

CITY OF PORT ISABEL

COMPREHENSIVE PLAN

PLANNING PERIOD 2005-2015

APRIL, 2005

F. THOROUGHFARE SYSTEM

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The data, information, analysis, and recommendations presented herein are exclusively for planning and budgeting purposes and do not constitute engineering analysis or detailed cost estimates. Engineering for each of the recommended tasks are beyond the scope of these studies and should be performed in the customary fashion as projects are defined and implemented.

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F.1. INTRODUCTION

As mentioned in the streets section of this study, a streets network is the link within and external to a community, a city's livelihood is critically dependent upon its streets. Convenient, safe and efficient access within the community as well as to adjoining areas is the primary function of a street network, major thoroughfares included. The streets network of any city operates, in effect, as the arterial system of that city, providing access in varying degrees to all properties abutting the network. Thoroughfare and other rights-of-ways occupy a large section of the total developed area and allows for circulation between all areas within the City. In addition to moving traffic, these thoroughfares provide access to and drainage for abutting properties, open space between buildings and right-of-ways for utilities. The street network including these major thoroughfares are therefore primary factors in supporting land use. Due to their visibility and exposure, street conditions are typically the most noticed infrastructure of a city and one which generates the most criticism. Due to its high cost in comparison to other infrastructure components, adequate street construction and maintenance can represent the largest single required expenditure of a city. Fortunately, both major thoroughfares in the City, State Hwy. 48 and Hwy. 100 are maintained by the State of Texas. With the exception of drainage, and land acquisition, the state usually provides most if not all construction and maintenance on these roads.

Both of these roadways consist of asphalt and adequate drainage. Hwy. 100 has curbs and gutter from where it enters the City near Laguna Heights in the west to the Causeway. A recent annexation located north on South Padre Island was designed as a rural highway and lacks curb and gutter. Both of the roads have been constructed with proper right-of-way and sufficient pavement widths. The thoroughfares appear to be very well maintained by the State and the City has done an exceptional job with the landscaping. Since the State is currently working on construction of a second causeway, it critical that the City planners coordinate the location and design a thoroughfare plan for the new route. Traffic, land acquisition, drainage and economic considerations should be well thought out before beginning any improvements. It is essential that the City have a plan in place to support the proposed new land uses and growth that are sure to develop with the construction of a second causeway. It is through such a plan that this proposed

project will provide maximum benefits and will become an integral part of the City. This should also assist in minimizing duplicative expenses and obsolescence of improvements.

F.1.2. Definition for major and collector streets

Field survey results and classifications are graphically depicted in **Map F.1. Thoroughfare Conditions Map**. For ease of reference the “Thoroughfare Conditions”, Map F.1, illustrates the major characteristics of Hwy. 48 and Hwy. 100 and the various collector streets identified in this Study. Streets and roads are typically described in terms of usage such as major or minor traffic use. The four most common terms used for Cities the size of Port Isabel are 1) Major Arterial, 2) Minor Arterial, 3) Collector Street and 4) Residential or Minor Street. Street rights-of-way and street widths are the most notable features to most persons. Major Arterial can have ROW’s averaging 120 feet in width to up to 1,000 or more and are almost always multi-lane, four or more, while minor streets usually have ROW of 50 feet and are two-lane streets with an average width of 32 feet. An example of a Major Arterial is Expressway 77 or Expressway 83, neither of which extend to Port Isabel. In a City like Port Isabel state highways and farm-to-market roads would be examples of minor arterials. As mentioned previously in this Plan, there are two State Highways within the limits of the City, State Highway 100 and State Highway 48. The City’s roadway system is comprised mainly of residential streets. Most streets are classified as residential, with a few collector streets. Residential streets are designed for a particular block or neighborhood and are laid out so as to discourage their use by fast and thru traffic. Collector streets are by definition, just that; they collect traffic from other streets. Collector streets are typically wider than most other “City” streets and are many times called side streets, because few if any lots front them. They are designed to collect traffic from minor streets, both in residential areas or commercial areas and direct traffic flows outwards from those areas. Examples of collector streets are 2nd and 3rd Streets. Examples of residential streets are Hickman Street and Adams Street

F.2 PREVIOUS THOROUGHFARE STUDIES

Previous Studies

A Streets Improvement Program analysis was made in 1998. This study basically evaluated some streets that at the time City officials felt needed improvements. *Martin,*

Brown & Perez Engineering & Surveying based in Harlingen, Texas was commissioned to do the study. The study basically estimated cost for improvements but offered no recommendations for funding or prioritization. Based on the observations of this author, only some of the noted improvements were addressed. A comprehensive street assessment study was recently (2004) made for the City of Port Isabel by *Cruz-Hogan Consultants, Inc.* also based out of Harlingen, Texas. It too, however consists only of estimated costs and methods for improvement of existing streets with no reference to financing or prioritization. Neither study made references to “thoroughfares or collectors”. The State of Texas is currently conducting studies, not specifically thoroughfare studies, but aimed at the feasibility and location of a second causeway.

Current Study

This report includes an inventory of physical characteristics of the thoroughfares and collectors street system of record including the following:

- 1) Classifications of existing street conditions
- 2) Paved areas
- 3) Right-of-way widths
- 4) Existing curb and gutter locations
- 5) Land use and traffic generator
- 6) Truck routes

These inventories and results are found in other sections and tables within this Chapter.

F.3 THORUGHFARE SYSTEM INVENTORY

F.3.1 Classifications

For the purpose of this planning study, the following classifications were used:

- 1) **“Good”** -Surface is smooth with no cracks or potholes.
- 2) **“Fair”** -Surface has longitudinal and vertical cracks, previously sealed cracks, and/or small areas of potholes.
- 3) **“Poor”** -Extensive patches, potholes, large unsealed cracks, loose gravel. All unimproved streets are classified here.

Each street or road is designated as pavement, caliche, dirt, and not distinguishable.

F.3.2. Existing Street Conditions Findings

As mentioned in other sections of this Study a significant find during the study was that most streets in the City are in relatively good condition despite the fact that they

appear to be poorly maintained. Compared to other City's of similar size in the Valley, the collector streets conditions are above average. All City collector streets are constructed with an asphalt base except about 100 feet of Garcia Street from Hwy. 100 to Maxan, which are made of concrete. The following **Table F.1** represents the percentage of each categorical condition:

TABLE F-1 Collector Street Pavement Conditions		
Condition	Estimated Linear feet	Percent of Total
GOOD	21,600	57.2
FAIR	15,025	39.7
POOR	1,200	3.1
Total	37,825	100%

F.3.3. Peak Hour Data and average daily traffic counts

Peak Hour Data and average daily traffic counts are currently not available from TxDOT for streets in Port Isabel, however average daily traffic counts are listed in Tables F-3 and F-4 as are the counts for the South Padre Island Causeway.

F.3.4 Traffic Control Data

Collector street signage appears to be fairly comprehensive with a large majority of the streets having uniform, consistent and proper signage. City officials should however immediately conduct a City-wide comprehensive inventory of all signage and replace or repair any inadequate or defective signs since they might pose a potential threat to the safety of the citizenry. State highway system signs are above average.

F.3.5. Parking restrictions

A City-wide wind-shield survey basically concluded that the City has adequate parking for all business related activities and for all public facilities. The construction standards contained in the City's Subdivision Ordinance is quite adequate for parking space needs as long as it is followed and enforced. State standards for on-street parking are adequate in those areas where off-street parking on Hwy. 100 is required.

F.3.6. Curb and Gutters

Hwy. 48 does not have curb and gutter, however Hwy. 100 and all collector streets in the City currently has some form of curb and gutter. All appears to be in relatively good condition, but collector streets are in dire need of maintenance to remove all grass and dirt and sand. **Table F.2** shows the existing street R-O-W's, widths and whether they have curb and gutter.

TABLE F-2¹				
Existing Street Width Rights of Way and Pavement widths.				
Street Name	R-O-W Width (LF)	Street Length (LF)	Street Width (LF)	Curb & Gutter (LF)
Hwy. 48	+120	3,000	38	none
Hwy. 100	+120	14,800	Varies	29,600
1 st Street—Illinois to N. Shore	60	1050	30	2100
2 nd Street				
Hwy. 100 to Illinois	60	1035	42	2070
Illinois to N. Shore	60	110	42	2200
3 rd Street—Hwy. 100 to N. Shore	60	1590	30	3180
4 th Street—Hwy. 100 to N. Shore	60	1200	20	2400
Harbor Island—Hwy. 100 to Tarpon	60	2150	30	4300
South Shore Drive				
Garcia to Leal	60	4660	38	9320
Leal to Railroad	60	1465	38	2930
Railroad to Hwy. 100	60	565	30	1130
Garcia—Hwy. 100 to S. Shore	60	2400	38	4800
Port Road	100	3800	32	none

F.3.7. Truck Routes

The City's unique physical characteristics and layout do not appear to require a designated truck route. Most heavy truck traffic is near the channel and towards the Navigation District and that thorough traffic going towards South Padre Island. The City has basically only one major thoroughfare which is State Highway 100. It bisects the City from west to east. State Highway 48 is another major thoroughfare in the City, although not an urban thoroughfare in Port Isabel because it dead-ends with Highway 100.

F.4 TRAFFIC COUNT INFORMATION(TxDOT counts)

Traffic volumes identify existing travel patterns and assist in determining the road system's ability to serve the community needs. A tool available for identification of

¹ Cruz-Hogan Consultants, Inc., 2004 and Study results by RGA Consultants, Nov. 2004

flows and demands is the traffic count history maintained by the Texas Department of Transportation (TxDOT). Tables F-3, Table F-4 and Table F-5 below list traffic count data from surveys conducted in 2003 and 2004 by TxDOT in Port Isabel.

TABLE F-3²	
City of Port Isabel Traffic Counts	
Traffic Count Location	Annual Average Daily Traffic
Hwy. 100 approaching Hwy. 48 (west to east)	17,900
Hwy. 48 approaching Hwy. 100 (south to north)	6,700
Hwy. 100 approaching Port Road (west to east)	27,000
Hwy. 100 approaching South Shore (west to east)	22,000
Hwy. 100. approaching Garcia (west to east)	18,900
Hwy. 100 approaching Garcia (east to west)	22,000

TABLE F-4³		
SPI Causeway Daily Traffic Counts		
MONTH	Eastbound	Westbound
January 2004	9,403	9,330
February 2004	11,098	11,060
March 2004	13,597	13,594
April 2004	10,824	10,778
May 2004	11,062	11,108
June 2004	13,222	13,279
July 2004	16,246	16,321
August 2004	11,638	11,915
September 2004	9,237	9,171
October 2004	9,100	9,021

² 2003 Traffic Map, TxDOT

³ 2004 SPI Causeway Counts, TxDOT, January thru October Only

**TABLE F-5
SPI Causeway Monthly Traffic Counts**

MONTH	Eastbound	Westbound
January 2004	291,480	289,215
February 2004	244,118	243,313
March 2004	353,531	353,446
April 2004	313,906	312,565
May 2004	342,911	344,335
June 2004	395,658	398,375
July 2004	603,624	505,953
August 2004	349,125	357,444
September 2004	277,095	276,127
October 2004	273,008	270,623

F.5. THOROUGHFARE SYSTEM ANALYSIS

The existing grid-type street system configuration used by the City provides adequate control and capacity to handle traffic flow patterns. However, road system maintenance and improvements require a more methodical approach. The following is a list of deficiencies or problems and a ranking associated with each.

- | <u>Ranking</u> | <u>Problem</u> |
|-----------------------|--|
| 1) | <u>Street Paving</u> : While a majority of the streets are paved and are in fair to good condition, creeping deterioration and increased road use are an influencing factor. However, lack of adequate maintenance appears to be the main reason for this problem. |
| 2) | <u>Base failures and seal coating</u> : Many of the streets are starting to show failures and the need for seal coating. The increased frequency of potholes and surface cracks are evidence of this need. |
| 3) | <u>Unclear drain ditches</u> : Although drainage capacity is not considered to be a significant issue, the few open ditches that do exist along non-curbed and curbed streets show vegetation |

overgrowth that could hamper proper drainage and are therefore in need of clearing.

- 4) Right-of-way acquisition: Most of the streets currently enjoy sufficient right-of-way for any anticipated growth, however, some streets, such as those located in the “fingers area” were originally poorly planned and because of the physical characteristics, little or nothing can be done. However, for future subdivisions, adequate road right-of-ways should be allowed to prevent the need for future acquisition.

Addressing the deficiencies above will resolve or eliminate the primary roadway problems anticipated during the planning period. It is important to note that the two state highways in the City, particularly Hwy. 100 will require extensive maintenance because of its high use.

Map F.1. Thoroughfare Conditions Map depicts the various street conditions classifications as per a drive-by survey conducted in October, 2004.

F.6. RECOMMENDATIONS: GOALS

The key objective of the Street Plan is to support the growth projected in this Plan and to ensure a long-lived healthy transportation system for the City. Maintenance of the current grid pattern will continue to allow for a smooth flow of traffic and easily integrate with expected growth patterns. One future objective is to upgrade the FAIR and POOR streets to a GOOD status. Because upgrades to the main arteries of the City should be the top priority, funding constraints will result in new streets being built as a component of new subdivisions or as a limited extreme special needs.

The following sections list the street systems goals established for use in this Plan.

F.6.1 GOAL 1: Develop Traffic Circulation.

- 1) Develop and adopt a Traffic Circulation Plan (TCP) for future major and minor traffic arteries and subdivision integration. By

designating the location of future thoroughfares in conjunction with zoning/future land uses, the City can ensure sufficient right-of-way designation in future developments. The TCP can serve as a resource to developers in the purchase and platting of properties.

- 2) Review the existing subdivision ordinance requirements pertaining to street construction for adequacy. Also, ensure the enforcement of the Ordinance. The Ordinance should call for consistent quality and design throughout the City. Design details such as minimum pavement widths, parking, minimum right-out-ways, construction of curb and gutter, and cul-de-sac diameters should be established in the ordinance.

F.6.2. GOAL 2; Continue to Maintain Existing Streets

- 1) Develop a perpetual street maintenance schedule which includes street cleaning, minor pot-hole repairs and curb and gutter vegetation overgrowth elimination.
- 2) Develop and implement a perpetual seal-coating program and ensure all collector streets are addressed first.
- 3) Ensure the longevity of re-paved streets by analyzing the need for sealing within one year after re-paving and again at about five years.

F.6.3 GOAL: Improve Sub-Standard Streets

- 1) Begin to increase transportation access and safe, convenient movement of motor vehicles, bicycles and pedestrians by: re-paving streets in need; ensuring streets being used as collectors stay at a full collector width minimum (40 feet); integrating any trails, sidewalks and bikeways currently existing or planned and providing for lighting and signage to assure high levels of public safety and awareness particularly around schools and highway access points.

- 2) Investigating sources for funding improvement projects. The City should maintain or establish a fund with an annual allocation for the purpose of making street and/or drainage improvements.
- 3) Plans for street remediation and/or reconstruction should consider the design requirements for drainage ditches to hold additional capacity required from the street or road improvements.

F.7. THOROUGHFARE SYSTEM PLAN & OBJECTIVES

The improvements proposed here are based on the current street analysis. Special attention is given to improvements that are most in need or will provide the most widespread benefit for the community. High priority projects including highly traveled roadways in poor conditions or of insufficient capacity should be considered as soon as the City is able to finance the repairs. Typically street and road repairs with the greatest traffic flow should be improved first since this will benefit a larger number of people and will also most likely boost economic development. This is summarized in **Table F. 6** which shows improvements that are phased in over a ten-year period. Their respective costs are difficult to estimate in this table since social and primarily political considerations will most likely dictate street improvement priorities. **Table E. 7** does show estimated construction cost necessary per street. Phasing of improvements is an implementation method intended to minimize the financial demand from a city and the inconvenience that typically results from street construction project.

Map F.2. Future Improved Thoroughfare Map depicts a plan for future improved thoroughfare conditions as per this author' conclusions and professional recommendations.

TABLE F-6¹
Street Improvement Plan

YEAR	TASK	DESCRIPTION
YEARS 1-2	1	Hold Public Forums to inform public of Plan.
	2	Adopt a Traffic Circulation Plan & contract study for by-way from Port Road to Hwy. 48.
	3	Improve one main collector street & establish a street maintenance program.
YEARS 3-5	1	Hold Public Forums to inform Public of Plan and its progress.
	2	Establish an improvement plan for collector street.
	3	Improve one main collector and update seal-coat program.
YEARS 6-10	1	Hold Public Forums to inform public of Plan and its progress.
	2	Design and implement a street signage strategy and expand collector street repairs.
	3	Improve one main collector street and update seal coat program.

TABLE F-7¹
Estimated Thoroughfare & Collector Street Improvement Cost

Street Name	Total Street Reconstruction cost (in Dollars)	Total Estimated Street Reconstruction cost including curb & gutter replacement and all associated costs(in Dollars)
Hwy. 48	-0-	-0-
Hwy. 100	-0-	-0-
1 st Street—Illinois to N. Shore	-0-	3,516
2 nd Street	-0-	-0-
Hwy. 100 to Illinois	-0-	-0-
Illinois to N. Shore	-0-	-0-
3 rd Street—Hwy. 100 to N. Shore	-0-	-0-
4 th Street—Hwy. 100 to N. Shore	60,000	77,280
Harbor Island—Hwy. 100 to Tarpon	-0-	-0-
South Shore Drive		
Garcia to Leal	295,140	380,140
Leal to Railroad	92,790	119,513
Railroad to Hwy. 100	-0-	-0-
Garcia—Hwy. 100 to S. Shore	-0-	8,039
Port Road	-0-	-0-

F.9. POSSIBLE FUNDING SOURCES:

Since funding will be constraint on the development of the Plan, all avenues of funding should be researched. Possible sources for funding the above improvement are as follows:

- 1) General Fund
- 2) General Obligation Bonds
- 3) Special Subdivision Fees
- 4) Grants—Office of Rural Community Affairs ORCA, FmHA, EDA, TxDOT
- 5) Low Interest Loans
- 6) Street Assessment Programs

It should be noted that grants are often structured to have a local contribution component or are limited in their application to specific components of community improvement projects. Since timing is a critical factor, it is unlikely that funding will be entirely available through multitude grants but will instead most likely require a local contribution in order to be effective for project funding. A common mistake by many administrators is the failure to recognize that most state and federal grant programs are subject to stringent rules and regulations and therefore are not very flexible in terms of changes or modifications. Another factor usually also forgotten is that most state and grant funds take much longer to administer than projects funded with local funds because of a maze of bureaucratic rules, regulations and policies.

The following is a graphic illustration of Table F-1.

