



# City of South Padre Island, Texas DRAFT Transportation Plan Report

In Conjunction with the Padre Boulevard and Entertainment District Form-Based Code Initiative



Gateway Planning / Dover, Kohl, and Partners

April 2011

  
Kimley-Horn and Associates, Inc.

  
Gateway  
Planning Group

City Council Members

Alita Bagley

Jo Ann Evans

Courtney Hayden

Sam Listi

Robert Pinkerton Jr., Mayor

Rick Ridolfi

# Acknowledgements

Stakeholders

City of South Padre Island

Texas Department of Transportation (TxDOT)  
Pharr District

SPI Chamber of Commerce

Local residents and business owners

Consultant Team

Gateway Planning Group

Kimley-Horn & Associates, Inc.

Dover, Kohl and Partners

TXP, Inc.

PREPARED BY:



KIMLEY-HORN AND ASSOCIATES, INC.

Suite 275

2201 West Royal Lane

Irving, Texas 75063

Tel: (214) 420-5600

# Table of Contents

- Introduction ..... 1
- Background Studies ..... 3
- Context Sensitive Solutions Approach ..... 5
- Padre Boulevard..... 6
- Roadways ..... 9
- Parking..... 13
- Transit ..... 15
- Investment Strategies ..... 17
- Conclusion ..... 17
- Appendix ..... 18
  - Appendix 1: Padre Boulevard Multi-Modal Concept Plan
  - Appendix 2: Form-Based Code Regulating Plan
  - Appendix 3: Form-Based Code Street Sections
  - Appendix 4: Traffic Counts
  - Appendix 5: Synchro Intersection Analysis
  - Appendix 6: Crash Data
  - Appendix 7: Padre Boulevard Cost Estimate and Schedule

# Introduction

The City of South Padre Island is transforming its transportation system. As more people move to the island or visit its famous beaches, the demands on the transportation infrastructure will increase. Given the current roadway system's capacity constraints, the City must address these transportation challenges as growth and redevelopment occur. This transportation report presents a comprehensive set of roadway, transit, and parking recommendations to address future mobility and development needs.

In 2010, the City of South Padre Island (SPI) initiated a planning process to develop a form-based code for the Entertainment District and the Padre Boulevard commercial corridor. The process included the following components:

- A market analysis that examines short- and long-term forecasts and analyzes future market demand,
- A week-long design workshop and follow-up meetings to generate development and design options that established a vision for Padre Boulevard and the Entertainment District,
- A form-based code, including a regulating plan and development framework to implement the community's vision, and
- An integrated multi-modal transportation network plan to meet the city's current and future mobility needs.

The new corridor master plan and the multi-modal transportation plan were developed through a community design workshop process and coordinated work sessions with the TxDOT. These corridor planning activities embrace the creation of a redevelopment plan that incorporates the principles of New Urbanism to foster the development of mixed-income housing, neighborhood-scale retail and transit-friendly contexts throughout the corridor. The planning and redevelopment initiative embraces a complete context-sensitive approach, redefining not only the street itself but also the entire neighborhood context along the corridor.

Following is a description of each of these components:

## Form-Based Code (FBC) Initiative

A primary goal of the FBC Initiative is to provide a tool for the redevelopment of Padre Boulevard and the Entertainment District that integrates public assets, roads, transit facilities, parks, and trails with development to create a walkable and sustainable community.

By definition, form-based codes implement a specific urban form. Given conventional zoning's bias towards auto-oriented development, form-based codes are almost always a tool to implement walkable mixed use. One of the most critical aspects of successful plan implementation is establishing adjacency predictability for redevelopment. This ensures that property values will increase consistently as development or redevelopment occurs. A regulatory framework that does not require all property owners to meet higher development and design standards will create an uncertain environment and may fail to attract new investment. Thus, if implementing a specific area plan, a mandatory form-based code is an economic development imperative as opposed to an aesthetic requirement.

This is specifically relevant to the redevelopment of Padre Boulevard and the Entertainment District in South Padre Island into a walkable, mixed use corridor and regional destination. As the City continues to invest in infrastructure and maintenance, it needs to be able to better leverage private development. A carefully crafted and applied form-based code, together with the city's infrastructure program, can be the value capture vehicle by which public investment in transportation and other civic infrastructure is leveraged to increase the development potential of all properties within the FBC area, thus increasing property values and tax revenues to the community.

The Master Plan for Padre Boulevard envisions development "nodes" at key intersections along the Boulevard which can anchor higher intensity and mix of uses to better link the bay side of the island to the beach side. For

the Entertainment District, the vision is to develop a vibrantly active boardwalk along the Bay with key east-west streets becoming SPI's "Main" Streets linking Padre Boulevard to the bay.

The Illustrative Master Plan is located in the Appendix.

## Design Workshop and other Stakeholder Meetings

The Form-Based Code (FBC) Initiative planning process was based on facilitation and participation of a variety of stakeholders. The design workshop was a focused week long event that included many development and roadway design concepts for Padre Boulevard and the Entertainment District by the consultant team and daily meetings with stakeholders; these efforts helped inform the conceptual redesign for Padre Boulevard and the desires for the FBC. In addition to the design workshop, the project team held meetings with the City, TxDOT, residents, business owners and other stakeholders throughout the year-long process to better understand the existing constraints and to receive feedback on preliminary recommendations.



Exhibit 1: Technical working group meeting



Exhibit 2: Technical working group meeting

## Market Analysis

TXP, Inc. prepared the Market Analysis for Padre Boulevard Initiative in support of the FBC Initiative. The analysis looked at short- and long-term forecasts for growth on SPI.

The market analysis study found that:

- Over the next 20 years, SPI is expected to grow by 4,413 housing units, 101,548 SF of office space, and 672,066 SF of retail/restaurant/entertainment space.
- Within the FBC study area, SPI is expected to grow by 265 housing units, 71,000 SF of office space, and 470,000 SF of retail/lodging/entertainment space.
- Only 5.2% of employees who work on SPI, live on SPI (as of 2008)
- Of the SPI residents who work, 36% work on SPI.
- Within Cameron County, SPI represents 1% of the population and 16% of the tax base.

## South Padre Island Socioeconomic Context

South Padre Island Region Population & Employment Forecast  
(Census Tract 123.02 – includes Long Island)

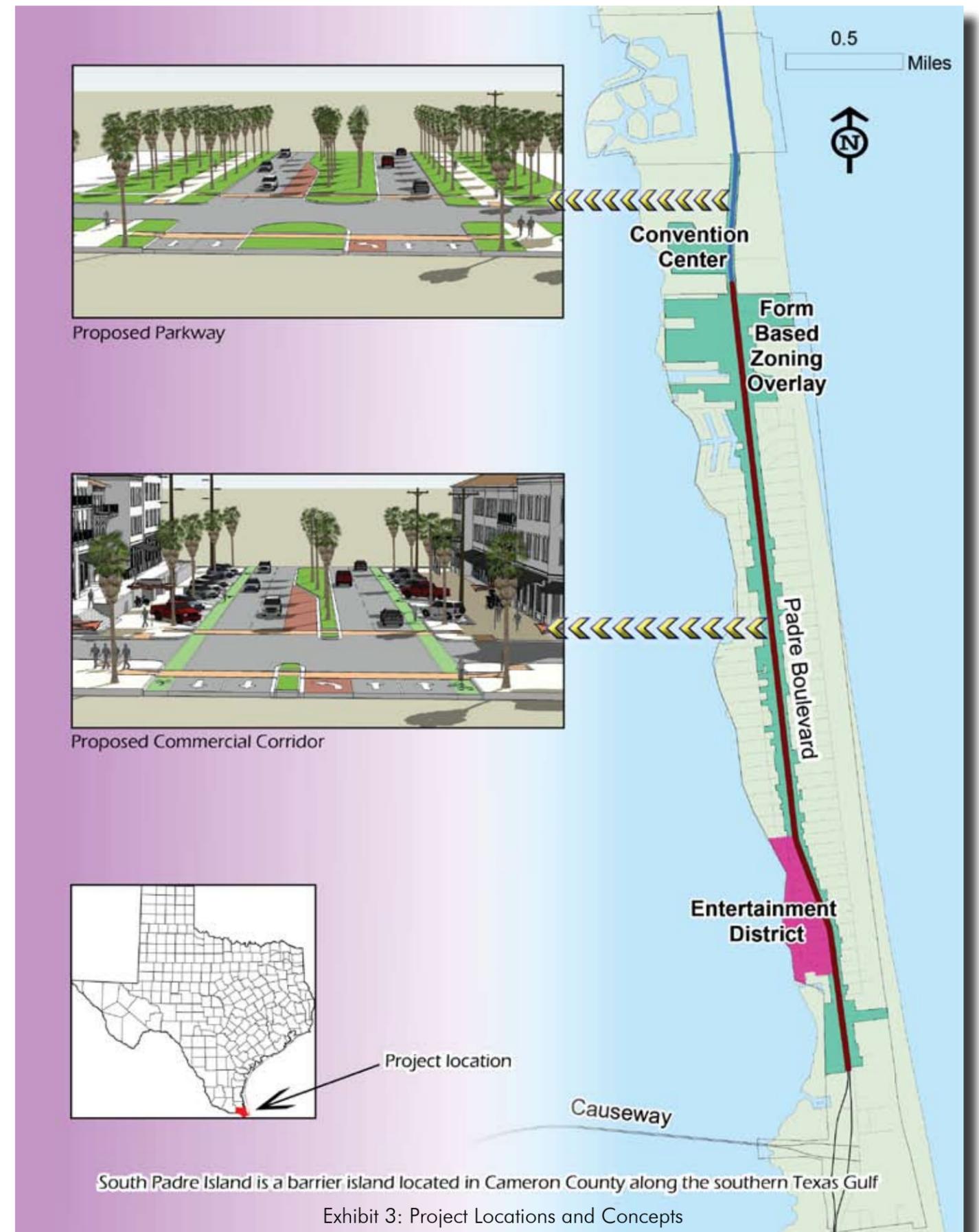
Population	2008	2015	2030	2045
Low	4,553	5,064	6,235	7,781
Medium	4,553	5,140	6,921	9,948
High	4,553	5,216	7,607	12,115
Employment	2008	2015	2030	2045
Low	4,310	4,722	5,323	5,943
Medium	4,310	4,793	5,909	7,598
High	4,310	4,864	6,494	9,252

Source: TXP

## Integrated multi-modal transportation network plan

This multi-modal transportation network plan considers automobile, pedestrian, bicycle, parking, and transit uses. The transportation system must not only serve the functional purpose of moving people and goods (i.e., providing adequate capacity), but also contribute to the goal of creating a livable, walkable community by enhancing area land uses. Tying transportation improvements with the FBC development framework is fundamental to building a lasting, sustainable community. This plan includes recommendations for the multi-modal transportation network.

One of the primary transportation outcomes of the initiative is the development of a conceptual multi-modal transportation plan for Padre Boulevard, which is provided in the Appendix. This roadway functions as both the "Main Street" for the City and as a major arterial roadway (TxDOT Park Road 100), which can create competing goals of access versus mobility. Working closely with the City and TxDOT, conceptual plans were created based on agreed upon design criteria. Exhibit 3 demonstrates the project location and concepts for Padre Boulevard.



# Background Studies

## Traffic Engineering Study (Halff Associates, Inc., 2004)

The City of SPI retained Halff Associates, Inc. to prepare a traffic study and conceptual access management plans for Padre Boulevard between Haas Street and Swordfish Street. This study was the precursor to the construction of approximately 1.1 miles of landscaped medians on Padre Boulevard from the Padre Boulevard Loop to Dolphin Street in 2007. Exhibit 4 shows an example of the existing median on Padre Boulevard.

The Traffic Engineering Study found:

- The Queen Isabella Causeway and sections of Padre Boulevard will be overcapacity by year 2030 without the construction of a second Causeway Crossing.

The study recommended the following:

- Designate specific east-west streets as collectors in a new thoroughfare plan,
- Provide parallel or angled on-street parking along Padre Boulevard,
- Provide bus stops and shelters along Padre Boulevard,
- Implement medians on Padre Boulevard, from Haas Street to Swordfish Street, including landscaping, pedestrian amenities, and drainage improvements.



Exhibit 4: Existing Median on Padre Boulevard

## Traffic and Parking Study (Carl Walker, Inc., 2007)

The City of SPI retained Carl Walker, Inc. to perform a comprehensive parking analysis for the City. The study included an inventory of parking capacity and parking occupancy. Efforts included peak season aerial photographic documentation, field observations, and surveys of beach visitors.

The Traffic and Parking Study found:

- Existing local parking occupancy (Saturday peak season) is 42% for non-residential off-street.
- Certain areas, such as near Wanna Wanna Beach Bar & Grill and at the Schlitterbahn Beach Waterpark, have a shortage of nearby parking.
- Gulf Boulevard public parking was 81% occupied at the 4 PM peak hour (94% in the cul-de-sacs, 71% on street). The turnover survey showed the 70% of the people using public parking along Gulf Boulevard stayed for 2 hours or less and 82% stayed for 3 hours or less.
- Three major challenges to centralized or shared parking on the island include:
  - Lack of concentrated demand – linear corridor plus multiple activity nodes and destinations
  - Cost of land – prohibitive to build surface parking
  - Seasonality – lack of consistent revenue
- With the high cost of land on SPI, the cost of providing surface parking nearly matches the cost of providing structured parking because more cars are stacked on the same land area.

The study recommended the following:

- Implement paid parking on Gulf Boulevard for on-street spaces and the beach access lots.
- Prohibit head-in parking along Padre Boulevard for future developments. The City has since adopted this into the development code.
- Consider clearly defined pedestrian pathways on cross streets that are aligned with a designated pedestrian crossing on Padre Boulevard.
- Design adequate mid-block pedestrian crosswalks to ensure that pedestrians are not required to walk multiple blocks to reach a signalized intersection to cross Padre Boulevard.
- Locate a future parking garage, if built, in the Entertainment District. Funding for the parking garage could come from parking revenues from facility users, parking revenues from beach access parking, special assessment fees, in-lieu fees, certificates of participation, and bond issues.

## 2<sup>nd</sup> Causeway Preliminary Traffic and Revenue Study Level 2 (C&M Associates, Inc., 2007)

C&M Associates, Inc. prepared a study for the Texas Turnpike Authority Division and TxDOT concerning the feasibility of a second causeway as a toll facility. The study considered both cash collection and electronic toll collection only. Travel demand models were used to model volume projections for future year analyses.

The Causeway Study found:

- The long queues that occur on Queen Isabella Causeway during peak periods are more related to the bottlenecks at both ends instead of lack of actual capacity on the existing causeway.
- An accident in 2001 involving a vessel collision with the Causeway resulted in a shutdown of the causeway for several months for repair, which caused a disruption of travel activities for people living on the island, as well as to those who planned to visit the island, since all transportation needs were met by ferry.
- A preferred alternative causeway to avoid the existing bottlenecks starts in the vicinity of Laguna Vista and ends north of most existing development on SPI.
- The annual revenues of the recommended alternative were projected to be \$5.7M in 2017 (assumed opening year) and \$8.2M in 2025. The annual vehicular volumes crossing the second causeway were projected to be 1.0 million in 2017 and 1.5 million in 2025.

## The Cameron County Regional Mobility Authority (CCRMA) 2<sup>nd</sup> Causeway Study (HNTB)

The Cameron County Regional Mobility Authority and TxDOT have continued the exploration of a 2<sup>nd</sup> Causeway. Per documentation on the CCRMA's website, five reasonable alternatives for the alignments were presented in February 2009 by HNTB, Inc. and are demonstrated in Exhibit 5. An Environmental Impact Statement will have to be completed and approved prior to construction. It is anticipated that the cost of this project will be \$350 - \$500 million. Per the CCRMA, funding is likely to be a combination of toll, federal, state, local, and private equity funding.



Queen Isabella Causeway

(Photo: Gem Images)

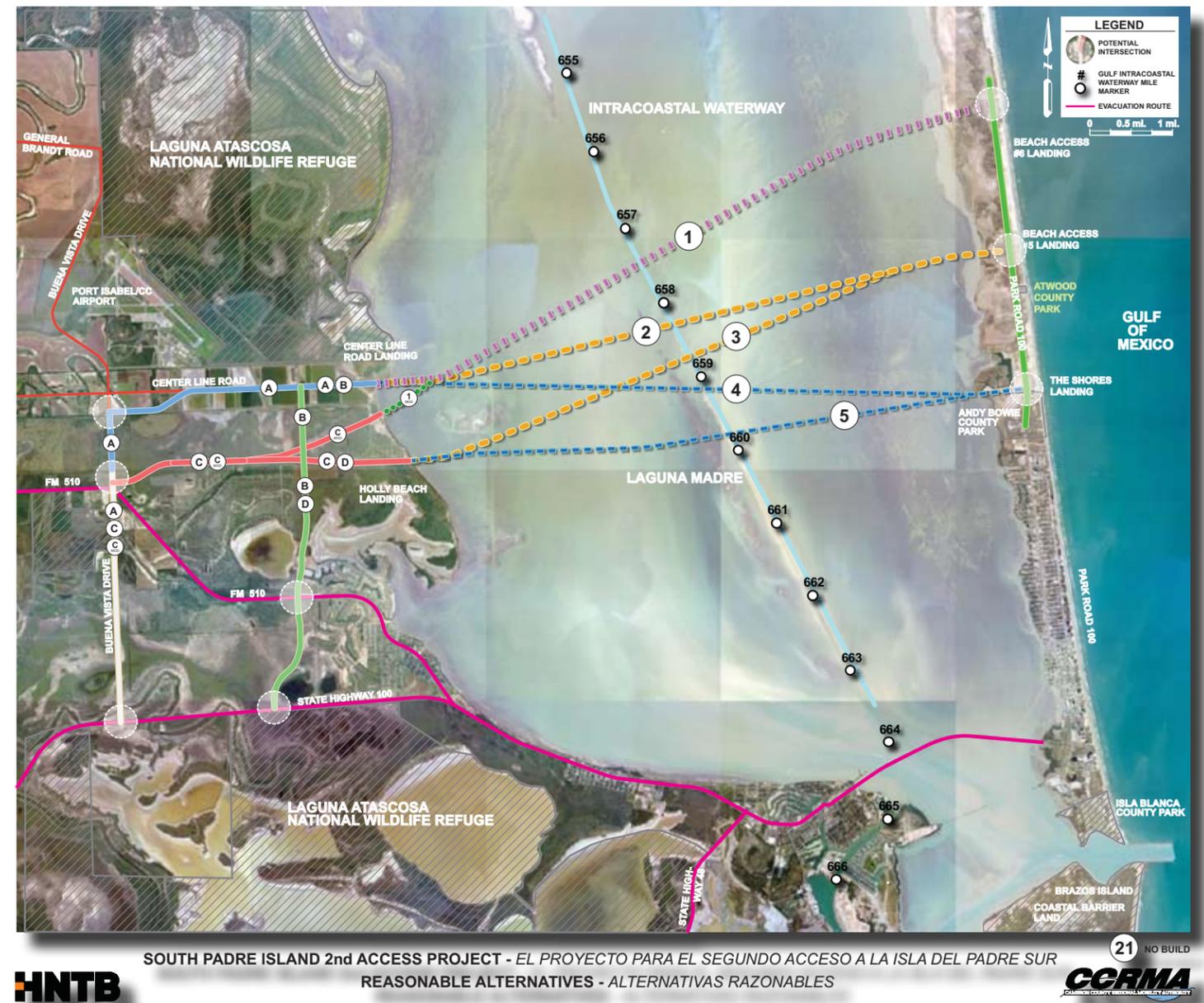


Exhibit 5: 2nd Causeway Alternatives

# Context Sensitive Solutions Approach

South Padre Island has temperate weather suitable for walking or cycling almost year-round. Walking and bicycling are not just commuting alternatives - they provide health benefits to individuals. Combined with an excellent transit system, multi-modal transportation options become more attractive to users and can compete more successfully against personal automobile usage. Improving walking and biking conditions can improve the overall attractiveness of a place as a great community to live in and as a vacation destination.

What makes walkable urbanism function is not merely distance, but the experience – a pedestrian trip where one encounters a mix of sights and sounds in the context of a range of land uses and a diverse built environment. The translation is that “critical mass” occurs when visitors can find enough to do for an afternoon or an evening, residents’ daily needs are largely met within easy access, and the underlying economics justify ongoing investment. When this happens (and is sustained), a dynamic system is in place that will create enhanced economic and fiscal value.

In an on-going effort to coordinate transportation engineering and planning efforts, a national dialogue has been established to identify the relationship that existing and future thoroughfares have with surrounding land uses. This new approach, called Context Sensitive Solutions (CSS), balances the needs of the surrounding land uses with the demands of the mobility network including transit, bicyclists and pedestrians.

CSS is a philosophy that guides public agencies and private entities in all phases of project development, from planning through project scoping, design and into construction and maintenance. CSS strives for outcomes that meet transportation service and safety needs, as well as environmental, scenic, aesthetic, cultural, natural resource and community needs. Context sensitive projects recognize community goals and are planned, scoped, designed, built and maintained while minimizing disruption to the community and the environment. CSS is not an aesthetic treatment; rather, it involves development of a transportation solution that fits into the project’s surroundings.

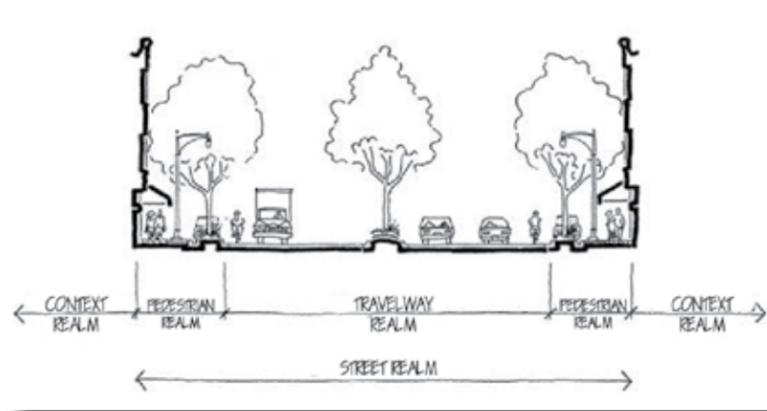


Exhibit 6: Elements of a Street

The Federal Highway Administration (FHWA) defines Context Sensitive Solutions as:

- “A collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility, and
- An approach that considers the total context within which a transportation improvement project will exist.”

Implementation of CSS attempts to not only address the decision-making process but the project outcomes as well. Its goal is to incorporate both land use and roadway function into the overall design of new roadways and/or the re-design of existing roadways. The implementation of CSS allows both the City and potential real estate

developers an opportunity to take into account the interaction between the developable land and the roadway itself.

The purpose of the CSS approach is to identify and address both transportation and project area needs during project development. CSS requires the flexibility to consider alternative solutions that when used in conjunction with traditional roadway design can benefit a broad range of stakeholders, while recognizing the fiscal constraints and the limits of the City of SPI.

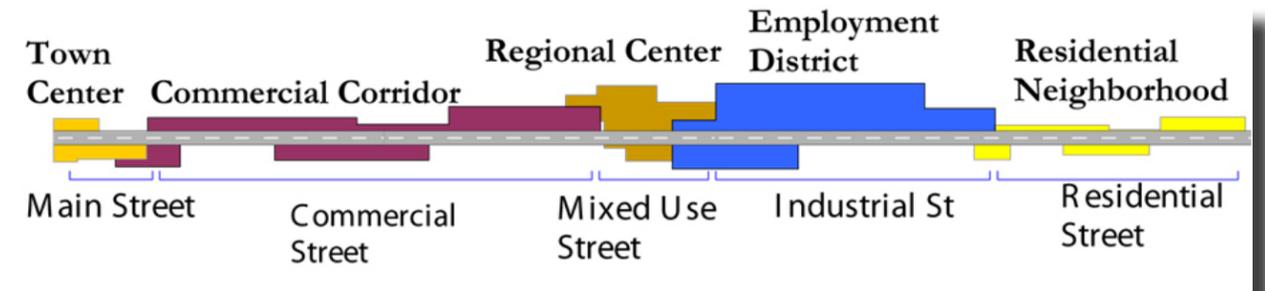


Exhibit 7: Changing Context’s Along an Example Corridor

Effective transportation solutions that fit the project’s context, rather than merely applying commonly used project enhancement, are the purpose of CSS. CSS maintains safety and mobility as priorities, yet recognizes that these are achieved in varying degrees with alternative solutions. Utilizing the CSS philosophy, design professionals determine which safe solution best fits, given the site’s conditions and context. CSS is about making good engineering and planning decisions while balancing competing values.

This initiative responds to these conditions by incorporating the principles of the Institute of Transportation Engineers’ *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach* by the Institute for Transportation Engineers (ITE) and the Congress for the New Urbanism (CNU). Criteria in this manual creates a clearer definition of the pedestrian realm, specifies pavement treatments for a bicycle corridor that inform drivers of the intent of the bike lane, relocates the parking facilities for the existing businesses into the corridor, promotes access management controls through the design on medians that also provide a pedestrian refuge, and narrows the travel lanes to promote a more pedestrian friendly travel speed. Ultimately, this approach will redesign the street to support the vision of walkable urbanism for Padre Boulevard. TxDOT has adopted the ITE Manual as a accepted source of design criteria for urban conditions. The following section goes into detail on the conceptual CSS design for Padre Boulevard. This design approach is consistent with the American Association of State Highway and Transportation Officials (AASHTO) Greenbook with the modification of design controls to consider all users.



# Padre Boulevard

## Existing Corridor

Padre Boulevard, also designated as Park Road 100, runs north-south along South Padre Island and is maintained by the Texas Department of Transportation (TxDOT). Today much of the roadway through SPI is a five-lane undivided road that is deficient of sidewalks. The sidewalks and adjacent private parking meet to create conflicts and safety hazards for pedestrians due to current curb design which permits driving over the sidewalks and onto private parking lots.

Several sections of the facility do not currently meet the Americans with Disabilities Act standards. Localized pooling of rain water occurs during even the slightest rains causing pedestrians and bicyclists to venture close to automobiles.

A portion of Padre Boulevard was reconstructed to add a median to improve safety through access management. The reconstruction project was limited to the median and did not improve the pedestrian and bicyclist realm of the corridor.

Historically, development along the corridor occurred in stages and required different finished floor elevations due to changes in the local building requirements. Padre Boulevard sits approximately four feet above sea level and the Base Flood Elevation requirement (as established by FEMA) continues to increase. This evolving building construction requirement and its impact on standards for access ramps to buildings creates an inconsistent pedestrian environment. The requirement for the increased elevations has also created a phenomenon where the buildings are significantly higher than the adjacent roadway sidewalk, creating cross-slopes within the pedestrian realm that provide difficult transitions for individuals with reduced mobility.

The design of vehicular access along the corridor and its impact upon the bicycle lanes and the pedestrian realm limit the further development and operation of the city's transit system. Reinvention of Padre Boulevard in the context of the form-based code corridor plan will move the system beyond serving a transit-dependent population into a system that provides an option for the choice rider, whether resident, employee, or tourist.

## Padre Boulevard Initiative

The Padre Boulevard initiative promotes a multi-modal transportation corridor that incorporates the principles of the Institute of Transportation Engineers' *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach* (ITE Manual for Walkable Urban Thoroughfares) by:

- Creating a clearer definition of the pedestrian realm,
- Providing specific pavement treatments for bicycle corridors that inform drivers of the intent of the bike lane,
- Relocating the parking facilities for existing businesses into the corridor,
- Promoting access management controls through the design of medians that also provide a pedestrian refuge, and
- Narrowing the travel lanes to promote a more pedestrian-friendly travel speed.

This approach stresses planning based on the context of the roadway across property lines, rather than just right-of-way lines, when developing a roadway schematic so the design can transition to the ultimate cross section, while accommodating existing development. This process allows for the evolution of existing parcels as the redevelopment activities within the corridor intensify. This process also creates a master developer environment across multiple ownerships that is crucial to achieving adjacency predictability when pursuing a variety of funding sources for redevelopment -- both public and private.

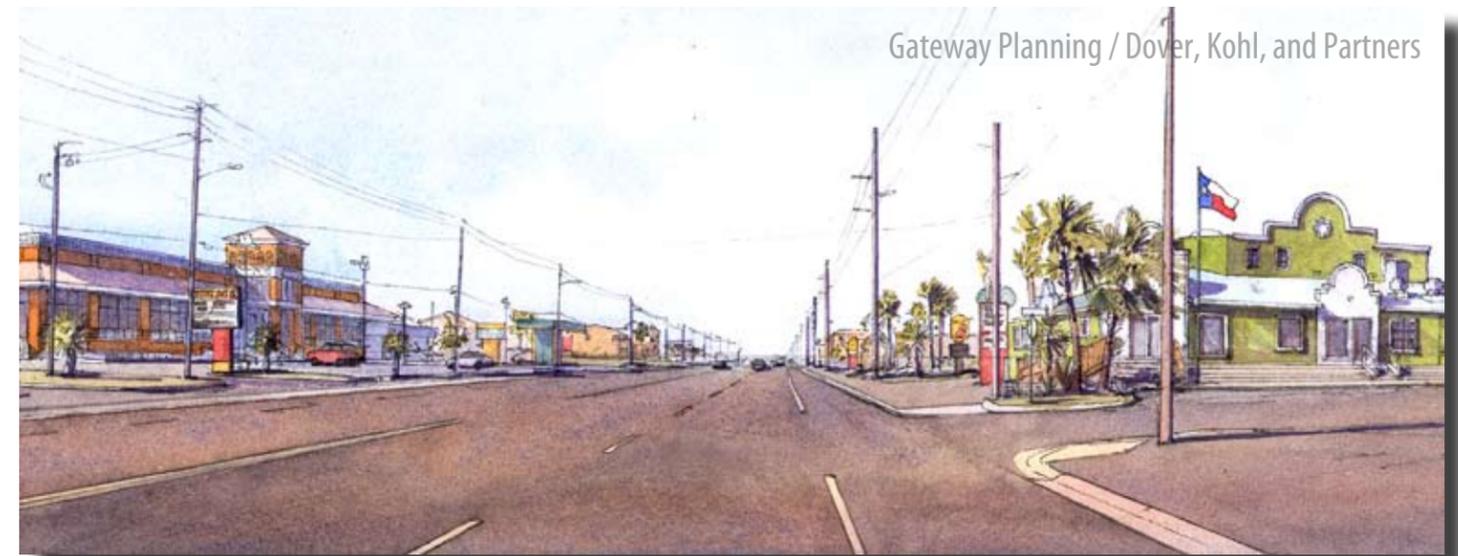


Exhibit 8: Depicts the existing facility within the commercial areas of Padre Boulevard



Exhibit 9: Depicts the proposed facility within the commercial areas of Padre Boulevard with overhead utilities



Exhibit 10: Depicts the proposed facility within the commercial areas of Padre Boulevard without overhead utilities

A possible future Padre Boulevard is shown in Exhibits 11 through 16, and can only be realized through the successful integration of pedestrian-friendly thoroughfare design that includes provisions for State-maintained facilities to be reconstructed using the principles set forth within the ITE Manual on Walkable Urban Thoroughfares. The Exhibits show Padre Boulevard after the application of the proposed conceptual redesign of the corridor and demonstrates how the reinvention of the 100-foot of right-of-way (ROW) with easements for sidewalks from a five-lane undivided section into a four-lane divided section with reverse-angled parking and a color-differentiated cycle track can completely change the development context of the corridor from an aging commercial corridor into a series of walkable neighborhood destinations along the Boulevard.

The benefit of this design strategy allows for the private property owners adjacent to Padre Boulevard to take advantage of parking in the TxDOT ROW instead of within the private frontage of their property. If one looks at the “before” versus “after” images (Exhibits 8-10) of this real location on Padre Boulevard, you can see that additional development can be realized in front of the Mexican Restaurant with the Texas flag to the right of the image manifested by the outdoor café rather than head-in parking.

In other words, this design strategy allows the utilization of the state highway ROW in this urban context to facilitate parking, bicycles and travel lanes more safely than the current conditions, freeing up private property for development and pedestrian uses, rather than off-street parking.

## Access Management and Mobility Objective

The goal of the Padre Boulevard Transportation Plan is to provide enhanced mobility for all users: automobiles, bicycles, and pedestrians. An equally important objective for the Padre Boulevard Transportation Plan was to increase safety.

The proposed Padre Boulevard Transportation Plan incorporates several concepts to increase both safety and mobility along the corridor. The Access Management Manual indicates that these concepts have been proven to increase mobility and safety. These concepts include:

### Installation of a raised median

- 55% reduction in total crashes
- 30% or greater decrease in delay
- 30% or greater increase in capacity

### Reducing the number of east-west cross streets that have full access to Padre Boulevard

- Significant reduction in conflict points

### Installation of dedication turn lanes

- 75% reduction in total crashes
- 25% increase in total capacity

Padre Boulevard currently has ninety degree head-in parking along much of the corridor. As part of the Transportation Plan the head-in parking is recommended to be replaced with angle parking. Based on the current plan every fifth angle parking spaces will be a landscaped island. As a result, the plan is not intending to maximize the number of



Exhibit 11: Possible Future Padre Boulevard (Angle 1)



Exhibit 12: Possible Future Padre Boulevard (Angle 2)



Exhibit 13: Possible Future Padre Boulevard (Angle 3)

parking spaces on Padre Boulevard, but rather replace the existing head-in parking with angled parking spaces. This replacement is anticipated to allow for easier ingress and egress from the parking spaces. It is anticipated that both safety and mobility will increase since the time and space needed to angle park is less than head-in parking.

The types of enhancements to Padre Boulevard that are illustrated on the Transportation Plan vary along the length of the project. In general, there are five distinct sections of enhancements, as described below.

### Section 1 – Park Road 100/Padre Boulevard Loop Intersection to Harbor Street

This section of Padre Boulevard includes the initial portion of the recently completed median project constructed by TxDOT, and includes a bike lane on the shoulder. This section of Padre Boulevard has decorative street lighting and landscaped medians. The parking is provided by straight-in parking. The posted speed limit is currently 30 miles per hour (mph) and it is recommended to retain this speed limit.

The enhancement highlights of this section include the following:

- Retain the existing medians and median openings;
- Create five-foot bike lanes;
- Phase out parking along Padre Boulevard; and
- Relocate the sidewalk between the parking and buildings.

### Section 2 – Harbor Street to Kingfish Street

This section of Padre Boulevard includes the remaining portion of the recently completed median project constructed by TxDOT, and includes a wide bike lane on the shoulder. This section has decorative street lighting and landscaped medians. The posted speed limit is currently 30 mph and it is recommended to retain this speed limit.

The enhancement highlights of this section include the following:

- Retain the existing medians and median openings;
- Create five-foot bike lanes;
- Transition from straight-in parking to back-in angled parking; and
- Relocate the sidewalk between the parking and buildings.

### Section 3 – Kingfish Street to Morningside Drive

This section of Padre Boulevard is a five-lane undivided section, (two travel lanes in each direction and a continuous left-turn lane), with a paved shoulder. This section has street lighting. The posted speed limit in this section is currently 30 mph between Red Snapper Street and Retama Street and 40 mph between Retama Street and Morningside Drive. It is proposed to extend the 30 mph speed limit to Morningside Drive in the future.

The enhancement highlights of this section include the following:

- Construct a 15-foot wide landscaped median with decorative street lighting;
- Reduce the travel lane width;
- Provide full median openings with turn lanes at a minimum of two block spacing;

- Create five-foot bike lanes;
- Transition from straight-in parking to back-in angled parking; and
- Create a sidewalk between the parking and buildings.

#### Section 4 – Morningside Drive to Convention Center

This section of Padre Boulevard is a five-lane undivided section, (two travel lanes in each direction and a continuous left-turn lane), with a paved shoulder. This section has street lighting from Morningside Drive to White Sands Drive; no street lighting is provided from White Sands Drive to the Convention Center. The posted speed limit is currently 40 mph between Morningside Drive and Kings Court and 45 mph from Kings Court to the Convention Center. It is proposed to extend the 40 mph speed limit to the Convention Center in the future.

The enhancement highlights of this section include the following:

- Construct a 15-foot wide landscaped median with decorative street lighting;
- Reduce the travel lane width;
- Provide full median openings with turn lanes;
- Create five-foot bike lanes;
- Transition away from on-street parking; and
- Construct a wide sidewalk set back from the edge of the roadway.

#### Section 5 – Convention Center to the North Project Limits

This section of Padre Boulevard is a two-lane undivided section with a bike lane provided on the shoulder. This section does not have street lighting. The posted speed limit in this section is currently 45 mph between Convention Center and The Shores development and 55 mph from The Shores development to the North Project Limits. It is proposed to reduce the speed limit to 40 mph speed limit within this section in the future.

The enhancement highlights of this section include the following:

- Construct two additional travel lanes;
- Construct a 28-foot wide landscaped median with decorative street lighting;
- Provide full median openings with turn lanes that at various cross-streets;
- No on-street parking; and
- Create an off-street hike and bike trail on each side of the roadway.

### Padre Boulevard Recommendations

Recommendations associated with the Padre Boulevard Multi-Modal Design:

- The roadway design elements included within the Schematic Design are currently envisioned as the median, median openings, turn lanes, curb, bike lanes, parking, driveways, side streets, sidewalk, right-of-way, easements, drainage, water line, typical sections and roadway profile. Components include survey, geotechnical, subsurface utility engineering, roadway schematic design, an Environmental Assessment, and the overall coordination with the corridor planning activities. Potential schedule and cost estimates are provided in the Appendix.



Exhibit 14: Possible Future Padre Boulevard



Exhibit 15: Possible Future Padre Boulevard



Exhibit 16: Possible Future Padre Boulevard

- Based on funding availability, prepare schematic design for the entire corridor or in phases. Obtain environmental clearance from TxDOT. Prepare full design plans in phases.
- Public outreach and coordination with adjacent property owners during the schematic design to ensure the effective implementation of multi-modal transportation plan.
- Obtain 10' easements on each side of the roadway to provide for the sidewalks along the corridor within the existing 100' wide right-of-way.
- Widen Padre Boulevard to four-lanes divided from the Convention Center to the future connection with the 2<sup>nd</sup> Causeway.
- Bury the overhead utilities along Padre Boulevard.
- Phase-out straight-in 90-degree parking that rolls over the sidewalk as the parking moves into the right-of way and the sidewalk is relocated between the parking and building fronts.
- Retain the existing median and median openings south of Kingfish Street, but provide bicycle, parking, and sidewalk improvements similar to the remainder of the corridor.
- Extend the median north to replace the remainder of the five-lane undivided section. It will be slightly wider than the existing median to accommodate landscaping and lighting within the median noses, as well as pedestrian refuges at crosswalk locations.
- Relocate continuous, wider sidewalks between the proposed on-street parking and building fronts.
- Use back-in angled parking within the right-of-way south of Morningside Drive.
- Initially implement back-in, angled parking as a pilot project in a smaller area prior to full implementation.
- Phase out all direct access parking south of Harbor Street and north of Morningside Drive.
- For approximately every four spaces of back-in angled parking, use a space for a landscaped island with trees to shield the overhead utilities from view.
- Provide five foot bike lanes next to the on-street parking lane on both sides of Padre Boulevard.
- Locate bus pull-outs at key locations along the Boulevard.
- Build Padre Boulevard to the Shores development at the northern end of the Island to four lanes. Provide a wider median with off-street hike-and-bike trails where the 200' wide right-of-way begins.
- Contingent on a speed study, extend the 30 mph speed limit to Morningside Drive.
- Potentially provide traffic signals at three of the plan's "Neighborhood Crossings." Vehicular and pedestrian traffic may be more intense at these locations and traffic signals could be constructed, when warranted based on pedestrian or vehicular volumes.
- Where pedestrian crosswalks are proposed, work with TxDOT during the schematic design phase to provide enhanced crossings that heighten awareness to approaching vehicles.

# Roadways

## Existing Conditions

The City of South Padre Island (SPI) has a tight grid system of roadways. Padre Boulevard (PR 100), a north/south TxDOT facility, runs the length of the City. It has two parallel roadways, Laguna Boulevard and Gulf Boulevard, which are generally bounded by Haas Street to the south and Morningside Drive to the north. Local east/west streets are located approximately every 250 feet between Haas Street and Morningside Drive. Besides Padre Boulevard and the Padre Boulevard Loop, all of the roadways on SPI are two-lane undivided.

Vehicular access to SPI is currently provided via the PR 100 Causeway (Queen Isabella Causeway). There are no other roadways currently connecting the Island to the mainland. Because limited regional access alternatives exist beyond the Queen Isabella Causeway (QIC) connecting the Island, the traffic congestion will only increase over time if alternative roadways and modes of travel are not identified and supported. As discussed previously, the CCRMA is studying a second causeway, which will alleviate the existing bottlenecks that occur during peak periods and provide a second emergency evacuation route for the City.

The primary arterial on SPI is Padre Boulevard, which is also TxDOT's Park Road 100. It is primarily a five-lane undivided roadway with paved shoulders that transitions to a two-lane undivided roadway north of the Convention Center. Raised medians were installed in 2007 for approximately 1.1 miles between the Padre Boulevard Loop and Dolphin Street. The shoulders are marked as bike lanes along the portion of Padre Boulevard with the medians, but are still regularly used by automobiles. Pedestrian accommodations are poor because there is a lack of continuous sidewalks and most of the ramps are not ADA compliant. In addition, straight-in (90 degree) parking is located behind the sidewalks throughout the corridor, so vehicles cross the sidewalks to enter and exit the parking spaces making it an unsafe pedestrian environment.

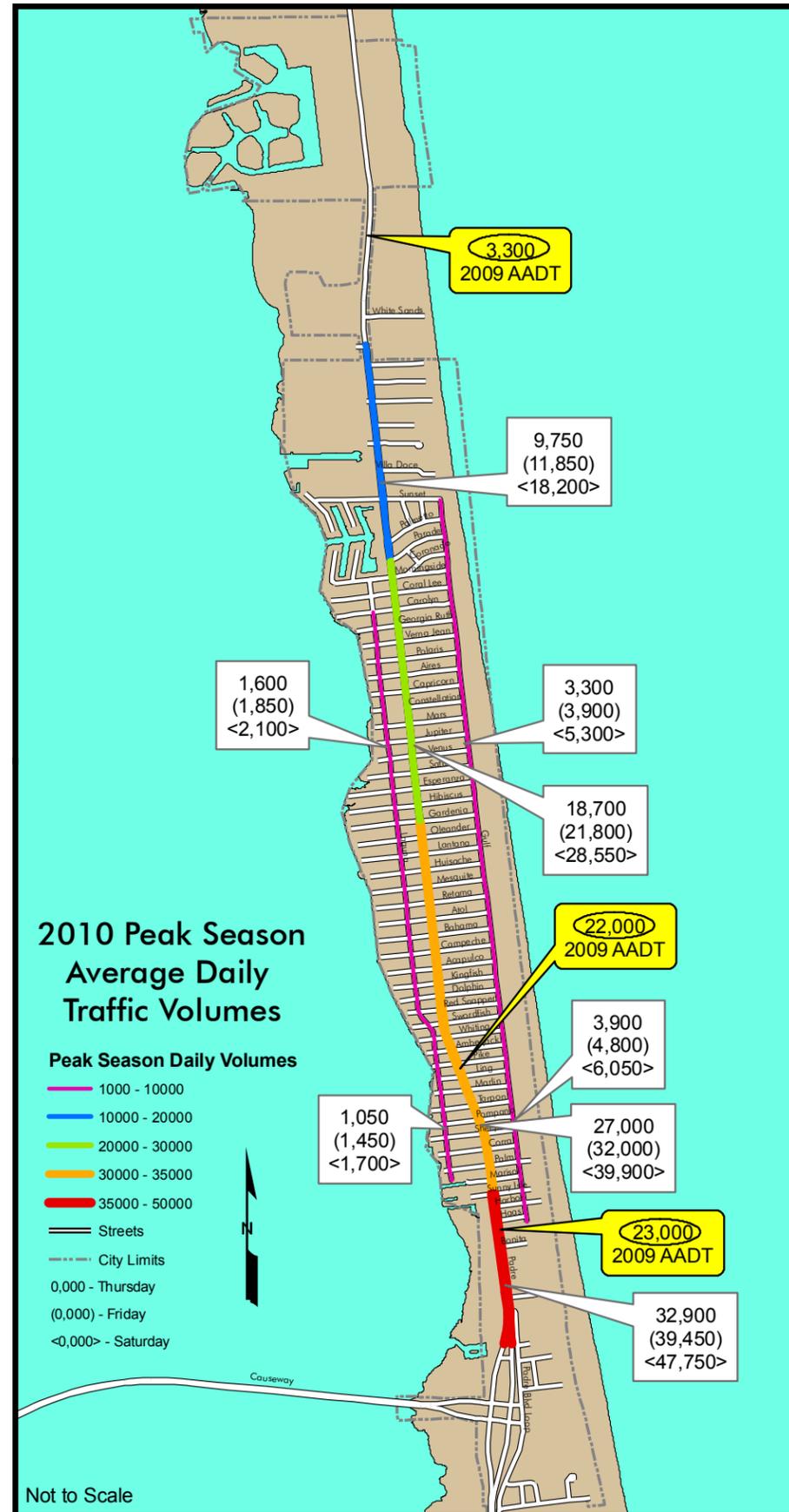
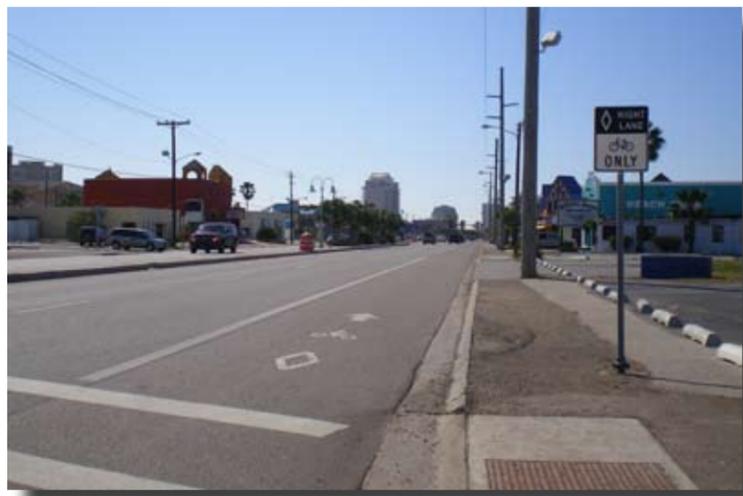


Exhibit 17: Peak Season Average Daily Traffic

## Crash Data Summary

Crash data for Padre Boulevard was obtained from TxDOT and is summarized in the Appendix. The data represent only the crashes that were reported to TxDOT from 2003 through mid-2010. Twenty-eight crashes were reported between 2003 and 2006. From 2007 through mid-2010, six crashes were reported. Raised medians were installed in 2007 for a portion of Padre Boulevard, which appears to have helped reduce crashes on Padre Boulevard.

In February 2011, there was a crash between two vehicles that resulted in a fatality on Padre Boulevard. This crash was in an area that is five-lane undivided. Per the TxDOT Access Management Manual (2004), a benefit of access management is "improving roadway safety conditions (reduced crash rates)." The first portion of the median was constructed with safety funding from TxDOT; similar options should be explored as a potential funding source for the rest of the corridor.

## Peak Season Traffic Analysis

In order to understand the future needs of the transportation system on South Padre Island, an analysis of the existing roadway network within the study area was accomplished. 72-hour traffic data was collected from Thursday, July 22, 2010 through Saturday, July 24, 2010, at two locations along Laguna Boulevard, four locations along Padre Boulevard, and two locations along Gulf Boulevard. Peak period turning movement traffic data was collected at the four existing signalized intersections within the study area on Thursday, July 22, 2010, and on Saturday, July 24, 2010. These intersections included Padre Boulevard & Padre Boulevard Loop, Padre Boulevard & Harbor Street, Padre Boulevard & Amberjack Street, and Padre Boulevard & Morningside Drive. The existing signal timing information for these intersections was obtained from TxDOT.

Exhibit 17 shows the peak season Average Daily Traffic for Thursday, Friday, and Saturday. As evidenced by the peak season volumes, Saturday (weekend)

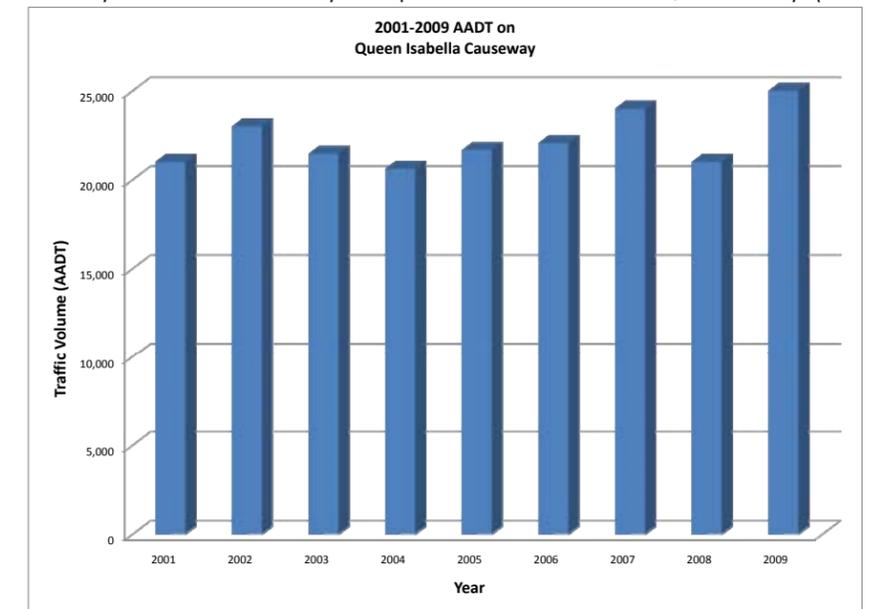


Exhibit 18: Queen Isabella Causeway Volumes by Month

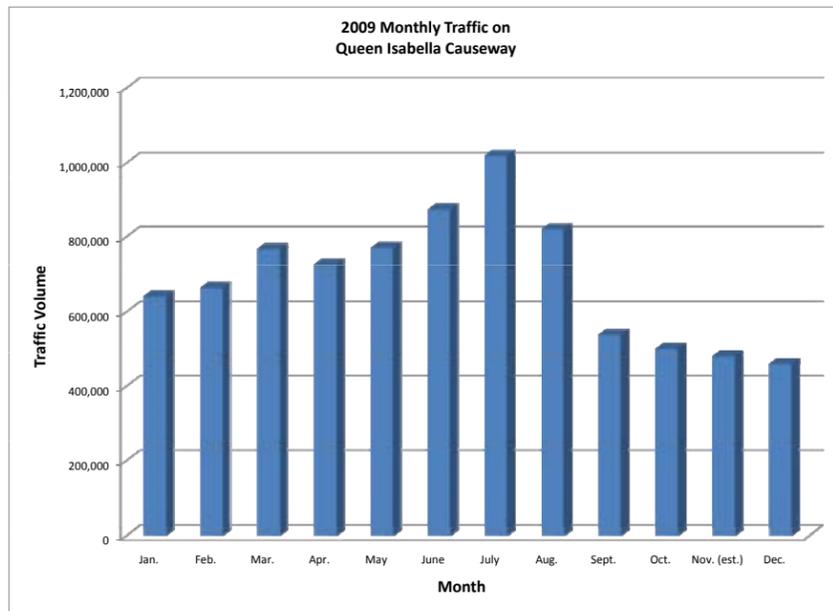


Exhibit 19: Queen Isabella Causeway Volumes by Year

volumes are approximately 50% higher than Thursday (mid-week) volumes. Exhibit 18 shows the traffic crossing the QIC by month in 2009, which demonstrates the variation of traffic throughout the year.

Exhibits demonstrating the Average Annual Daily Traffic for the last three years of available data from TxDOT are provided in the Appendix. As an average over the course of the year, the QIC and Padre Boulevard have sufficient vehicular capacity. During peak periods, traffic demand often exceeds the available capacity, primarily due to bottlenecks on either side of the QIC. Exhibit 19 shows the AADT for the QIC from 2001 to 2009, which has been relatively constant over the time period.

The existing peak season traffic conditions

were evaluated for both the weekday PM peak hour and Saturday PM peak hour turning movement traffic using the existing lane geometry and signal timing information for each of the study area intersections. The results of the intersection analyses are shown in Table 1 below and indicates that each of the study intersections currently operate at an overall acceptable level of service (LOS) during both the weekday PM peak hour and the Saturday PM peak hour. The results of the intersection analyses are provided in the Appendix. Although the intersection of Padre Boulevard & Padre Boulevard Loop operates at an overall acceptable LOS during the Saturday PM peak hour, field observations indicate that there is a latent demand of vehicles that is not being serviced by the intersection. Thus, the acceptable LOS is more a function of the turning movement count data only identifying the amount of vehicles that were actually processed, not the actual amount of vehicles that wanted to use this intersection. This intersection is the main chokepoint traveling to or from South Padre Island.

Signalized Intersection	2010 Existing		2015 without 2nd Causeway		2030 without 2nd Causeway *		2030 with 2nd Causeway *	
	Intersection LOS		Intersection LOS		Intersection LOS		Intersection LOS	
	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
Padre Blvd & Padre Blvd Loop	B	C	B	C	C	F	C	D
Padre Blvd & Harbor Street	B	B	B	B	B	C	B	B
Padre Blvd & Amberjack Street	A	B	A	B	B	B	B	B
Padre Blvd & Morningside Blvd	A	A	A	A	A	A	A	A

\* Assumes coordinated signal network between Padre Blvd Loop and Amberjack St

Table 1: Peak Season PM Peak Hour Intersection Analysis

The intersection of Padre Boulevard & Padre Boulevard Loop acts as a choke point during peak periods because the number of lanes of north/south capacity is eight lanes south of the intersection and four lanes north of the intersection for a period of approximately six blocks. Laguna Boulevard (bay side) and Gulf Boulevard (beach side)

provide additional capacity for north/south traffic beginning at Haas Street for Gulf Boulevard and beginning at Palm Street for Laguna Boulevard.

The bottlenecks on Padre Boulevard between Padre Boulevard Loop and Haas Street create backups across the causeway for vehicles entering SPI. A similar situation occurs in Port Isabel, with its network of closely spaced signalized intersections, for vehicles trying to exit SPI. As development continues to grow on SPI, the transportation network will become increasingly stressed during peak periods if improvements are not implemented. Since the major roadway network within the study area is nearly built out, only minor modifications and improvements will likely be made to the existing transportation system. This study recommends a series of roadway, parking, and transit improvements that will reduce the vehicular demand on Padre Boulevard and shift to more multi-modal trips.

Based on the multi-modal goals of the City and limited right-of-way, widening Padre Boulevard beyond four-lanes is not feasible. The overcapacity conditions are limited to peak periods, such as Spring Break and peak season weekends. Besides the multi-modal improvements proposed with this study, the construction of the second causeway will alleviate the existing peak period congestion on the QIC and on Padre Boulevard.



Exhibit 20: Queen Isabella Causeway from Port Isabel. (Photo by J. Stephen Conn)

The project team estimated future traffic volume projections for the study area for the intermediate year 2015 and the future design year 2030. The team reviewed several sources to develop an appropriate growth rate to project future traffic volumes, including the TxDOT Preliminary Traffic and Revenue Study for the South Padre Island 2<sup>nd</sup> Causeway (C&M Associates, Inc., October 2007), the Market Analysis for Padre Boulevard Initiative (TXP, Inc., Spring 2010), and historical traffic data. The result of this review indicated a one and a half percent (1.5%) annual growth rate for future traffic projections. This growth rate is expected to accommodate the projected levels of growth identified in the Market Analysis for Padre Boulevard Initiative. Based upon the improvement recommendations provided within this study, not all growth on the Island will be associated with vehicular travel. Additional growth will occur in the form of other modes of travel, including walking, bicycling, and transit, which will assist in transporting locals and visitors to/from their destinations on the Island and off the Island.

Future traffic conditions were evaluated for the weekday PM peak hour and Saturday PM peak hour for intermediate year 2015 and future design year 2030. These scenarios took into consideration the amount of projected growth on SPI. As discussed earlier, a second Causeway connecting the Island to the mainland is proposed at the northern end of the City of SPI. For the year 2030 analysis scenario, the intersections were evaluated for the "Without

Second Causeway” and “With Second Causeway” conditions to provide a comparison.

The Intermediate Year 2015 Scenario was evaluated with the existing lane geometry and traffic control for each of the study area intersections. The results of the analyses are shown in Table 1 and indicate that each of the study intersections are expected to operate at an overall acceptable LOS during both the weekday PM peak hour and the Saturday PM peak hour, with several movements and approaches operating at or near capacity at the Padre Boulevard and Padre Boulevard Loop intersection. To help traffic flow more smoothly through this chokepoint and along Padre Boulevard, modification of the signal cycle lengths is recommended, along with coordination of the traffic signals at the Padre Boulevard & Padre Boulevard Loop, Padre Boulevard & Harbor Street, and Padre Boulevard & Amberjack Street intersections.

The Design Year 2030 Scenario was evaluated both with and without the construction of the second South Padre Island Causeway. For the “Without Second Causeway” scenario, the team evaluated study area intersections with the lane geometry and traffic control recommended from the Intermediate Year 2015 analysis. The results of the analyses are shown in Table 1 and indicate that each of the study intersections are expected to operate at an overall acceptable LOS during both the weekday PM peak hour and the Saturday PM peak hour, except for the intersection of Padre Boulevard & Padre Boulevard Loop during the Saturday PM peak hour. In addition, several movements are expected to operate at or near capacity at the Padre Boulevard & Harbor Street intersection during the Saturday PM peak hour. Northbound right-turn lanes are recommended improvements at each of these intersections to improve the traffic operations.

For the “With Second Causeway” scenario, the analysis considered a redistribution of traffic entering and exiting the Island to account for the additional access provided by the second Causeway. The results of the analysis indicate that each of the study intersections are expected to operate at an overall acceptable LOS during the weekday PM peak hour and the Saturday PM peak hour.

Allowing proper circulation in SPI was a primary objective in the design of Padre Boulevard. Median spacing in the Padre Boulevard Transportation Plan is approximately every two to three blocks. The frequency of median openings every six hundred feet allows SPI to take advantage of the existing gridded network. This gridded network allows for a dispersion of traffic within SPI. This dispersion prevents any one intersection from being over utilized. Due to this circulation and dispersion of traffic, it is anticipated that generally only two vehicles will be queued in a dedicated left-turn lane, which can easily be accommodated within the turn lanes. In the event a particular intersection becomes highly utilized, the left-turn could potentially be lengthened to accommodate such demand. The dedicated left-turns at signalized intersections were designed to be longer to accommodate larger queues.

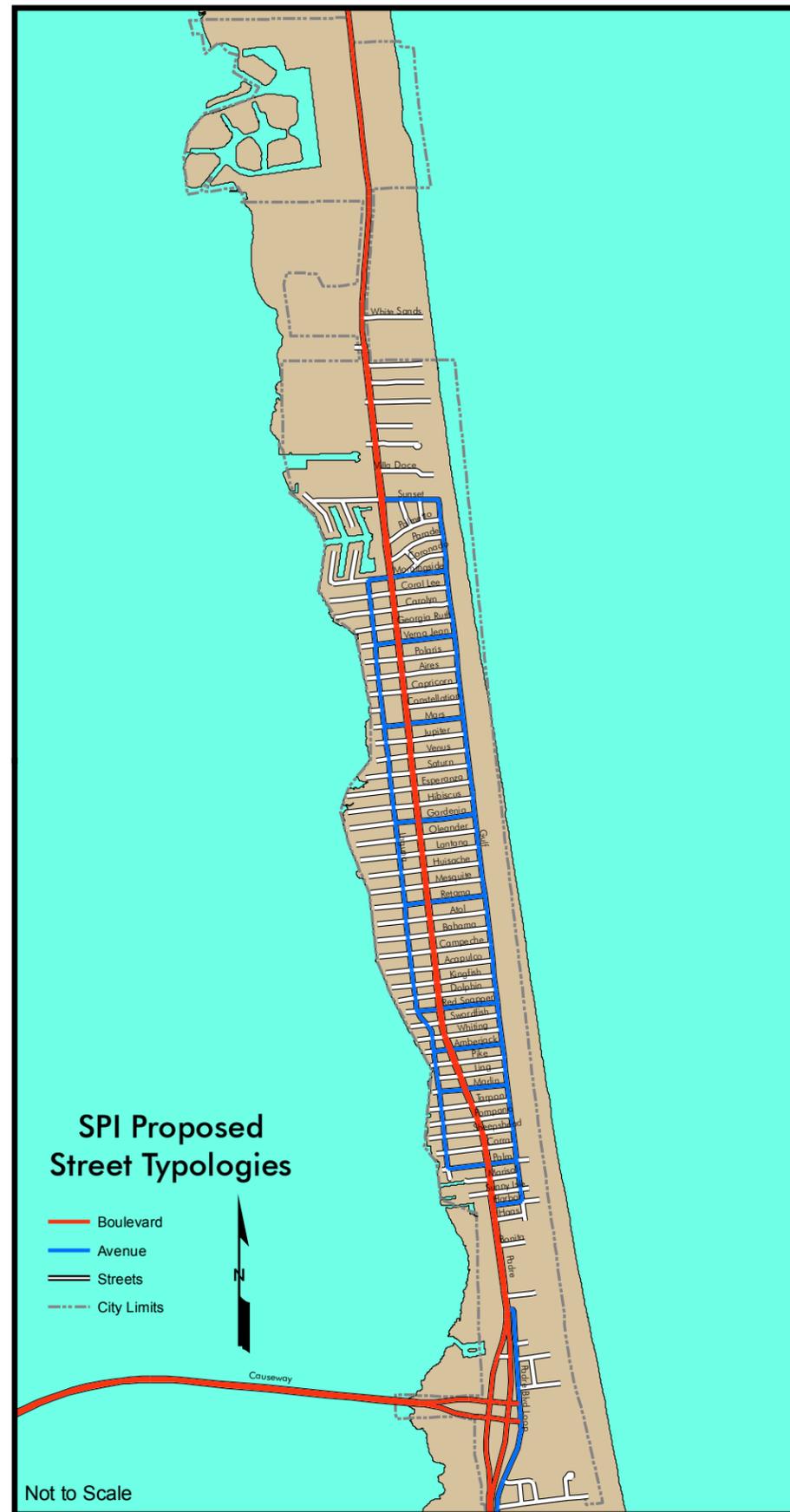


Exhibit 21: Proposed Street Typologies

The median openings are shown with crosswalks to also assist in pedestrian circulation and reduce midblock crossings. The frequency of the median openings will reduce the amount of u-turn traffic on Padre Boulevard.

### Future Traffic Signals

There are several intersections along Padre Boulevard that have been studied previously for traffic signal warrants. Historically, the side street volumes at unsignalized intersections have not met volume warrants because of the large number of east-west street choices for drivers, which disperse traffic. As part of the Padre Boulevard Multi-modal Concept Plan, future traffic signals are shown at three of the plan’s “Neighborhood Crossings.” Vehicular and pedestrian traffic may be more intense at these locations and traffic signals could be constructed, when warranted based on pedestrian crossing priorities or vehicular volumes.

### Proposed Street Typologies

Within the City limits, the roadway network is essentially built out. From the Convention Center to the north, Padre Boulevard will eventually be four-laned. Future development to the north could also result in additional roadways. Exhibit 21 shows the proposed street typologies, with boulevard, avenue, and street designations, which are the categories provided in the ITE CSS Manual. Table 2 provides the proposed design parameters for the street typologies within the City. Within the FBC area, future modifications to the roadways should be paired with the illustrative FBC, which is provided in the Appendix.

Padre Boulevard has the “Boulevard” (arterial) classification. Within the urban designation, Padre Boulevard is currently four-laned with either a median or center turn lane within 100 feet of right-of-way; to accommodate the proposed design elements discussed later in this report, 10 foot easements are proposed on each side of the roadway to accommodate pedestrian

	Boulevard		Avenue			Street
	Padre Blvd (Urban)	Padre Blvd (Suburban)	Major East/West Roads	North/South Roads	Padre Blvd Loop	Local Roads
Minimum Sidewalk Width	6'	12' trail	5'	5'	5'	N/A
Number of Through Lanes	4	4	2	2	4	2
Target Speed (MPH)	30	40	25	30	30	25
Lane Width	10-12'	12'	10-11'	10-11'	10-11'	10-11'
Median Width	15'	28'	N/A	N/A	N/A	N/A
On-Street Parking width	8' - 15'	N/A	0-9'	0 - 9'	N/A	0-9'
Bike Lanes	(2) 5'	Use multi-use trail	Sharrow markings	Sharrow markings	N/A	N/A
Right-of-Way (ROW)	100' with (2) 10' easements	200'	50'	Varies	50'	50'

Table 2: Proposed Street Typology Design Matrix

access. North of the convention center, Padre Boulevard has 200 feet of right-of-way and is currently two-laned, although it will be widened to four lanes in the future.

Laguna Boulevard has the “Avenue” or collector classification. It is a two-lane roadway that runs parallel to Padre Boulevard between Palm Street and Morningside Drive. Within the Entertainment District, Laguna Boulevard is within the Form-Based Code limits. Exhibits 22 and 23 provide before and after renderings of Laguna Boulevard within the Entertainment District. North of the Entertainment District, Laguna Boulevard is a residential-focused avenue.

Gulf Boulevard has the “Avenue” (collector) classification. It is a two-lane roadway that runs parallel to Padre Boulevard between Haas Street and Sunset Drive. Gulf Boulevard currently provides parallel parking and a paved walkway that is part of the pavement. The redesign of Gulf Boulevard is part of another on-going initiative.

Several of the east-west roadways are classified as “Avenues” to differentiate between the local “Streets”. The east-west avenues have existing or proposed full access intersections with Padre Boulevard and provide connectivity to Laguna Boulevard and Gulf Boulevard. As avenues, these roadways should provide sidewalks to provide better pedestrian accommodations within the City.



Exhibit 22: Laguna Blvd Rendering Before



Exhibit 23: Laguna Blvd Rendering After

### Pedestrian and Bicycle Traffic

South Padre Island has tremendous opportunity to improve the accommodations for bicyclists and pedestrians. Currently, there is a general lack of continuous sidewalks throughout the City. Padre Boulevard sidewalks are located between the street and straight-in parking, which creates an unsafe walking experience. Most of the east-west streets, which are generally low-volume, do not have sidewalks. Gulf Boulevard has sidewalks that are part of the pavement roadway and are separated only by striping from vehicles and parking areas. During peak periods, many pedestrians walk from the beach to the Entertainment District, having to cross Padre Boulevard. Four intersections have medians with crosswalks at non-signalized intersections that provide crossing opportunities and reduce jaywalking. Some median areas have temporary barriers preventing pedestrians from crossing mid-block during peak periods. No crosswalks exist in the 27 block area between Red Snapper Street and Morningside Boulevard. To cross Padre Boulevard

through this area, pedestrians are expected to jaywalk and must cross 82 feet of pavement (four travel lanes, two paved shoulders, one center turn lane) with no median refuge. With the implementation of the proposed multi-modal plan for Padre Boulevard, pedestrian crosswalks are proposed at each of the intersections with median openings. In addition, the Appendix includes typical cross-sections within the FBC area.

Accommodating pedestrians in an inviting way can lengthen the distance visitors are willing to walk from where they park. Pedestrian facilities also have a number of ancillary benefits such as improving the health of employees and visitors, expanding private development opportunities, and adding commuting options for employees that live close to work. In addition, higher pedestrian activity can also reduce the impact on the roadway capacity improving mobility and reducing delays.

Bike lanes exist on Padre Boulevard between the Queen Isabella Causeway and Red Snapper Street. They are a re-designation of the paved shoulders. Unfortunately, the shoulders are 10 feet wide from the edge of the travel lane to the face of the curb, which is wide enough to be used as a travel lane. Based on the 1999 AASHTO Guide for the Development of Bicycle Facilities (and draft 2010 Guide), bike lanes should normally be five feet wide. Once bike lanes are seven feet wide or wider, they can be mistaken for parking or travel lanes. On Laguna Boulevard and Gulf Boulevard, bicyclists can comfortably ride with automobile traffic because of the slow speeds and low traffic volumes; separate bicycle lanes are not needed on these facilities or the east-west facilities in the City, although shared-lane markings could be installed to provide more recognition to motorists of bicycle traffic.

In the State of Texas, bicycles are considered vehicles on all streets except those specifically noted, such as access controlled highways. This law means that bikes should be incorporated into transportation circulation and roadway designs. Other cities have experienced rapid increases in the use of bicycling with the provision of dedicated facilities for bikes.

Transit systems benefit from pedestrian and bicycle improvements near the stops and destinations by allowing users to comfortably complete the first or last mile or more of their trip every day by walking or riding a bike. The concept of providing safe pedestrian and bicycle accessibility should be incorporated in future roadway designs.

### Roadway Recommendations

- Coordinate traffic signals on Padre Boulevard from Padre Boulevard Loop to Amberjack Street.
- Monitor major unsignalized intersections for future traffic signalization.
- Consolidate driveways along Padre Boulevard when possible and with redevelopment.
- Phase out direct access parking on Padre Boulevard between the Padre Boulevard Loop and Haas Street.
- Interim change – stripe a buffer between the travel lanes and bike lanes to create a 6 foot bike lane with 4 foot buffer within the existing four-lane portion of Padre Boulevard.
- Interim change – stripe a buffered bike lane between Red Snapper Street and end of four-laned roadway to the north, even before remainder of median construction.
- Update the bike lane sign and pavement markings – diamond is only allowed for HOV vehicles. Bike lane should not be labeled as “Right lane” on the sign.
- Place shared lane (sharrow) bike lane markings on Laguna and Gulf Boulevards.
- Provide continuous sidewalks on the thoroughfare boulevards and collectors .
- Develop schematic design for Laguna Boulevard through the Entertainment District to inform future development.
- Develop schematic design for Gulf Boulevard.

# Parking

Parking is an essential piece in the overall experience of a visitor to the area and also affects business owners and residents. Throughout the Form-Based Code Initiative, parking has been a major discussion topic with stakeholders.

The 2007 parking study indicated that while the current parking supply is adequate within the City, it is neither ample nor convenient for all users due to its location. In the short-term, parking will need to be provided for new development using the existing established trends. However, in the long-term, parking demand within the FBC area will be better managed by multi-modal measures, such as expanded transit and shuttle service, expanded pedestrian and bicycle access and circulation, and accommodation of employees in workforce housing so that they may walk or bike to work. Beach parking areas, besides Gulf Boulevard, will be utilized in conjunction with transit service to provide adequate parking for visitors and reduce the demand on Gulf Boulevard.

As businesses along Padre Boulevard were developed, the norm was for straight-in (perpendicular) parking between the right-of-way and the building face. This required driving over the sidewalk, which creates an unsafe interaction with pedestrians. In addition, vehicles must back up directly onto Padre Boulevard with limited visibility depending on the location. The City recently banned any new straight-in parking along Padre Boulevard, although it is prevalent at many of the existing businesses. As proposed with the multi-modal transportation plan, parking along Padre Boulevard should transition into the right-of-way and be constructed as back-in angled and parallel parking based on the development context. On-street parking along Padre Boulevard should generally be limited to the area between Haas Street and Morningside Drive.

When Padre Boulevard was constructed as a four-lane facility in 1987, it was constructed with parallel parking lanes within the right-of-way. At some point, the parking lanes were designated as paved shoulders, and now a portion of the shoulders are designated as bike lanes. Because it is considered a shoulder in some locations and a wide bike lane in others, it is ambiguous as to its use and creates potential conflicts between bicyclists and cars.

## Beach Parking

The City of SPI has closed a portion of the beach to vehicles. Per the Texas Open Beaches Act, one public parking space should be provided for every 15 feet of closed beach within ¼ mile of a beach access point. Currently beach goers park for free within the City at a number of locations. The most common beach parking area (apart from County parks) is on-street along Gulf Boulevard and at the beach access parking areas along Gulf Boulevard. Beginning in 2010, the City restricted parking on the east-west streets between Padre Boulevard and Gulf Boulevard from March to September to permitted vehicles only. Based on discussions with the Texas General Land Office, the city should provide transit service and wayfinding signage to direct beach goers to parking areas if the City intends to locate beach parking more than a quarter-mile from areas of closed beach.

Based on an October 2010 analysis by the City, 1,620 spaces are required to meet the goals of the Open Beaches Act. The City summarized 1,782 existing available parking spaces for beach goers:



Exhibit 24: Gulf Blvd



Exhibit 25: Padre Blvd

- Gulf Boulevard on-street = 256 spaces
- Beach Access cul-de-sacs = 209 spaces
- Convention Center = 469 spaces
- Post Office = 83 spaces
- Birding Center = 112 spaces
- City Hall = 105 spaces
- West 100 Block between Padre and Laguna = 448 spaces
- Contributed by County Parks for Shores Development = 100 spaces

## Form-Based Code Area Parking Demand

Within the FBC study area, we assumed 1,836 KSF of retail/lodging and 274 KSF of office existing based on the property database. The future non-residential growth is 503 KSF (437 KSF of retail/lodging and 66 KSF of office) based on TXP's Market Analysis. The following summary demonstrates the existing and future non-residential parking demand within the FBC area:

- Existing parking demand (1,836 KSF of retail/lodging and 274 KSF of office) = 5,459 spaces
  - This assumes 85th percentile demand on a weekday (3.16 vehicles per 1,000 SF for retail, 3.45 vehicles per 1,000 SF for office)
- Existing parking demand using shared parking reductions = 5,054 spaces
- Existing excess supply (based on Carl Walker study) = ~42% occupied during Saturday peak season
- Future parking demand = 6,761 spaces
- Future parking demand using shared parking reductions = 6,259
- Increased parking demand = 1,205 spaces (assuming shared parking; takes credit for existing excess capacity)
  - 1,205 spaces / 503 KSF = 2.4 spaces per 1,000 SF demand

## Parking District Concept

An important step in improving the overall parking experience is the formation of a unified parking and local transit product where a visitor can park once and navigate through the entire City. The formation of a parking district could improve the overall parking experience in the SPI.

A parking district manages parking operations, often across individual boundaries. It is a mechanism that can be used for funding joint mobility initiatives and creating a more walkable environment. The most effective and progressive parking programs are those that have embraced a "dual mission philosophy" relative to parking management. That is, when parking is managed by an organization whose primary objectives are area-wide development and access, decisions are made relative to the whole area and not just individual components. Typically when organizations are successful in managing parking, there is often a change in staff and program attitudes, such as "How can we manage parking to make the island more visitor-friendly?" or "Everything we do regarding parking should enhance the overall SPI experience!"

Characteristics of a Parking District:

- A defined mission and vision

- Coordination of all aspects of parking operations (multi-level structures, surface lots, enforcement, maintenance, wayfinding, pricing strategies, branding, etc.)
- Typically headed by a President or Executive Director reporting to a Board (Typically 7 – 12 members)
- The Board comprised of influential stakeholders based upon representation determined through a variety of methods (number of beds, number of parking spaces, revenue, etc.)

Parking districts are flexible in that the City can develop an approach that provides the desired amount of authority to the parking district to satisfy the needs of the individual stakeholders. The entire City could be within the parking district. The district could be City-led or operate as a business improvement district. The parking district can set a pricing strategy to meet City-wide goals, such as construction of new facilities or maintenance of existing facilities. With collection of parking fees (including the fee in-lieu), the City is obligated to use the fees for parking or parking-related uses (such as funding a park and ride bus), but has no obligation to build parking at a certain location. The parking district can be its own governing board, which can manage all funds and revenues, such as residential and commercial permits and beach parking fees.

## Parking Wayfinding

The ease in which available parking is found is the first experience a visitor driving to SPI will encounter. Wayfinding systems provide guidance to parking areas, especially beach-related parking. Wayfinding signs along with parking availability guidance can alert drivers if intended visitor parking is available in time to divert to another destination if needed. Basic guidance can provide visitors with consistent parking signage throughout the City, including lot identification, entrance/exit signs, and area maps. The City has already provided wayfinding signs at each of the beach access points, as shown in Exhibit 26. If temporary park and ride locations are used during peak periods, temporary wayfinding should direct visitors to the appropriate locations.



Exhibit 26: Beach Wayfinding Sign

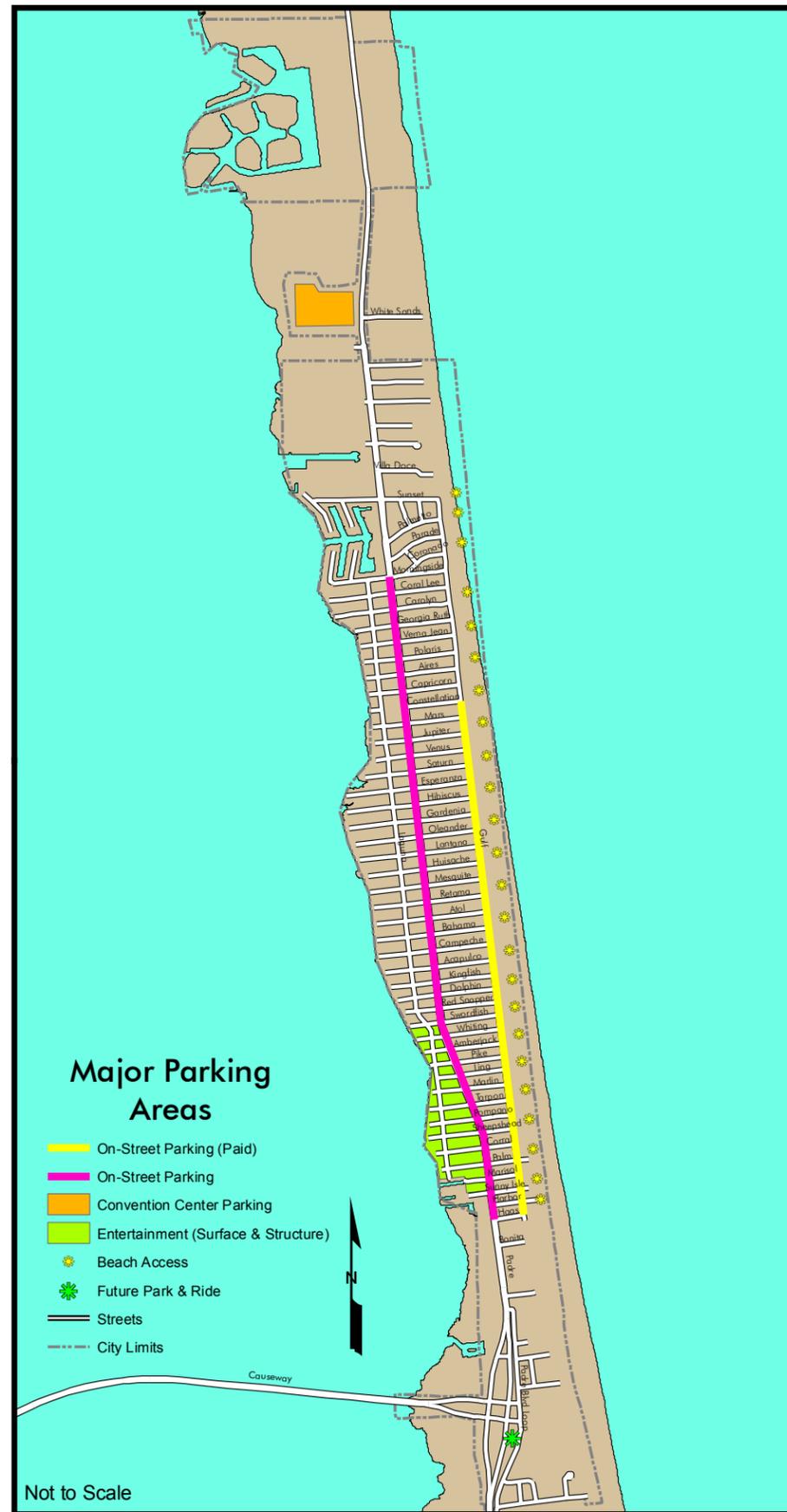


Exhibit 27: South Padre Island Major Parking Areas

## Parking Recommendations

- For Gulf Boulevard on-street, no increases in number of parking spaces in the future.
- For the beach access cul-de-sacs, no parking between 2 AM – 6 AM.
- Charge for paid parking during peak season for Gulf Boulevard on-street and on the beach access cul-de-sacs. Recommend a flat \$1/hr rate from 9 AM – 5 PM with no time limit.
- Determine if the paid parking will be managed by the City or by a vendor. If by a vendor, release an RFP for a parking operator, with a portion of the revenue being provided to the City.
- Explore parking district concept for operations and management.
- Transition from straight-in to back-in angled parking along Padre Boulevard between Haas Street and Morningside Drive in conjunction with multi-modal transportation plan.
- Phase out direct access parking on Padre Boulevard between the Padre Boulevard Loop and Haas Street.
- Phase out direct access parking on Padre Boulevard north of Morningside Drive.
- Focus wayfinding signage for beach parking at major locations.
- Construct future Park & Ride. The P&R will provide between 300-400 spaces once constructed. Provide wayfinding signage and transit service.
- Use free surface parking (and potentially paid future structured parking) in Entertainment District as daytime beach parking. Provide wayfinding signage and beach circulator transit service during peak season.
- Parking supply along the Padre Boulevard corridor should be supplemented by the future parking within the TxDOT ROW. Limit parking to 2 hour maximum within TxDOT ROW between 9 AM – 5 PM. This shared parking supply does not count toward required parking for businesses. If spaces are lost due to conversion from straight-in to back-in angled parking along the Padre Boulevard frontage, businesses are grandfathered in.
- A public/private partnership is encouraged to build a structured parking lot in the Entertainment District. If located within 1,000 feet, a development could pay a fee in lieu of providing parking if garage exists (City-owned) or lease spaces if garage exists (privately-owned).
- Padre Boulevard Non-Residential (not at neighborhood crossings) - Require 1.0 space per 500 SF minimum for existing development/uses (1.0 space per 400 SF minimum for new). No maximum. Can propose alternative standards if a shared parking plan between uses or parcels is approved by the City.
- Padre Boulevard Non-Residential (at neighborhood crossings) - Require minimum of 1.0 space per 500 SF. Maximum of 1.0 surface space per 300 SF, unless providing structured parking. Can reduce if a shared parking plan between uses or parcels is approved by the City.
- Entertainment District Non-Residential - Require minimum of 1.0 space per 300 SF. Can reduce if a shared parking plan between uses or parcels is approved by the City. No maximum standard established.
- All FBC Areas Residential – Require minimum of 1.5 spaces per dwelling unit. No maximum standard established.

# Transit

The Wave provides free transit service between SPI and Port Isabel for residents, employees, and visitors. The existing system consists of five shuttles, has a regular commuter ridership, and is well used by visitors during peak periods. Four shuttles run at any one time, with the fifth rotating out for repairs and preventative maintenance. The shuttles are equipped with handicap ramps, bike racks on the front, and are in the process of being modified to include a storage platform for visitors' beach gear. Covered shelters are provided at several transit stops along Padre Boulevard. In front of City Hall, a transit pull-off area is also provided for the southbound direction.

Fixed transit routes are used, although the City proactively makes changes to the routes to provide the best service possible with the limited resources available. In 2010, the City provided two routes with 30 minute headways (time between buses reaching a given location). One route provided service on SPI only and the other serviced both Port Isabel and SPI. Service is provided along Queen Isabella Highway 100 through Port Isabel and connects to the Rio Transit system, which includes coverage of the Brownsville SPI International Airport.

For the last three fiscal years, ridership has been fairly steady, with 309,081 in 2008, 308,863 in 2009, and 315,989 in 2010. Approximately 1% of the passengers bring a bike and approximately 0.1% of the passengers have wheelchairs. Exhibit 28 demonstrates the monthly variation in ridership throughout fiscal year 2010.

In January 2011, SPI was selected for Federal Transit Administration fast-track funding to construct a transit facility. This facility will be located within TxDOT's Padre Boulevard right-of way, just south of the Queen Isabella Causeway and will provide a transit transfer center and approximately 400 park and ride spaces. This location will serve to alleviate some of the congestion to

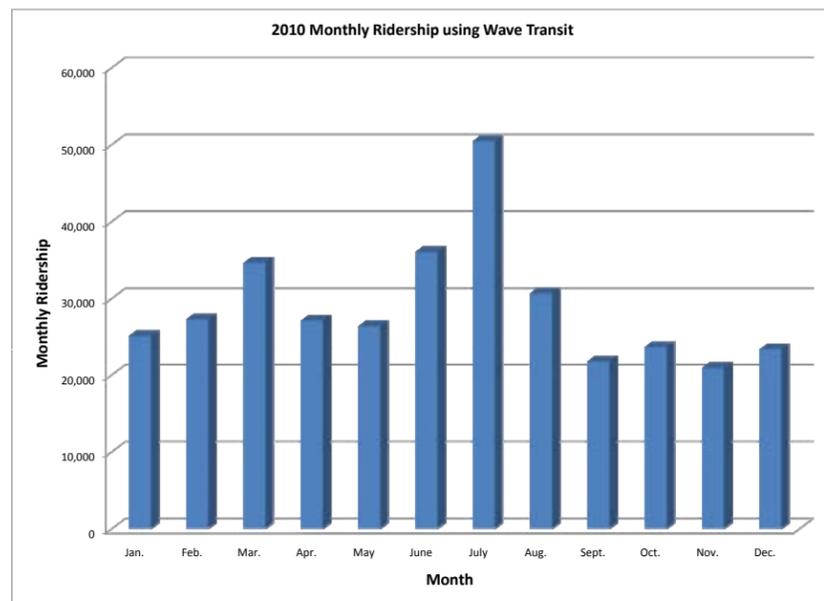


Exhibit 28: Monthly Variation in Transit Ridership

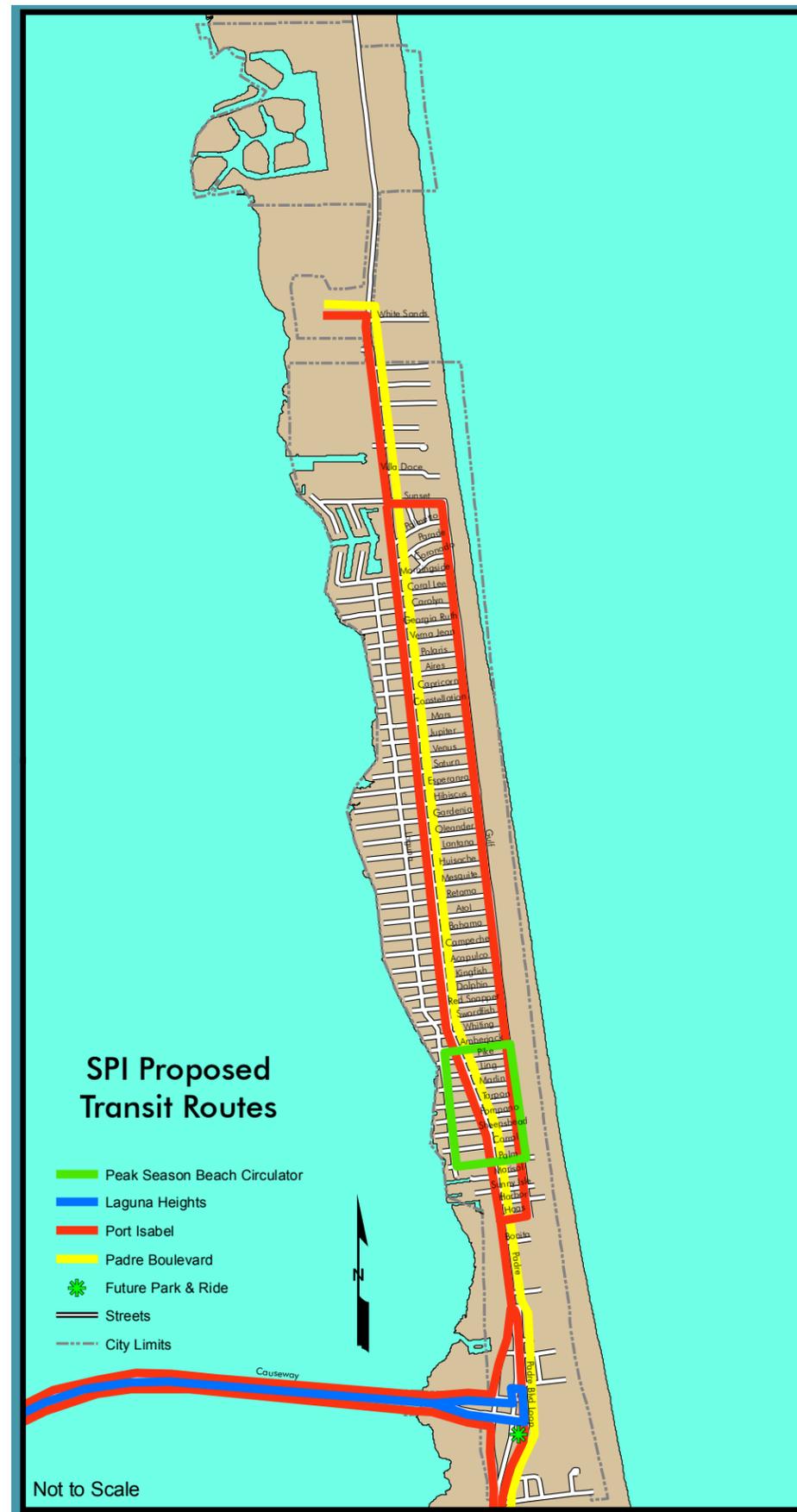


Exhibit 29: South Padre Island Proposed Transit Route

the north on Padre Boulevard by reducing the vehicular demand on the roadway.

Exhibit 29 details the basic transit routes envisioned for South Padre Island to provide service for residents, employees, and visitors. Other than the Beach Circulator route, the City began implementing these routes in January 2011. The routes vary in terms of distance covered and operating headways, but each route provides a specific transportation purpose for various portions of the island.

A transit hub is proposed at the future transit park and ride station in order to provide transfer and bus hold-over locations to accommodate the route structure proposed. If a transit hub is created in the Entertainment District in the future, the routes should be modified to accommodate it. The Transit Hub concept is critical to the successful implementation of this route structure because it allows for necessary transfers between routes to be accommodated within scheduled service parameters.

### Padre Boulevard Route:

The Padre Boulevard Route provides service to Padre Boulevard from the Convention Center to Isla Blanca Park. The route links destinations such as the Entertainment District, the Convention Center, lodging locations, and commercial areas along the corridor. The 2011 route will operate on 30 minute headways using one shuttle. It will tie into the future transit hub at the Park and Ride and facilitate transfers with the Laguna Heights route.



Exhibit 30: Existing Bus on South Padre Island

### Laguna Heights Route:

The Laguna Heights Route provides service from Laguna Heights Park to SPI near the Visitors Center. The 2011 route will operate on 60 minute headways using one shuttle. The route links destinations such as Laguna Heights, Port Isabel, the Port Isabel High School, connection to the Valley Metro Shuttle, and SPI. It will tie into the future transit hub at the Park and Ride and facilitate transfers with the Padre Boulevard route.

### Port Isabel Route:

The Port Isabel Route provides off-island access for residents and employees. This service option is the longest route; however, a significant portion of the route operates at a higher speed along the causeway bridge. The 2011 route will operate on 30 minute headways using two shuttles. It provides coverage for all of Port Isabel and SPI without requiring transfers. It will tie into the future transit hub at the Park and Ride.

### Peak Season Beach Access Circulator Route:

The Peak Season Beach Access Circulator is a proposed route that should operate on 10-15 minute headways throughout the day. The service will begin within the Entertainment District and provide access to the Beach via Marlin Street and Amberjack Street. This service will provide residents, employees, and visitors a transportation choice when travelling within the heart of the daily activity center for the Island. This will require an additional shuttle to operate and maintain the existing service frequencies for the other routes.

By operating a system of shuttles that provide services along Padre Boulevard and access to Port Isabel at higher frequencies, SPI can maximize the current transit infrastructure while planning for future growth. For some patrons, this route structure may require a transfer at the Park and Ride location and amenities for protection from the sun and any precipitation are crucial to ensuring the expanded use of the system. In general the route structure for the system will focus on two aspects of the system Padre Boulevard and Port Isabel access. Routes serving Padre Boulevard (Padre Boulevard route and Port Isabel route) should be maintained at off-set intervals to provide shorter headways, as they have similar coverage for SPI and the commercial core of the Island. Routes serving Port Isabel, Port Isabel route and Laguna Heights route, should be maintained at off-set intervals to provide shorter headways, as they have similar coverage for Port Isabel. The Concept of off-set intervals ensures regular access to transit within the majority of the focus corridor; however transfers are a necessary reality to making this structure functional. The proposed Park and Ride facility will accommodate the transfer activities for the time being, however, should an entertainment district transit hub become functional, the service parameter would likely shift based on the needs of that location.

A future option for enhanced shuttle service is the concept of dynamic service, which lets the rider know when the next shuttle will arrive; Shuttles and stations would have to be retrofitted to provide real-time information and the schedules, as shown in Exhibit 31.

## Transit Recommendations

- Construct proposed Transit Center with Park & Ride. Provide shuttle service to the beach and to other routes. Include storage platform on all shuttles for visitors' beach gear if not already equipped.
- Consider revising routes to transfer at a central location.
- Reduce headways for transit service as funding allows. Set a goal of wait times of approximately 10 minutes maximum during peak periods on SPI. At significant transfer locations, consider a goal of no more than 5 minute wait times to transfer.
- Include storage areas on all shuttles for beach-related equipment.
- Provide beach circulator route during peak season to connect Entertainment District to beach.
- Update routes to accommodate actual demand.
- Provide shuttle service from major Convention Center to beach if used for beach parking areas to the beach (P&R, Entertainment District, Convention Center).
- Provide bus turn-outs at FBC development nodes with re-design of Padre Boulevard.
- In the future, provide enhanced stations and shuttle technology that is incorporated into the transit network. The schedules will transition from set schedules to dynamic service, which lets the rider know when the next shuttle will arrive.



Exhibit 31: Enhanced Shuttle Station Example

# Investment Strategies

Leveraging investments between private and public partnerships both on the local and Federal level is essential to meeting the redevelopment and growth strategy envisioned by the City. Proposed investments should be weighed against the return on investment it will have for the City. This strategic investment plan provides a guide and should be revisited and modified, as appropriate. The purpose of this strategy is to set the course and describe a new financial model, one that relies upon the blurring of institutional boundaries and takes advantage of available federal and local funding options.

The federal transportation funding process is under a major transformation. The past model relied upon strict funding formulas that roadway and transit agencies had to meet. Roadways and transit had to demonstrate by means of a computer forecast model based on a 25 year population distribution trend to justify traffic counts and ridership, respectively. This funding model is unsustainable as evidenced by the sheer number of earmarks aimed at producing projects of local and regional significance. The way federal funding is being allocated is changing, as demonstrated through a number of pilot projects with the Department of Transportation, Housing and Urban Development and Environmental Protection Agency that provide funding for walkable communities and multi-modal corridors.

The 2010 livability indicators as defined by DOT, HUD and EPA:

- Provide more transportation choices. Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.
- Promote equitable, affordable housing. Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- Enhance economic competitiveness. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.
- Support existing communities. Target federal funding toward existing communities — through strategies like transit oriented, mixed-use development, and land recycling — to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- Coordinate and leverage federal policies and investment. Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy
- Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods — rural, urban, or suburban.

Creating a mechanism to deliver the infrastructure, develop the partnerships, and operate the improvements is critical to being awarded funding and attracting other funding sources. SPI should partner with TxDOT, Cameron County, and Port Isabel to ensure the City is a high priority for future grant opportunities. Paired with a master plan vision and implementation program that assures predictability between multiple property owners, a de facto master developer arrangement will assure that SPI develops in a unified and sustainable manner, even while using multiple streams of financing, ownership and operations.

Funding sources that can be leveraged to work towards the desired changes include:

- TxDOT funding options, such as safety grants and enhancement grants, can be used within the existing corridor for median and sidewalk improvements.
- Local bond programs typically fund major transportation improvements. In the past the City has proposed bond elections to fund infrastructure improvements.
- Tax Increment Reinvestment Zones (TIRZ). The City is currently implementing a TIRZ for the Padre Boulevard Corridor. Over time, this will provide a funding stream that can be used in conjunction with other funding tools to implement the vision for Padre Boulevard.

## Conclusion

The development of a multi-modal transportation plan is a critical step towards the future of the SPI. In order to continue to position SPI as a world class community and vacation destination, steps need to be taken towards the improvement of the City's infrastructure that will both support the growth of the area, and improve the overall experience for both residents and visitors. With a clearly defined vision, the City now needs to take strategic steps to begin to implement the vision.

The first step is to begin public communication of this plan. Communication of the highest priority improvements within the City should be given to the Congressional Delegations to begin positioning SPI to obtain Federal funding. Continual coordination with TxDOT, Port Isabel, Cameron County, and other related entities should occur to communicate the clear desires of SPI and help identify funding sources.

The roadway cross sections developed during the planning process promote a blending of transportation options in a manner that is pedestrian friendly, recognize the importance of devoting right-of-way to bicyclists and clearly defining their realm within the travel shed, and accommodate a public parking concept that would allow visitors, residents, and business owners to access locations throughout the City including the beaches, entertainment district, commercial corridors and residential areas. The design concept also includes provisions for the inclusion of transit stop locations throughout the corridor and the development of pedestrian systems to create a comfortable environment for patrons boarding or alighting the transit vehicles.

Through the development of the Form-Based Code, the City will work with the development to create intrinsic value along the corridor by allowing for greater development potential, encouraging a mix of uses, promoting mixed-income housing options, and allowing the existing businesses to evolve as their consumer related demands change over the course of the corridor's redevelopment. By creating this atmosphere of predictability, with an understanding of the market forces at play, the City will work with the development community to generate an economic engine that recognizes the benefits to the current revenue streams, and seeks to promote a sustainable development pattern for businesses throughout the corridor.

Padre Boulevard is the existing "Main Street" for South Padre Island. By creating an environment for redevelopment and reinvigoration, SPI is continuing to promote the economic competitiveness of this Main Street while protecting the residential areas from development pressures that might not fit within the overall context of the neighborhood. Without the completion of the Schematic Design, the likelihood of pilot projects such as moving parking onto the public- right-of-way to increase the pedestrian amenities and developable area is severely diminished given the uncertainty of a corridor-wide program for parking transitions, access, and overall uncertainty regarding the future design and implementation of the envisioned cross section.