Texas Metropolitan Mobility Plan:

Breaking the Gridlock

2004 Report of Progress
And
Action Plan for Continued Success

Presented for Consideration to:
The Texas Transportation Commission
October 28, 2004
Austin, Texas
Texas Metropolitan Mobility Plan: Breaking the Gridlock

Introduction

Background

Gov. Rick Perry instructed the Texas Department of Transportation (TxDOT), to develop a plan to improve mobility and reduce congestion in metropolitan Texas. In his letter of March 2003, the governor challenged TxDOT to better meet the needs of metropolitan Texas. The Governor’s Business Council showed that congestion cost Texans more than $45 billion in delay and wasted fuel during the 1990s. That report also showed that significant investments in transportation to reduce metropolitan congestion could produce a benefit of more than $500 billion in the next 25 years. That report estimated the benefit-to-cost ratio of such investment at more than 6.5:1.

In Transportation Partnerships (August 2001), TxDOT offered a blueprint for meeting the state’s transportation challenges. This report recognized that the future of Texas is intricately tied to an efficient and effective transportation system — a system that must provide reliable mobility, improved safety, streamlined project delivery, and economic vitality.

Responding to the governor and building on Transportation Partnerships, the leadership of TxDOT formed a core team of TxDOT and Federal Highway Administration (FHWA) personnel to develop an approach to better meet the needs of metropolitan Texas and to reduce congestion. Through the spring and summer of 2003, that core team met with leaders of the metropolitan areas of
Texas. They discussed issues, identified challenges and developed a strategic approach. From that effort, the *Texas Metropolitan Mobility Plan: Breaking the Gridlock* was born.

Adopted by the Texas Transportation Commission in August 2003, the Texas Metropolitan Mobility Plan presents a framework and outlines action steps to better meet the mobility needs of metropolitan Texas and to reduce congestion.

Understood in the effort was the desire of metropolitan Texans to spend less time stuck in traffic and more time at home with family, at play, in service to community, and at work strengthening the Texas economy. It was also understood that congestion, which leads to idling vehicles, degrades the air we breathe. Congestion also results in more crashes.

The governor and the Texas Transportation Commission set forth a bold plan to reduce congestion through strengthening partnerships. The Texas Metropolitan Mobility Plan supports increased local control of funds and increased local decision-making. This document reports on the efforts and progress made in the first year of implementation.
**Action Steps for Implementation of the Texas Metropolitan Mobility Plan**

The Texas Metropolitan Mobility Plan outlined several key steps for implementation. These steps included bold changes in funding and planning strategies and groundbreaking developments in modeling and needs assessment. These steps demanded improved coordination efforts and strengthened partnerships at the local level among many entities and with TxDOT. Chief among these action steps were:

**Designation of a TxDOT senior administration member to oversee the implementation**

In a letter to the governor, Steve Simmons, P.E., deputy executive director of TxDOT, was named to lead this effort. He met with many metropolitan leaders and TxDOT staff and facilitated the implementation of the plan through executive analysis, resource allocation, research funding, and milestone management. Figure 1 depicts the relationship of the Metropolitan Mobility Plan to other efforts.

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**Figure 1 – The Planning Funnel**

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<tr>
<th>Strategic Plan Texas Transportation Plan</th>
<th>QUESTIONS ADDRESSED</th>
<th>WHO PREPARES?</th>
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<td>Trans-Texas Corridor Plan (TTC)</td>
<td>How will transportation issues be approached in Texas? What are the State priorities?</td>
<td>The Texas Transportation Commission</td>
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<td>State Rail Plan (SRR)</td>
<td>Which corridor/regional projects are priorities? How do we plan to fund them?</td>
<td>MPOs, Divisions, Districts</td>
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<tr>
<td>Metropolitan Mobility Plan (MMP)</td>
<td>Which projects will be funded in the next 25 years? Which will be done first?</td>
<td>MPOs, Divisions, Districts</td>
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<tr>
<td>Regional/Metropolitan Transportation Plan (RTP)</td>
<td>Which projects are funded and authorized for development in the next 10 years?</td>
<td>MPOs, Divisions, Districts</td>
</tr>
<tr>
<td>Texas Trunk System</td>
<td>Which projects are funding and will let to contract in the next 3 years?</td>
<td>Districts</td>
</tr>
<tr>
<td>Unified Transportation Program (UTP)</td>
<td>How will the project be constructed?</td>
<td>Districts</td>
</tr>
<tr>
<td>State Mobility Program (SMP)</td>
<td>When will we be through?</td>
<td>Districts</td>
</tr>
<tr>
<td>State Preservation Program (SPP)</td>
<td></td>
<td>Districts</td>
</tr>
<tr>
<td>Statewide Transportation Improvement Plan (STIP)</td>
<td></td>
<td>Districts</td>
</tr>
<tr>
<td>Construction Plans</td>
<td></td>
<td>Districts</td>
</tr>
</tbody>
</table>

* Transit is element common to many plans
Develop and adopt the Texas Congestion Index

TxDOT retained Dr. Timothy Lomax, P.E., of the Texas Transportation Institute (TTI), Texas A&M University, to work with the metropolitan planning organizations (MPOs) and TxDOT to develop a new measure of congestion for use in Texas. This Texas Congestion Index (TCI) uses the existing metropolitan transportation models developed and maintained by the MPOs and allows for more accurate and robust analyses of congestion. This groundbreaking effort allows for goal-setting and analysis of progress towards meeting congestion-reduction goals. The MPOs worked closely with Dr. Lomax to define the parameters of analysis and to establish the data sets required by the computational methods that would be used to develop this meaningful and reproducible measure. The TCI methodology as outlined by the MPOs follows the metropolitan model process and addresses choice of mode in the calculations.

Enact regional, baseline allocations for metropolitan funding

In a bold step to allow for increased local control, TxDOT developed funding allocation formulas for Category 2 metropolitan mobility funds to each of the eight metropolitan MPOs in Texas. The methodology for allocation was developed in concert with the MPOs. Through a series of sessions, the MPOs and TxDOT developed a formula for this regional baseline allocation. The first 10 years of this allocation accounts for over $6 billion in funds. Additionally, nearly $2 billion from the Texas Mobility Fund were identified for use by the MPOs for planning. These funds were divided using the same formula as that developed for the Category 2 funds. Actual use of the funds in the MPO areas is contingent upon adherence with TxDOT strategic-plan guidelines.

Develop comprehensive mobility plans to meet regional needs

The Texas Metropolitan Mobility Plan has been recognized as a key step in the planning process as a means to assess needs and develop priorities within the context of addressing congestion.

Metropolitan MPOs of Texas jointly developed a method to assess the needs of metropolitan Texas in a more comprehensive and meaningful manner. For the first time, the MPOs used their planning models to relate needs to congestion levels measured by the Texas Congestion Index. By using supporting research by TTI, and funded by TxDOT, these MPOs related needs as identified by the models to needs for capacity. They developed the most accurate, precise and meaningful estimates of transportation needs ever available to planners and decision-makers.
Identify funding to better meet needs

The MPOs were charged with working with the regional baseline funding provided by TxDOT to develop leverage strategies, maximize use of new tools provided by HB 3588 and other legislation. From there they were called on to develop plans providing the needed resources to reduce congestion in their areas. MPOs met throughout the year to develop and compare approaches. They also worked with partners in their individual areas to develop strategies. These partners included elected officials, TxDOT districts, transit providers and toll entities.

Use available funding sources to develop a financially constrained regional list of prioritized projects to reduce congestion

Each MPO developed funding plans using the regional baseline funding provided by TxDOT, the tools of HB 3588, and other legislation. These plans substantially constitute the MPO submission to TxDOT for the Unified Transportation Plan and the Statewide Mobility Plan. These plans will also be used as the MPOs develop their federally required Regional (Metropolitan) Transportation Plans. Each MPO also oversaw the public involvement effort for plan development.

These action steps outlined in the Texas Metropolitan Mobility Plan provided for increased local control and decision-making. They also provided groundbreaking research implementation with the Texas Congestion Index. These steps provided the framework for the MPOs of Texas to be innovative and lead the charge to reduce congestion in metropolitan Texas.

The bold path set by the Texas Metropolitan Mobility Plan was further defined through the MPO leadership and provides meaningful results that will reduce congestion and improve the quality of life in metropolitan Texas.
**Needs Assessment**

Using the Texas Congestion Index and the planning models, the MPOs of metropolitan Texas assessed their mobility needs. Figure 2 depicts the process used by MPOs. With assistance of TxDOT and TTI, the MPOs developed costs associated with these needs and have provided the most accurate, precise and meaningful analysis ever formulated for planners and decision makers.

Figure 3 shows the relationship between congestion and funding levels as reported by the MPOs. Simply stated, this figure shows that congestion is bad and getting worse. With traditional methods of funding, congestion in metropolitan Texas will increase significantly in
the next 25 years (from a Metropolitan Texas TCI of 1.28 to a Metropolitan Texas TCI of 1.48). A TCI of 1.18 was set as goal by the MPOs.

**Filling the Gap**

Each of the metropolitan MPOs was charged with developing plans to reduce congestion and fill the funding gap. The legislature provided new money to assist this effort with the Texas Mobility Fund and new tools through HB 3588 and other legislation.

In several areas, regional mobility authorities (RMA) have developed to become new partners in helping fill the gap and meet the challenge in several areas. Other RMAs are being considered.

Among the most effective and fastest ways to reduce congestion and develop the funds needed is use of toll initiatives. Several MPOs have adopted plans which allow for this strategy. Others are still debating the issue.

The MPOs, through the Texas Metropolitan Mobility Plan, have identified an additional $12 billion in additional funds during the next 25 years to help reduce congestion. These funds will be used to build toll lanes, expand transit service and assist with development of regional corridors.

With these new funds, the MPOs are able to slow the rate of congestion increase from a Metropolitan Texas TCI of 1.48 with traditional funds to a metropolitan
Texas TCI of 1.40. MPOs have identified an approximate decrease of 17 percent in anticipated congestion with the initiatives identified within this first year of the Texas Metropolitan Mobility Plan. Figure 4 shows the impact of the first year of Texas Metropolitan Mobility Plan efforts. The gap also can be closed by demand-reduction measures being considered for implementation by several MPOs. These low-cost policy changes also work to reduce congestion.

**Reducing Congestion Now**

The new tools provided by legislation such as HB 3588 have allowed the MPOs to develop increasingly innovative funding plans. The plans can work to reduce congestion now rather than waiting for incremental traditional funding. Tolls, bonds and other initiatives developed in the metropolitan areas allow for a considerable increase in mobility projects. On the highway side, innovative financing and bonding allows for an increase of more than $12 billion in projects in 25
years, adds more than $700 million to the next 10 years of the program, and accelerates 88 percent of the conventional 10-year program into the first six years.

These plans result in more mobility projects under construction sooner. The MPOs have not fully analyzed the congestion impacts of this effort. Even so, the sooner that more projects are implemented, the greater the cumulative impact on congestion.

Figure 5 indicates the impact of the innovative MPO plans on infrastructure investment in metropolitan Texas. The first-year efforts of the MPOs to meet the challenges of the Texas Metropolitan Mobility Plans result in a significant increase in infrastructure investment.

Much of the increase in infrastructure is associated with the development of toll initiatives. These will result in a long-term economic stimulus for infrastructure investment. Revenue generated by toll initiatives at the local level is useful for additional multimodal infrastructure in that area.

**Congestion Reduction Solutions Have Great Benefits**

The MPOs developed plans to reduce congestion. Each MPO examined how reduced congestion impacts the following parameters:

**Reduced Delay**

It is difficult to put a value on time, as a minute or hour lost is never recovered. Time is not a renewable resource. An hour spent sitting in a stalled lane of a congested expressway is an hour lost forever. It is an hour not spent with family,
or friends, in service to the community, or producing a product or service for the expanding economy of Texas. It is estimated that reducing congestion from what it will be at traditional funding levels to the MPOs goal will result in a savings of more than 6.1 billion hours of delay for metropolitan Texans in the next 25 years. The 2004 Texas Metropolitan Mobility Plan will result in at least 1.6 billion hours of time saved by metropolitan Texans. The true benefit of the time saved on a personal basis is, however, priceless. Figure 6 shows the hours lost to congestion in metropolitan Texas between 2005 and 2030.

Safety, Air Quality, Economic Activity and Quality of Life

MPOs examined the impacts that reduced congestion can have on improving safety. They looked at different strategies such as bicycle and pedestrian issues, issues associated with trucks, and the interface between rail and highway elements. Each plan is unique, but the conclusion can be drawn that improved mobility will result in a greater reliability which translates into a safer overall system.

Air-quality analysis as part of this effort was not meant to be a replacement for the rigorous conformity analyses performed by the non-attainment areas of the state. The MPOs analyzed their plans in a more qualitative manner and the general
conclusion is that, as delay is reduced, the emission of compounds that degrade our air decreases.

An efficient transportation system strengthens economic activity. Each MPO looked at this issue and some developed and documented the connection between sustainable economic environment and better mobility.

**Quality of Life**

The combined implementation of policies, projects and plans to improve mobility by reducing demand and increasing capacity works to improve the quality of life in a metropolitan area. MPOs examined these relationships with such issues as bicycle plans, vanpooling initiatives, implementation of intelligent transportation systems (ITS), access policies, and other endeavors. The general observation is that metropolitan quality of life is positively impacted by improved mobility and more available choices among transportation modes.
Next Steps to Reduce Congestion

The first year of implementation of the Texas Metropolitan Mobility Plan was a huge step in the direction of increased local control and local decision-making. Tremendous strides were made in development of improved planning, funding and project delivery.

Groundbreaking gains to implement strategies were developed by the MPOs, TxDOT and TTI to assess transportation needs and measure the impact of project and policy decisions. The MPOs, TxDOT and other partners have worked in a concerted effort to reduce congestion. The results of these cooperative efforts will reduce congestion.

Planners and decision-makers have more and better data than ever before. The methods, strategies and partnerships are a great step forward in meeting the directives given by the governor and the Texas Transportation Commission. Increased authority at the local level combined with better assessment tools and measures of performance will continue to result in reduced congestion and improve mobility. To build upon this fruitful first-year effort it is suggested that the following steps be implemented:

Inform Legislative Decision Makers of the Results of the Work Undertaken by the MPOs of Texas

The MPOs of Texas have developed better data than ever available to assess the needs of metropolitan Texas. They have shown how certain tools can be implemented to address congestion. These MPOs need additional financial resources and innovative financing flexibility to meet congestion-reduction goals. MPOs feel that metropolitan transportation needs to be an increased priority in
the state’s legislative agenda. It is suggested that TxDOT develop a summary of the metropolitan needs, document the positive impacts of new tools from HB 3588 and other legislation and share that with the legislature. This summary should discuss the need to improve all modes of transportation in the metropolitan areas.

**Continue to Refine the Texas Congestion Index**

The Texas Congestion Index would be an even more powerful tool with refinements to include better estimation of impacts of freight-rail initiatives, increased user-friendly interfaces with the metropolitan models, improved estimation of transit benefits, better ITS estimations, and other enhancements. It is suggested that TxDOT continue to research methods to refine and improve this tool.

**Work with MPOs to Enhance Plans**

Continue to strengthen the partnerships developed and matured between the MPOs, TxDOT and other partners by this effort to develop increasingly sophisticated and comprehensive plans. Some MPOs need further assistance in developing innovative financial plans to fully access the Texas Mobility Fund and to better realize the benefits of the new tools available. These are very new concepts in many areas of Texas. It is suggested that TxDOT develop a multidisciplinary mobility team under the leadership of senior administration to assist MPOs and other partners with financial analysis and with strategies for implementing projects. This mobility team should include experts versed in innovative financing, legal issues, marketing, and project engineering and development. The purpose of the mobility team is to work cooperatively with
MPOs, TxDOT district offices and other partners to examine strategies and cooperatively develop improved and enhanced plans that can be implemented to reduce congestion.

**TxDOT and the MPOs Need Better Data on Rehabilitation Needs**

During the course of the last year, the MPOs realized through analysis that rehabilitation of the existing system is a major and growing component of the needs analysis. Simply expanding the existing system is not prudent in many cases as the existing system is in a degraded condition. Rehabilitation of the existing system is a major cost component of many expansion projects. The ability to compute this cost in the out years of analysis is limited by the data available. It is suggested that TxDOT and the MPOs work together develop a better database for this type of analysis. An enhanced pavement-management information system could be used in this effort. Early efforts to access metropolitan rehabilitation reveal conservative estimates of more than $100 billion in additional needs.

**Develop a 2006 Metropolitan Mobility Plan that is More Comprehensive and Multimodal**

During the first year of this new way to plan, fund and deliver projects, tremendous gains were made by the MPOs in Texas. Some refinements have been suggested to improve the analysis tools and strengthen the partnerships developed. It is also suggested that the MPOs continue to meet quarterly to encourage peer-to-peer learning and develop enhanced mechanisms for technology transfer to allow all MPOs to develop more comprehensive and multimodal plans. Some MPOs included extensive and innovative multimode initiatives; others were less comprehensive. It is suggested that the MPOs and
TxDOT continue to refine the methodologies and tools, seek further legislative support and develop more comprehensive plans on metropolitan mobility for submission to the Texas Transportation Commission by Sept. 1, 2006. It is suggested that the MPOs and TxDOT meet and further define expectations for the 2006 Metropolitan Mobility Plan by Sept. 1, 2005.
Summary

Through a cooperative effort, the MPOs of metropolitan Texas, TxDOT and other partners developed initial reports in response to the *Texas Metropolitan Mobility Plan: Breaking the Gridlock.*

The MPOs were innovative and, with TTI and TxDOT, developed groundbreaking ways to examine and reduce congestion. Better data were collected and more sophisticated analyses were performed than existed. The MPOs developed plans to reduce congestion. Some plans were more aggressive in attacking congestion than others.

The first year of the new way to plan, fund and implement transportation projects in Texas — through the Texas Metropolitan Mobility Plan — allows for the following conclusions:

**Congestion is Bad and Getting Worse and Traditional Funds Cannot Keep Up**

The studies conducted by the MPOs indicate that congestion will increase significantly if more innovative and comprehensive funding and policies are not implemented.

**There are Many Types of Solutions to This Problem**

Adding capacity and reducing demand can be accomplished through an array of projects and policies. Projects to add capacity can include highways, transit and rail initiatives. The methods to reduce demand can include metropolitan design, access management, and other policies. Construction of projects in all modes, and policy implementation, will be required to meet the congestion reduction goals in metropolitan Texas.
Solutions Will Be Expensive

The benefits of meeting the congestion-reduction goals in metropolitan Texas will be expensive. MPOs leveraged state and federal funding and identified innovative funding that includes tolls and local-revenue sources to help reduce the growth in congestion. The MPOs estimated that, even after implementation of the 2004 Texas Metropolitan Mobility Plan, a large funding gap still exists.

Solving the Problem Will Have Great Benefits

MPOs showed that reducing congestion will save Texans time and money. Societal benefits of reduced congestion far outweigh associated costs. Benefits included reduced lost time, improved safety and air quality, and a stronger economy.

Partnerships Are the Key To Solving the Problem

Enhanced partnerships between MPOs, TxDOT and other entities already have made a difference in congestion in metropolitan Texas with the first year of the new methods of planning, funding and project delivery available to metropolitan Texas. Strengthening legislation to assist with public/private partnerships and funding enhancements will aid the development of such partnerships.

We Are Off To a Great Start and Need to Keep Going

Efforts associated with the first year of the Texas Metropolitan Mobility Plan resulted in tremendous strides forward in the areas of planning, funding and project delivery. These efforts need to continue and be enhanced as outlined by the MPOs.

The initial year of the Texas Metropolitan Mobility Plan was a success. MPOs and TxDOT — along with other partners — analyzed needs, assessed possibilities and developed plans. This year was a great start and, with some enhancements, this effort will continue to provide the framework to reduce congestion in metropolitan Texas and will give back to Texans a most precious commodity: TIME.
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Appendix A - The Texas Congestion Index Methodology

Long-range transportation planning model volumes are used as a base. These volumes have transit riders removed from the highway demand, so the analysis includes the effect of transit in the congestion levels. Travel speed is estimated for every link of the road system and delay is calculated using the difference between the hourly speed estimate and the free-flow speed on each link. A factor is used to estimate the delay increasing effects of collisions and vehicle breakdowns. A spreadsheet process is used with these numbers to estimate the improvements due to a variety of operational treatments. The first generation numbers include freeway incident management and ramp metering and arterial street signal coordination. Additional treatments such as access management are being added for year 2.

The data are summarized by road type and type of area within each metro region. Several performance measures are calculated.

Figure A.1 – TCI Methodology

1. For each Metro County and Year
   Peak Periods (6A-9A and 4P-7P)
   Person Travel Conditions

2. Texas Congestion Index = Peak Period Travel Time - Freeflow Travel Time

3. PREPIN Produces for each hour

4. DelayRECUR = VHT - VHTFF

5. % Delay Reduction Matrix for Operational Treatments
   (for each Metro County and Year)
   Treatment Types: Frwy Incident Mgmt, Frwy Metering, Signal Coord

6. Get delay with operational treatment effect
   DelayOPS = DelayRECUR + DelayINC - DelayREDUCTIONS

7. Estimate Total Travel Time
   TravelTimeTOTAL = DelayOPS + VHTFF

8. Estimate Person TT
   Person TT = TravelTimeTOTAL x Person/Vehicle

9. Sum the hourly Person TT

10. Include Public Transportation and HOV lanes

11. State level TCI is sum of metro peak period TT divided by sum of metro freeflow TT.
Appendix B – The Assessment of Needs Methodology

Figure B.1 indicates how MPOs calculate needs using the existing models by computing the required lane-mile equivalent to reach a congestion goal. The term “lane-mile equivalent” is the amount of capacity added to a corridor equal to what a highway lane mile will carry. An equivalent lane mile can be accomplished with construction of a lane mile of highway added to an existing road, or a lane mile of highway on a new location, or an expanded transit service, or a new transit service, or an operational improvement, or traffic control feature, or a demand reduction feature. The actual method to add the capacity or reduce the demand equivalent to a lane mile of highway will be determined by the MPO and its various partners. In some areas that method can be determined now and in some areas it will take further study to determine. In reality, a combination of the various approaches will be needed to address the needs of a growing metropolitan Texas.

Figure B.1 – TMMP Model Process

For each Functional Class, multiply weekday All-or-Nothing directional link volumes by a peak-hours (K) factor.

If Volume over Capacity Ratio is greater than 1.0, the increase the hourly capacity (in increments of a whole # of lanes) until V/C is less than 1.0.

Sum up additional lanes required by functional classification.

Incorporate overall roadway needs into a traditional capacity-constrained model run to verify LOS “F” has been eliminated and to develop final congested speeds.
Appendix C1 – CAMPO (Austin)

Needs

As reflected in Figure C1.1, the Austin region needs $18.3 billion dollars in order to build the needed projects to decrease congestion to a desired level. This amount reflects not only added capacity to the roadways, but additional rail/bus rapid transit, moving the Union Pacific Railroad from the central metropolitan area, and the right of way needed to expand the system.
As shown in Figure C1.2, only 3,606 total lane mile equivalents of roadway improvements could be added to the base (for the entire Austin region) by traditional funding strategies by 2030. Travel demand modeling was used to identify and estimate added capacity needed to eliminate level of service “F” facilities. This showed a need of an additional 1,168 lane mile equivalents to meet the transportation demand of 2030.

<table>
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<tr>
<th>Facilities by Area Type</th>
<th>Base Year Lane Mileage</th>
<th>Traditional Funding Levels</th>
<th>Eliminate all LOS F Facilities</th>
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</thead>
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<td></td>
<td></td>
<td>Additional Lane Mile Equivalents (Long-Range Plan)</td>
<td>Additional Lane Mile Equivalents</td>
</tr>
<tr>
<td>Freeways &amp; Tollways</td>
<td>794</td>
<td>1,226</td>
<td>246</td>
</tr>
<tr>
<td>Minor &amp; Principal Arterials, Frontage Roads</td>
<td>6,536</td>
<td>2,380</td>
<td>922</td>
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<tr>
<td>Total</td>
<td>7,330</td>
<td>3,606</td>
<td>1,168</td>
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</table>

**Filling the Gap**

CAMPO, the Austin MPO, submitted a 25-year plan that adds $900 million investment in highways, $1.65 billion in arterial street system enhancements to aid in mobility, and $900 million in improvements to the transit system. This is in addition to the traditional revenue already identified in their long-range plan. This total increase in infrastructure investment of $3.45 billion will be realized by toll initiatives, making use of the Texas Mobility Fund and the State Infrastructure Bank, as well as other options made available by House Bill 3588. Much of the new highway capacity will be tolled, as shown in Figure C1.3.
In addition to the $3.45 billion needed to fill the gap, the CAMPO TMMP has identified the need of $8.5 billion to address the rehabilitation of the transportation system. This important aspect will require additional study.
Figure C1.4 shows the planned high-capacity transit that could also help improve regional mobility.
Key Features of Austin Plan

The Austin plan includes advancement of project construction using Proposition 14 and toll initiatives allowing for vastly increased infrastructure investment in the near term to improve mobility. Figure C1.5 shows how employing these new tools can accelerate projects and thus increase annual letting amounts.
Also, the Austin plan includes the continued development along major US and State routes to allow for connection to SH 130 and IH-35 corridors. The plan also includes the direction of up to $161 million of anticipated TMF funds to the development of high-capacity corridors, as shown in Figure C1.6.
Next Step

The Austin region is developing a variety of next-step initiatives. The region is examining options for moving a portion of the Union Pacific Rail Road, has plans for improved bicycle/pedestrian accommodations, and is improving both travel demand management and transportation system performance. The region is also maximizing its intermodal opportunities by strengthening the connection between regional land use and transportation decisions. Complementing that connection is Capital Metro’s All Systems Go long-range transit plan and the Envision Central Texas initiative. Several alternatives are shown in Figure C1.7.
Appendix C2 – Corpus Christi

Needs

As reflected in Figure C2.1, Corpus Christi needs almost one billion dollars in addition to traditional revenue in order to build the needed projects to decrease congestion to a desired level. This amount reflects not only added capacity, but the new Harbor Bridge, the addition of several major interchanges around the city and the right of way needed to expand the system.

Through traditional funding of about $500 million, only 45 total lane-mile equivalents of roadway improvements can be added to the base (for the entire Corpus Christi MPO region), as shown in Figure C2.2.

<table>
<thead>
<tr>
<th>Facilities by Type</th>
<th>Base Year Lane Mileage</th>
<th>Traditional Funding Levels Additional Lane-Mile Equivalents</th>
<th>Eliminate all LOS F Facilities Additional Lane-Mile Equivalents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeway</td>
<td>393</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>Arterial</td>
<td>1,844</td>
<td>30</td>
<td>258</td>
</tr>
<tr>
<td>Total</td>
<td>2,237</td>
<td>45</td>
<td>280</td>
</tr>
</tbody>
</table>

Once the travel demand model is applied, service level “F” facilities are identified. The model then adds capacity in increments of whole number lanes until that
level of congestion is eliminated, resulting in a need of an additional 280 lane-mile equivalents all requiring additional revenue to construct.

The greatest number of additional lane-mile equivalents needed to eliminate LOS F facilities are urban arterial streets belonging to the City of Corpus Christi and therefore not on the state system. This reflects the fact that the majority of the congestion is on the city street system and not on the state system.

Filling the Gap

In addition to traditional revenue already identified, the Corpus Christi Plan is to increase infrastructure investment by $367 million to reduce the funding gap. This will be done with a combination of $135 million from toll initiatives, $57 million from the Texas Mobility Fund, and $175 million from Proposition 14 funds. These funds together with traditional funds will be used to construct 22 lane-mile equivalents of roadway improvements which will go towards reducing congestion in the Corpus Christi area to a tolerable level.

These improvements are highlighted in red in Figure C2.3 and include projects to add managed toll lanes to the Crosstown Expressway (SH 286), South Padre Island Drive (SH 358), and US 181 (New Harbor Bridge).
Key Features of the Corpus Christi Plan

The Corpus Christi plan includes advancement of project construction using the Texas Mobility Fund, Proposition 14, and toll initiatives allowing for vastly increased infrastructure investment in the near term to address congestion along the major freeway corridors. This also includes accelerating the replacement of the Harbor Bridge to construct it almost 20 years sooner than if using only traditional revenue sources.

Through the use of new and innovative revenue sources for improvements to major freeways in the Corpus Christi area, the plan then allows more use of traditional revenue sources for improvements to urban arterial streets belonging to the City of Corpus Christi where the majority of the congestion in the area occurs.

Next Step

The Texas Metropolitan Mobility Plan for the Corpus Christi area is the beginning of seeking alternative and innovative forms of financing to improve and increase the capacity of the area’s highway and street system to decrease congestion. Without increased funding for needed improvements, congestion will continue to increase while economic development and quality of life for area residents will decrease.

The Corpus Christi plan must include future planning efforts which will focus on evaluating additional highway corridors in the area such as Interstate Highway 37.
and State Highway 44 for added capacity upgrades to further relieve congestion. The evaluation process will determine if these projects can be financed using new tools such as tolling and bonding to accelerate their development and construction.

These and other important highway corridors in the area provide vital connections to various significant multimodal facilities in the area including the Union Pacific and the Tex-Mex railroads, the Corpus Christi International Airport, and various Port of Corpus Christi facilities such as the Corpus Christi Ship Channel, La Quinta container terminal, and the Joe Fulton International Trade Corridor. Improved highway corridors with additional capacity will not only relieve congestion in the area but ensure that goods and services travel freely and quickly to reach their final destination.

In addition with the future development of the Trans Texas Corridor and Interstate Highway 69, the area must make sure that highway facilities are in place to provide safe and efficient access to them in order to prevent Corpus Christi from being “left out.” The Corpus Christi plan will need to ensure this does not happen and that Corpus Christi and the surrounding area continue to prosper and grow.
Appendix C3 – Dallas-fort worth

Needs

Transportation needs in the Dallas-Fort Worth region continue to increase significantly. The performance of the system is reflected in the graphic to the right. The left-hand map shows the condition of traffic in the year 1999 when the region had 4.5 million persons. The pink areas reflect conditions of moderate congestion where there is some stop-and-go traffic on major facilities during the peak period. The dark red areas on the map identify conditions of stop-and-go traffic throughout most, if not all, of the peak period and alternate routes are likely not available to relieve the demand. In 1999, the cost of congestion sums up to roughly $5.3 billion dollars of lost productivity each year due to that traffic congestion.

By the year 2025, the anticipated regional population is expected to be near eight million persons, reflecting a 75 percent increase over 1999 values. The anticipated regional employment follows an even sharper trend line. While the population and employment activity increases at roughly 75 percent and 84 percent respectively, travel within the region will increase by about 87 percent.
Based on current funding and revenue streams, it is anticipated that we can only provide an additional 50 percent of new capacity to the transportation system through the year 2025. This somewhat optimistic share of added capacity is contingent on solving a $31.4 billion shortfall in infrastructure rehabilitation costs.

Almost $12 billion dollars of annual lost productivity would occur in the year 2025 if we are unable to identify and secure additional sources of funding.

The year 2025 congestion map is based on spending $45 billion worth of improvements as identified in this region’s MTP, and even with that level of funding, congestion continues to worsen over time.
As a result of this needs-based plan, it is estimated that the Dallas-Fort Worth metropolitan area has a total out-year need of approximately $100.8 billion, which includes the $45.0 billion already identified in the financially constrained MTP, plus the additional unfunded need of $55.8 billion, which was derived as a result of the Texas Metropolitan Mobility Plan process.

Between now and the year 2025, this region must develop partnerships and identify every funding opportunity to generate this level of additional funding needed above and beyond what is anticipated from current funding streams. The ability to implement regional projects and achieve these ambitious goals is closely tied to this region’s ability to identify innovative financing methods and work closely with the Texas Transportation Commission to pursue every available funding opportunity, whether that be through toll equity, regional mobility authorities, the Texas Mobility Fund, or other tools and programs to be developed in the future.
Filling the Gap

*Estimate of Available Funds (2004-2015)*

<table>
<thead>
<tr>
<th>SOURCE OF FUNDS</th>
<th>Fort Worth District ($Millions)</th>
<th>Dallas District ($Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2007 Projects (2004 UTP)**</td>
<td>$611.43</td>
<td>$399.44</td>
</tr>
<tr>
<td>2008-2015 Formula/Proposition 14</td>
<td>$330.77</td>
<td>$736.23</td>
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<tr>
<td><strong>Initial Category 2 (Subtotal)</strong></td>
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<td><strong>$1,135.67</strong></td>
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<tr>
<td>New: Tx Mob. Fund (Formula Allocation)</td>
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<td>$435.40</td>
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<tr>
<td>Tx Mob Fund (Potential Allocation)</td>
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<td>$69.00</td>
</tr>
<tr>
<td>Str. Priority (Requested-thru 2008)</td>
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<td>$276.00</td>
</tr>
<tr>
<td>Strategic Priority (FY 2009-2015)</td>
<td>$131.40</td>
<td>$292.50</td>
</tr>
<tr>
<td>STP-MM (New Funds)</td>
<td>$77.50</td>
<td>$172.50</td>
</tr>
<tr>
<td>STP-MM (Previous Partnerships)</td>
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<td>$77.07</td>
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<tr>
<td>Toll Projects (Assumed NTTA)</td>
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<td>$350.00</td>
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<td>Toll Projects (Assumed TxDOT)</td>
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<td>$600.00</td>
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<tr>
<td>Managed HOV / Toll Lanes</td>
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<td>$450.00</td>
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<td><strong>New Funding Sources (Subtotal)</strong></td>
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<td><strong>$2,722.47</strong></td>
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<tr>
<td>Local Contributions</td>
<td>$66.50</td>
<td>$458.69</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$2,089.35</strong></td>
<td><strong>$4,316.83</strong></td>
</tr>
</tbody>
</table>

* Final decision regarding reprioritization to be made at October 2004 Regional Transportation Council (RTC) meeting.

The Texas Metropolitan Mobility Plan includes both long-range and short-range objectives and components. The short-range component is a result of TxDOT’s 2005 Unified Transportation Program (UTP).

Specifically, projects identified for construction represent the prioritized listing of improvement projects and are a component of the 2005 UTP. The map to the right identifies the Dallas-Fort Worth region’s short-range high-priority projects which we are aggressively pursuing at this time.
The North Texas Tollway Authority (NTTA) is the Dallas-Fort Worth region’s toll provider, and is moving forward with TxDOT with the funding and construction of approximately $2 billion of additional tollways. The commission is urged to continue the collaborative funding between NTTA and the TxDOT in the construction of these facilities, which will play a key role in maintaining mobility in North Central Texas.

Over 150 miles of permanent High Occupancy Vehicle/Managed Toll lanes are also planned for construction on Dallas-Fort Worth roadways during the next 10 to 15 years. The commission is urged to support TxDOT’s participation in the design, construction, and operation of these important mobility and air quality projects. Rail is being expedited with an aggressive implementation plan including regional rail and light rail construction.

![Regional Rail System Improvements](image-url)
Dallas-Fort Worth Funding Strategies

1. Spend Wiser
   a. Reprioritize Category 2 projects
   b. Apply Minute Order #109519
   c. Flex Category 7 STP Funds

2. Be More Efficient
   a. Support comprehensive development agreements (CDAs)
   b. Plan Manager Lanes

3. Borrow to Build
   a. Use toll funds
   b. Apply shadow tolls
   c. Explore the use of Proposition 14/Ogden Bonds

4. Find Partners
   a. Coordinate Congressional funding
      i. Identify potential Congressional earmarks
      ii. New rail starts
   b. Request TxDOT Category 12 funds – Strategic Priority
   c. Leverage Texas Mobility Funds for critical multimodal projects
   d. Coordinate local sources

Next Step

A variety of facilities are necessary for the long-term efficient and safe operation of the region’s goods movement system. The variety of facilities to achieve this goal include rail and hazardous-cargo bypasses for trucks to the south and west of the region, improvements to the Tower 55 interchange between the Burlington Northern Santa Fe and Union Pacific railroads, and capital improvements
(intelligent transportation systems, roadways, transload facilities, safe havens, etc.) to enhance rail and truck access to major freight destinations in and around the Metroplex. The total long-term cost of these facilities is being developed as part of the region’s Freight Bottleneck Study. The current estimate for the necessary public and private sector investment prior to 2025 is $2.6 billion.

The Texas Metropolitan Mobility Plan represents this region’s commitment to a comprehensive, cooperative, and continuous transportation planning process that provides for a balanced transportation system by recognizing the evolving transportation and air quality issues of the region. The ability to implement the region’s projects and achieve these ambitious goals is closely tied to this region’s ability to identify innovative financing methods and to work closely with the Texas Transportation Commission to pursue every available funding opportunity, whether that be through toll equity, regional mobility authorities, or the Texas Mobility Fund.
El Paso
Appendix C4 - El Paso

Needs

Enhancing mobility or reducing congestion levels in the transportation networks of the major metropolitan areas in Texas is a key element in the development of the TMMP. However, the TMMP also addresses safety, economic development, air quality improvement, and enhancement of quality of life as important goals. The needs-based plan for El Paso considered, in addition to the necessary improvements in the roadway capacity (equivalent lane-mile analysis), that congestion in the international Ports of Entry and rail/intermodal improvements are key issues. The cost of this plan, which is over and above funding levels from traditional sources that are identified in the El Paso MPO 2030 Metropolitan Transportation Plan, reaches $10.5 Billion. This amount includes the cost of rehabilitating the existing facilities that will have their useful life expire between 2000 and 2025.

The mobility improvements identified for the El Paso metropolitan area are summarized in Table C4.1. Under current funding levels, it is estimated that about 1,000 lane-miles will be built between 2000 and 2025. The cost of building these projects is estimated at $2.46 billion. The remaining 800 lane-miles, identified in the needs-based plan, have an approximate cost of $3.44 billion.

The Texas Congestion Index (TCI) was developed to measure congestion levels in the metropolitan areas. It was used to capture the impact that different funding

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>Base year 2000</th>
<th>Traditional Funds (MTP)</th>
<th>Needs-Based</th>
<th>2025 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeways</td>
<td>512</td>
<td>297</td>
<td>51</td>
<td>860</td>
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<tr>
<td>Principal Arterials</td>
<td>1587</td>
<td>576</td>
<td>606</td>
<td>2770</td>
</tr>
<tr>
<td>Minor Arterials</td>
<td>664</td>
<td>165</td>
<td>144</td>
<td>973</td>
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<tr>
<td>Total</td>
<td>2763</td>
<td>1039</td>
<td>802</td>
<td>4603</td>
</tr>
</tbody>
</table>
scenarios have on mobility. The following figure shows the TCI for El Paso. In 2025, the “MTP” scenario reduces congestion levels from the “No-Build” scenario. However, under current funding conditions, congestion will get worse between today and 2025.

**El Paso Mobility Plan Highlight: The I-10 Relief Route Project**

El Paso’s geographical conditions and the political boundaries that have been created through the years make transportation planning a challenging task for this region. As shown in the following map, the El Paso metropolitan area is bounded to the south by the Rio Grande, which serves as the international border with Mexico. The Franklin Mountains have a north-south alignment that makes east-west mobility more complex. The northeastern quadrant of the region is covered by the Fort Bliss/Biggs Airfield military facilities.

Interstate 10 is the backbone of El Paso’s transportation network and is the prime link for east-west flows. Given the geographical constraints, expanding capacity
on I-10 is quite complex, especially in the downtown El Paso area, where right of way is not readily available. Thus, completing the I-10 Relief Route Project has been, and continues to be, a priority for this region.

The map shows different elements of the project, which include:

- Americas Interchange (I-10 at Loop 375), on the east side
- Joe Battle Blvd. (Loop 375, between I-10 and Montana Ave.)
- Purple Heart Highway (Loop 375, between Montana Ave. and Railroad Dr.)
- Northeast Parkway, Texas (Loop 375 to NM state line)
- Northeast Parkway, New Mexico (NM state line to I-10)

Each of these elements is in different stages of implementation. The following table summarizes the status of each element, its projected cost, and the funds that have been identified for their implementation.

Coordinating the implementation of this project with New Mexico agencies is a key factor in the success of this project. Funding for the Northeast Parkway (NM) needs to be identified as part of the financial plan.
El Paso’s Financial Plan

The challenge in El Paso is not only to find the funding necessary to build additional capacity to the transportation network, but to find a way to accelerate the implementation of those that are already identified under the MTP scenario. In order to do this, the financial plan will include new and innovative funding mechanisms as a complement to traditional funding sources. House Bill 3588 provided the framework for several new funding tools, which include the creation of RMAs, the implementation of toll facilities, and the introduction of Toll Equity. The Texas Mobility Fund is another new funding mechanism that was created by the Texas Legislature. The Strategic Plan for the implementation of this fund was recently approved by the Texas Transportation Commission, and calls for metropolitan areas to develop leveraged projects in order to maximize their allocations of the fund.

The El Paso region is committed to develop a short- and long-range financial strategy that combines current funding sources with the new available tools to accelerate the implementation of mobility enhancing projects. However, on September 24, 2004, the El Paso MPO Transportation Policy Board (TPB) issued a statement that provides very clear principles to be followed in the development of the financial plan. The TPB’s statement can be summarized as follows:

- The Northeast Parkway is identified as El Paso’s priority project
- Funding this project will be accomplished via innovative tools which may include land-leasing agreements and tolling of this project to leverage TxDOT funding sources.
- Tolling in the El Paso region is limited to the Northeast Parkway project.
• All final decisions regarding funding mechanisms in the region will be made by the El Paso MPO’s TPB.

Based on the TPB decision, the financial plan for the implementation of the key mobility projects in the El Paso region will consider a combination of several sources and mechanisms including, but not limited to:

• TxDOT Funding Sources
  o Category 2
  o Strategic Discretionary
  o NAFTA
  o Texas Mobility Fund
  o Toll Equity
  o Proposition 14 bonds
  o Other

• Local Funds and Leverage
  o Tolls (Northeast Parkway, Texas)
  o Land-lease agreements
  o Right of way donations
  o Other

• New Mexico Funding
  o To be coordinated with state and local entities in New Mexico

• U.S. Congressional Funding
  o These sources to be channeled through Texas and/or New Mexico
Funding for the I-10 Relief Route Project presents a major challenge to the El Paso region. The details of the financial plan to meet this challenge will be developed in the short term in order to meet the key milestones in the statewide schedule.

**Next Steps**

In addition to developing a comprehensive financial plan in the short term that takes advantage of all the new funding tools that have been made available, there are other issues that will be addressed by the El Paso partnership of agencies and organizations:

- Maintain the coordination with the other seven TMAs (MPOs and TxDOT Districts) in the continued development of the TMMP. Much work is needed to improve the innovative procedures that were developed during this first stage, such as the TCI and the Needs-Based methodology.

- Continue the analysis of the international ports of entry and the rail/intermodal projects. These are critical elements to improve of mobility of freight and people.

- Analyze the congestion in the regional corridors that were identified in the Needs-Based Plan methodology.
The Hidalgo County MPO (HCMPO) needs an additional $808,200,000 in order to build needed projects to decrease the amount of congestion in Hidalgo County. This amount does not include the additional $830,520,000 dollars that would be required to maintain the continuously aging network.

Using traditional funding levels only (Figure C5.1), the Hidalgo County MPO would only be able to construct 1,887 lane miles as identified in the fiscally-constrained 2030 Metropolitan Transportation Plan. HCMPO staff calculated that in order to eliminate Level of Service (LOS) “F” from the forecast year Travel Demand Model, an additional 382 lane miles would need to be constructed, as well as five freeway interchanges. As shown in Figure C5.2, the HCMPO would need an additional $808,200,000 to construct the 342 lane miles needed to eliminate LOS “F”.

### Alternative Funding

The HCMPO recognizes the need for alternative means to fund future highway projects as well as the maintenance cost associated with existing and future roadways. The TMMP allows for a set, predictable allocation of funds to the state’s eight most congested urban areas. This change, combined with new tools
from recent legislation (HB 3588) and the secured Texas Mobility Fund, empowers the urban areas of Texas to better address congestion. The HCMPO has identified the “Pharr Connector” (Figure C5.2) as a possible revenue generating project within Hidalgo County. The HCMPO has obligated $66 million in Texas Mobility Funds for the Pharr Connector project. Recent feasibility studies have provided information that this project would be an excellent candidate for tolling.

**Features of the HCMPO Plan**

The HCMPO plan also includes the development of Priority Projects (Figure C5.3) that will ease congestion in Hidalgo County. The ultimate goal of this plan is to increase mobility and decrease the level of traffic congestion.

Achieving these goals is difficult in a state that is growing as fast as Texas.
Southbound Border Truck Crossings FY 2004

<table>
<thead>
<tr>
<th>Progreso International Bridge</th>
<th>Pharr International Bridge</th>
<th>Hidalgo International Bridge</th>
</tr>
</thead>
<tbody>
<tr>
<td>22,287</td>
<td>349,504</td>
<td>14,785</td>
</tr>
</tbody>
</table>

Northbound traffic is provided to the HCMPO on a yearly basis and was not available at the time of publication.

Hidalgo County has truck crossings at three international bridges and this can multiply the impacts that truck traffic is having on the existing system since the traffic is heavily concentrated at the three bridges.

The amount of truck traffic within Hidalgo County emphasizes the need to develop multimodal partnerships. One such partnership the HCMPO is undertaking is the coordination of a non-radioactive, non-destination hazardous-materials truck route. The HCMPO has been successful coordinating between the local city and county governments, as well as,
emergency response teams in developing a hazardous-materials route. The proposed route shown in Figure C5.5 is currently undergoing analysis to assure it is the safest and most effective route possible.

Another partnership the HCMPO is examining is with the local rail line operators. At present HCMPO is performing a rail study to examine the possibilities in relocating rail lines within Hidalgo County. As shown in Figure C5.6 the main rail lines within Hidalgo County travel within the most densely populated areas of Hidalgo County. It is important to develop a partnership with rail and truck freight operators to reduce the amount of congestion that is created by truck traffic to and from the international bridges.

The HCMPO is also working closely with the three local transit providers (Figure C5.7) to help promote and increase ridership, therefore reducing the amount of single-passenger car trips and
creating a reduction in congestion within Hidalgo County. In summary, the goals adopted as part of the TMMP represents this region’s commitment to a comprehensive, cooperative, and continuous transportation planning process that provides for a balanced transportation system by recognizing the evolving transportation needs for the region. The ability to implement regional projects and achieve these ambitious goals is inherently closely tied to this region’s ability to identify and pursue every available funding source.
Appendix C6 – Houston-Galveston Region Needs

Background

Covering eight counties and 8,000 square miles in southeast Texas, the Houston-Galveston region is home to the fourth largest city in the nation and has a population of more than 5 million people. Known for its dynamic growth, regional projections indicate that the Houston-Galveston area is on track to add another 2.5 million residents by 2025. Travel growth over the next two decades is expected to outpace population growth, increasing 75 percent. Average vehicle miles traveled will climb from 125 million per weekday in 2000 to 218 million by 2025.

It is not surprising, therefore, that the Houston-Galveston region has the highest congestion index in the state. According to the latest data published by the Texas Transportation Institute, commuters and commercial vehicles spend 39 percent more time making a trip during peak hours than the same trip made during the off-peak travel times. Congestion costs each resident $586 per year. This increase in travel time also slows commerce and reduces business productivity. As home to four international seaports and one of the nation’s busiest airports, congestion in the Houston-Galveston area not only...
adversely impacts residents and businesses in the region but commerce across Texas and the nation.

**Needs analysis for the Houston-Galveston region**

In its recently adopted 2025 Regional Transportation Plan, the Houston-Galveston area’s Transportation Policy Council endorsed an aggressive program designed to reduce operational delay, increase system capacity and reduce the growth in vehicular travel demand. Keystones of this plan include $10.6 billion in revenue from existing and proposed toll/managed lanes and a $5 billion expansion of regional transit services, including more than 70 miles of commuter and light rail transit.

However, congestion will continue to increase. The Houston-Galveston Area Council estimates that an additional $19 billion will be needed to expand transportation capacity (or reduce the growth in vehicular travel demand) in order to alleviate the most severely congested elements of the transportation system.

**Unfunded Need for System Preservation**

Expanding the transportation system will yield few benefits if maintenance and preservation of the system is inadequate. An increased need to replace existing
pavements and structures that will have exceeded their useful life during the next two decades could increase the unmet transportation investment by more than $42 billion.

**Leading with Innovative Tolling Strategies**

A major component of the Houston-Galveston regional transportation system is the freeway and tollway system. The freeway/tollway system represents only 10 percent of regional lane miles but carries more than 40 percent of vehicle miles traveled. Although growth in vehicle travel may be mitigated by transit system expansion, improved operation of major arterial streets and technology increasing the effectiveness of teleworking and e-business, regional and state economic growth require continued expansion of the regional freeway/tollway network.

The Houston-Galveston area has utilized toll roads as a method of financing facilities and improving mobility for more than two decades. Currently, there are four toll roads in operation – the Hardy, Sam Houston, Westpark and Fort Bend Parkway Toll Roads. The system is projected to grow from approximately 470 lane miles now to 1,923 lane miles in 2025.
Local Government Support for Mobility

In November 2000, residents in Fort Bend County approved the creation of the Fort Bend County Toll Road Authority. Voters also approved a $140 million bond issue to support the construction of the Fort Bend Parkway and the Westpark Extension, developed cooperatively with the Harris County Toll Road Authority. Brazoria County has also set up a toll road authority to examine potential toll options for facilities within the county. Montgomery County is pioneering the use of “pass through” or “shadow” tolling with TxDOT as a method to accelerate needed improvements to state highways and farm-to-market routes.

A Multimodal Approach to Improving Mobility

Smart Streets

Access and traffic management improvements on non-freeway arterials in the Houston-Galveston region represent an early opportunity to improve roadway and transit mobility. Smart Streets have been introduced in the 2025 Regional Transportation Plan as a means of increasing mobility, transit access and safety.

The Smart Streets “toolbox” includes traffic signal timing and synchronization, driveway consolidation, improved intersection design and control of median
access, landscaping, sidewalks and other measures designed to smooth the flow of traffic and improve pedestrian and transit accessibility. Customized to fit the needs of each community and the mix of adjacent land uses, Smart Streets can provide a connective framework for regional highway and transit facilities.

**Mass Transit**

METRO has developed a long-term regional transportation system called METRO Solutions that was approved in a voter referendum and is a component of the Houston-Galveston area’s 2025 Regional Transportation Plan. The METRO plan includes:

- Authorization to issue $640 million in bonds for the first 10 years of the plan
- Specific approval of METRORail expansion
- Plans for an additional 64.8 miles of light rail
- Plans for an eight mile commuter rail line
- 50% increase in bus service, including 1,000 new route miles
- Providing continued funding for road and street improvements through 2014

In addition to METRO, transit services are provided by the Gulf Coast Center/Connect Transportation in Brazoria and Galveston Counties, Colorado
Valley Transit in Waller County, and Brazos Transit, which operates The Woodlands Express between Montgomery County and Houston. The feasibility of additional commuter rail service across the region also is being studied.

**Freight Rail: An Opportunity for New Partnerships**

Freight rail movement is a critical issue in the Houston region. The current freight rail system slows freight movement on rails and delays area motorists at 733 at-grade crossings, which often are the sites of vehicle crashes. Nine priority at-grade rail crossings were identified in a recent study by Harris County and the Port of Houston based upon safety and travel delay considerations. The study estimated that the cost for improving these at-grade crossings would be approximately $195 million.

In addition to investigation of ways to improve freight movement, planning is underway to examine the potential for commuter rail service throughout the region. Implementation of commuter service must be carefully coordinated with freight movement. TxDOT intends to work with local governments and transportation agencies in the Houston-Galveston area to examine freight and commuter rail opportunities on a regional and statewide perspective.
In 1978, voters in Harris County made a strong commitment to public transportation by adopting a one cent sales tax to fund the construction and operation of a public transportation system. METRO offers transit services in its 1,285-square mile service area with a fleet of more than 1,500 buses. In 2004, METRO opened the first component of a 72.8-mile passenger rail system, the 7.5-mile light rail line from Downtown to Reliant Park.

During Fiscal Year 2003, METRO had more than 89.1 million customer boardings on its fixed-route bus system, 1.4 million boardings on its paratransit (METROLift) system, 1.3 million boardings on its METROVan system and 1.6 million boardings on its Special Event services. Through the first seven months of METRORail, there were 3.7 million boardings.

Through 2003, METRO invested $1.22 billion on street and road improvements under its General Mobility Program. Through 2014, 25 percent of its sales tax revenues will continue to fund street and road improvements and related projects. METRO is also in the final stages of completing the $300 million Downtown/Midtown Transit Streets Project, including the reconstruction of more than 22 miles of downtown/midtown streets. As part of the Regional Computerized Traffic Signal System (RCTSS), METRO is spending $140 million to replace 1,500 traffic signals throughout the region. In partnership with TxDOT, METRO helped construct more than 100 miles of HOV/bus lanes.
Appendix C7 – Lubbock

While congestion is not a major problem in the Lubbock Metropolitan Area at this time, model runs show it will become a problem soon if steps are not taken to control it. The Lubbock Metropolitan Planning Organization (MPO) has determined there to be a gap of approximately $150 million (see Figure C7.1) between traditional funding levels and the amount needed to eliminate all Level of Service “F” locations by 2030. This amount reflects highway and street mobility needs, as well as transit needs. It does not include the projected shortfall in rehabilitation needs. If rehabilitation needs are included, this amount balloons to over $900 million.

Traditional funding levels will provide for the construction of 314 equivalent lane-miles of capacity (Figure C7.2). The elimination of all Level of Service “F” in the MPO area would require an additional 78 equivalent lane-miles.

![Texas Congestion Index](image)

![Lane Mile Equivalent Needs](image)
Filling the Gap

The Lubbock Metropolitan Area is taking advantage of two new tools to begin addressing the funding shortfall. The use of an additional $37 million in Proposition 14 bond funds is being utilized to accelerate the construction of Phase 2 of the Marsha Sharp (US 82) Freeway beginning in FY 2005. Without these funds, construction would be delayed on this project well beyond 2010.

The City of Lubbock has stepped up with a projected $90 million in local bonding capacity for other street projects through its newly formed “Gateway Streets Program.” These funds have initially been designated for use in widening four miles of Milwaukee Avenue on the west side of Lubbock, as well as adding capacity to Northwest Loop 289 and extending Slide Road past North Loop 289 and widening of two miles of Erskine Street in this same area (Figure C7.3).

As a result of the use of these tools, the letting amount for the Lubbock District
increases dramatically in FY 2005 (Figure C7.4). The use of these new tools is expected to lower the Texas Congestion Index (TCI) from 1.17 to 1.13, thus taking the Lubbock area halfway to its goal of 1.09 before 2030.

**Next Step**

The district is in the process of developing a toll plan for presentation to the MPO Policy Committee, as well as to local elected officials and the Chamber of Commerce. A toll feasibility study is currently under way on the Marsha Sharp (US 82) Freeway, and it is the main focus of the Lubbock Toll Plan. Other projects will be considered as they are developed. Adoption of the toll plan by local decision makers would provide for the availability of $35 million in Texas Mobility Funds to the Lubbock Metropolitan Area. A successful toll project would also generate future revenues, which would be dedicated to additional mobility projects in the Lubbock Metropolitan Area.

The local transit provider (Citibus) is working closely with members of Congress to reevaluate how transit dollars are allocated to urban areas with more than 200,000 population. The effort is to increase transit funding and give more flexibility to the local decision makers as to how those funds may be used.
San Antonio
Appendix C8 – San Antonio

Needs

As reflected in Figure C8.1, San Antonio needs $8 billion dollars in order to build the needed projects to decrease congestion to their goal level. This amount reflects not only added capacity, but transit, the addition of several major interchanges around the city and the right of way needed to expand the system.

Through traditional funding, only a total of 430 total lane mile equivalents of roadway improvements to the base (for the entire San Antonio-Bexar County region) can be added, as shown in Figure C8.2. Once the travel demand model is applied, service level “F” facilities are identified. The model then adds capacity in increments of whole number lanes until that level of congestion is eliminated, resulting in a need of an additional 2,330 equivalent lane miles.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Base Year Lane Miles</th>
<th>Traditional Planning Levels</th>
<th>Eliminate All LOS F Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Additional Lane Mile Equivalents</td>
<td>Cost (in millions)</td>
<td>Additional Lane Mile Equivalents</td>
</tr>
<tr>
<td>CBD Freeway</td>
<td>30</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>CBD arterial</td>
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<td>Urban Freeway</td>
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<td>160</td>
<td>16.9B</td>
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<td>Urban Arterial</td>
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<td>760</td>
<td>16.76</td>
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<td>Suburban Freeway</td>
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<td>140</td>
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<td>Rural Arterial</td>
<td>481</td>
<td>121</td>
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<tr>
<td>Freeway to Freeway Interchange</td>
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<td>Right-of-Way Cost</td>
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Filling the Gap

San Antonio MPO submitted a 25-year plan adding a $960 million investment in highways, $170 million in enhancements for city streets to aid in mobility, and $340 million in improvements to the transit system. This is in addition to the traditional revenue already identified. This adds more than 260 equivalent lane miles to the system. Total increase in infrastructure investment $1.47 billion, realized by $600 million from toll initiatives, $194 million from the Texas Mobility Fund and $680 million from the Advanced Transportation District (ATD). The ATD is on the November 2, 2004 ballot for voter approval.

Key Features of San Antonio Plan

The San Antonio plan includes advancement of project construction using Proposition 14 and toll initiatives allowing for vastly increased infrastructure investment in the near term to address congestion now rather than later.

The San Antonio plan also includes the development of routes along Loop 1604 and I-10 to allow for connection to the anticipated SH 130 and the I-35 Trans Texas Corridor projects. The plan also includes the direction of up to $30 million of
anticipated TMF funds to SH 130 to assist with advance ROW acquisition, realizing the importance of an alternate to I-35.

**Next Step**

Freight rail in San Antonio is an increasing concern. San Antonio sits as a major NAFTA trade hub and rail center. The area needs to fully examine possible partnerships to reroute rail from the densely populated areas, develop inland multimodal ports and realize additional rail capacity along the I-35 corridor for future commuter rail to Austin.

Public transportation efforts need to include an enhanced long-range strategic plan for the more efficient movement people about the region. This strategic plan needs to include bus rapid transit and rail possibilities (both commuter and intraregional). The use of future Texas Mobility or other flexible funds could be directed to such rail and transit initiatives after a further evaluation.