

Padre/Mustang Island Mobility

Existing Conditions Memorandum



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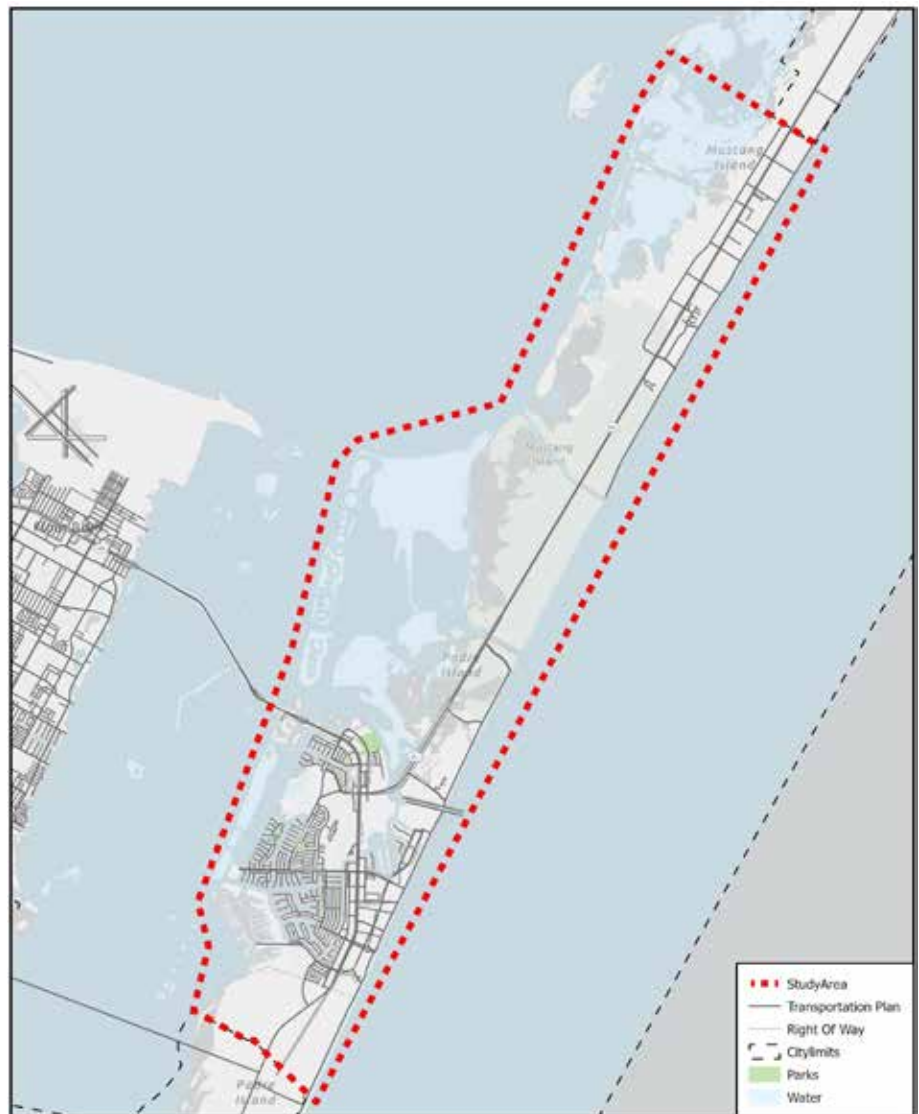
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1

STUDY INTRODUCTION

The 2021 Padre/Mustang Island Area Development Plan established the goal to “Promote tourist-oriented development east of State Highway 361/Park Road 22 and between Zahn Rd. and Whitecap Blvd. by providing public and private amenities to make the area more attractive and ‘people-friendly’. These amenities should support a multimodal transportation system (pedestrian, bicycle, vehicular, golf cart, and watercraft) and uniquely attractive developments, both public and private, with facilities using the highest quality design and materials”. This study is furthering the initiative by assessing the current conditions of Padre/ Mustang Island (Study Area), evaluating recommendations from existing plans, gathering feedback on desired enhancements, and creating recommendations for a comprehensive multimodal network for the area.

Figure 1: Padre/Mustang Island Study Area

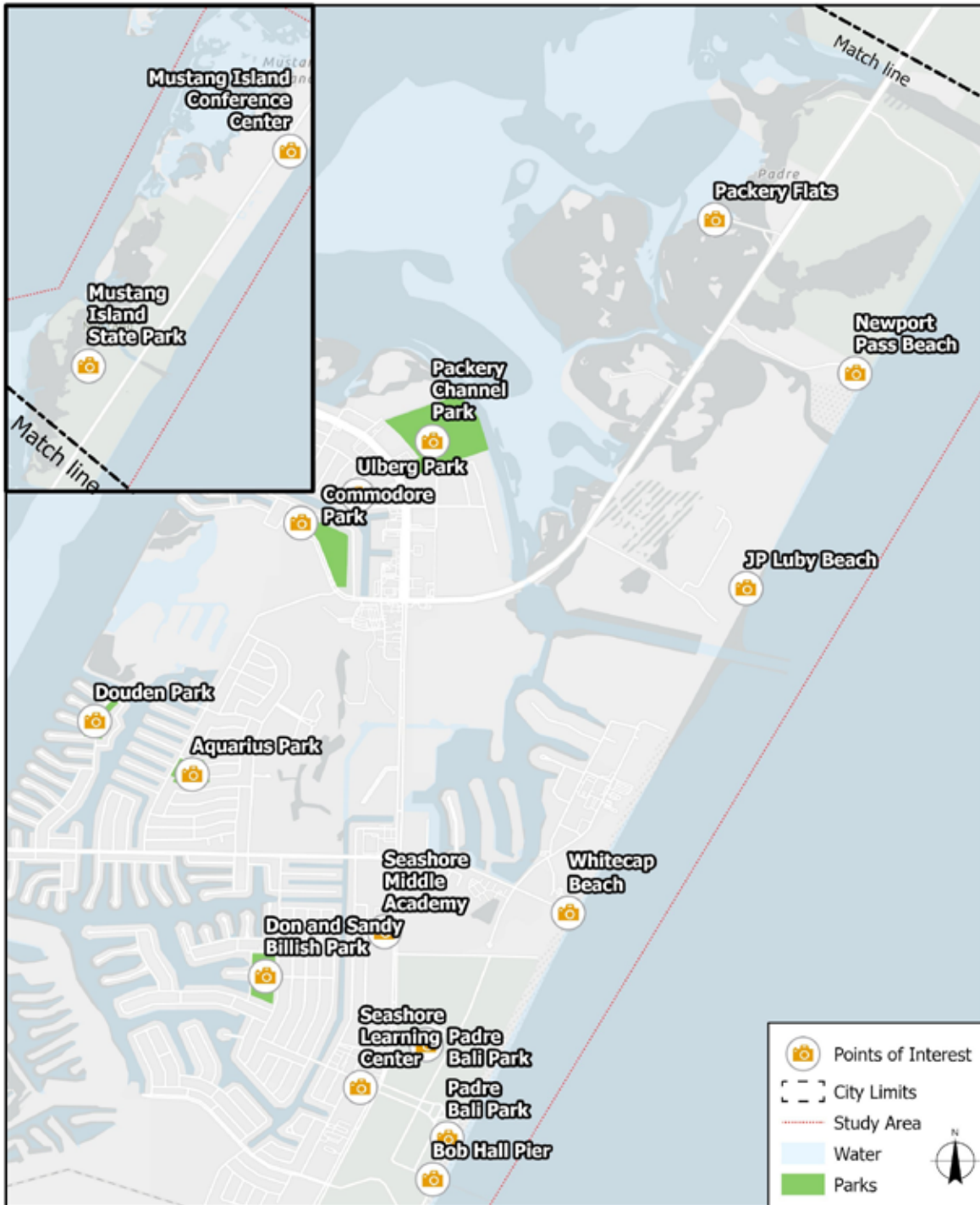


Note: Apart from Figure 1, the maps will display the southern portion of the Study Area (south of PR 22) where the majority of the built infrastructure exists. Inset maps will be used where there is infrastructure or other network elements existing north of the intersection of PR 22 and SH 361.

1.1 Areas of Interest

Within Padre/Mustang Island, there are many points of interest for activity outside of commercial and retail centers. This includes State and regional Parks, local parks, beaches, and other water access points.

Figure 2: Activity Points of Interest



2

PREVIOUS PLANNING EFFORTS

The Padre/Mustang Island area has been studied independently and as a component of other major planning efforts. The following section identifies the elements of those previous planning efforts that impact mobility, the function and efficiency of the overall transportation network.

2.1 ADA Master Plan (2012)

The Corpus Christi 2012 Americans with Disability Act (ADA) Masterplan states the need to update the curb ramps, sidewalks, crosswalks, and pedestrian signals within Corpus Christi/ Padre/ Mustang Island. 78% of the curb ramps calculated were labeled poor or non-existent. 54% of sidewalk paths studied were classified as either poor or non-existent. At signalized intersections, 40% had non-existent pedestrian signals and 31% had non-existing crosswalk. The improvements are broken up into three phases with Padre/Mustang Island being part of Phase Three (Places of Public Accommodation) with a 5+ year time frame.

2.2 Erosion Response Plan (2012)

To help prevent erosion on Padre/Mustang Island, there are procedures in place for any new infrastructure. Beachfront Construction Certificates and Dune Protection Permits are not required on Padre/Mustang Island State Park and the Padre Island National Seashore. Additionally, the dune mitigation area is part of a Dune Protection Permit for the Preserve at Padre/Mustang Island subdivision. FEMA requires a minimum base flood elevation for structures of 13 to 14 feet in the V-Zones within the foredune ridge on Padre/ Mustang Island.

2.3 Plan CC Comprehensive Plan (2016)

The Plan Corpus Christi (CC) Comprehensive Plan (2016) is a 20-year vision for the City which highlights goals and strategies the City wants to see accomplished. Strategies for the Island that resulted from this plan included supporting a plan for a second access on and off Padre Island. The Plan CC Comprehensive Plan identified the majority of the land use within the Study Area as park, single-family, and vacant. The plan for the future land use identified many of these vacant areas as Planned Development. This means that these currently undeveloped or underutilized areas may be suitable for a variety of uses.

2.4 Planning and Environmental Linkages (PEL) Study (2017)

The study used the Padre/Mustang Island Area Development Plan as a tool to incorporate current and future developments for more accuracy. A traffic analysis was conducted of the flow of traffic going on and off Padre/Mustang Island. The study forecasts growth for both residential and vacationers. With growth expected, enhancing connectivity between the island and mainland Corpus Christi is a high priority for both travel and hurricane evacuation.



2.5 Padre Island Mobility and Access Management Study (2018)

The study was conducted in 2018 to conceptualize and develop access management and mobility recommendations. The study corridors included State Highway (SH) 361, Park Rd. (PR) 22, the adjacent arterials, and the future Regional Parkway. The limits of the study on PR 22 were the eastern base of the Gulf Intracoastal Waterway to Sea Pines Dr. The limits on SH 361 were from PR 22 to Zahn Rd. Since 2012, annual traffic growth averaged 4% on PR 22 on Padre Island. Short- and long-term solutions were recommended as part of this study including directional medians and a shared-use path along PR 22.

2.6 Strategic Plan for Active Mobility (2018)

The Corpus Christi Metropolitan Planning Organization (MPO) Strategic Plan for Active Mobility, Phase 1: Bicycle Mobility Plan (revised 2018), identifies locations, class, and connections of bicycle facilities within the MPO boundary. The plan was designed with the bike-dependent commuter and casual recreational rider as the priority user. This plan ultimately identified a one-way cycle track along both directions of travel for SH 358/PR 22 within the Study Area. Additional

facility types including bike boulevards, buffered bike lanes, and crossing locations were identified for other collectors and local roadways.

2.7 Padre/Mustang Island Area Development Plan (2021)

Padre/Mustang Island (Island) includes residential neighborhoods, commercial development, and miles of beaches and natural areas. As the development continues to grow, the Island must focus on balancing future development with the environmental sustainability of the existing natural areas. Key takeaways include the desire for street improvements, such as improve PR 22 with bridge and golf cart paths.

2.8 Parks, Recreation & Open Space Master Plan (2022)

Padre/Mustang Island State Park covers 3,954 acres along five miles of beach front. The park is in a floodplain and home to over 400 species of birds and an abundance of wildlife. Municipal and County parks located on Padre/Mustang Island are Commodore Park, Don and Sandy Billish Memorial Park, Aquarius Park, Douden Park, Kent Ulberg Park, Packery Channel Park and Padre Island Beach. A notable attraction on Padre/Mustang Island is Bob Hall Pier located within Padre Balli Park.



Source: Google Earth Park Road 22



3

CURRENT AND PLANNED PROJECTS

The City is actively engaged in several roadway and land development projects within the Study Area. The planned improvements of these projects have been incorporated into the “existing” conditions of the transportation network, based on their progress at the time of this memorandum. Table 1 identifies these projects and the potential transportation impacts to the community.

Table 1: Current Planning and Engineering Projects

Project	Status	Description
Whitecap Development	Under Construction	This is a public/private partnership (P3) project that may include a kayak access point, on-property nature trails, a golf cart bridge.
Commdores Bridge	Under Construction	As part of the Whitecap development, this project is being done by LJA and the Whitecap Developers with TIRZ #2 funds for this bridge. It will open up the canals within the Whitecap Development to Laguna Madre.
Lake Padre Development	Under Construction	As part of the Whitecap development, this project is being done by LJA and the Whitecap Developers with TIRZ #2 funds for this bridge. It will open up the canals within the Whitecap Development to Laguna Madre.
Wayfinding Study	Planning	This project will allow for more consistence with branding signage and may include renaming the existing beach access roads.
CCMPO Active Transportation Plan	Update in progress	This is an update to the existing plan, expected to be completed in 2024. The plan will evaluate their previous pedestrian and bicycle recommendations.
Encantada Ave.	30% Design Phase	Traffic Safety Improvement Project to improve operational safety by reducing conflict points at the intersection of PR 22 & Encantada/Nueces County Park Road. This 2020 bond project will include median improvements at the intersection with PR 22 and pedestrian improvements. The design is expected to be complete in Fall/Winter of 2023.
Beach Access Road 3	30% Design Phase	Design and environmental permitting of construction of new 2-lane access road to the beach (SH361 to Beach).
Park Road 22	Under Construction	This project includes access and sidewalk improvements along the road from Aquarius St. to Jackfish Ave. Rehabilitation to reconstruction of existing service road including addition of sidewalks, installation of ADA compliant curb ramps, and upgrading and additional street illumination. This is contingent upon Texas Department of Transportation approval. Median improvements to create left turn lane from Compass to Park Rd. 22.
Park Road 22 Bridge	Under Construction	This project works with TxDOT owned PR 22 ROW to bridge over a proposed canal. The bridge will include sidewalks and curbs beneath the southbound arches.
Jackfish Ave.	Under Construction	Rehabilitation of existing 2-lane roadway with new pavement, minor curb and gutter repairs, installation of ADA compliant curb ramps, signage, pavement markings, and upgraded and additional street illumination.
Packery Channel Restoration	Under Construction	Sidewalks and bollards will be included in this reconstruction.



Additionally, the City has identified roadway rehabilitation projects out to 2026 (Table 2). There are two programs with streets identified in the Study Area for preservation or rehabilitation. The programs are the Street Preventative Maintenance Program (SPMP), a regularly scheduled maintenance program for streets in fair condition and the In-House Pavement Rehabilitation which is the rehabilitation of residential streets. There is potential opportunity to capitalize on the programmed projects to include recommendations from this study.

Table 2: Planned Roadway Rehabilitation Projects

Program	Year	Work	Street	Street From	Street To
SPMP	2020	Preservation	Commodores	PR 22	Aquarius
SPMP	2020	Rehabilitation	Encantada	Gypsy	PR 22
In House	2021	Rehabilitation	Cruiser	Whitecap	Encantada
SPMP	2021	Rehabilitation	Sea Pines	PR 22	Dead End
SPMP	2022	Rehabilitation	Aquarius	Commodores	Das Marinas
SPMP	2022	Rehabilitation	Aquarius	Topsail	Whitecap
In House	2022	Rehabilitation	Caravel	Brigantine	Dead End
In House	2023	Rehabilitation	Dasmarinas	Aquarius	Whitecap
In House	2024	Rehabilitation	Cuttysark	Encantada	Eaglesnest Bay
In House	2026	Rehabilitation	Ambrosia	Aquarius	Jackfish
SPMP	2026	Rehabilitation	Tesoro	Port Royal	Whitecap

As discussed in the previous section, the Padre Island Mobility and Access Management Study conducted in 2018 included short, and long-term recommendations specifically along PR 22 and SH 361. These recommendations included potential locations for directional median openings and U-turn locations, shared-use side paths along both sides of these corridors, and intersection improvements.



4

EXISTING TRANSPORTATION NETWORK

The transportation network considers all modes of transportation from vehicles, walking, cycling, and in the case of Padre/Mustang Island, neighborhood electric vehicles (NEV), golf carts, and watercraft. The following identifies the existing and, where available, proposed network for the individual modes.

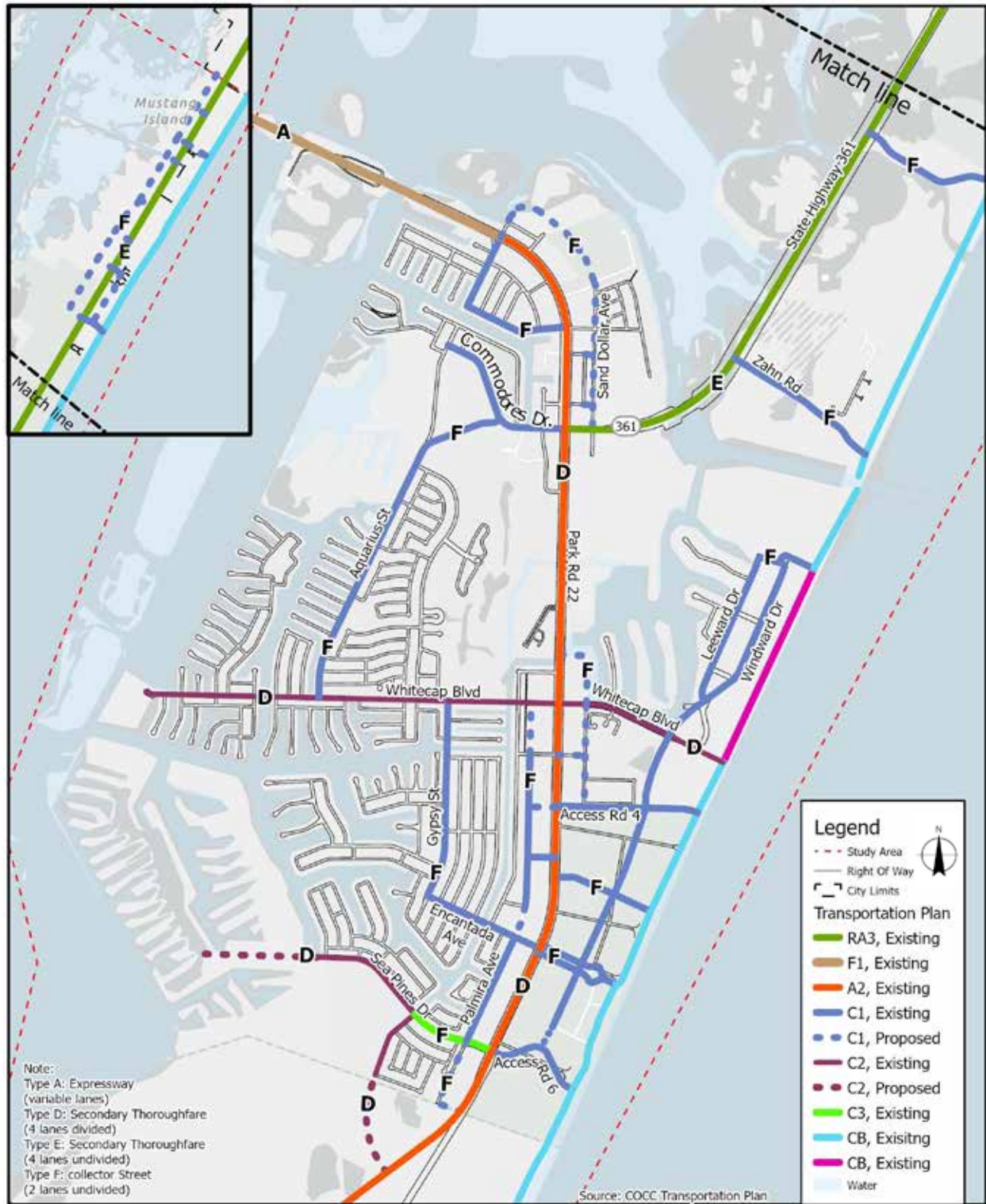
4.1 Roadways

The Urban Transportation Plan Roadway Classifications for corridors within the Study Area are displayed in Figure 3. The two main corridors through the Study Area are the TxDOT facilities PR 22 and SH 361. PR 22, also known as S. Padre Island Dr. transitions from road classification Freeway/Expressway (F1) to Secondary Arterial (A2) once the road crosses onto the Island. SH 361 is classified as a Primary Rural Arterial Divided (RA3) on the Transportation Plan. A variety of collectors connect into these arterials and provide access to the island neighborhoods.

As displayed, most of the roadway network within the Study Area is built. However, there are several proposed C1 roads within the study including a grid of streets from Beach Access Rd. 2 to Mariners Dr.; connections of Sand Dollar Ave.; Paper Streets; and connecting segments of Palmira Ave. The Plan also includes a proposed continuation of C2 corridors Sea Pines Dr. and Coralvine St.



Figure 3: Urban Transportation Plan Roadway Classification





Source: Google Earth – SH 361

The arterials in the Study area are built with shoulders and open ditch flanking both sides. The collectors and residential roadways are more typically designed with curb and gutter. The design of the travelway (the paved road between curbs or gutters) for these roadway classifications is defined in Table 3.¹²

Table 3: Roadway Classification Travelway Elements

Roadway Classification	ROW Width (ft.)	Through Lanes	Median/ Turn Lane	Sidewalk (ft.)	Shoulders (ft.)
Secondary Arterial (A2)	100	4	Median	5	—
Minor Res. Collector (C1)	60	2	No	5	—
Secondary Collector (C2)	65	3	Center Turn	5	—
Primary Collector (C3)	75	4	No	5	—
Freeway/Expressway (F1)	400	4-10	Median	—	—
Primary Rural Arterial Divided (RA3)	250	4	Median V-Ditch	—	10

Source: City of Corpus Christi Engineering Services Infrastructure Design Manual Chapter 6



Source: Google Earth – Park Road 22

¹ [MobilityCC.pdf \(cctexas.com\)](#) Pg 40,43

² [IDM-final-version.pdf \(cctexas.com\)](#) Pg 83





Source: Google Earth – Whitecap Blvd.

Table 4 provides a planning level summary of the current attributes of the larger corridors within the Study Area. The observed pavement widths are based on measurements a from Google Earth Pro.

Table 4: Existing Corridors Cross-Section

Street Names	Classification ROW	Identified Pavement Width	Existing Number of lanes	Median/ CTL	Sidewalk	Bike Facility
SH 361	RA3 – 250'	47'	2 – 4	No	No	No
Park Road 22	A2 – 100'	120'	2 – 4	Yes	No	No
Sea Pines Dr	C2/C3 – 65'/75'	80'	4	Yes	No	Yes
Coral Vine St	C2 – 65'	28'	2	No	No	No
Whitecap Blvd	C2 – 65'	60'-80'	4	Yes	Yes	No
Commodores Dr	C1 – 60'	96'	2	Yes	No	Yes
Aquarius St	C1 – 60'	40'-50'	2	No	No	No
Gypsy St	C1 – 60'	40'	2	No	No	No
Encantada Ave	C1 – 60'	40'	2	No	No	Yes
Zahn Rd	C1 – 60'	40'	2	No	Trail	No
Windward Dr	C1 – 60'	60'	2	No	No	Yes

For many of the corridors on the Island, the road classification and the observed cross-section of the corridor are not consistent. In most cases, the classification as indicated by the Transportation Plan identifies the ultimate build of the roadway, not what exists.



Source: Google Earth – Sea Pines Dr.



The following highlights the discrepancies between the attributes for each classification in Chapter 6 of the Infrastructure Design Manual and what is currently built. Further evaluation of these differences will be necessary to confirm any recommendations developed as part of this study can be implemented.

- Most of the Collector streets do not have sidewalks.
- SH 361 is missing the median/v-ditch indicated in the Infrastructure Design Manual.
- Commodores Dr. was redesigned in approximately 2008 and now includes a median and buffered bike lane.
- The northern segment of Aquarius St. meets more of the classification standards and includes a sidewalk on the western edge; however, most of the corridor does not.

4.1.1 ISSUES/NEEDS:

This section captures the planning-level assessment of issues and potential needs within the Study Area that will be evaluated during the recommendations phase of this study.

- Determine the applicability of the design criteria from the Transportation Plan as compared to the existing roadway cross-sections.
- Determine the likelihood of the construction of the proposed roadways within the next ten years.
- Continue coordination with TxDOT regarding PR 22 and SH 361.

4.2 Pedestrian Network

There are very few sidewalks throughout the island community as shown in Figure 4. Whitecap Blvd. is the only street with consistent sidewalks, where the north side of the street has a sidewalk that runs the duration of the boulevard west of PR 22 and to the east has facilities on both sides of the corridor. There are limited designated crosswalks with the neighborhoods as well.



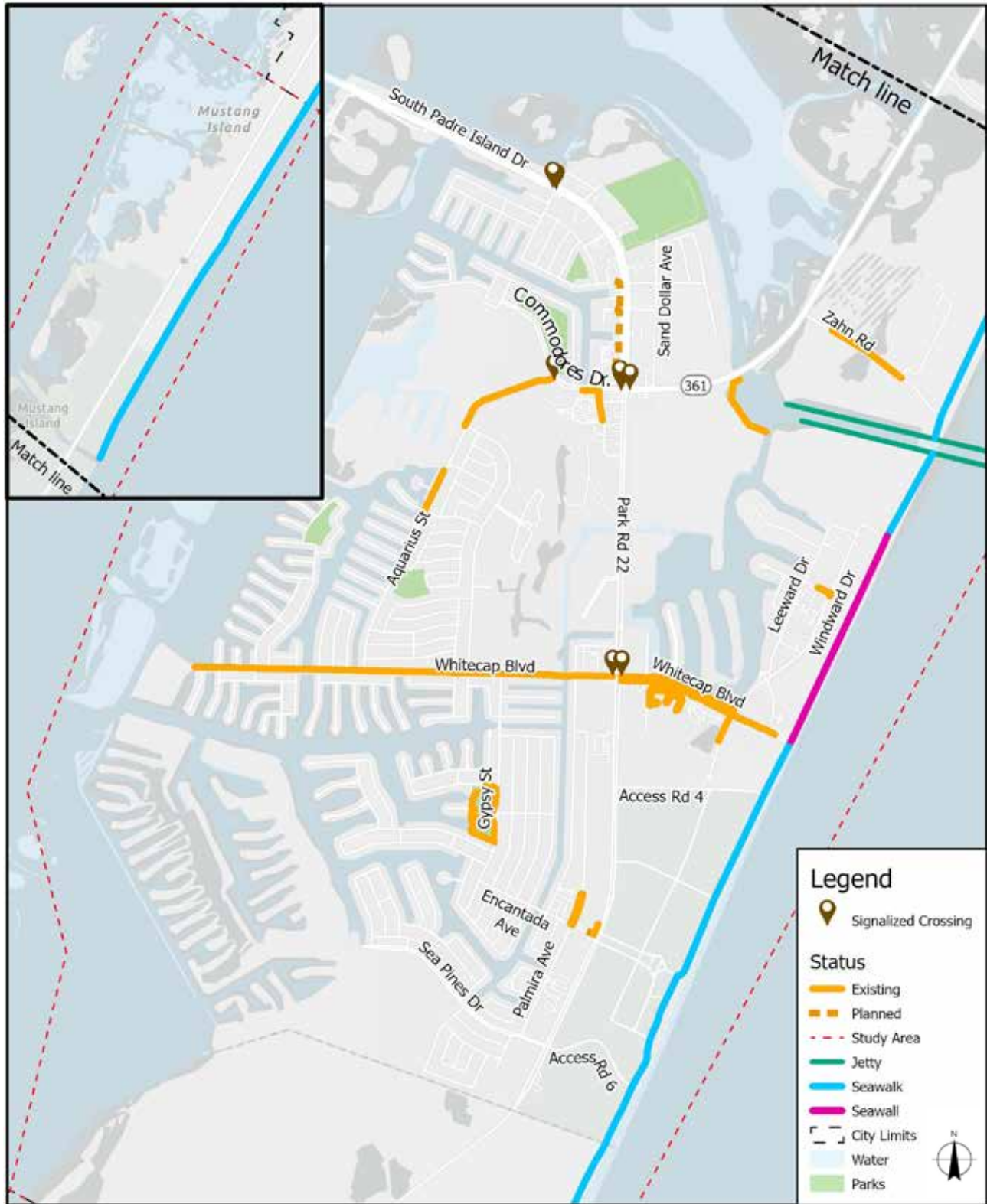
Source: Google Earth – Access Road 3a at Winward Dr.

Coinciding with the limited development to the North of the Study Area, there is also a lack of sidewalks and pedestrian crossings along SH 361.

PR 22 service roads do not have sidewalks at the time of this report (the current project will incorporate a five-foot sidewalk), but there are signalized crosswalks with pedestrian signals at the major intersections. However, these pedestrian facilities typically do not exist where PR 22 intersects with smaller connector or local streets, such as the beach access roads. Some smaller facilities were identified to have a designated location for pedestrians, such as Access Rd 3a.



Figure 4: Existing Pedestrian Facilities



Locations of crosswalks and/or signalized crossing of PR 22 are found at Aquarius St/ Aquarius Cove, Commodores Dr/SH 361, and Whitecap Blvd.

Locations without sidewalks or pedestrian crossings result in pedestrians making dangerous movements to cross a wide expanse of road. In some instances, such as the intersection of PR 22 and Sea Pines Dr/ Access Rd 6, there is a wide median where pedestrians can take refuge while crossing. Access roads provide direct access to the beach from neighborhoods are likely areas with the most active users.



Source: Google Earth – Intersection of PR 22 and Aquarius St/ Aquarius Cove

4.2.1 ISSUES/ NEEDS:

This section captures the planning-level assessment of issues and potential needs within the Study Area that will be evaluated during the recommendations phase of this study.

- Within the Study Area there is very limited sidewalk infrastructure in place including both sidewalks and crosswalks.
- There are limited designated crossing for pedestrians. Those in place are at major signalized intersections and not at crossings from the neighborhoods to beach access roads.



Source: Google Earth – Intersection of Park Rd 22 and Sea Pines Dr/Access Rd 6



Source: Google Earth – Commodores Dr

4.3 Bicycle Facilities

The bicycling facilities on the Island are used for both commuting and recreational purposes. The Corpus Christi MPO’s Active Mobility Plan includes many proposed facilities for the Study Area. Currently, there are limited dedicated facilities. These proposed and existing facilities are identified in Figure 5.

Many cyclists within this area tend to share the road with vehicles. However, there is limited signage and education on the rights of cyclists to share these facilities. In many locations, this leads to the roads only being used by avid cyclists that will share the road or use the wide shoulders and not by the average user.

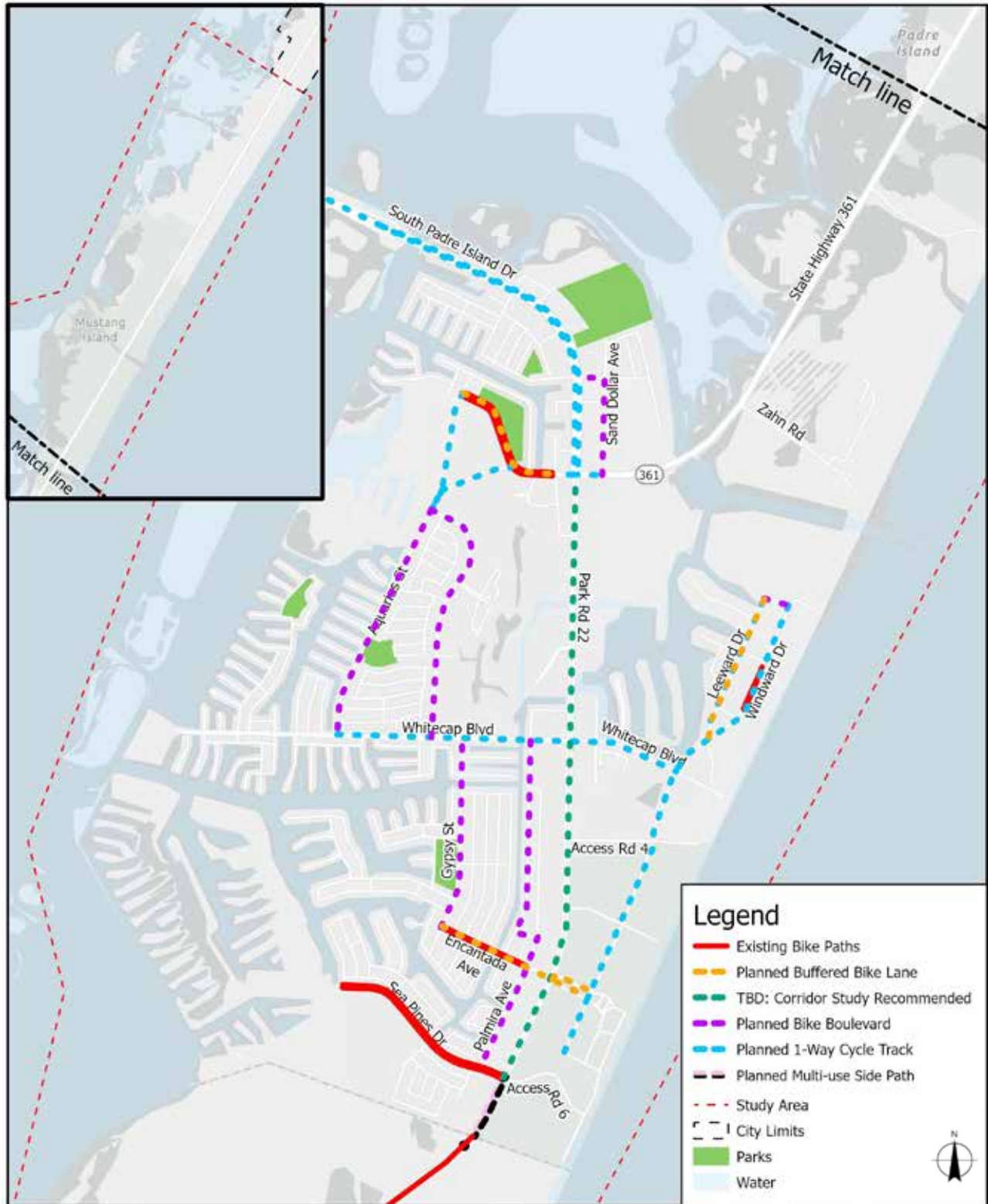
Dedicated facilities are currently on collector streets leading into neighborhoods. As displayed in Figure 5, when SH 361 transitions to Commodores Dr. at PR 22, the corridor gains buffered bike lanes on both sides of the street. Encantada Ave. and Sea Pines Dr. also have designated bike lanes on both sides of the street. Windward Dr. has an on-street bike lane from Robla Dr. to St. Augustine Dr. and for a small segment of the road near the intersection with St. Bartholomew Ave.



Source: Google Earth – Winward Dr



Figure 5: Existing and Planned Bicycle Facilities



4.3.1 ISSUES/NEEDS:

This section captures the planning-level assessment of issues and potential needs within the Study Area that will be evaluated during the recommendations phase of this study.

- The current network of bicycle facilities is limited.
- There is little signage about sharing the road, which can lead to confusion with drivers about where cycling is permitted.
- Consideration of additional safety features and separated facilities where able, will be needed to entice the average bicyclists to use the facilities as an alternative mode of transportation.

4.4 NEV/ Golf Cart Facilities

There are no designated facilities for Neighborhood Electric Vehicles (NEV) or Golf Carts currently on the Island. House Bill 1548 states that NEVs and golf carts can be deemed as street legal and operate on roads with a posted speed limit of 35 MPH if they meet certain criteria. Since the Bill was passed, NEVs can be operated on North Beach and Padre/Mustang Island on the streets with a posted speed limit of 35 mph and under as indicated in Figure 6.



Figure 6: Potential NEV and Golf Cart Network



Observed behavior has shown residents traveling from the neighborhoods to the beach using golf carts. Additionally, the current dirt roadway (proposed future roadway) that runs parallel to PR 22 from Whitecap Blvd. is used by golf carts to access some of the commercial buildings.

4.4.1 ISSUES/NEEDS:

This section captures the planning-level assessment of issues and potential needs within the Study Area that will be evaluated during the recommendations phase of this study.

- There are no designated facilities within the Study Area.
- An education campaign may be needed to educate golf cart/NEV users and vehicular drivers of the rights of these users on the road.
- Road markings may be needed.



Source: Google Earth – Golf Cart Path

4.5 Watercraft and Beach Access Points

The use of watercraft within the Study Area is a major appeal to residents as well as a draw for tourism. In addition to motorized boats, kayaks and stand-up paddle boards (SUPs) are regularly used by visitors. Texas law for public access to navigable streams states “Access must usually be obtained through the use of public property. The typical access may be from the right of way of a public road that crosses the stream, through a publicly owned boat launch area, or from some other public land (a park, for example) adjacent to the stream. There is no general right to cross private property to get to a navigable stream. If the private landowner forbids access, an attempt to use the private land would be a trespass. Within a public road’s right of way, private fencing that restricts public passage to the stream is illegal.”³



³ Source: https://tpwd.texas.gov/publications/nonpwdpubs/water_issues/rivers/navigation/riddell/publicaccess.phtml
Accessed June, 2023



Currently there are both public and private boat launch/ramps on the Island. Public launches are available at the Packery Channel. There are seven private boat launches throughout the island with access only through the Padre Island Property Owners Association (PIPOA)⁴. These areas include:

- Bounty and Gypsy Streets
- Caravel and Whitecap Streets
- Cartagena Dr.
- Cobo de Bara Circle
- Encantada and Cruiser Streets
- Fortuna Bay and Mt. Pelee Streets
- Jackfish St.

Smaller, portable watercraft such as the kayaks, and SUPs can be launched from other areas, and are not limited to boat ramps. For these, general access to the beach can be sufficient to launch. Figure 7 identifies the public access points within the Study Area.

4.5.1 ISSUES/NEEDS:

This section captures the planning-level assessment of issues and potential needs within the Study Area that will be evaluated during the recommendations phase of this study.

- Tourism materials identifying public access to boat ramps and the beach.
- Defined ordinances related to launching of watercraft.
- Identification of restricted water channels (if any).



Source: Google Earth – Beach Access Road 6

⁴ [Padre Isles Property Owners Association > Padre Isles Boat Ramp Information \(padreislespoa.net\)](http://PadreIslesPropertyOwnersAssociation.com/PadreIslesBoatRampInformation)



Figure 7: Public access points (Boat Ramps and Beach)



5

LAYERED TRANSPORTATION NETWORK

Figure 8 is a comprehensive map that displays the existing infrastructure as well as the proposed facilities which includes recommendations from past planning efforts and the current and programmed projects underway by the City.

Figure 8: Current Comprehensive Existing and Planned Transportation Network



6

CURRENT DESIGN CRITERIA

The design of the roadways within the Study Area is based on criteria from the City's Engineering Services Department, Infrastructure Design Manual (2022). Chapter 6 of this manual (Street Design Requirements) outlines the geometric standards for roads classified on the Urban Transportation Plan (UTP), following American Association of State Highway Transportation Officials (AASHTO) and National Association of City Transportation Officials (NACTO) guidelines.

Street Right-of-Way dimensions for each element of the travelway are identified within this chapter. This includes the widths and type for sidewalks, traffic lanes, parking lanes, etc. The overall design element width is detailed in Table 6.2.2.D Geometric Design Criteria:

Design Element Width	Preferred (Feet)	Minimum (Feet)
Travel Lanes	11	10
Turn Lanes	12	10
Median Width at Turn Lanes	17	15
Median Width Face of Curb to Face of Curb	17	4
Center Turn Lane Width	12	10
Standard Bike Lane	7	6
Buffered Bike Lane	10	8
Buffered Sidewalk	5	5
Tied-Sidewalk	5	5
Multi-Use Side Path	10	8
Shared Use Path/Hike-n-Bike Trail	14	12
One-Way Cycle Track, Both Sides	6	6
Landscape/Parking Buffer	5	2

Additionally, the following criteria was noted:

- All urban streets within the City and Extraterritorial Jurisdiction (ETJ) shall be designed with curb and gutter, underground utilities and storm drainage systems to the appropriate design year storm as indicated in Chapter 3 unless otherwise approved by the City Development Services Engineer.
- Rural streets (LRS, RA1, RA2, and RA3) may be designed with above ground storm drainage systems to the appropriate design year storm as indicated in Chapter 3.

Specific criteria regarding pedestrian and bicycle accommodations (section 6.2.3) promote the consideration of pedestrians where appropriate.



In addition to this design criteria, the City maintains the following guidance on certain traffic control devices and street design:

- Pedestrian Hybrid Beacon (PHB): which is an overhead signal-beacon designed to help pedestrians safely cross a busy street. A PHB signal works like any other push-button activated pedestrian, a red signal will appear allowing pedestrians to cross safely with a WALK signal.
- Speed humps: are only allowed on residential streets. In addition to a City-led evaluation prior to installation, fees and installation costs, and a petition from the local community may be required.
- Sidewalk and curb & gutter: by City Ordinance, the property owner is responsible for sidewalk maintenance. Occasionally small stretches of sidewalk are repaired or replaced as part of a street project⁵.

⁵ Source: <https://www.cctexas.com/services/streets-and-transportation/sidewalk-and-curb-gutter-problems>



7

CRASH DATA

Crash data for the Study Area was pulled from the TxDOT Crash Records Information System (CRIS) database for January 2018 through December 2022. Over the past five years, a total of 931 crashes were reported within the Study Area. There has been an upward trend since 2019, which can be correlated at some level to changes in driving associated with the pandemic and the resuming of traditional driving habits.

- Over this period 411 crashes were associated with driveways or intersections (44%).
- The top contributing factor for crashes was speeding, followed by failure to yield right-of-way.
- Beginning in March, which is typically associated with Spring Break, there is an increase in crashes through August (Figure 10).
- The density of crashes is highest along PR 22, and Whitecap Blvd. (Figure 11).

Figure 9: Number of Crashes by year (2018-2022)

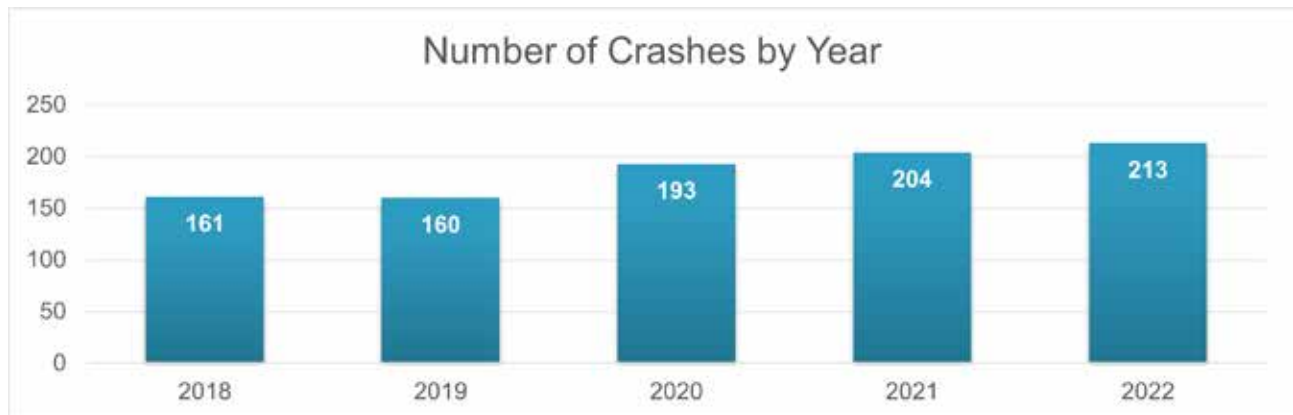


Figure 10: Number of Crashes by Month (2018-2022)

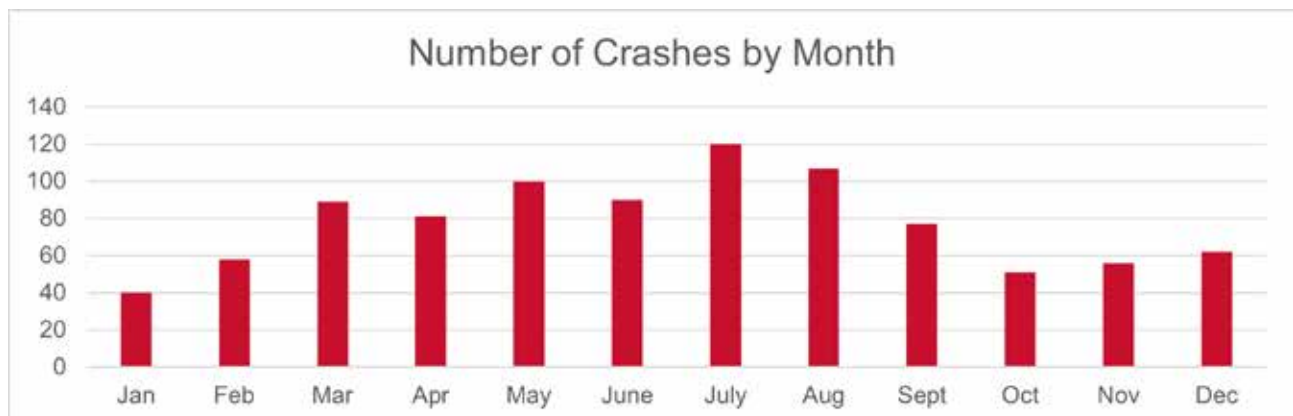
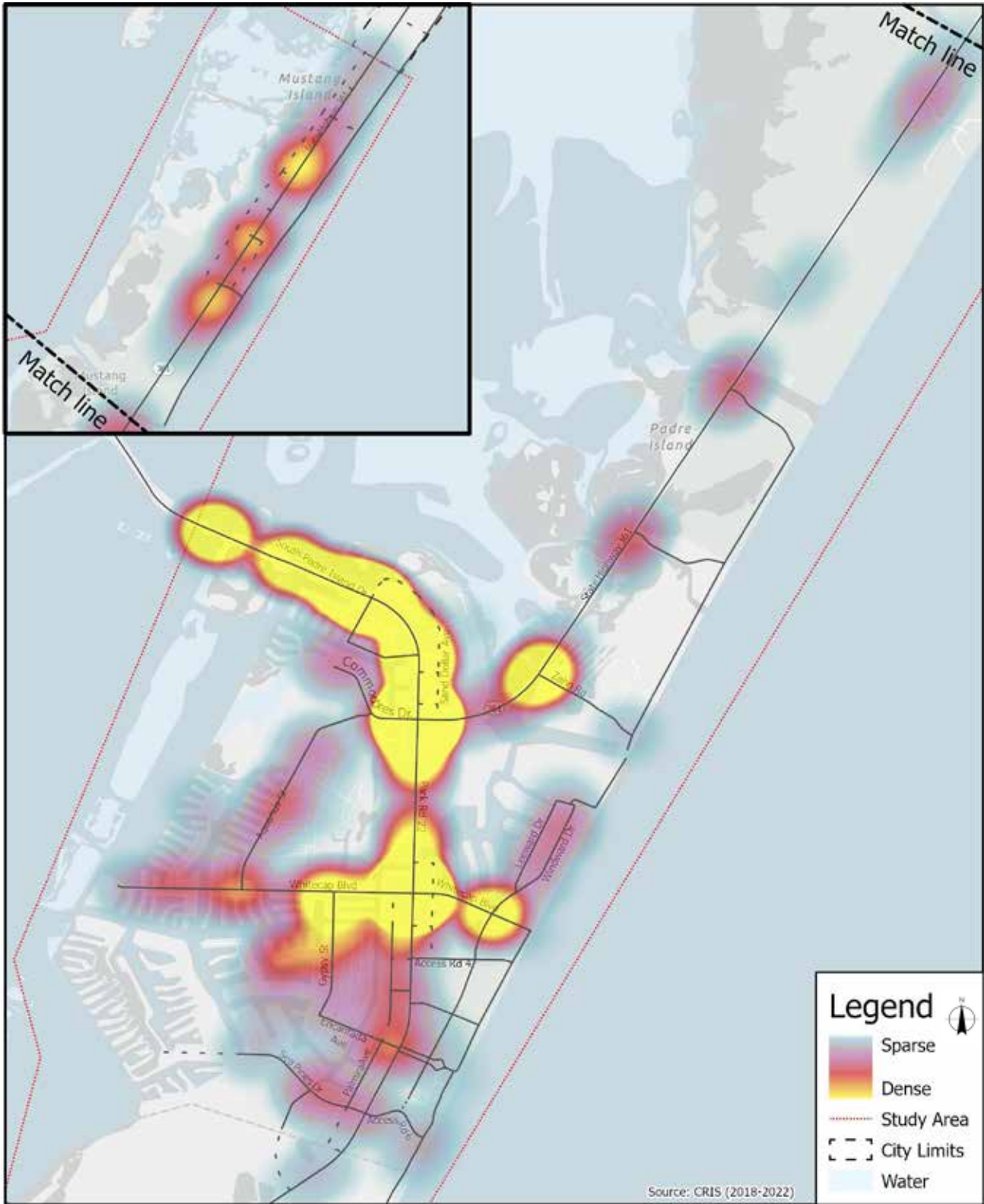


Figure 11: Density of Reported Crashes (2018-2022)





5.1 Fatal, Pedestrian, and Bicycle Crashes

During this five-year period, there were six fatal crashes in the Study Area, one involving a pedestrian (See Figure 12). There were an additional four crashes involving pedestrians and six involving bicyclists.

Table 5: Cyclist and Pedestrian Crash Contributing Factor and Injury Level

User	Contributing Factor	Injury
Cyclist	FAILED TO DRIVE IN SINGLE LANE	SUSPECTED SERIOUS INJURY
Cyclist	CHANGED LANE WHEN UNSAFE	SUSPECTED MINOR INJURY
Cyclist	FAILED TO YIELD RIGHT OF WAY - STOP SIGN; WRONG SIDE - APPROACH OR INTERSECTION	SUSPECTED MINOR INJURY
Cyclist	OTHER (EXPLAIN IN NARRATIVE)	SUSPECTED MINOR INJURY
Cyclist	FAILED TO YIELD RIGHT OF WAY - STOP SIGN	SUSPECTED MINOR INJURY
Cyclist	FAILED TO YIELD RIGHT OF WAY - TURNING LEFT	POSSIBLE INJURY
Pedestrian	IMPAIRED VISIBILITY; PEDESTRIAN FAILED TO YIELD RIGHT OF WAY TO VEHICLE	FATAL INJURY
Pedestrian	FAILED TO CONTROL SPEED; PEDESTRIAN FAILED TO YIELD RIGHT OF WAY TO VEHICLE	SUSPECTED MINOR INJURY
Pedestrian	IMPAIRED VISIBILITY; PEDESTRIAN FAILED TO YIELD RIGHT OF WAY TO VEHICLE	SUSPECTED MINOR INJURY
Pedestrian	OPENED DOOR INTO TRAFFIC LANE;	SUSPECTED MINOR INJURY
Pedestrian	DRIVER INATTENTION; IMPAIRED VISIBILITY	POSSIBLE INJURY



Figure 12: Fatal, Pedestrian, and Bicycle Crashes

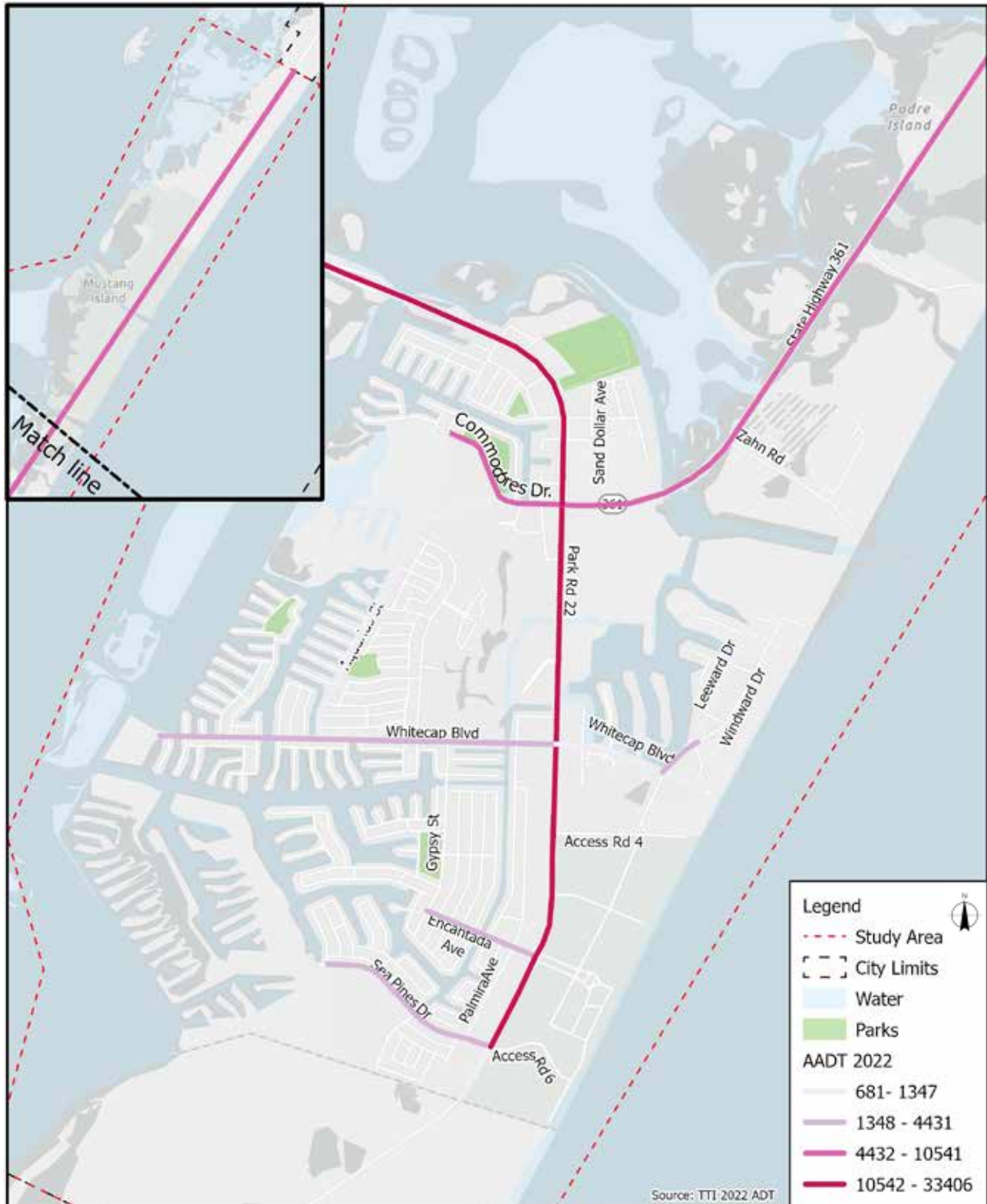


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TRAFFIC PATTERNS

For this study, historical volumes were used to assess traffic patterns. Volumes for the Island area were collected from the Texas A&M Transportation Institute (TTI). The available TxDOT Annual Average Daily Traffic (AADT) Counts for 2022 are displayed.

Figure 13: TxDOT AADT (2022)



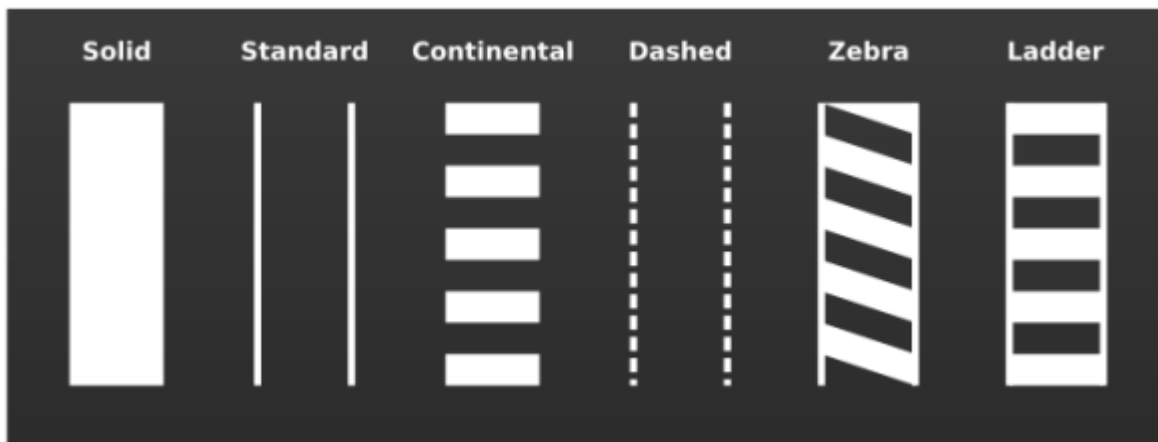
9

BEST PRACTICES AND ESTABLISHED POLICIES

9.1 Pedestrian and Bicycle Facilities

Through movements such as Vision Zero and Safe Streets for All, the reprioritization of the safety of pedestrians and bicyclists has been prevalent in changing industry standards. Best practices for these two modes can vary in level of cost and materials and be tailored to the character of local communities. The following highlight more commonplace industry best practices for pedestrian and bicycle infrastructure.

Painted crosswalks, with ADA compliant ramps are encouraged at all crosswalks. The different types of crosswalks are standard (two white lines), solid (paint/material), continental, ladder, and zebra.



Source: SFBetterStreets.org

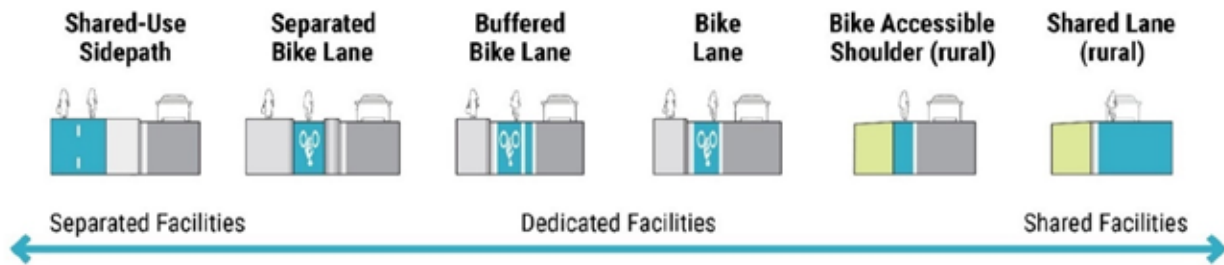


At signalized intersections, audible pedestrian signals (APS) with countdown heads are preferred as they provide audible and/or vibrotactile information coinciding with visual pedestrian signals to let pedestrians who are blind know precisely when the WALK interval begins. They can also provide directional guidance to users.

Source:
AccessforBlind.org

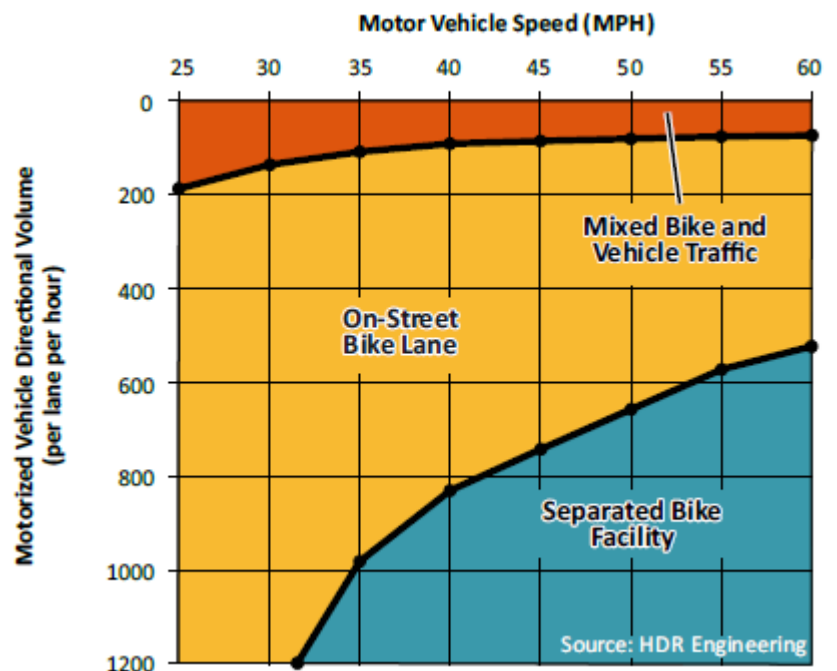
Leading Pedestrian Intervals (LPI) are an additional benefit to pedestrians at intersections that regularly experience heavy turning movements. LPI's give pedestrians the opportunity to enter the crosswalk at a signalized intersection 3-7 second before vehicles are given a green indication – consequently establishing the pedestrian within the line of sight of the vehicle.

The following are the approved bicycle facilities within the TxDOT Roadway Design Manual.



The cities and countries that historically have the highest bicycle mode share have a complete bike network that accommodates bike riders of all ages and abilities. As indicated in the chart, the higher motor vehicle speeds and volumes, the more it is necessary to create separation between cyclists and drivers to ensure safety.

To this point, the safest bicycle facility that can be implemented is a Shared-Use Sidepath. Shared-Use or Multi-Use paths are facilities on exclusive right-of-way and with minimal cross flow by motor vehicles. FHWA encourages Shared-use paths as a complementary system of off-road transportation routes for bicyclists and others that serves as a necessary extension to the roadway network. The bicycle facilities recommended by the Corpus Christi MPO Bicycle Mobility Plan prioritize maximal separation between cyclists and cars using off-road trail segments on stormwater easements wherever possible.





9.2 NEV/ Golf Carts

The Texas Department of Transportation (TxDOT) allows Golf Carts to operate on roads if they have at minimum headlamps, tail lamps, reflectors, parking brake, mirrors, and a Golf Cart license plate and are operating in the following situations :

- In a master planned community with a uniform set of restrictive covenants and a county or municipality approved plat
- On a public or private beach that is open to vehicular traffic
- On a highway with a posted speed limit of 35 mph, during the daytime and not more than two miles from the location where it is usually parked for transportation to and from a golf course
- To cross intersections, including an intersection with a highway that has a posted speed limit of more than 35 mph.

Additionally, cities or certain counties may authorize operation of Golf Carts on roads within the boundaries of the city or within unincorporated areas of certain counties. The Golf Cart must display a Golf Cart license plate when operated on roads authorized by the city or county. Operation may be authorized only on roads with a speed limit of 35 mph or less.

The City of Corpus Christi passed an ordinance in 2019 amending Section 53-109 of the City Code to allow golf carts in certain areas by adding neighborhood electric vehicles and off-highway vehicles as an allowable mode of transportation within the city, Padre/Mustang Island, and North Beach. The Ordinance states that a person who holds a valid driver's license may operate a golf cart. Additional guidance is discussed in the Section Articles. Special notes within this Study Area include:

- Article (8): If the golf cart, neighborhood electric vehicle, or off-highway vehicle is operated on a highway within the City limits on Padre/Mustang Island east of S.H. 361 and north of Packery Channel;
- Article (9): If the golf cart, neighborhood electric vehicle, or off-highway vehicle is operated on portions of Padre/Mustang Island within the City limits that are south of Packery Channel.

⁶ Source: <https://safety.fhwa.dot.gov/saferjourney1/Library/countermeasures/08.htm>

⁷ Source: [Unique Vehicles | TxDMV.gov](http://UniqueVehicles.TxDMV.gov)

⁸ Source: [City of Corpus Christi - File #: 19-1512 \(legistar.com\)](http://CityofCorpusChristi.File#:19-1512.legistar.com)



Several communities around the nation have begun to incorporate planning for golf carts/NEV's along with their bicycle plans. Within these plans they will indicate corridors that meet requirements for these vehicles to operate. As well as necessary markings/signage. For example, communities in Arizona have included golf cart/NEV markings on the roadways. This has been paired with bike lane markings as shown in Figure 14.

Houston has also approached accommodating a specific lane for Golf Carts on the Bayou Greenways (public trails) as shown in Figure 15. There is not a standard marking approved currently.

Figure 14: NEV and Bike Lane Road Markings



Source: Azcentral.com
 (<https://www.azcentral.com/story/news/local/surprise/contributed/2015/09/18/surprise-rethink-bullard-changes/72406028/>)

Figure 15: Golf Carts Only Markings on Trail



Source: Source:
 HoustonPublicMedia.org (<https://www.houstonpublicmedia.org/articles/news/2017/03/10/191185/houstons-newest-bike-trail-has-a-unique-feature/>)



9.3 Watercraft and Beach Access Points

Access to the beach for recreational purposes involving watercraft is dependent upon access. The Texas Beach Accessibility Guide⁹ states:

“The beaches along the Texas Gulf Coast were historically used as public roadways. Today, this tradition is still recognized in many areas where vehicles are permitted to park and drive without restrictions on the public beach throughout the year. Vehicular access is considered a primary means of access to most Texas beaches for all persons and is recognized as an acceptable option for providing access for people with disabilities.”

“Technical Standards for Footpaths Clear Widths, Passing Space & Surface Openings When considering the appropriate width to construct a beach access route, local governments should estimate the amount of traffic the pathway will generate. A minimum clear width of 36 inches accommodates one-way passage for a single wheelchair. If the natural conditions of the site do not allow for a 36-inch clearance, the width of a route may be reduced to 32 inches for a distance no greater than 2 feet. A clear width of 60 inches accommodates two-way passage and is highly recommended for public beach access routes. If the width of a beach route is less than 60 inches, a 60-inch by 60-inch passing space should be provided every 200 feet. Openings along the surfaces of footpaths must run perpendicular to the direction of travel and shall not exceed ½ inch in width.”

Reaffirming and incorporating these policies into future recommendations can provide alternative means of dedicating transportation network facilities.

⁹ Source: <https://www.glo.texas.gov/coast/coastal-management/forms/files/texas-beach-accessibility-guide.pdf>



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NEXT STEPS

The information provided in this Memorandum provide a baseline of the transportation network on the Island. The next step in this process will use this assessment to begin identifying projects and other recommendations for each mode of transportation, and the connections and interactions between them.

The mobility plan for this area will use this information, public feedback, an understanding of the constraints and opportunities within this environmental area, and national best practices to identify the best utilization of the travelway to safely accommodate multiple modes and users where able.