Chapter 4

STREETS AND HIGHWAYS

Introduction:

Streets and highways define the structure of a community and provide critical connectivity. People travel on this network of streets to go to and from work, shopping, educational facilities and recreation sites. A healthy and growing transportation network is an essential element of social and economic growth in our communities. However, with an increasing urban population and constrained financial resources, it is becoming difficult to construct new capacity to accommodate the increasing number of trips which has resulted in increasing congestion. Maintenance, access management, use of alternative modes, and improved transportation and land use planning are the focus of streets and highways development for the future.

Streets and highways convey a variety of agency responsibilities. The state system (represented in Figure 1) includes 887 center-line-miles of roadway in Nueces and San Patricio Counties. In addition to state maintained roadways the County road system and 1,123 miles of city streets comprise a network of corridors to connect and carry a variety of vehicles, bicycles and pedestrians. There are over 330,000 registered vehicles in Nueces and San Patricio County that have operated an estimated 8 million average daily vehicle miles in the two county area.

Figure 1 - State System
Urban Action Plan:

The goals of the long-range plan for the MPO include identifying projects that will:

1. **Reduce Congestion** by maximizing the capacity and efficiency of the existing major highways and streets.

2. Improve the **Safety** of our transportation network through improved efficiency and effectiveness of major street and highway facilities.

3. Provide new facilities, improved facilities and transportation services that **Expand the Economic Opportunities** in the area.

4. Provide new facilities, improved facilities and transportation services that will support the maintenance of our Attainment status and **Improve Air Quality**,.

5. Provide new facilities, improved facilities and transportation services that will **Increase the value of Transportation Assets**.

The planning process leads to projects and improvements funded by local, state and federal sources that will enhance the overall system and support the goals stated above.

1. **Develop and maintain the street classifications as roadway improvement decisions are made.**

   Streets and highways are typically classified according to their intended function in providing traffic movement. These functional classifications carry a hierarchy as well as a set of design standards consistent with the type of service each facility is intended to provide. Criteria for designation of street and highway facilities include travel desires of the public, access requirements for adjacent land use, and continuity of the system. Classifications used in the Corpus Christi Metropolitan Area are identified in Table 1.

**Table 1 - Functional Systems in Urbanized Areas**

<table>
<thead>
<tr>
<th>Freeway and Interstate</th>
<th>SH 358 / South Padre Island Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>A limited access highway with</td>
<td></td>
</tr>
<tr>
<td>not traffic stops and</td>
<td></td>
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<tr>
<td>grade-separated interchanges at</td>
<td></td>
</tr>
<tr>
<td>major thoroughfares. Intended</td>
<td></td>
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<tr>
<td>for high-volume, high-speed</td>
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<tr>
<td>traffic movement between cities,</td>
<td></td>
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<tr>
<td>and interstate across the</td>
<td></td>
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<tr>
<td>metropolitan area. Not intended</td>
<td></td>
</tr>
<tr>
<td>to provide direct access to</td>
<td></td>
</tr>
<tr>
<td>adjacent land.</td>
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<table>
<thead>
<tr>
<th>Principal Arterial</th>
<th>SH 357 / Saratoga Blvd.</th>
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<tbody>
<tr>
<td>A street primarily intended to</td>
<td></td>
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<tr>
<td>provide for high-volume,</td>
<td></td>
</tr>
<tr>
<td>moderate-speed traffic between</td>
<td></td>
</tr>
<tr>
<td>major activity centers and trips</td>
<td></td>
</tr>
<tr>
<td>entering and leaving the urban</td>
<td></td>
</tr>
<tr>
<td>area. Access to abutting property</td>
<td>subordinate to major traffic</td>
</tr>
<tr>
<td>movement and is subject to</td>
<td></td>
</tr>
<tr>
<td>necessary controls of entrance</td>
<td></td>
</tr>
<tr>
<td>and exits. (40 - 65 VMT)</td>
<td></td>
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</tbody>
</table>
The street and highway plan is intended to provide an overall framework for making decisions on street improvements and extensions. The plan identifies the general location of future major transportation corridors and should serve as a general guide for securing street right of way and for determining appropriate zoning intensities. Precise locations of future facilities will be determined prior to right of way acquisition.

2. Establish a system of priorities for the upgrading of substandard streets, replacement of deficient bridges, and the extension of streets.

Existing streets not constructed to an acceptable standard for their classification and function will pose continuous operational, safety, and maintenance problems until improvements are made. It is recommended that improvements to existing facilities be assigned priorities on the basis of the following factors:

1. Existing and projected traffic volumes.
2. Volume-to-capacity ratios.
3. Traffic accident history.
4. Peak-hour and off-peak hour travel speeds.
5. Structural condition.
6. Surface width.
7. Use as a Hurricane Evacuation Route.

Extension of existing streets into underdeveloped areas should be assigned priorities on the basis of their potential for serving new development and for relieving congestion on other streets without conflict with existing or planned land uses.

Based on these considerations, improvement priorities have been identified in the Project Listing section of the plan. These priorities were defined with the assistance of the Texas Department of Transportation computerized travel demand model. This model estimates future traffic levels for streets on the network on the basis of population and employment projections.

3. Preserve major street alignments by preventing development within corridors designated as right of way for future roads.

The City of Corpus Christi - Transportation Plan has identified right of way requirements to prevent encroachment of subdivision development for present and future road improvements. Some flexibility to determine precise alignment is possible when a plat is filed and upon right of way acquisition, but the approximate routes of all major streets as shown on the plan should be adopted and respected by city and county governments as development proceeds.

4. Ensure that the type, intensity, and traffic generation characteristics of all developments bear a reasonable relationship to the street system.

Streets should have adequate capacity so that new development does not cause or compound traffic congestion. A transportation infrastructure impact study requirement is an acceptable method for assuring development compatible with the street system. A simplified traffic analysis, identifying the number of vehicle trips generated by the proposed development and the impact of these trips on the street network, should be conducted whenever an agency approval for a plat or rezoning is required. If this analysis indicates that traffic problems may occur, a detailed study should be conducted to determine the proper course of action. Off-site traffic improvements should be made by the developer if the development is solely responsible for creating a situation which necessitates the improvements.

5. Minimize potential traffic conflicts by controlling the frequency and location of driveway access to principal arterial, arterial, and collector streets.

Each type of street is intended to perform a different function, and access should be regulated accordingly. Local streets are intended primarily to provide access to abutting property and should do so with minimal restrictions. Arterials are intended primarily to move traffic and cannot do so efficiently if there are too many access points which disrupt traffic. Flashing beacons along arterials for schools and hospitals slow down the traffic. Access to schools should be provided from streets that have the needed capacity. Pedestrian signals may be installed on arterials and collectors to
replace flashing beacons. Collector streets serve as a dual function of access and traffic movement and should have moderate restrictions on access.

6. **Provide off-street parking and loading facilities in sufficient quantity to accommodate vehicle volumes generated by the type and intensity of development.**

Provide enough off-street parking bearing a reasonable relationship to the number of vehicle trips attracted by a particular development. The shared use of parking facilities should also be encouraged where two or more establishments are not normally open at the same time. Platting and subdivision regulations of municipalities may be amended to allow movement of traffic from one business to another without using the public street system.

7. **Discourage on-street parking along major streets.**

On-street parking should be discouraged or prohibited along principal arterials, arterials and collectors. Consideration should also be given to removing existing on-street parking along major streets where congestion occurs and adequate off-street parking is available.

8. **Maximize the efficiency of the existing street system by implementing effective transportation control measures (TCM).**

The construction of new streets is an expensive and lengthy process. TEA-21 stipulates that where the need for a major transportation investment is identified and federal funds are potentially involved, major investment (corridor or sub-area) studies shall be undertaken to develop or refine the plan. Major investment studies shall evaluate the effectiveness and cost-effectiveness of alternative investments or strategies in attaining local, state, and national goals and objectives.

The alternative strategies can be a combination of various TCM techniques: trip reduction, high-occupancy vehicle (HOV) lanes, traffic flow improvement, and flexible work schedules. These and many other TCM techniques can maximize the efficiency of existing streets.

9. **Employ ITS and other Transportation System Management (TSM) techniques for improving the capacity of the existing street system.**

Signal regulations, ramp metering, one-way pairing and reversing lanes can increase the capacity of existing facilities.

10. **Emphasize the preservation of existing assets.**

Given the current fiscal limitations project priority has been placed on operational (TCM) improvements and the preservation of existing assets as the initial efforts in maintaining a level of service acceptable to the local community.

**Regional Connectivity:**

The Port of Corpus Christi results in Corpus Christi being central to multimodal movements of freight and cargo and necessitates efficient regional connectivity. Truck movements in South Texas (truck
traffic Exhibit) have shown continued growth until the most recent economic downturn. As the economy recovers the growth in this traffic will return and the transportation facilities will continue to be stressed. The upgrade of US 77 to interstate standards from the Corpus Christi connection with IH-37 to the US 83 connection in the Valley will be a welcome improvement. Potential development of IH-69 from Corpus Christi north and possible corridor development between Corpus Christi and Laredo will enhance the safe and efficient movement of not only freight but provide safer corridors for passenger traffic.

The proposed development of IH-69 did not propose any specific connectivity or improvements to serve the Ports of Houston, Laredo, Corpus Christi and Brownsville. Populated areas in the “modal Transition and Potential Connection Zones” are to be studied during the second phase environmental and planning process. As part of this second phase the MPO recommends exploring a spur that would connect southbound I-69 traffic directly to the Port of Corpus Christi utilizing upgraded facilities that include SH 89 and US 181 and northbound I-69 traffic utilizing SH 44, IH-37 and US 181, see Map 1 below.

Other critical connections for the efficient movement of freight and emergency evacuation include the continued development of US 181 between the Port of Corpus Christi and the Port of San Antonio and improvements to SH 44 between Corpus Christi and US 59 in Freer.
American Recovery and Reinvestment Act of 2009

The Congress of the United States of America passed the American Recovery and Reinvestment Act (ARRA), commonly known as the Economic Stimulus Package, and it was signed into law by President Obama on February 17, 2009. Contained within the Act are funds designated for transportation infrastructure that are allocated to States and Metropolitan Planning Organizations for the development of projects that will create jobs and put people back to work quickly. The Urban ARRA funds allocated to the Corpus Christi MPO was a total of $9,514,791. A variety of project options were discussed at the Technical Advisory Committee and the Transportation Policy Committee. An opportunity for public input was provided on these project options.

Economic Stimulus Recovery projects:

Projects included:

1. CSJ 2343-01-031 FM2444 (Staples) from SH 357 (Saratoga) to Oso Creek Bridge for Construction of a median and access management elements - $3,700,800 – The project was on the MTP and TIP for 2011 ARRA funding allowed the project to be accelerated to 2010

2. CSJ 1069-01-030 SH 357 (Saratoga) from FM 2444 (Staples) to Rodd Field Rd. for Construction of a median and access management elements - $2,823,400 – The project was on the MTP and TIP for 2012 ARRA funding allowed the project to be accelerated to 2010

3. CSJ 0916-35-905 Joe Fulton InternationalTrade Corridor for Reconstruction of roadway and resurfacing - $15,000,000 – The project was on the MTP as a Category 2 project and ARRA accelerated the project to 2010

Funding for Projects 1 & 2 came from the MPO sub-allocation of ARRA funds. Funding for Project 3 came from $2,990,591 of the MPO sub-allocation of ARRA funds, $3,750,000 from the Port of Corpus Christi and $8,259,409 of TxDOT Commission allocated ARRA funds.

Overall this resulted in $21,524,200 of transportation projects being realized in the MPO area.

MPO Sub-Allocation: $ 9,514,791 – applied to Projects 1, 2 & 3

Port of Corpus Christi: $ 3,750,000 – applied to Project 3

TxDOT Commission allocation: $ 8,259,409 – applied to Project 3

Total Project Impact in MPO area: $21,524,200

Critical Incident Planning:

The regional transportation network is a critical part of the area infrastructure for the safe efficient movement of people and freight. Nevertheless, local public safety agencies must and have prepared for the natural and manmade incidents that could disrupt the effective use of the transportation network. Hazardous cargo spills, major accidents, extreme weather events including hurricanes are just some of the incidents the local agencies have prepared for in a comprehensive manner.
To expand upon these efforts the MPO and local partners have established a dialog concerning those events that may have an extended impact on the transportation network. The scenarios that are being discussed include:

1. A long-term closure of the Harbor Bride (US 181)
2. A long-term closure of the Intracoastal Waterway Bridge (PR 22)
3. A long-term closure of the ferry landing (SH 361)
4. A long-term closure of the bridge over the Nueces River (IH-37)

The purpose of the dialog is to facilitate the pre-planning of responses to events that have the potential to disrupt the transportation network for an extended period of time. The discussion will be ongoing however, documentation of the process will be completed in early 2010.