SAN ANTONIO

Five of the state’s 50 most congested corridors are in San Antonio (Exhibit SA-1). Recent implementations of congestion reducing designs and improved operations on US 281, Loop 1604, and Culebra Road have improved travel times in those corridors (Exhibit SA-2).

Improvements for the two most congested corridors in the San Antonio area, SL 1604 and US 281, are being examined in environmental impact studies conducted by the Alamo Regional Mobility Authority. These environmental studies will be monitored over the coming months. If the Alamo RMA decides to not pursue a project in these corridors, there may be a need to re-examine the potential for a project implemented by another agency.

The IH 35 corridor is being examined jointly by TxDOT and Alamo RMA using a process termed a Planning and Environmental Linkages (PEL) study. The PEL process uses previous study findings and builds upon those findings through additional planning analysis and public discussion about improvement strategies that address the corridor problems. Numerous capacity alternatives, including additional mainlanes and managed lane projects, as well as other modes of transportation, are studied to meet the long-range transportation demand. The PEL study will also identify short-range transportation improvements to improve efficiency of the corridor. Detailed environmental studies should begin immediately following the PEL studies. Other major corridors should be studied to provide information about alternate routes for the IH 35 corridor, particularly for long-distance trucks traveling through San Antonio.

A summary and map of the recommended actions that will affect each congested corridor is included in Exhibits SA-3 and SA-4 after the individual corridor summaries. Information regarding large projects with significant congestion reduction potential, their estimated implementation cost, and implementation timeframe is included in Exhibit SA-5.
Exhibit SA-1: San Antonio’s Most Congested Corridors
Exhibit SA-2: San Antonio
Under Construction or Recently Constructed

#23: Completed superstreet

#23: Completed superstreet

#23: Completed ramp improvements

#23: Expanded freeway

#38: Completed superstreet

#38: Constructing southern direct connectors

#23, #48: Expanded freeway

#50: Widened roadway

#xx: Congested Section Addressed by Project

: Completed Projects

: Projects Under Construction
STATE LOOP 1604
SH 16 (Bandera Road) to FM 471 (Culebra Road)

**Current Conditions**
South of Bandera Road and towards Braun Road, Loop 1604 transitions from a freeway section to a 4-lane divided highway with signalized intersections. Traffic lights and turnarounds improve traffic flow, but there is significant congestion. Current congestion slowdowns occur near equally both in the morning and evening rush hours. However, eastbound traffic does not slow down as much during both rush hour periods as does westbound traffic.

- Segment Length: 5.5 miles
- Road Type: 4-Lane divided highway
- Annual Hours of Delay: 552,000
- Texas Congestion Index: 1.33
- Commuter Stress Index: 1.36

**Possible Congestion Causes**
Residential and commercial land development has grown extensively in recent years. Traffic volume surpassed the capacity of the current facility and causes recurring congestion.

**Projects in Progress or Completed**
*Superstreet Improvements*
The Loop 1604 superstreet improvement was completed in September 2011. Two other projects to reduce congestion and improve safety included intersection improvements at Braun Road and ramp and a frontage road reconfiguration south of Culebra Road. Signal timing operations for the superstreet will be maintained by the City of San Antonio.

- Improvements at Braun Road were environmentally cleared and constructed by the Texas Department of Transportation (TxDOT).
- Alamo Regional Mobility Authority (Alamo RMA) environmentally cleared the operational improvement and

reconfiguration of intersections to the superstreet design at New Guilbeau Road and Shaenfield Road in September 2010; construction began in March 2011. The San Antonio District of TxDOT oversaw construction for this phase, with $6.3 million in funding from one-time federal sources.
**SH 151 Underpass**
The underpass of SH 151 at Loop 1604 is under environmental review; if constructed it will relieve a congestion bottleneck.

**Corridor Improvements**
Alamo RMA is currently working on the Environmental Impact Statement (EIS) for SL 1604 corridor improvements across the west, north, and east sides of the city, including this congested corridor. Several public meetings have been held, and Alamo RMA maintains an active web site, Twitter account, and Facebook page for the future project.

**Expansion**
In October 2011, Bexar County completed widening from two to four lanes on Shaenfield Road just north of Culebra Road.

**Park and Ride**
VIA Transit has an interim park and ride facility two miles south of Culebra Road at SL 1604 and Military Drive/Sea World Drive.

**Planning Efforts to Date**

**Expansion of SL 1604**
Options studied in the Alamo RMA corridor EIS include:

- Widening the existing facility (both divided highway and freeway sections),
- Providing tolled managed lanes,
- Managed lane HOV/HOT lane options

Other aspects of the corridor situation and future plans include:

- Local opposition to tolling in the corridor has been strong for years.
- When construction moves forward, Alamo RMA will require the construction contractor to provide incident clearance during construction.
- Any future tolling improvements will be done with electronic tolling.
- Dynamic message signs and cameras will be used for traffic management in the corridor, in cooperation with TxDOT.

**Planned Improvements**
The San Antonio-Bexar County Metropolitan Planning Organization's (MPO) Metropolitan Transportation Plan (MTP)/Transportation Improvement Program (TIP) includes the following projects related to this portion of SL 1604:

- Expand to a 6-lane toll expressway from W. Military Dr. to Braun Road with non-tolled frontage roads, including two tolled direct connectors at SH 151. Total project cost for this improvement is $226 million.
- Expand from a 4-lane to an 8-lane expressway (with tolling on the four new mainlanes) from Braun Road to SH 16 with non-tolled frontage roads. Total cost of this project is $62.6 million.
- Expand from a 4-lane to an 8-lane expressway (with tolling on the four new mainlanes) from SH 16 to NW Military Highway with non-tolled frontage roads, including two tolled direct connectors at IH 10. Total project cost for this portion of the Loop 1604 improvements is $308.8 million.
- The MPO MTP/TIP currently includes plans by TxDOT to construct a grade separation at Marbach Road with $19 million funded by state sources.
Next Steps

- There is local agency agreement and support for more aggressive incident management methods to improve mobility and congestion in the San Antonio area. **Improved incident management and related agency coordination** in quickly clearing crashes and disabled vehicles will reduce incident-related delay and congestion.

- **Broad deployment of advanced traveler information systems** (including dynamic message signs and camera monitoring) in cooperation with TxDOT has been identified as a city-wide congestion management measure. The TransGuide traffic management center does not cover the Loop 1604 west corridor. TransGuide can be improved with electronic signs, which provide updated traffic information and other traffic management solutions to travelers. Funding for the expansion and maintenance of additional traffic management devices and services has not been identified.

- **Superstreet operation should be monitored and signal timing adjusted** in the corridor to ensure the best possible operation of the existing road.

- There is local agency agreement and support for **increased travel demand management activity and strategy deployment** in San Antonio. Likely champions of these activities in the San Antonio region are the Alamo Area Council of Governments and VIA Metropolitan Transit. Studies can determine the most effective travel demand management strategies for the region and the potential to form Transportation Management Associations (TMAs) in cooperation with major employers in the region.

- **Monitor the progress of the Alamo RMA EIS for this corridor** (to be completed mid to late 2012) as it is reviewed by TxDOT and the FHWA, and released to the public. Provide technical and public information support, as needed, during this process and in support of any future project identified by the EIS. Assuming the outcome of the EIS includes tolled mainlanes along Loop 1604 West, construction of the project could begin by May 2013, and take four years to complete. Overall construction for Loop 1604 from US 90 on the west side to IH 35 in northeastern San Antonio is expected to cost between $770 million and $1.47 billion, depending on which alternative is preferred in the EIS.
US 281
Comal County Line to SL 1604 (Anderson Loop)

Current Conditions
U.S. Highway 281 North is a multi-lane divided highway in a developing suburban corridor. U.S. 281 south of Loop 1604 is a typical Texas freeway with mainlanes and frontage roads; however, the expressway ends just north of Loop 1604. A superstreet design along some of the corridor has reduced delays, fuel consumption, driver frustration, and vehicle emissions, but congestion remains a significant problem. US 281 experiences the worst congestion and slowdowns in the northbound direction, specifically during the evening rush hour period. Southbound traffic experiences minimal slowdowns only during the morning.

- Segment Length: 7.5 miles
- Road Type: 4- to 6-Lane divided highway
- Annual Hours of Delay: 1,035,000
- Texas Congestion Index: 1.62
- Commuter Stress Index: 2.00

Possible Congestion Causes
Most of the congestion along the US 281 corridor is directional: delays occur inbound in the morning and outbound in the afternoon. Traffic volume has significantly increased because of rapid residential development in the surrounding area in recent years. The growth in homes has dramatically outpaced expansion of the roads causing significant congestion, particularly in the evening rush hours.

Completed Projects
Superstreet Configurations North of Loop 1604
A superstreet high-capacity street configuration was completed in October 2010 on four intersections north of Loop 1604: Marshall Road, Stone Oak Parkway, Evans Road and Encino Rio. The project used $5 million of one-time federal stimulus funding. The project increased the amount of green time at signals on the US 281 corridor by reducing the number of turns.

Bus and Park and Ride Services
VIA Metropolitan Transit has a temporary express bus park and ride facility at the south end of the corridor, as well as a local route servicing the Loop 1604/US 281 interchange area.
Expansion of Blanco Road/FM 2696
This stretch, which parallels US 281 to the west, was expanded from two lanes to four lanes with median treatments beginning in 2008. The project opened in November 2010 and was funded by pass-through financing supported by TxDOT (70 percent of the $30 million cost). San Antonio Advanced Transportation District (ATD) tax proceeds covered the remaining cost. This was the first project completed under a pass-through financing agreement between Bexar County and TxDOT.

Expansion of Bulverde Road
Bulverde Road, which parallels US 281 to the east, was recently expanded by Bexar County from two lanes to four lanes with medians from Evans Road to Marshall Road.

Projects in Progress

Direct Connector Ramps
American Recovery and Reinvestment Act/federal stimulus funding is being used to add four direct connect ramps to the US 281/Loop 1604 interchange. The total construction cost of the four south-side direct connectors and associated improvements is $145.2 million.

Corridor Improvements
The Alamo Regional Mobility Authority (ARMA) is working on an Environmental Impact Statement (EIS) for corridor improvements between Loop 1604 and the Bexar/Comal County Line. ARMA is aggressively pursuing public input (twice the required number of public meetings have been held, and the RMA has an active web site, Twitter account, and Facebook page for the project).

Traffic Signals
TxDOT is completing the installation of traffic signals at the Sonterra interchange, just north of Loop 1604. The cost of this project was $68,000, and it is expected to resolve localized congestion at this interchange.

Expansions
The City of San Antonio is using bond funding to expand Bulverde Road from Loop 1604 to Evans Road from two lanes to seven lanes with medians, sidewalks and bicycle lanes. Improvements to the Bulverde Road/Evans intersection are scheduled for completion in March 2012, while the roadway expansion to the south will continue well into 2012.

Additional expansion projects affecting this corridor are summarized in the table below.

Planning Efforts to Date

Expansions of US 281
Options for US 281 improvements studied in the Alamo RMA corridor EIS include:

- Widening the existing divided highway
- Non-tolled freeway with frontage roads
- Tolled freeway with non-tolled frontage roads
- Overpass construction at major crossings
- Managed lane HOV/HOT lane options

<table>
<thead>
<tr>
<th>Road Expansions</th>
<th>Location</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulverde Phase IV</td>
<td>Marshall Road to 1.2 miles north of Marshall</td>
<td>being designed for an expansion from two lanes to four lanes with shoulders and curbs</td>
</tr>
<tr>
<td>Bulverde Phase V</td>
<td>Bulverde Phase IV to Smithson Valley</td>
<td>preliminary design phase to widen the existing 2-lane roadway to a 4-lane road with shoulders</td>
</tr>
<tr>
<td>Borgfeld Phase I</td>
<td>Timberline to US 281</td>
<td>final design stage for a reconstruction from a 2-lane street to a 4-lane road with shoulders</td>
</tr>
<tr>
<td>Borgfeld Phase II</td>
<td>Blanco to Timberline</td>
<td>awaiting right-of-way clearance for an expansion from two lanes to a 4-lane road with shoulders</td>
</tr>
</tbody>
</table>
In an October 2011 newsletter, the RMA informed the public that the expansion of US 281 with overpasses at cross streets and frontage roads between intersections was eliminated from future consideration by the EIS team. Other aspects of the corridor situation and future plans include:

- Local opposition to tolling in the corridor has been strong for years.
- When construction moves forward, Alamo RMA will require the construction contractor to provide incident clearance during construction.
- Any future tolling improvements will be done with electronic tolling.
- Dynamic message signs and monitoring cameras will be used for traffic management in the corridor, in cooperation with TxDOT.
- Ensure adequate right-of-way is preserved for future high-capacity transit options and maintained on US 281 as part of any added capacity projects.

**Toll Expressway**
The San Antonio-Bexar County Metropolitan Planning Organization’s (MPO) Metropolitan Transportation Plan (MTP)/Transportation Improvement Program (TIP) includes a project to expand this corridor to a 6-lane toll expressway with non-tolled outer 2- and 3-lane frontage roads and non-tolled north-side direct connector ramps at Loop 1604. Total project cost for the tolled expressway expansion is $462.5 million, while the non-tolled northern direct connectors at the Loop 1604 interchange have a total cost of $59 million.

**Future Transit Center**
VIA Metropolitan Transit has a plan for a future transit center near the middle of the corridor at US 281 and Stone Oak Parkway. The center will serve a local route, as well as express bus service to downtown San Antonio.
**Next Steps**

- The Alamo Regional Mobility Authority is currently constructing four of the eight direct connector ramps at the US 281/Loop 1604 interchange at the southern end of this congested corridor. The ramps are to be completed by May 2013, with other improvements completed by February 2014. Funding exists for the four northern direct connectors that will complete the interchange, but design work for those connectors has not yet been funded and performed. Utilize Rider 42 funding to **perform the design work necessary for the four northern direct connector ramps at the US 281/Loop 1604 interchange**. The record of decision on the US 281 EIS must first be approved before these connectors are built. Assuming this occurs by December 2013, construction could begin by mid-2014 and completed by late 2018 (The connectors and US 281 improvements would be built simultaneously).

- There is local agency agreement and support for **increased travel demand management activity and strategy deployment** in San Antonio. Likely champions of these activities in the San Antonio region are the Alamo Area Council of Governments and VIA Metropolitan Transit. Studies can determine the most effective travel demand management strategies for the region and determine the potential to form Transportation Management Associations (TMA) in cooperation with major employers in the region.

- There is local agency agreement and support for **more aggressive incident management methods** to improve mobility and congestion in the San Antonio area. Improved incident management and related agency coordination in quickly clearing crashes and disabled vehicles will reduce incident-related delay and congestion.

- **Broad deployment of advanced traveler information systems** (including dynamic message signs and camera monitoring), in cooperation with TxDOT, has been identified as a city-wide congestion management measure. The TransGuide traffic management center does not cover the US 281 north corridor. TransGuide can be improved with electronic signs, which provide updated traffic information and other traffic management solutions to travelers. Funding for the expansion and maintenance of additional traffic management devices and services has not been identified.

- **Superstreet operation should be monitored and signal timing adjusted** in the corridor to ensure the best possible operation of the existing road.

- **Monitor the progress of the Alamo RMA EIS for this corridor** (to be completed mid to late 2013) as it is reviewed by TxDOT and the FHWA and released to the public. Provide technical and public information support, as needed, during this process and in support of any future project identified by the EIS. Depending upon which alternative is ultimately identified in the EIS, construction cost for US 281 is expected to be between $403 million and $703 million. Assuming the EIS is finalized and a record of decision is made by the end of 2013, construction could begin in mid-2014 and be completed by late 2018.
**Current Conditions**

IH 35, a major interstate freeway and international trade corridor, passes through the city of San Antonio from northeast to southwest. IH 10 West joins with IH 35 along the western side of downtown. IH 35 splits into upper and lower levels (two lanes each) across the north side of downtown. This section of IH 35 follows a typical morning inbound/evening outbound congestion pattern; however, the evening rush hour period experiences significantly slower speeds than the morning period.

- Segment Length: 4.2 miles
- Road Type: Multi-lane expressway
- Annual Hours of Delay: 733,500
- Texas Congestion Index: 1.30
- Commuter Stress Index: 1.42

**Possible Congestion Causes**

The corridor has complex configurations near downtown, with upper and lower decks on IH 35 and major interchange ramps connecting facilities (IH 37/US 281, IH 10, US 90). IH 35 is a major NAFTA trade route in the south central US, and commercial traffic from Laredo (IH 35) and Corpus Christi and the Lower Rio Grande Valley (IH 37) combine with daily commuter and visitor traffic in this corridor. On the west side of downtown, the IH 35 and IH 10 routes overlap, and northeast of downtown IH 35 serves Fort Sam Houston and the San Antonio Military Medical Center.

**Projects in Progress or Completed**

*TranGuide Monitoring*

The corridor is monitored by the TransGuide (TxDOT San Antonio) traffic management center, using video cameras and dynamic messages signs throughout the corridor.

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**Interchange Improvements**

The Loop 410 South Interchange (i.e., IH 35/Loop 410 South) near Fort Sam Houston and the San Antonio Military Medical Center (formerly Brooke Army Medical Center) will have $25 million of additional improvements in 2013 from a Department of Defense Office of Economic Adjustment Grant to the City of San Antonio.
**Operations Improvements**
Operational improvements funded by Proposition 12 will begin in 2013 along IH 35 north of this congested segment. TxDOT issued a Notice of Interest to consultants in October 2011 to bid on the analysis and development of plans for $18.5 million of congestion reduction improvements to the IH 35 corridor between IH 10/US 90 and the IH 35/Loop 410 North Interchange. There is, however, no funding to make physical improvements to IH 35 between IH 10/US 90 and IH 37/US 281.

**Bus and Park and Ride Services**
VIA has added express bus service and multiple transit routes to the University of Texas at San Antonio’s (UTSA) downtown campus, which is adjacent to the corridor west of downtown.

**Future Transit Center**
VIA purchased property west of downtown and IH 35 for a future west side transit center.

**Bus Rapid Transit**
VIA adopted a long-range plan known as SmartWaySA in July 2011 that outlines phases of transit improvements for the greater San Antonio area and includes a near-term (2015) implementation of bus rapid transit (BRT) in the corridor northwest of downtown.

VIA’s first BRT line, initiating VIA Primo service, will extend from its future west side transit center along Fredericksburg Road through the South Texas Medical Center to the UTSA main campus on Loop 1604. This route will provide a viable connection between the UTSA campuses, the South Texas Medical Center, and downtown, removing some IH 10 traffic using IH 35 near the downtown area. Additionally in Fall 2011, the Federal Transit Administration’s Bus Livability Program funded an extension of the VIA Primo service to serve the suburban community of Leon Valley.

SmartWaySA includes an east-west and north-south urban streetcar rail service component in the downtown area. The east-west line connects an existing transit center east of downtown with VIA’s future west side multimodal transit center; the north-south line parallels IH 35 and IH 37 in the downtown area. In line with the SmartwaySA, VIA adopted a five year capital improvements plan to include funding the north-south and east-west downtown streetcar system, improvements to the east transit center (Robert Thompson), Phase 2 Improvements to the west-side multimodal facility, the US 281 Park and Ride, and the Brooks Transit Center totaling $240 million. In late 2011, the City of San Antonio, Bexar County and VIA made an agreement to jointly fund these projects with the consideration of ATD bonding capacity and other funding mechanisms.

**Planning Efforts to Date**

**Needs Assessment**
The Alamo RMA and TxDOT are partnering on a Planning and Environmental Linkages (PEL) Study to determine the long-term needs and viable improvement alternatives for the IH 35 corridor from US 281/IH 37 to FM 1103. This study is scheduled to be complete by the summer of 2012.

**Expansion of IH 35**
The MPO TIP currently includes the following project related to this portion of IH 35: expand from a 6-lane to 10-lane expressway (tolling the four new mainlanes)

- From US 281/IH 37 to near the Loop 410 South interchange.
- Total project cost of $335.5 million is estimated for this improvement.

**My35**
The recent award-winning public involvement process and long-term planning initiative, MY 35, conducted by TxDOT on the IH 35 corridor through Texas recommended a number of short-term operational improvements and long-term freeway expansion needs along this portion of the IH 35 corridor.
My35—Short Term Adjustments
Immediately implementable short-term recommendations that could affect this portion of IH 35 included:

- Improve incident management and related agency coordination so collisions and disabled vehicles can be cleared quicker and delays can be minimized.

- Use improved technology such as electronic signs to provide updated traffic information, alternative routes, and other traffic management solutions to travelers.

My 35—Long-Term Improvements
Long-term, capital-intensive recommendations for this portion of IH 35 included:

- IH 35 improvements from the Williamson/Bell County Line to IH 10; estimated cost $2.7 billion to $3.85 billion for a minimum of four lanes in each direction (8-lane facility).

- IH 35 HOV/toll lane from SH 45SE in Austin to IH 10 (estimated cost $6.2 billion to $8.85 billion, excluding right-of-way).

- IH 35 improvements from US 90 to the Atascosa County Line to provide four travel lanes each direction (estimated cost $150 million, not including right-of-way).

- Passenger rail alternatives from Laredo to Dallas/Fort Worth (estimated cost $30 billion to $50 million).

- Freight rail relocation to allow commuter rail to use existing tracks paralleling IH 35 between San Antonio and Taylor (estimated to exceed $2.4 billion based on studies performed by TxDOT in 2008).

- Improvements to alternative routes within San Antonio to link with SH 130 in Seguin, including IH 10 from SH 130 to IH 35, Loop 410 from IH 10 to IH 35, and Loop 1604 on the south side of San Antonio from IH 10 to US 90. Collectively, these projects are expected to cost between $3.2 billion and $4.65 billion, not including right-of-way.

Commuter Rail
LoneStar Rail District Commuter Rail Project from Austin to San Antonio is currently in the preliminary phase of the development process. The project costs are estimated at $2 billion, but the project is not funded.

Expansion of SH 130
Completion of SH 130 from Georgetown to IH 10 (in Seguin) is expected to provide some traffic relief through downtown San Antonio.
Next Steps

- **There is local agency agreement and support for more aggressive incident management methods to improve mobility and congestion in the San Antonio area.**
  
  **Improved incident management and related agency coordination** in quickly clearing crashes and disabled vehicles will reduce incident-related delay and congestion.

- **Broad deployment of advanced traveler information systems** (including dynamic message signs and camera monitoring) in cooperation with TxDOT has been identified as a city-wide congestion management measure. TransGuide can be improved with electronic signs, which provide updated traffic information and other traffic management solutions to travelers. Funding for the expansion and maintenance of additional traffic management devices and services has not been identified.

- **There is local agency agreement and support for increased travel demand management activity and strategy deployment** in San Antonio. Likely champions of these activities in the San Antonio region are the Alamo Area Council of Governments and VIA Metropolitan Transit. Studies can determine the most effective travel demand management strategies for the region and determine the potential to form Transportation Management Associations (TMAs) in cooperation with major employers in the region.

- **Provide support and feedback to TxDOT** and their consultants on the IH 35 operational improvements study that will be initiated in the winter of 2011 (from IH 10/US 90 to Loop 410 North).

- **Conduct Planning and Environmental Linkages (PEL) studies** on IH 35 in the downtown area and along alternative routes to IH 35 in San Antonio. PEL studies and their proactive public involvement efforts will define the type and scope of long-term improvements to the IH 35 corridor and its alternate routes (i.e., Loop 410 southwest, Loop 410 south and east, IH 10 east, and Loop 1604 east), including consideration of past corridor planning efforts and strategies to reduce congestion. Each PEL study will identify both near-term and longer-term, large-scale improvements and the scope and cost associated with recommended projects.

- **Conduct a parking management study** for downtown San Antonio and major employers. Local transportation agencies have identified parking management as one potential strategy for alleviating congestion along major travel routes (such as IH 35) into the urban core. The proposed study will examine available parking resources and examine parking pricing and policy options for their potential to influence traveler behavior and mode choice into the downtown area.

- **Work with local agencies (most likely VIA) to identify a champion for a study of temporary shoulder use (bus on shoulder).** Though bus use of shoulders is currently precluded by state law, the IH 35 corridor in downtown San Antonio is limited in opportunities for capacity expansion. Buses using the shoulder has been identified as one method of supporting VIA Metropolitan Transit’s future downtown transportation center initiatives.
IH 35

FM 1518 (Evans Road) to Loop 1604

Current Conditions
IH 35, a major interstate freeway and international trade corridor, serves a mixture of commuting and freight traffic during a typical weekday. Immediately north of Loop 1604, IH 35 is a 6-lane freeway with continuous frontage roads. This more suburban section of IH 35 follows the traditional daily commute congestion pattern: inbound morning/outbound evening traffic. Southbound traffic still experiences slowdowns in the evening in addition to northbound traffic.

- Segment Length: 2.1 miles
- Road Type: 6-Lane expressway
- Annual Hours of Delay: 326,000
- Texas Congestion Index: 1.40
- Commuter Stress Index: 1.58

Possible Congestion Causes
Rush hours feature high levels of inbound morning and outbound evening traffic. Daily commuter traffic mixes with international commercial traffic in this major central US NAFTA corridor, which connects to the high-volume inland port of Laredo and sea ports in Corpus Christi and Brownsville. Local communities around this portion of IH 35 (i.e., Live Oak, Universal City, Selma) are not partners with VIA Transit and have limited modal options.

Projects in Progress or Completed

TransGuide Monitoring
This portion of the IH 35 corridor is monitored by TransGuide (TxDOT San Antonio) and the Combined Transportation, Emergency, and Communications Center (TxDOT Austin) staff, with monitoring cameras and dynamic messages signs throughout the corridor.

Truck Restrictions
There are left-lane truck restrictions along IH 35 north of Loop 1604.

Expansion
$21 million in Proposition 12 funding is being applied to the corridor between Judson Road (inside Loop 1604) and FM 3009. A lane addition will be provided to improve operations from FM 3009 to Loop 1604, and ramp improvements will facilitate flow through the Forum Parkway and Loop 1604 interchanges with IH 35.
Operations Improvements
Operations improvements funded by Proposition 12 will begin in 2013 along IH 35 south of this congested segment. TxDOT issued a Notice of Interest to consultants in October 2011 to bid on the analysis and development of plans for $18.5 million of congestion reduction improvements to the IH 35 corridor between IH 10/US 90 and the IH 35/Loop 410 North Interchange. There is, however, no funding to make physical improvements to IH 35 between IH 10/US 90 and IH 37/US 281.

Interchange Improvements
The Loop 410 South Interchange (i.e., IH 35/Loop 410 South) near Fort Sam Houston and the San Antonio Military Medical Center (formerly Brooke Army Medical Center) will have $25 million of additional improvements in 2013 from a Department of Defense Office of Economic Adjustment Grant to the City of San Antonio.

Planning Efforts to Date

Needs Assessment
The Alamo RMA and TxDOT are partnering on an IH 35 Planning and Environmental Linkages (PEL) study. The outcome of the PEL study will frame the environmental study necessary for future facility improvements. This study is scheduled to be complete in the summer of 2012.

Expansion of IH 35
The MPO TIP currently includes the following projects related to this portion of IH 35:

- Expansion from a 6- or 8-lane facility to a 12- or 14-lane expressway (toll six new mainlanes) from the Loop 410 South interchange to Schertz Parkway, including a new tolled direct connector interchange at Loop 1604 and tolled direct connectors at Loop 410 South and Loop 410 North. Total project cost is estimated to be $1.7 billion.

My35
The recent award-winning public involvement process and long-term planning initiative, MY 35, conducted by TxDOT on the IH 35 corridor through Texas recommended a number of short-term operational improvements and long-term freeway expansion needs along this portion of the IH 35 corridor.

My35—Short Term Adjustments
Immediately-implementable short-term recommendations that could affect this portion of IH 35 included:

- Improve incident management and related agency coordination so that accidents and disabled vehicles can be cleared more quickly and delays can be minimized.
- Use and improve upon technology, such as electronic signs, to provide updated traffic information, alternative routes, and other traffic management solutions to travelers on IH 35.

My35—Long-Term Improvement
Long-term, capital-intensive recommendations for this portion of IH 35 included:

- IH 35/Loop 1604 and IH 35/IH 410 interchange improvements (estimated cost $600-$900 million, not including right-of-way).
- Loop 1604 improvements from IH 35 to IH 10 (estimated cost $300-$400 million for freeway construction, not including right-of-way).
- IH 35 improvements from the Williamson/Bell County Line to IH 10; estimated cost $2.7 billion to $3.85 billion for a minimum of four lanes in each direction (8-lane facility).
- IH 35 HOV/toll lane from SH 45SE in Austin to IH 10 (estimated cost $6.2 billion to $8.85 billion, not including right-of-way).
IH 35 alternative route improvements to IH 10 from Seguin to IH 35 in San Antonio (estimated cost $950 million to $1.4 billion, not including right-of-way).

- Passenger rail alternatives from Laredo to Dallas/Fort Worth (estimated cost $30 billion to $50 million per mile).
- Freight rail relocation to allow commuter rail to use existing tracks paralleling IH 35 between San Antonio and Taylor (estimated to exceed $2.4 billion based on studies performed by TxDOT in 2008).

Managed Lanes
A Major Investment Study (MIS) of the IH 35 corridor conducted in 1996 for the San Antonio-Bexar County Metropolitan Planning Organization (MPO) suggested the addition of barrier-separated express, truck, and/or HOV lanes to this freeway. In addition, a “Basic Improvements Package” was also recommended including signal improvements, better signage, ramp modifications, expansion of the TransGuide (TxDOT) system, addition of pedestrian facilities and bicycle routes, improved bus service, and operational improvements to both Loop 410 interchanges (north and south) and the Loop 1604 interchange. The signal, signage, and TransGuide improvements have already been completed, and some operational improvements have been made for southbound traffic at the Loop 410 South Cutoff interchange.\(^1\)

Commuter Rail
Lone Star Rail District commuter rail project from Austin to San Antonio is currently in the preliminary phase of the development process. There is no funding for the $2 billion project.

Expansion of SH 130
Completion of SH 130 from Georgetown to IH 10 (in Seguin) is expected to provide some level of traffic relief for IH 35 throughout San Antonio.

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Next Steps

- Provide support and feedback to TxDOT and their consultants on the IH 35 operational improvements study from Judson Road to FM 3009.

- Monitor the TxDOT/Alamo RMA joint IH 35 Planning and Environmental Linkages (PEL) Study (to be completed in August, 2012). TTI will also provide support and serve as a technical resource to Alamo RMA as the Planning and Environmental Linkages Study evolves into future corridor plans.

- Utilize the findings of TxDOT/Alamo RMA PEL study to identify the type of environmental study required for IH 35 and conduct an Environmental Assessment (EA) or Environmental Impact Study (EIS) for the corridor between downtown and FM 1103 starting as early as January 2013 and ending by late 2015 (if an EA) or late 2017 (if an EIS). The environmental study performed will outline a plan for IH 35 improvements to meet long-range needs as well as provide fundamental travel demand data for all corridor users. The EA or EIS will refine concepts, project scope and costs for future, large-scale IH expansion.

- There is local agency agreement and support for increased travel demand management activity and strategy deployment in San Antonio. Likely champions of these activities in the San Antonio region are the Alamo Area Council of Governments and VIA Metropolitan Transit. Studies can determine the most effective travel demand management strategies for the region and determine the potential to form Transportation Management Associations (TMAs) in cooperation with major employers in the region.

- In order to fully analyze the potential for IH 35 alternate routes to accommodate traffic strategically diverted from the interstate, utilize Planning and Environmental Linkages (PEL) studies planned along alternate routes to IH 35. Roadway corridors that provide viable alternative routes to IH 35 in northeastern San Antonio include Loop 410 South, Interstate 10 East (toward SH 130 in Seguin), and Loop 1604 on the east side of the city.
CULEBRA ROAD (FM 3487)
SH 471 (Grissom Road) to IH 410

Current Conditions
Culebra Road (FM 3487), formerly a 4-lane arterial with a center-turn lane, was improved to a 6-lane road with a turn lane in 2010 and 2011. The corridor improvements also included raised medians at signalized intersections, bike lanes, and sidewalks for the length of the project. Bexar County managed the improvement project as a pass-through financing project supported by TxDOT. Culebra Road experiences congestion opposite to a traditional pattern. Morning slowdowns occur in the outbound direction while evening slowdowns occur in the inbound direction. These slowdowns are light compared to other congested corridors in the region.

- Segment Length: 3.3 miles
- Road Type: 6-lane divided arterial
- Annual Hours of Delay: 325,000
- Texas Congestion Index: 1.35
- Commuter Stress Index: 1.42

Possible Congestion Causes
A road construction project caused some of the congestion measured in 2009. With the widening and the end of construction activities, congestion has dramatically decreased.

Projects in Progress or Completed
Roadway Expansion
Bexar County’s pass-through financing (supported by TxDOT) of $22.9 million provided improvements to 3.2 miles of Culebra Road including widening the road from five lanes to seven lanes, raised median treatments at major signalized intersections, and several upgrades at cross drainage features, including relocating a city street segment outside of a flood-prone area.

Rank: 50
Annual Hrs. of Delay/ Mile: 99,000
Congestion Time: 5 Hours
Annual Cost of Delay: $8.0 million
Average Daily Traffic: 39,000 Vehicles

Transit Facilities
VIA operates a nearby transit center on Ingram Road near Ingram Park Mall.
Traffic Signals
New signal equipment will be installed and the signals retimed upon construction completion.

Signals Timing
The City’s signal management center will provide remote monitoring and control of Culebra’s signalized intersections.

Monitoring for Success
Speed and volume data will be collected in December 2011 to document project impacts.

Planning Efforts to Date
Operations improvements may result in increased bus service by VIA.

Next Steps
- Monitor the before/after comparison study by the City of San Antonio, and decide on next steps depending on the remaining congestion.
- There is local agency agreement and support for more aggressive incident management methods to improve mobility and congestion in the San Antonio area. Improved incident management and related agency coordination in quickly clearing crashes and disabled vehicles will reduce incident-related delay and congestion.
- **Broad deployment of advanced traveler information systems** (including dynamic message signs and camera monitoring) in cooperation with TxDOT has been identified as a city-wide congestion management measure. TransGuide can be improved with electronic signs, which provide updated traffic information and other traffic management solutions to travelers. Funding for the expansion and maintenance of additional traffic management devices and services has not been identified.
- There is local agency agreement and support for increased travel demand management activity and strategy deployment in San Antonio. Likely champions of these activities in the San Antonio region are the Alamo Area Council of Governments and VIA Metropolitan Transit. Studies can determine the most effective travel demand management strategies for the region and determine the potential to form Transportation Management Associations (TMAs) in cooperation with major employers in the region.
The most congested corridors in San Antonio were examined to identify the most appropriate actions that will have the greatest impact on relieving traffic congestion. Many of these actions can be funded by Proposition 12 funds and are consistent with the goals of Rider 42, while other actions are being funded or performed by other agencies. Exhibit SA-3 summarizes the recommended actions to address traffic congestion for each San Antonio corridor.

### Exhibit SA-3: San Antonio Summary of Congested Corridor Recommendations

<table>
<thead>
<tr>
<th>Rank</th>
<th>Congested Corridor</th>
<th>Actions Funded by Others</th>
<th>Recommended Early Actions Affecting Congested Corridor</th>
</tr>
</thead>
</table>
| 23   | SL 1604 (Anderson Loop) *(SH 16 to FM 471)* | ▪ Monitor signal timing.  
▪ Evaluate need for additional improvements.  
▪ Widen to freeway/tollway with managed lanes, based on environmental study. | ▪ Traffic Management & Traveler Information—Project planning and feasibility study.  
▪ Travel Options—Project planning and feasibility study to assess needs and assist outreach efforts.  
▪ Parking Management—Project planning and feasibility study. |
| 38   | US 281 *(SL 1604 to Comal County Line)* | ▪ Monitor signal timing on recently implemented superstreet.  
▪ Evaluate need for additional improvements.  
▪ Widen to freeway/tollway with managed lanes, based on environmental study. | ▪ Design four northern direct connector ramps at SL 1604 interchange.  
▪ Traffic Management & Traveler Information—Project planning and feasibility study.  
▪ Travel Options—Project planning and feasibility study to assess needs and assist outreach efforts.  
▪ Parking Management—Project planning and feasibility study. |
| 48   | IH 35 Central *(US 281/IH 37 to US 90)* | ▪ Conduct PEL study on IH 35 Central to examine expanding capacity and operations.  
▪ Conduct PEL study for southern IH 35 bypass corridor along Loop 410 South and East, IH 10 East, and Loop 1604 East.  
▪ Conduct PEL study on IH 410 Southwest for improvements as an alternative corridor.  
▪ Traffic Management & Traveler Information—Project planning and feasibility study.  
▪ Travel Options—Project planning and feasibility study to assess needs and assist outreach efforts.  
▪ Parking Management—Project planning and feasibility study. |
<table>
<thead>
<tr>
<th>49</th>
<th>IH 35 Northeast</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(US 281/IH 37 to FM 1103)</td>
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<td></td>
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<table>
<thead>
<tr>
<th>50</th>
<th>Culebra Road (FM 3487)</th>
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<tbody>
<tr>
<td></td>
<td>(SH 741 to IH 410)</td>
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</tbody>
</table>
Exhibit SA-4: San Antonio Early Recommendations—February 2012

All Congested Corridors
- Traffic management & traveler information
- Travel options
- Parking management

#50: Monitor before/after study
#48, #49: Study expanded capacity & operations

#49: Conduct environmental study

#38: Design northbound direct connectors

#38: Monitor EIS; widen to freeway/tollway with managed lanes
#48: Study expanded capacity & operations
#xx: Congested Section Addressed by Project

: Study Funded by Others

: Proposition 1.2 Funds

[Map of San Antonio with marked suggestions and recommendations]
The early recommendations described above represent the first step in the process of reducing congestion on the worst corridors in the state. A larger project involving construction, operation, management, and travel option strategies will follow the early recommended actions. The following table identifies possible projects in the Houston metropolitan area and the amount of funds and timeframe for project implementation. In San Antonio, many large projects are awaiting the results of recommended planning or environmental studies before a specific project option, cost, and implementation timeframe can be determined.

**Exhibit SA-5: Summary of Possible Large Projects for San Antonio Congested Corridors**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Corridor</th>
<th>Large Projects</th>
<th>Rider 42 Funding Estimate</th>
<th>Estimated Implementation Funds Needed*</th>
<th>Implementation Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>SL 1604</td>
<td>Widen expressway to 6 or 8 tolled lanes from US 90 to IH 35 East</td>
<td>$0.0</td>
<td>$770M to $1.47B (Alamo RMA)</td>
<td>2013 to 2017</td>
</tr>
<tr>
<td>38</td>
<td>US 281/SL 1604</td>
<td>Northern direct connectors</td>
<td>$6M</td>
<td>$59M (MPO MTP)</td>
<td>2014 to 2018</td>
</tr>
<tr>
<td>38</td>
<td>US 281</td>
<td>Widen existing freeway</td>
<td>$0.0</td>
<td>$403M to $703M (Alamo RMA)</td>
<td>2014 to 2018</td>
</tr>
<tr>
<td>48</td>
<td>IH 35 Central</td>
<td>Widen to 10 lanes from US 281/IH 37 to IH 410 South</td>
<td>$0.0</td>
<td>$335.5M (MPO MTP)</td>
<td>TBD*</td>
</tr>
<tr>
<td>48</td>
<td>IH 35 Central</td>
<td>PEL study</td>
<td>$1.0M</td>
<td>TBD**</td>
<td>TBD*</td>
</tr>
<tr>
<td>49</td>
<td>IH 35 Northeast</td>
<td>EIS or EA Study***</td>
<td>$13M</td>
<td>TBD**</td>
<td>TBD*</td>
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<tr>
<td>49</td>
<td>IH 35 Northeast</td>
<td>Widen to 12 or 14 lanes</td>
<td>$0.0</td>
<td>$1.7B (MPO MTP)</td>
<td>TBD*</td>
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<tr>
<td>49</td>
<td>IH 35 Northeast</td>
<td>IH 35/SL 1604 and IH 35/IH 410 interchange improvements</td>
<td>$0.0</td>
<td>$600M to $900M+ROW</td>
<td>TBD*</td>
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<tr>
<td>48, 49</td>
<td>SL 1604</td>
<td>Widen freeway from IH 35 to IH 10</td>
<td>$0.0</td>
<td>$300M to $400M+ROW</td>
<td>TBD*</td>
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<tr>
<td>48, 49</td>
<td>South IH 35</td>
<td>PEL study for IH 410 Southeast, IH 10 East, and SL 1604 Northeast</td>
<td>$2.5M</td>
<td>TBD**</td>
<td>TBD*</td>
</tr>
<tr>
<td>48, 49</td>
<td>IH 410</td>
<td>PEL study for IH 35 bypass</td>
<td>$0.5M</td>
<td>TBD**</td>
<td>TBD*</td>
</tr>
<tr>
<td>48, 49</td>
<td>IH 35 Alternate Routes</td>
<td>Link to SH 130 in Seguin: IH 10 from SH 130 to IH 35, IH 410 from IH 10 to IH 35, and SL 1604 South from IH 10 to US 90</td>
<td>$0.0</td>
<td>$3.2B to $4.65B+ROW</td>
<td>TBD*</td>
</tr>
<tr>
<td>All Congested Corridors</td>
<td>Planning and feasibility study to implement traffic management and incident clearance</td>
<td>$1.0M</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>Transportation Management</td>
<td>Planning and feasibility study to facilitate parking management</td>
<td>$0.3M</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>Parking Management</td>
<td>Engineering study to examine regional travel options along the corridors.</td>
<td>$0.3M</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>Travel Options</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>$24.6M</td>
<td>$7.4B to $10.2B+ROW</td>
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</tr>
</tbody>
</table>

Remaining San Antonio Rider 42 allocation: $9.14M.
*Source of implementation funds noted if known.
**Project funding and scope to be determined from current or future PEL, EIS or EA study.
***Alamo RMA’s expected time frame for the IH 35 Northeast EA or EIS is 2013-2017.