neighbor's property as well as the beach.

This bollard fixture is equipped with horizontal downcast louvers. This is an excellent fixture for illuminating pathways and landscaping. Specified with long wavelength "yellow" lamps, these lights reduce glare and actually improve night vision.



Interim Sea Grape and Saw Palmetto Pruning Guidelines

Native salt resistant vegetation helps to preserve and build beaches and dunes. The root systems of plants retard erosion of sand while leaves, limbs and stalks act as collectors of sand to build the dunes and beaches. Without the stabilizing and accreting effects of vegetation, dunes will be eroded. Salt-resistant vegetation is therefore essential to maintain a viable beach and dune system which provides protection to coastal structures and property from storm damage.

Therefore, it is a policy of the Department of Environmental Protection to "protect native salt-resistant vegetation and endangered plant communities" (62B-33.005(8), Florida Administrative Code). Individuals may apply for a permit to conduct landscaping activities seaward of the Coastal Construction Control Line. However, the Department's policy to protect native salt resistant vegetation will be applied during the permit review process.

Pruning of sea grapes and saw palmetto, in accordance with the attached species specific guidelines, may be exempt from the Department's permitting requirements. However, to be considered exempt, a property owner must provide reasonable assurance to the Department that the maintenance activities will not harm the vegetation or dune system.

An exemption from the permitting requirements of the Bureau of Beaches and Coastal Systems does not shield the property owner from enforcement action which may be taken by local, state, or federal agencies. All local permitting requirements must be satisfied. Furthermore, proper horticultural practices must be followed to ensure that the plants are not damaged or destroyed.

Property owners who wish to prune seagrasses or saw palmetto seaward of the Coastal Construction Control Line must consider the impacts to marine turtles. Potential for disorientation and subsequent injury or mortality of hatchling marine turtles exists due to increased illumination of the nesting beach as a result of pruning. The property owner must evaluate existing or proposed site lighting and take appropriate measures to eliminate potential illumination of the nesting beach. No landscaping activities or pruning shall be permitted if the activities will result in increased illumination of the beach which has the potential to cause disorientation of marine turtles.

Marine turtle mortality resulting from increased illumination shall be considered a violation of Chapter 370.12, Florida Statutes, and the Federal Endangered Species Act of 1973. Such a violation could subject the responsible party to prosecution by both the Department and the U.S. Fish and Wildlife Service with fines up to \$10,000.

Sea Grape (*Coccoloba uvifera*)

Sea grape is a native, salt-resistant plant which is an important component of the beach and dune system throughout its range. Fruit of the sea grape is a berry which grows in grape-like clusters. The fruit is a source of food for a number of native birds and mammals. The leathery, broad leaves of sea grape may grow to be 10 inches wide. The leaves protect sensitive understory plants from lethal salt spray. Throughout its range, sea grape is important to owners of ocean front property. The large round leaves trap windblown sand and thereby help to build dunes that protect upland structures. Sea grape leaves also protect structures from the destructive forces of windblown salt. Furthermore, thick stands of sea grape slow storm induced erosion of dunes.

The Department will exempt trimming of sea grapes seaward of the Coastal Construction Control Line from the stringent permitting requirements of Chapter 161, Florida Statutes, when the trimming will not damage or destroy the plant. In order to ensure that the trimming will not destroy the plant the following guidelines shall be followed:

- I. No more than one-third of the height of a tree and no more than one-third of the total leaf surface area of a tree may be removed in a single pruning event or in a single year.
- II. The trimming techniques and timing should be in accordance with accepted horticultural practices (see the attached Crown Reduction Pruning Standards).

Trimming of sea grapes, in accordance with the conditions described in the preceding paragraph, may be exempt from the permitting requirements of Chapter 161, Florida Statutes, for any number of consecutive years. However, trimming of sea grapes to heights of less than six (6) feet will not be exempt from the permitting process.

In instances where the proposed trimming will reduce the plant to a height of less than 6 feet or completely destroy it, the applicant will be required to submit an application for a permit. The Department will consider the site specific information, including the possible adverse impacts to the beach and dune system from the activity, as part of its determination of whether or not to permit the proposed activity.

Trimming of sea grapes will not be exempt from the permitting process or permitted if the trimming results in additional lights being visible from the beach or exposure of salt-sensitive coastal hammock vegetation to increased salt spray.

Dead leaves and limbs should not be removed unless they are creating a safety hazard because they protect sensitive understory plants and new growth from salt spray.

Saw Palmetto (*Serenoa repens*)

Saw palmetto is an important plant throughout the southeastern United States. This native, salt resistant shrub provides food and cover for native wildlife.

Trimming of leaves of saw palmetto is exempt from the permitting requirements of Chapter 161, Florida Statutes. However, trimming shall be limited to one event per year.

Botanists refer to the "cabbage" or "heart of palm" as the apical meristem. The apical meristem is located at the tip of the trunk and is responsible for plant growth. Unlike many woody plant species, when the apical meristem is removed from a saw palmetto the plant dies. Because trimming of the trunk of saw palmetto removes the apical meristem and thereby destroys the plant, this type of trimming is not exempt from the stringent permitting requirements of Chapter 161, Florida Statutes.



Town of Surfside
Public Works Department
Dune Plan

EXHIBIT D

