

**4.3.1.16 Revenue Generation, Administration and Interoperability**

**A. Revenue collection strategies and structures**

**Toll system approach** - The revenue collection solution proposed for TTC-35 comprises a very flexible approach. This consists on the fact that the Team does not rule out any tolling system, as each system presents advantages for particular types of Facilities. Automatic systems (Electronic Toll Collection), semiautomatic systems (coin machines) and manual systems (human toll collectors) could be used depending on future more accurate parameters such as ADTs, number of ramps, schematic of the Facility, and, above all, TxDOT's desires and the legal implementation framework.

If manual lanes are needed, the Concessionaire will minimize the number of toll plazas to optimize user efficiency and simplify toll management and equipment maintenance. The Concessionaire will also use lane capacities and distribution to staff tollbooths to minimize waiting time at the toll plazas. The Concessionaire will also collect traffic data during operation to develop a more accurate traffic forecast and improved toll facilities.

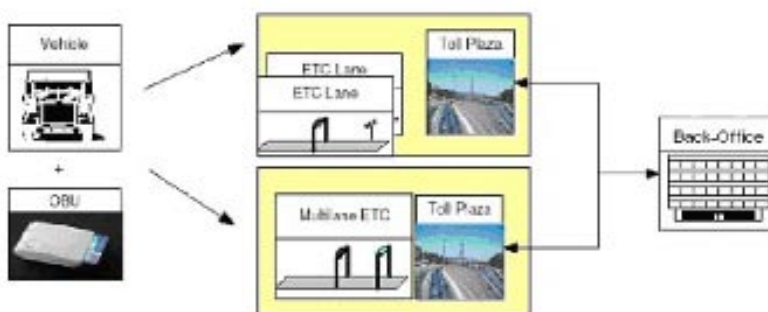
However, **it is the firm intention of the Proposer to implement ETC** at both toll plazas and ramps from the beginning of operation, in combination with other payment methods. Drivers wishing to use the ETC lanes will carry transponders to pay their toll fees electronically. Drivers without transponders will be identified by an automatic digital camera, which will take a picture of their vehicle's license plate. The unauthorized user will then be charged the basic toll rate plus an additional fee.

Furthermore, the Proposer offers TxDOT (if financially feasible) the possibility to provide TTC-35 with what is without doubt, the latest electronic tolling technology: the **pure Free Flow tolling system**. With this system, traffic flows through the toll collection sections non-stop and without the necessity to have a transponder in the vehicle.

A free flow system minimizes the need for extensive infrastructure. There is no change to the highway section, there are no barriers or gates, therefore drivers do not need to slow down or avoid roadway obstacles. Overhead bridges supporting the tolling equipment replace complete toll plazas.

**Free Flow System Overview**

The overall system solution is presented in the figure below. When the user enters the tolling point he/she will either be charged based on the transponder or vehicle license plate.



**More detailed information can be found in the Appendix.**

Based on this modular tolling system, it will be fully adaptable to the evolution of TTC-35.

The flexibility of the system allows the implementation of open and/or closed tolling systems, depending on the needs of each Facility, the implementation phase and multiple pricing systems (e.g. Value Pricing by day, time of day, length of trip).

Special attention must be paid to the **key factors for the success of the system**:

- **Video Enforcement.** A strong settled legislation that supports enforcement, based on vehicular license plate information provided by the concessionaire, is required. Multilateral agreements have to be established with other countries / states.
- **License plate information.** The Concessionaire must have license plate information attached to the transponder. The user can easily provide this information when filling out the application form.

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- **Vehicle's Classification Information.** To compare classification provided by the video detection cameras to the one attached to the transponder, it is important to have the vehicle classification data provided by TxDOT or the user.
- **Vehicle's Classification Structure.** It is important to develop classification based on direct measurement of vehicle's dimensions (width, height and length).
- **Administration Fees.** Toll collection from non-transponder users. The extra cost is justified on the limited accuracy of automatic license plate recognition, and the additional manpower to manage this information. To compensate for this extra cost, toll administration fees, charged to non-transponder users, should be high enough for the Concessionaire recover this cost and also to increase transponder use.

**B. Administration, management and processing procedures** - The Team will either provide the employees to operate the toll facilities or will contract out the work to another company. The Team will develop a structure that will put importance on human resources while also allowing control of the Toll facilities to maximize the Level of Service. The Team will perform the following duties (if applicable):

- Customer services; including marketing and third party claims
- Toll collectors organization to meet the level of service required
- Toll collection process, transportation of money and bank relationships
- Traffic control
- Fraud control from users or toll collectors
- Enforcement procedures.
- Money transfer and cash handling control
- Periodic audit of revenues

The Team will use different strategies to manage high traffic volumes in the toll plazas while maintaining the required level of service. The Team's aim is to set up procedures to handle peak hour fluctuations in traffic flow. The Team will forecast these traffic volume peaks using recorded counts and vehicle counts taken at the toll stations.

The Team's strategy could be different if ETC free flow is implemented. In the event manual toll lanes are implemented, the Team will choose a company specializing in money transport to collect and deposit all cash collected at the toll facilities on a determined schedule. The Team will ensure every possible safety precaution is taken, including having all money transfers made under video surveillance.

**C. Interoperability with existing and future facilities and other existing and planned transportation infrastructure in State** - The Federal Highway Administration (FHWA) and the American Society for Testing and Materials (ASTM) are currently developing a nationwide standard for Dedicated Short Range Communications (DSRC). The new standard will operate in the 5.9 GHz band where the Federal Communications Commission (FCC) has allocated 75 MHz of bandwidth for Intelligent Transport System (ITS). The creation of the standard and implementation of equipment should occur around 2010. At that time, the tolling agencies using ETC will be pressured to migrate from the 915 MHz systems currently deployed to new 5.9 GHz standard compliant systems. Future planned in-vehicle transponders will comply with the new standard, and it will probably not be necessary to provide transponders to new-car users. Recent developments from the International Bridge, Tunnel and Turnpike Association (IBTTA) to define requirements on new ETC operations indicate that the only change for existing facilities will be a new overhead antenna, reader and reader processor.

The use of a common ETC technology will allow vehicles issued transponders by one agency to execute transactions on another agency's ETC equipment. Because of this transaction interoperability, different Texas toll agencies will join existing (OmniAir) or new organizations, which will establish methods and procedures that allow agencies to exchange databases and ETC transactions via the Internet.

#### 4.3.1.17 Intermodal Transfer

**A. Auto/Truck** - Major intermodal hub terminals for the transfer of freight between truck carriers and between

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truck and rail carriers either exist or are under development in Dallas, Fort Worth and Houston as well as in Mexico City and San Luis Potosi. An additional intermodal center complimenting these others in Texas as well as Mexico is essential to the successful development of the entire TTC-35 Corridor Project. Connections between the truck lanes, rail lines and the intermodal centers should be provided to encourage use of the Facility.

Sizable critical masses of originating and terminating freight are required for the economic development of intermodal hubs. Intermodal facilities are inefficient when positioned to support smaller markets. With the north end of the TTC-35 already well served by the existing and planned Dallas and Fort Worth facilities, San Antonio represents the preferred location for development of such a hub on the southern portion of the TTC-35 Corridor.

San Antonio is ideally located for such a facility, it sits at the intersection of major east/west and north/south rivers of trade. Such a hub will, in addition to serving the growth generated by the Corridor, serve as an efficient funnel relieving existing congestion at Laredo, potentially relieve congestion in Houston, and support increased commerce from Asia. International freight can be transferred truck-to-truck, truck-to-rail and rail-to-truck in a new facility.

The Team's conceptual plans provide for consolidating carload rail freight into a new classification yard south of San Antonio. This plan frees UP's East Yard to support commuter rail and potentially frees UP's South Yard for intermodal hub development. The close proximity of South Yard to KellyUSA could permit the San Antonio hub to be much more than simply an intermodal hub; it can become a multi-modal logistics center serving a large market region and benefiting the entire TTC-35 Project.

Team member Railroad Industries has extensive related experience. Within this project's regional reach the firm has provided analysis for terminal development in Corpus Christi as well as intermodal development work in Laredo, Monterrey, and San Luis Potosi. They are also the rail advisors to KellyUSA.

**B. High Speed Intercity Passenger Rail** - High Speed Rail is not anticipated as a near-term Facility. High speed rail will be the single most costly component of the TTC-35 corridor. However, the anticipated population and economic growth of Texas may drive the ultimate development of High Speed Intercity Rail in the state. The technology presently exists and should be improved in time for effective deployment in Texas.

If high speed rail is found viable, two single direction tracks will need to be deployed at the same time, requiring a significant investment. Such tracks will need to be grade separated to permit safe and efficient operation at high speeds. These tracks should be developed on the then existing rail ROW connecting and serving the major urban areas on the chosen route or routes. For high speed rail to be successful, it must have connections into the centers of the urban areas.

The Team has made preliminary investigations as to the viability of high speed passenger rail, and it appears that it may be viable in the near-mid-term. Earth Tech (under its prior entity Lichliter/Jameson) developed the Texas Triangle High Speed Rail Study for the Texas Turnpike Authority in 1989. However, the Texas T-Bone and Brazos Express Corridor, being promoted by the Texas High Speed Rail and Transportation Corporation (THSRTC), may provide a more economic routing connecting all of the major population centers in Texas. As interest for high speed rail grows, the Team will study the alternatives and develop the most effective and economic plan.

**C. Freight Rail** - The Team envisions rerouting and developing new or upgraded facilities for the Union Pacific Railroad (UP). A new double track mainline will be built between Georgetown and Seguin running east of Austin, San Marcos and New Braunfels and utilizing both existing and new ROW. The line from Seguin to San Antonio (Kirby yard) will also be double tracked to handle the additional westbound trains from Georgetown to Seguin. These lines will be for the exclusive use of UP and will handle all through freight trains presently running on the MoPac corridor.

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Local rail freight service on the MoPac corridor will be provided by a shortline railroad interchanging traffic exclusively with UP at Georgetown and San Marcos. This local service will be carefully coordinated to provide appropriate service levels to rail shippers in the MoPac corridor without interfering with commuter rail operations.

The UP will also be rerouted on new ROW from near the Kirby yard to run south of its existing east/west mainline and major San Antonio population centers and reconnect with the mainline at a point south and west of San Antonio. Such a reroute will remove rail freight operations from UP's East yard and existing mainline running adjacent to the Alamo Dome, both of which will become available for commuter rail service. This new mainline will be double track and for the exclusive use of UP. A new classification yard will be developed for UP south of San Antonio at a green field site located between KellyUSA and the new Toyota plant. This new yard facility will be of sufficient capacity to handle the present and anticipated rail freight needs of San Antonio as well as being a north/south and east/west hub for UP mainlines. This will enable UP to efficiently consolidate the operations of its East and South yards. The South yard could be converted to a dedicated intermodal facility if volumes dictate and could be operated in cooperation with KellyUSA.

Team member Railroad Industries has extensive related experience providing both strategic and tactical advice to numerous public and private entities and railroads of all sizes. They have provided analysis, planning, and implementation related to trackage, facilities, operations, marketing, business development, and equipment. Their work has included railroad start-up, privatization, and rationalization.

**D. Commuter Rail** - TxDOT has identified two commuter rail tracks, one for each direction, for the ultimate TTC-35 facility. The portions of TTC-35 between Austin and San Antonio parallel a currently planned commuter rail line located on the west side of IH 35. Commuter rail on the main alignment of TTC-35 in this length would be in direct competition, and it is unlikely that there is enough passenger rail demand to make both corridors viable.

It is possible that the Team could develop the Georgetown to San Antonio commuter rail service after the through freight rail is removed from the MoPac corridor. This commuter rail operation would form a parallel system to the main TTC-35 alignment. The Team envisions developing a commuter rail system utilizing primarily the MoPac corridor from Georgetown to San Antonio. Through freight train service will be relocated to a line from Georgetown to Seguin running to the east of Austin, San Marcos and New Braunfels utilizing existing and new ROW. Local rail freight service would be provided by a shortline railroad on behalf of UP in the MoPac corridor from Georgetown to San Marcos. This rail freight service will be carefully scheduled such that business interests requiring rail freight service are properly addressed without interfering with the rail commuter operations.

This concept also envisions relocating UP operations to the south of San Antonio on a new ROW from Kirby yard to a point rejoining the UP east/west mainline southwest of San Antonio. A new classification yard will be developed for the UP thus consolidating its operations to one major yard location outside the main San Antonio population center. This will increase the UP's yard capacity in the market and allow for substantial anticipated growth. Such a relocation would make UP's East yard available to serve as the operational center for the rail commuter operation. This facility will be upgraded to provide a secure coach yard as well as passenger car, locomotive and track repair and maintenance facilities. Local San Antonio rail freight service will be provided by a shortline railroad and/or through transload.

The MoPac corridor will be upgraded to double track from Georgetown to San Marcos to permit bi-directional commuter rail operations. Portions of the line between San Marcos and San Antonio will be triple tracked to provide UP and BNSF capacity for freight operations without interfering with bi-directional commuter rail operations. The plan will provide for under-passing major urban arterials and the elimination of as many grade crossings as possible to permit safe rail operations at passenger speeds.

Team member Railroad Industries is experienced in the passenger rail arena. They have advised AMTRAK on

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both business and equipment issues. In addition they have helped a number of large and small commuter and transit entities with development and operational issues. Related to this specific project, they have assisted in situations where commuter and freight operations coexist.

**E. Utilities** - Utilities will be located within the TTC-35 Corridor to serve both the corridor itself and as a means of providing bulk commodity transfer to distribution centers along and at the terminus of the Corridor. To provide utility service to the Corridor infrastructure, it may be most efficient if certain utilities, such as wastewater, are provided by a local service provider so as to avoid the expense of transiting the utility from the Corridor to the individual Corridor user and to avoid any problems with pre-defined utility service areas and franchises. In the case of each utility service described below, it will be necessary to determine the most cost effective means of providing service and the potential customers for the selected utility. In addition, it is expected that utility-source revenue will be a source of funds to offset the cost of the Corridor to be supported by other users.

**E.1 Types of Utilities** - Several types of utilities may be placed within the TTC-35 Corridor to provide bulk transport and local service requirements, specifically these include, but are not limited to:

**Bulk Transport** - The most favorable current prospects are in the areas of Electric Commodity Transmission service and wireless communication facilities.

The TTC-35 corridor is an excellent location to place 345-500 MW electric transmission lines. Such facilities can transport bulk electric power from generating stations and existing transmission lines in the proximity of the Corridor to the major Texas population centers, (San Antonio, Austin, Dallas), near the TC-35 Corridor. As the population in these areas increase, it will be possible to expand the transmission capacity of the Corridor to accommodate this future growth.

Wired and wireless communication, in various forms, (e.g., cellular phones, optic cable, data transfer, internet, etc.) for the Corridor, users of the Corridor, and population centers along the Corridor can be provided

through attachment to the electric transmission towers, stand-alone facilities, and buried cable/conduit will find the Corridor an attractive location to provide service to Central Texas.

Further into the life-cycle of the Project, additional utilities may become practical. These would include, water transmission from reverse osmosis facilities located on the Gulf of Mexico to any or all of the cities along the Corridor. A specific target for this portable water resource would be the growing Dallas-Ft. Worth area.

In summary, the bulk utilities to be considered for inclusion in the TTC-35 Corridor include:

- 1. Electrical** - Due to the active competitive Electric Transmission Market in Texas there is an opportunity, early in project, to develop a large Transmission line to serve these markets.

The Proposal will address the immediate and longer-term potential for development, possible partners, and anticipated costs and revenues associated with the potential development.

- 2. Water** - The growth of the central Texas population centers of Austin, Waco, and the Dallas-Fort Worth areas will give rise to the possibility of using TTC-35 as a means to deliver desalinated water from the Texas coast to inland areas. Although not an immediate prospect for development, the medium and longer-term potential for this important longer-term resource makes the TTC-35 Corridor an important location for development. The Ferrovial Group currently operates six desalination plants in Spain under its Cadagua company, and is well positioned to further study desalination plants for the corridor.

- 3. Gas and Petroleum** pipelines may have potential in the longer term. The possibility for development exists to integrate the TTC-35 Corridor into the extensive existing infrastructures that already exist near and/or across the TTC-35 alignment.

- 4. Communications - (data, fiber optic, etc.)** - Utilities are additional possible uses of the TTC-35 Corridor between the various population centers.

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5. **Other opportunities for development** within the utility-corridor, such as the utility needs of the corridor itself and nearby communities, will also be addressed. Specifically, utilities of all types (electric, natural gas, water, wastewater, telephone) will be required along the transportation corridor. These utilities will directly service the needs of the corridor (e.g. tollbooths, service facilities, electrified rail, highway lighting, or optic fiber, etc.) and may be a source of revenue if located and sized to accommodate third party usage, (e.g. electric transmission).

**TTC-35 Corridor Services** - The Corridor will be a consumer of various utility services, (e.g., electricity, highway lighting, natural gas, water, wastewater, telephone, internet, etc.). However, due to franchise restrictions, the cost of providing service, and regulations, (e.g., the Safe Drinking Water Act, Environmental requirements, etc.) each user or type of user, (restaurant, toll booth, gas station, electric powered train, etc.), needs to be examined to determine the possible methods of providing utility services and the alternative costs thereof.

#### 4.3.1.18 Risk Management Approach

The Team will develop a Risk Management System that will analyze each risk category, identifying potential risks and facilitating early warnings to minimize or eliminate the risks. All aspects of the Facilities will be analyzed with respect to the following risks:

- Risk to the State;
- Risk to the whole Project;
- Risk to the design;
- Risk to the environment;
- Risk to the financial profile;
- Risk to safety; and
- Risk to completion dates.

The Proposer will undertake this Risk Management System for each specific Facility and mode.

**Proposer's Risk Matrix** - The table included below schematically summarizes the Proposer's risk management philosophy in relation to the following aspects:

- Risks description
- Potential consequences
- Likelihood of occurrence
- Allocation of the risk
- Risk-mitigation strategies

Most of the risks that are included in the table are common for the TTC-35 Project. However, some other risks may be added when further developing each particular Facility. These additional risks would deal with the specifics of each Facility's location, surroundings and social implications, and will be included in the risk management system for appropriate treatment. The Proposer's risk analysis is focused on infrastructure projects developed under a concession scheme; therefore the analysis would further be modified for different contract methods.

The Team believes that the criteria and methods presented below will minimize both TxDOT and Project risks.

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<b>RISK DESCRIPTION</b>	<b>POTENTIAL CONSEQUENCES</b>	<b>LIKELIHOOD</b>	<b>RISK ALLOCATION</b>	<b>RISK MITIGATION</b>	<b>RISK SENSITIVITY ANALYSIS</b>
<b>Political / legal risks</b>					
Change in law	Delay, increased costs, loss of revenue, conclusion of concession.	Medium	TxDOT	Developer's right to re-optimize the financial model with the new input data.	n/a
Change in Sales Tax	Increased costs.	Low	TxDOT	Developer's right to re-optimize the financial model with the new Sales Tax.	Risk sensitivity analysis is carried out with different sales tax rates.
<b>Design risks</b>					
Inadequate designs	Damage to works, delay, increased costs, loss of revenue.	Low	Contractor	Professional indemnity cover. Design check carried out by an independent consultant.	n/a
Delay in design process	Delay, increased costs, loss of revenue.	Medium	Contractor	Professional indemnity cover. Economic penalties for the contractor.	Risk sensitivity analysis is carried out with different processes length
Legislative changes	Delay, increased costs, loss of revenue.	High	Contractor / TxDOT	Legislative changes before bidding must be considered by the Developer. If legislative changes after bidding are to be considered, Developer must be indemnified.	n/a
<b>Construction risks</b>					
Construction price	Increased costs.	Low	Contractor	Risk transferred to the contractor in a back-to-back basis with a fixed price.	Risk sensitivity analysis is carried out with different construction prices.
Construction failures	Damage to works, delay, increased costs, loss of revenue.	Low	Contractor	Construction warranty. Construction quality control carried out by an independent consultant.	n/a

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<b>RISK DESCRIPTION</b>	<b>POTENTIAL CONSEQUENCES</b>	<b>LIKELIHOOD</b>	<b>RISK ALLOCATION</b>	<b>RISK MITIGATION</b>	<b>RISK SENSITIVITY ANALYSIS</b>
<b>Construction risks (continued)</b>					
Acquisition of land	Delay, increased costs, loss of revenue.	Medium	Developer	Independent advisor is to carry out a report on both cost and time. Developer will have a Liability Director.	Risk sensitivity analysis is carried out with different timing and costs for the availability of the land.
Planning Approvals	Delay, increased costs, loss of revenue.	Medium	Contractor	Contractor must procure all necessary approvals from the authorities to carry out the Facility in a timely manner and ensure that they remain in force.	Risk sensitivity analysis is carried out with different construction length.
<b>Operation risks</b>					
Operating performance	Penalties, additional costs, loss of revenue.	Low	Developer	Developer will establish an operating manual that will describe the operating procedures to maintain the standard levels.	Risk sensitivity analysis is carried out with different operation costs.
Operating costs	Increased costs.	Low	Developer	Developer will establish an operating manual that will describe the operating procedures to maintain the standard levels.	Risk sensitivity analysis is carried out with different operation costs.
Liability to users	User's claims.	Medium	Developer	Developer will have a customer service.	n/a
Emergency service	Road accidents.	Medium	Developer	Developer will establish a 24 hour, 7 day a week emergency service.	n/a
<b>Environmental risks</b>					
Permissions	Delay, increased costs, loss of revenue.	Medium	Contractor	Contractor must procure all necessary permits.	Risk sensitivity analysis is carried out with different construction length



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RISK DESCRIPTION	POTENTIAL CONSEQUENCES	LIKELIHOOD	RISK ALLOCATION	RISK MITIGATION	RISK SENSITIVITY ANALYSIS
<b>Environmental risks (continued)</b>					
Contamination and pollution	Additional costs.	Low	Contractor and Developer / TxDOT	Payments to Contractor will <u>not</u> be indexed (fixed price).  Operational costs will be indexed. Risk of cost increase fully covered through indexation of toll tariffs to CPI.	n/a
Discovery of hazardous materials	Delay, increased costs, loss of revenue.	Medium	Contractor	Environmental manual for disposal of hazardous materials.	n/a
Geotechnical conditions	Delay, increased costs, loss of revenue.	Low	Contractor	In-situ and laboratory testing to check the soil assumptions of the design.	n/a
<b>Financial / economic risks</b>					
Inflation	Additional cost.	Medium	Contractor and Developer / TxDOT	Payments to Contractor will not be indexed (fixed price).  Operational costs will be indexed.  Risk of cost increase fully covered through indexation of toll tariffs to CPI.	Risk sensitivity analysis is carried out with different inflation rates.
Interest rate	Additional cost.	Low	Developer	Hedging plan will be established in accordance with lenders' request. The Developer will conclude a fixed interest rate swap for all/part of the loan tenor.	Risk sensitivity analysis is carried out with different interest rates.
Traffic	Loss of revenue.	Medium	Developer	Traffic studies are audited by a specialist consultant to provide enough comfort.	Risk sensitivity analysis is carried out with different traffic assumptions.

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<b>RISK DESCRIPTION</b>	<b>POTENTIAL CONSEQUENCES</b>	<b>LIKELIHOOD</b>	<b>RISK ALLOCATION</b>	<b>RISK MITIGATION</b>	<b>RISK SENSITIVITY ANALYSIS</b>
<b>Financial / economic risks (continued)</b>					
Enforceability of tolls	Loss of revenue.	Medium	TxDOT	Prosecution of the vehicles that don't pay the toll fees. Consider a certain percentage loss of the total toll revenue.	Risk sensitivity analysis is carried out with different percentages of loss of the total toll revenue.
<b>Other events</b>					
Health & safety	Damage to workers during construction and operation.	Medium	Contractor and Developer (Insurance)	Risk is transferred to the insurance company.	n/a
Third party liability	Damage to third parties because the existence, construction and operation of the infrastructure.	Medium	Contractor and Developer (Insurance)	Risk is transferred to the insurance company.	n/a
Insurable events	Damage to works, delay, additional costs, loss of revenue, interruption, termination.	Medium	Contractor and Developer (Insurance)	Risk is transferred to the insurance company.	n/a
Terrorism and sabotage	Damage to works, delay, additional costs, loss of revenue, interruption, and termination.	Low	TxDOT	TxDOT shall support this risk because of its uncertainty.	n/a
Force Majeure event	Interruption, termination.	Low	TxDOT	The Developer is released from its obligation and can terminate the contract.	n/a

#### 4.3.1.19 Major System and Equipment Supply Needs

**A. Unique or Limited Availability Items** - All of the suggested near-term Facilities are standard highway and railroad construction projects. The only unique items on these Facilities comprise the in-lane Electronic Toll Collection infrastructure. The Team will utilize standardized WAVE hardware and currently owned back office support systems. The use of standardized hardware will help ensure its availability, as more and more entities will be utilizing it, thus making the supply more certain. The other highway and railroad construction items contain many commodity items (e.g. steel and concrete), and labor hours, which do fluctuate over time, however, the construction partners in the Team have vast experience in “mega-projects,” and are able to control these fluctuations through various market and hedge techniques.

**B. Design and Procurement Issues** - As a Facility is moving along the various NTP stages, agreements with the major suppliers and vendors of the various construction components will be finalized. The long duration of construction, and long time periods of operation and maintenance will be useful in achieving optimum pricing, and availability of equipment and materials.

Long lead items will be identified early in the design and procurement process for each of the potential rail construction contracts. If necessary these items need to be purchased early and supplied to the installer. For the early contracts these items could include special trackwork and project specific track items, grade crossing protection devices along with other signal devices mentioned above. Rail availability to UP specifications fluctuates widely and needs to be reviewed as a potential long lead item early in the design process for each construction contract.

For the future contracts regarding High Speed Ground Transportation, either High Speed Rail (steel wheel-on-steel rail) technology or maglev technology, other unique and limited available items will be required. These include the vehicles, which will be a long lead item for both High Speed Rail and maglev and the support / running beams for maglev. For High Speed Rail there are suppli-

ers with proven technology in Europe (France, Germany and Spain) and in Asia (Japan). Proven current commercial maglev technology is only available from Germany at this time. However by the time this contract is effective similar technology should be available from Japan and China. This applies to both the vehicles and the structural support / running beams for maglev.

Buy America clauses are an issue in the procurement of vehicles. However, the suppliers usually agree to either assemble the vehicles in the US and/or include the requisite amount of US manufactured equipment in the vehicle. The maglev technology includes the beams, which China is anticipating to fabricate in the future as a competitive supplier. They would have to be 25% lower in cost than other potential US manufacturers to be competitive under current rules.

Selecting a technology and qualified supplier for the High Speed Ground Transportation will be required early in the design process since many items will be unique to each technology and supplier. The transportation systems will need to be designed to accommodate these unique features. The selection should be made prior to the beginning of Preliminary Engineering. This will allow the environmental process to also account for the unique design and operational features. Preliminary engineering will need to account for individual geometric guideways, system, structural requirements and station designs for each qualified technology and supplier.

During the operation and maintenance of the Facilities, the costs of commodities can vary over time. Due to the lengths of Facilities, optimum supply agreements can be reached with providers.

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## 4.3.1.20 Delivery Methodology

**Facilities to Self Perform:**

1. SH 130, Segments 5 & 6
2. TTC-35, Dallas Southeast Connector
3. TTC-35, Dallas Northeast Connector
4. TTC-35, Georgetown to Temple
5. TTC-35, Temple to Dallas Southeast Connector

For these Facilities, the Team has identified the anticipated delivery method, and roles for the major entities involved.

- The Team plans to deliver this Facility as Design-Build-Finance-Operate-Maintain-Transfer.
- Cintra and Zachry will inject equity in a Special Purpose Vehicle (concession company) that will sign a facility agreement with TxDOT.
- There will be a long-term commitment with the 50-year concession agreement.
- The concession company assumes the design, construction and traffic revenue risks (among others).
- ROW acquisition is financed by the concession company.
- The Team will develop the Facility Implementation Plan, prepare preliminary and final design, provide the financing identified in the Conceptual Finance Plan, self-perform construction lead by a joint venture of Ferrovial Agroman and Zachry, operate and maintain the Facility through the Concessionaire.
- TxDOT will review, comment and approve the Facility Implementation Plan, provide design guidance, and task the TTC GEC and TTC-35 Section Engineers with supporting the Facility review. The Team will prepare ROW acquisition documents, finance and acquire the real property and transfer title to the State.

**Competitive Procurement**

1. TTC-35, San Antonio Southeast Loop
  - The Team plans to offer this facility as a Design-Build-Finance-Operate-Maintain-Transfer on a competitive basis. The Conceptual Financial Plan includes this facility, and the Team is interested in competing for this facility with others.
  - The Team will prepare facility development to the extent that it does not prevent Cintra/Ferrovial Agroman and Zachry from competing for the concession and construction.
  - TxDOT will review, comment and approve the facility implementation plan, provide design guidance, and task the TTC GEC and TTC-35 Section Engineers with supporting the facility review.
2. UP Railroad Relocation (MoPac)
  - The Team plans to deliver this Facility as Design-Bid-Build or Design-Build.
  - The Team could develop the Facility Implementation Plan and provide the trust financing identified in the Conceptual Finance Plan. The Team could prepare all required ROW documents, and provide real property appraisal services.
  - TxDOT will review, comment and approve the Facility Implementation Plan, provide design guidance, and task the TTC GEC and TTC-35 Section Engineers with supporting the Facility review. The Team will prepare ROW acquisition documents, finance and acquire the real property and transfer title to the State.
  - The user agreement with UP will identify the method of payment for use of the Facility.
  - The United States Department of Transportation and its Federal Railroad Administration and Federal Transit Administration may contribute funds for moving the through freight rail service from the existing Austin – San Antonio Corridor and implementing new commuter rail service.

#### 4.3.1.21 Third Party Agreements

**A. Freight Railroads** - In addition to a master agreement defining the detailed understanding and mutual acceptance of the development concepts, a complex series of interdependent multi-discipline agreements will need to be negotiated with the Union Pacific Railroad to permit implementation of the rail plans. These agreements will be negotiated with a myriad of functional UP departments and will cover in great detail, as examples and not a complete listing, the following:

- Handling of ongoing marketing and new business development.
- Construction and use of new, upgraded and/or re-routed of existing facilities.
- Maintenance-of-way, signaling, equipment, and facilities.
- Transportation, operations and the use of joint facilities.

Team member Railroad Industries has structured and negotiated similar arrangements on behalf of public entities, rail districts and railroads. This experience ranges from line sales to major merger casework. Their extensive rail industry network is useful in implementation of complex strategies.

**B. Utility Providers** - Third party agreements will be required with providers of utility services throughout the TTC-35 Corridor. These will generally fall into four categories: temporary services, franchised service, special contract service, and easement agreements, specifically:

**Temporary Services** – During the construction of the TTC-35 Corridor, there will be the need for temporary utility services in support of the construction effort.

**Franchised Utility Service** – Electric, natural gas, water and wastewater utilities may be available to supply utilities required for operation of the TTC-35 Corridor and its supporting infrastructure throughout the length of the TTC-35 Corridor from local utilities at their standard rates and tariffs. Receiving this type of service will require no special arrangements or agreements.

**Special Contract Service** – In areas where utility service is needed but the location is not within an existing utility service area, (e.g. potable water needed in areas not within the normal service area of a water district), a special arrangement with a local provider may be required to provide service within the TTC-35 Corridor. Normally, this can be accomplished through Contributions In Aid of Construction with a nearby utility provider.

Some services, such as local and long distance telephone and Internet services, may be available under multiple possible arrangements such as special contract or through “normal” wireless connections.

**Easement Agreements** – Providers of bulk utility services, (See Section 4.3.1.17.E Utilities), will require easement (and possibly Right of Way) agreements to place facilities that they own and arrange financing for within the TTC-35 Corridor. Due to the long-term nature of these arrangements, it may be necessary to require Irrevocable Letters of Credit and/or Liability agreements with these entities.

**C. Municipal and Regional Authorities** - It is anticipated that the following types of agreements will be necessary with the cities, counties, and tolling authorities in the project areas.

- Corridor preservation agreements/arrangements with cities, counties, and regional planning entities.
- Right of way acquisition agreements with cities and counties.
- Traffic signal operation agreements with cities.
- Multiple-use agreements with cities and counties. These agreements would allow shared use of the right of way.
- Roadway network expansion agreements with cities, counties, and tolling authorities. These agreements are to ensure that the expansion of existing facilities and the development of new facilities do not negatively impact the TTC-35 Facilities.

**D. Customers** - The customers of the suggested near-term Facilities are mainly the automobile and truck users. As described in Section 4.3.1.16, these customers will be providing the revenue necessary to pay for

the Facility; therefore they must be afforded the utmost respect.

This begins with the implied agreement that they will not utilize the Facility without paying for its use. For those who “sign-up” for a toll transponder, there will be a very brief agreement enclosed with the transponder that is accepted by the use of the transponder.

**E. Commercial Franchises** - On the automobile and truck Facilities, there will be the opportunity for additional private sector operators to provide services for the TTC-35 users. These will include service centers, restaurants and hotels. Those operators, who choose to locate their establishment on TTC-35 ROW, will enter into an agreement with the State for use of the ROW, and an agreement with the Developer to operate on the TTC-35 corridor.

**F. Land Owners and Developers** - To avoid any conflicts of interest, the Team will keep distant from adjacent land owners and developers who choose to develop along the TTC-35 ROW.

#### 4.3.1.22 Updating the Master Development Plan

Following the Initial Scope of work during 2005, and continuing for the life of the CDA, the Master Development Plan will be updated on a continual basis. Listed below are some of the triggers that will necessitate a review and update of the MDP.

**A. Periodic Reviews** - Periodic reviews of the MDP will occur every six months. The Team recommends that these scheduled reviews occur in May and in November. The May review will allow sufficient time prior to the State’s fiscal year beginning on September 1 for items to be included or removed from the budget. The November meeting will allow time prior to the beginning of the calendar year to make modifications that are contingent on the beginning of the year.

These periodic reviews will begin at the start of the month, and will include a three-day session within the Team members to review the entire MDP, looking for

items that have changed, are no longer valid, or will require additional research. Following the internal session, the proposed changes will be reviewed with TxDOT, the TTC GEC and TTC-35 Section Engineers. Those items approved for change will be modified and re-submitted for approval.

**B. Changes in the Master Financial Plan** - Significant changes to the Master Financial Plan will necessitate a review of the MDP for implications to the list of Facilities, or the schedule for their possible implementation. Significant changes to the MFP would include trends (positive or negative) in the bonding community, interest rate changes, and various entity rating changes.

**C. Highway and Rail Demand** - For Facility advancement purposes, the comprehensive traffic projections will be updated every three years. This is in addition to smaller Facility-specific traffic and revenue studies that may be performed more frequently. The comprehensive study will include updates to the Statewide Analysis Model (SAM), as well as verification of economic and demographic data. As other transportation initiatives are presented (e.g. high speed rail), these studies will be included in the review of TTC-35 demand.

**D. Facility Procurement** - As the CDA advances, there will be Facilities that are developed under the CDA. As these Facilities progress through the NTP stages, the MDP will be updated through the normal six-month periodic review. However, when a Facility reaches NTP3, the MDP will be updated to reflect the fact that the Facility has successfully reached Close of Finance. There may be some Facilities that are removed from the Project, and thus the scope of the CDA. When this happens, the MDP will be updated reflecting the revisions to the list of Facilities under the CDA.

**E. Major Environmental, Planning, or Permitting Approvals** - Each facility will be developed at different time periods. As each progress through the process, the MDP will be updated to reflect the various approvals. Major milestones will include a finding of no significant impact (FONSI) or record of decision (ROD) as dictated in NEPA, FHWA approval of the schematics, and the major permits such as Section 404 (Corps of Engineers) permit, Section 401 water quality certifica-

tion, Texas Pollutant Discharge Elimination System (TPDES) General Permits for Storm Water Discharges from Construction Sites, Section 9 (U.S. Coast Guard bridge) permits, and FAA Airway-Highway Clearance permit.

**F. MPO Information and STIP Submissions** - The MPOs and TxDOT's Transportation Planning and Programming (TPP) Division will play a vital role in the development of the Facilities. The approach of the Team is to maintain continuous involvement with each group to ensure that new additions and revisions to the planning documents do not impact facility development. The Team will monitor the development and modifications to the Metropolitan Transportation Plans (MTP), the Transportation Improvement Programs (TIP), and the STIP by attending the MPO meetings and discussing with MPO and TxDOT staff on a regular basis.

**G. Major Changes in Detail of Facility Development Changes to the UTP** - The Unified Transportation Program (UTP) is the internal TxDOT document that identifies the projects to be developed and constructed and their funding source during a ten-year period. Again, the Team will work closely with TxDOT's TPP Division and work within their update and development schedule and the approval process to incorporate major changes such as project limits, project implementation schedule, and funding sources, into the UTP.

**H. Local Government Requirements and Needs; Regional or National Economy; Demographic Patterns and Trends** - As indicated in the Highway and Rail Demand, the traffic projections will be updated every three years. Along with this traffic update, the demographic patterns and trends will also be analyzed to determine shifts in population, income, and goods movement.

As a stakeholder, the local communities will have continual access to the development of the Facilities. As suggestions and changes are brought forth, the Team will meet and discuss with the local officials, TxDOT, and others to determine the appropriate action.

**I. Political Concerns or Shifting Agendas** - The approach to handling political concerns or shifting agendas

is to educate the locally elected officials, state executive and legislative officials, and national executive and legislative officials on the Trans Texas Corridor. The Team will take a proactive approach in an attempt to head off any of the issues. However, as they arise, the Team will gather the concerns and offer alternatives and incorporate into the MDP.