THE NEW LBJ

IH 635 Managed Lanes Project

Project Management Plan

Texas Department of Transportation

Texas Department of Transportation

IH 635 Managed Lanes
Project Management Plan

Prepared by:

October 19, 2010

Table of Contents

1 Introduction 1
1.1 Purpose of a Project Management Plan 1

2 Project Description and Scope of Work 2
2.1 Scope of Work 2
2.2 Background 4
2.3 CDA 5

3 Goals and Objectives 7
3.1 Purpose and Need 7
3.1.1 Population and Employment Growth 7
3.1.2 Traffic Projections 8
3.1.3 Current Condition of Facility 8
3.1.4 Accident Rates 9
3.1.5 Air Quality Improvement 9
3.2 Goals and Objectives 10

4 Organizational Charts, Roles and Responsibilities 12
4.1 TxDOT 12
4.2 FHWA 13
4.3 Project Team 14
4.4 Agency and Stakeholders Coordination and Involvement 15

5 Project Phases 17
5.1 Planning 17
5.2 Environmental Re-Evaluation 17
5.3 Design and Construction 18

6 Procurement and Contract Management 19
6.1 Procurement of Developer 19
6.2 Procurement of Oversight Engineer 19
6.3 Procurement of Independent Engineer 20

7 Cost, Budget, and Schedule 21
7.1 FHWA Requirements 21
7.2 Funding Sources 21
7.3 Cost Estimating 21
7.4 Schedule 22

8 Project Reporting and Tracking 23
8.1 Document Management 23
8.2 Project Activities and Deliverables 23
8.3 Action Items/Outstanding Issues 24

9 Internal and Stakeholder Communication 25
9.1 Internal Communication 25
9.2 External Communications 25
9.3 Conflict Management Strategy 25

10 Project Management Controls 26
10.1 Project Cost Control 26
10.2 Risks 26
10.3 Schedule Review 27
10.4 Oversight, Inspection and Testing 27
10.5 Partnering 28

11 Quality Management Plan and Design QA/QC 29
11.1 Quality Management Plan 29
11.1.1 Quality/Environmental Manager 29
11.2 TxDOT's Role 31
11.3 Design QA/QC 31
11.3.1 Plan Package Assembly Review 32
11.3.2 Formal Review by TxDOT/Federal Oversight/Stakeholders 32
11.4 Design Standards 32

12 Construction QA/QC 33
12.1 Acceptance Testing and Inspection 33
12.2 Control of Inspection, Measuring, and Test Equipment 34
12.3 Inspection and Test Status 35
12.4 Documenting and Correcting Deficiencies and Noncompliance Issues 36
12.5 Commencement of Construction 36
12.6 Construction Procedures and QA/QC 37

13 Environmental Monitoring 38
13.1 Environmental Approvals 38
13.2 Comprehensive Environmental Protection Program 39
13.2.1 Environmental Management System 40
13.2.2 Environmental Protection Training Plan 40
13.2.3 Hazardous Materials Management Plan 40
13.2.4 Communication Plan 40
13.2.5 Recycling Plan 40
13.2.6 Pollution Prevention Plan 40
13.2.7 Environmental Compliance and Mitigation Plan 41
13.2.8 Construction Monitoring Plan 41
13.3 Environmental Personnel 42
13.4 NEPA Approval and Commitments 43
13.4.1 Threatened/Endangered Species, Vegetation and Wildlife Habitat 44
13.4.2 Floodplains 44
13.4.3 Waters of the U.S., Including Wetlands 45
13.4.4 Water Quality 46

13.4.5 Hazardous Materials 47
13.4.6 Traffic Noise 48
13.4.7 Historic Structures and Archeological Sites 49
13.4.8 Socio-Economic Impacts 50
13.4.9 Community Cohesion 50
13.4.10 Public Facilities and Services 50
13.4.11 Aesthetic Considerations 50
13.4.12 Invasive Species and Beneficial Landscaping 51
13.4.13 Prime, Unique, and Special Farmland Impacts 51
13.4.14 4(f) Properties 51

14 ROW Acquisition 52
14.1 ROW Acquisition Process 52
14.2 Utility Adjustments 52

15 Safety and Security 53

16 Traffic Management 55
16.1 General Traffic Management 55
16.2 Lane Closure Guidelines 55

17 Project Communication 57

18 Civil Rights Program 58

19 Project Closeout Plan 59
19.1 Completion of Construction Work 59
19.1.1 Submission of Quality Records 59
19.1.2 Final Acceptance 59
19.1.3 Payment of Public Funds 59
19.2 Handback 60

20 Project Documentation 61

21 Operations and Maintenance 62
21.1 Maintenance Management Plan 62
21.2 Renewal Work 63
21.3 Operations Management Plan 63

22 Executive Leadership Endorsement 65

Appendix A Initial Financial Plan A-1

Appendix B Schedule Milestones B-1

List of Acronyms

ACHP .....Advisory Council on Historic Places
APE .....Area of Potential Effects
ASTM .....American Society of Testing and Materials
BMP .....Best Management Practice
BOP .....Business Opportunity Plan
CAP .....Compliance Action Plan
CDA .....Comprehensive Development Agreement
CDC .....Corridor Development Certificate
CEPP .....Comprehensive Environmental Protection Program
CFPM .....Concession Facility Project Manager
CFR .....Code of Federal Regulations
CGP .....Construction General Permits
CMP .....Construction Monitoring Plan
CMP .....Corridor Management Plan
CO .....Carbon Monoxide
CP .....Communication Plan
CPA .....Comptroller of Public Accounts
CQMP .....Construction Quality Management Plan
DART .....Dallas Area Rapid Transit
DBE .....Disadvantaged Business Enterprise
DBJV .....Design-Build Joint Venture
DCQM.....Design and Construction Quality Manager
DFW .....Dallas-Fort Worth
DNT .....Dallas North Tollway
DQMP .....Design Quality Management Plan
EA .....Environmental Assessment
ECI .....Environmental Compliance Inspectors
ECM .....Environmental Compliance Manager
ECMP .....Environmental Compliance and Mitigation Plan
EDMS .....Electronic Document Management System

List of Acronyms (Continued)

EMS .....Emergency Medical Services
EMS .....Environmental Management System
ENV .....Environmental Affairs Division
EPA .....Environmental Protection Agency
EPIC .....Environmental Permits, Issues, and Commitments
EPTP .....Environmental Protection Training Plan
ETS .....Environmental Training Staff
FEIS .....Final Environmental Impact Statement
FHWA .....Federal Highway Administration
FIRM .....Flood Insurance Rate Map
FSLSC .....Fire, Security and Life Safety Committee
FONSI .....Finding of No Significant Impact
FP .....Financial Plan
ft .....Foot/Feet
HCR .....Highway Conditions Report
HMM .....Hazardous Materials Manager
HMMP .....Hazardous Materials Management Plan
HOV .....High Occupancy Vehicle
HUB .....Historically Underutilized Business
IE .....Independent Engineer
IFC .....Issued for Construction
IMP .....Incident Management Plan
IMTE .....Inspection, Measurement and Testing Equipment
LBJ .....Lyndon Baines Johnson
LCN .....Lane Closure Notification
LOMR .....Letter of Map Revision
LOS .....Level of Service
LPA .....Locally Preferred Alternative
MMP .....Maintenance Management Plan
MOU .....Memorandum of Understanding

List of Acronyms (Continued)

MSAT .....Mobile Source Air Toxics
MTP .....Metropolitan Transportation Plan
NAAQS .....National Ambient Air Quality Standards
NCTCOG .....North Central Texas Council of Governments
NEPA .....National Environmental Policy Act
NOI .....Notice of Intent
NOx .....Nitrous Oxide
QAP .....Quality Assurance Plan
NPDES .....National Pollutant Discharge Elimination System
NRHP .....National Register of Historic Places
NTTA .....North Texas Tollway Authority
NWP .....Nationwide Permit
OMP .....Operations Management Plan
O&M .....Operations and Maintenance
OVT .....Owner Verification Testing
P2 .....Pollution Prevention
PA .....Programmatic Agreement
PCN .....Preconstruction Notification
PICP .....Public Information and Communications Plan
PIO .....Public Information Officer
PMP .....Project Management Plan
POE .....Project Oversight Engineer
PSL .....Project Specific Location
QA/QC .....Quality Assurance/Quality Control
QAP .....Quality Assurance Plan
QMP .....Quality Management Plan
QMS .....Quality Management System
RCSR .....Review Comment Summary and Resolution
RFC .....Released for Construction
ROW .....Right-of-Way

List of Acronyms (Continued)

RP .....Recycling Plan

RTC .....Regional Transportation Council

SAFETEA-LU .....Safe Accountable Federal Transportation Equity Act – Legacy Users

SBA .....Small Business Association

SBE .....Small Business Enterprise

SH .....State Highway

SHPO .....State Historical Preservation Office

SIP .....State Implementation Plan

SOV .....Single Occupancy Vehicle

STIP .....State Transportation Improvement Plan

SW3P .....Storm Water Pollution Prevention Plan

TCEQ .....Texas Commission on Environmental Quality

THC .....Texas Historical Commission

TIP .....Transportation Improvement Plan

TMP .....Traffic Management Committee

TMP .....Traffic Management Plan

TMT .....Traffic Management Team

TPDES .....Texas Pollutant Discharge Elimination System

TPWD .....Texas Parks and Wildlife Department

TTC .....Texas Transportation Commission

TTI .....Texas Transportation Institute

TUCP .....Texas Unified Certification Program

TxDOT .....Texas Department of Transportation

UPRR.....Union Pacific Railroads

USACE .....U.S. Army Corp of Engineers

USDOT .....U.S. Department of Transportation

VMT .....Vehicle Miles Travelled

VOC .....Volatile Organic Compounds

WBS .....Work Breakdown Structure

1 Introduction

1.1 Purpose of a Project Management Plan

According to section 1904(a) of Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), a project management plan (PMP) and an annual financial plan are required for all projects with an estimated total cost of $500 million or more, and are recipients of Federal financial assistance, or as may be identified by the Secretary of Transportation. The PMP establishes a framework for the management of the project and the methodology for organizing, directing, and coordinating the resources required for the project. It is not a detailed procedure manual. The purpose of the plan is to document mechanisms for control of scope, budget, schedule, and quality.

This PMP has been prepared for the Federal Highway Administration (FHWA) and other interested parties to provide a guideline for effective management of the budget, schedule, quality of the project, safety of the construction workers and traveling public, and in a manner in which public trust and confidence is maintained. The plan has been prepared in accordance with 23 Code of Federal Regulations (CFR) 106(h) and is based on the FHWA PMP Guidance.

The plan is submitted by the Texas Department of Transportation (TxDOT) Project Manager to the designated FHWA Project Manager for the FHWA approval. The TxDOT Project Manager will evaluate the plan annually to determine if a plan update is necessary.

2 Project Description and Scope of Work

2.1 Scope of Work

The IH 635 Managed Lanes project consists of five project sections, totaling approximately 17 miles of the IH 635 and IH 35E corridors in Dallas County, Texas. Figure 1.1 depicts the project location.

The project section descriptions are as follows:

IH 635 Section

The IH 635 section extends along IH 635 from east of the IH 635/IH 35E interchange near Denton Drive to east of Merit Drive (approximately 7.4 miles).

The work includes the reconstruction of the existing main lanes (4 lanes in each direction); reconstruction of the existing frontage roads (2 to 3 lanes in each direction); construction of additional frontage roads (2 to 3 lanes in each direction) to provide a continuous frontage road system; reconstruction of the existing cross streets and interchanges at Denton Drive, Josey Lane, Webb Chapel Road, Marsh Lane, Rosser Road, Valley View Lane, Midway Road, Welch Road, Montfort Drive, Preston Road, Hillcrest Road, and Park Central Drive; and the construction of managed lanes (2 to 3 lanes in each direction).

Along IH 635, the Developer will be responsible for providing a facility meeting the functionality shown in TxDOT's roadway schematics as well as providing operations and maintenance of the entire Section throughout the contract term.

IH 35E Section

The IH 35E section extends along IH 35E from south of the IH 35E/Loop 12 split near Northwest Highway to Crown Road (approximately 3.2 miles).

The work includes the construction of elevated managed lanes (2 lanes in each direction) adjacent to the existing main lanes, construction of four 1 to 2 lane managed direct connectors within the IH 35E/Loop 12 interchange, and various sections of 2 to 3 lane frontage roads required to maintain access.

The added managed lane direct connectors at the IH 35E/Loop 12 interchange will be in addition to the four existing direct connectors that will remain in place.

Along IH 35E, the Developer will be responsible for providing a facility meeting the functionality shown in TxDOT's roadway schematics as well as providing operations and maintenance of the constructed elements throughout the contract term.

IH 635/IH 35E Interchange Section

The IH 635/IH 35E interchange section extends along IH 635 from east of Luna Road to east of IH 35E near Denton Drive (approximately 1.5 miles) and along IH 35E from Crown Road to south of Valwood Parkway (approximately 2.6 miles).

The work includes construction of four 2 lane managed direct connectors within the existing IH 635/IH 35E interchange. The direct connectors facilitate access between IH 635 and IH 35E for the northbound to eastbound, southbound to eastbound, westbound to southbound, westbound to northbound movements. In addition, managed lanes (2 lanes in each direction) will be constructed along IH 635 from east of Luna Road to the end of this Section near Denton Drive.

The added managed lane direct connectors at the IH 635/IH 35E interchange will be in addition to the eight existing direct connectors that will remain in place.

The Developer will be responsible for providing a direct connection managed lane facility at the IH 635/IH 35E Interchange meeting the functionality shown in TxDOT's roadway schematics as well as providing operations and maintenance of the constructed elements throughout the contract term.

IH 635/US 75 Interchange Section

The IH 635/US 75 interchange section extends along IH 635 from east of Merit Drive to west of Greenville Avenue (approximately 1.8 miles).

The work includes adding managed lane and tolling equipment to the existing managed lanes (2 lanes in each direction) and reconfiguring the entrance/exit point at the eastern end of the Section.

The Developer will be responsible for operations and maintenance of the existing and constructed elements at the IH 635/US 75 Interchange Section throughout the contract term.

IH 35E Capacity Improvement Section

The IH 35E capacity improvement section extends along IH 35E from south of the IH 35E/Loop 12 split near Northwest Highway to east of the IH 635/IH 35E interchange (approximately 3.0 miles within the IH 35E Section and the IH 635/IH 35E Interchange Section). Construction on this Section would begin after TxDOT issues a notice to proceed for this Section.

The work includes the construction of managed lanes (1 lane in each direction) and construction of the required managed lane and tolling equipment.

Within the IH 35E Capacity Improvement Section, the Developer will be responsible for providing a facility meeting the functionality shown in TxDOT's roadway schematics as well as providing operations and maintenance of the constructed elements throughout the contract term.

The Project was jointly proposed by the TxDOT Dallas District, City of Dallas, Dallas County, and City of Farmers Branch. All approved resolutions in support of the Project were obtained during the Major Investment Study.

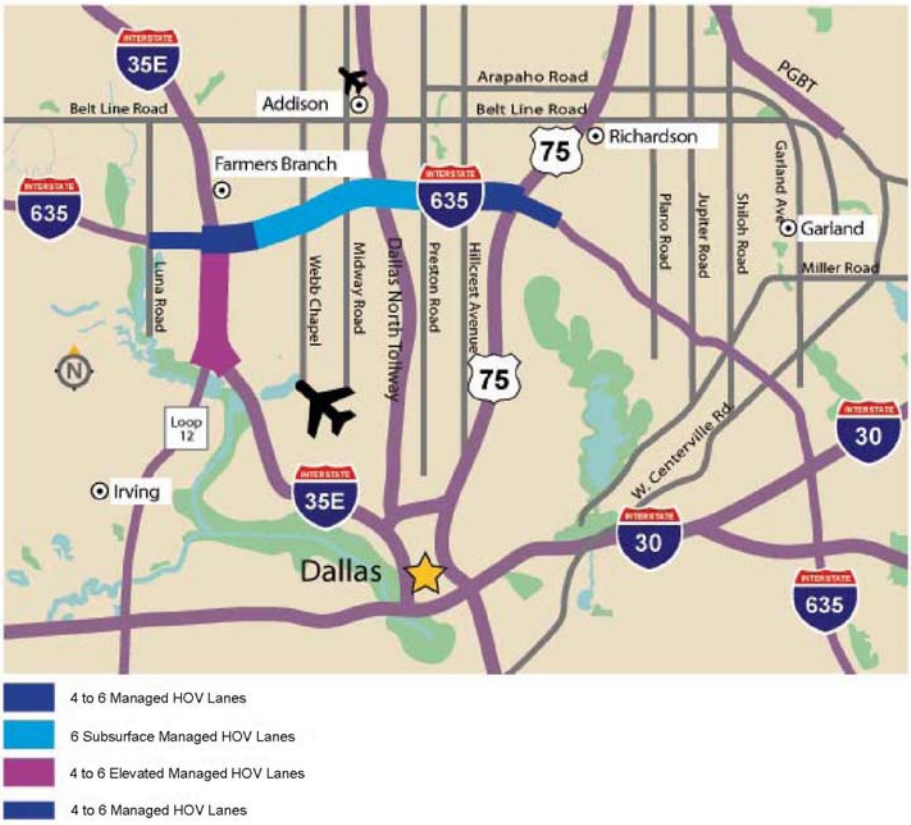

Figure 1.1. Project Location Map

2.2 Background

Corridor Description

The LBJ corridor encompasses one of the most highly developed commercial and residential areas in north Texas. The completion of LBJ in the 1970's resulted in significant population and employment growth in the LBJ corridor. This growth and the opening of Dallas-Fort Worth (DFW) Airport led to traffic demand which greatly exceeded predictions.

LBJ serves a variety of trip purposes including long distance trips accessing other regional facilities including IH 35E, Dallas North Tollway (DNT), US 75, IH 30 and US 80 and shorter, local trips between residential and commercial developments. The combination of these users has resulted in traffic volumes on the most congested sections of LBJ approaching 250,000 vehicles per day (according to a 2004 North Central Texas Council of Governments (NCTCOG) count) which has caused significant congestion and delay beyond peak hours each day. Predicted development and travel demand growth indicate that traffic demand will continue to grow by more than 100,000 vehicles per day by 2030.

LBJ Public Involvement Organizational Structure and Program

Based on lesson-learned from previous projects, the public acceptance of proposed transportation improvements on LBJ and other corridors led TxDOT to propose an extensive and unprecedented public involvement process for the study. Through a series of meetings, TxDOT, community and political leaders and local elected officials developed an LBJ Executive Board structure and a design strategy outline. The Dallas City Council approved the process in February 1993.

The LBJ Executive Board was formed to represent six work groups which were identified as sub-sets of the general public impacted by LBJ. The Executive Board was supported by a Technical Advisory Committee and Study Concept Development Committee. Focus groups were also formed to study identified issues in greater detail in support of the other LBJ committees. All of these groups met on a regular basis either throughout the study length or during specific periods. In addition, a number of meetings were held with the general public, cities, county, and chambers of commerce, among others.

Locally Preferred Alternative development and Evaluation

The collective identification of problems and potential solutions for LBJ began with an initial series of workgroup meetings. These meetings led to the development of an Alternative Definition List which summarized all potential solutions discussed. After the initial identification of problems and development of potential solutions, the study was structured to allow the workgroup participants to examine concepts and ideas before focusing on the most viable alternatives. This process led to the eventual development of a Locally Preferred Alternative (LPA). The LPA consensus became complete when the Regional Transportation Council (RTC) finalized *Mobility 2020*.

Using the LPA concepts, the TxDOT Dallas District developed a schematic design and began the environmental assessment (EA) of the proposed improvements. A Finding of No Significant Impact (FONSI) was received for this plan on April 29, 2004.

Environmental Re-evaluation

In order to provide connectivity compatible with the NCTCOG RTC's managed High Occupancy Vehicle (HOV) lane policy along IH 635 through the IH 635/US 75 interchange, as well as the connectivity between IH 635 and IH 35E, TxDOT included portions of infrastructure approved in the Loop 12-IH 35E Corridor EA (2004) and the US75-IH 635 Interchange EA (1993). These EAs were re-evaluated along with the Interstate Highway 635 from Luna Road to US 75 to accommodate the design modifications necessary to achieve this goal in 2008. The Re-evaluation is discussed further in Section 5.2 of this document.

2.3 CDA

On April 28, 2005 The Texas Transportation Commission (TTC) authorized TxDOT to issue a request for qualifications from organizations interested in financing, constructing, operating and maintaining the Project through a comprehensive development agreement (CDA). This action gave the Project momentum and project development continued. On September 4, 2009, TxDOT officials executed a CDA with the LBJ Infrastructure Group (Developer) to design, construct, finance, operate and maintain the project corridor in Dallas County for 52 years. Exact project limits are contained in Section 1.2.2 of Book 2A.

CDA Documents

The CDA Documents are available on the following TxDOT website:

http://www.dot.state.tx.us/project_information/projects/dallas/635_lbj_cda/cda.htm

Descriptions for each document that make up the contract ("CDA Documents") can be found below:

- **Book 1: CDA.** This document details the legal, contractual, and financial framework for the design, construction, operation, and maintenance of the IH 635 Managed Lane Project.
- **Book 2A: Project Technical Provisions.** This document details technical provisions specific to the design and construction of the IH 635 Managed Lane Project.
- **Book 2B: Programmatic Technical Provisions.** This document details programmatic technical provisions generally applicable to the design and construction of the CDA projects across the state.
- **Book 3 Technical Documents.** This document lists technical documents that are incorporated into the CDA Documents in addition to the Technical Documents identified in Books 2A and 2B.

Some of the processes and procedures described herein reflect the Developer's PMP. Because the CDA method of Project delivery was selected, certain responsibilities and risk were transferred to the Developer.

3 Goals and Objectives

3.1 Purpose and Need

The need for and purpose of the proposed improvements are to:

- Provide traffic congestion relief on IH 635 and on the surrounding arterial street system.
- Provide increased capacity and improved mobility with a continuous frontage road system by linking existing segments.
- Provide more balanced and better access to the surrounding facilities and thoroughfares by modifying ramps to meet future growth conditions.
- Provide improved cross street/frontage road intersections.
- Provide improved access to HOV and rail mode choices.
- Incorporate value pricing into the corridor to permit improved traffic management.
- Improve the Project design to address current safety concerns (current roadway design standards, lighting standards, signing standards, and roadside standards).
- Accommodate additional IH 635 traffic and traffic movements between the major interchanges at IH 35E and the DNT, as well as integrate into the US 75 interchange.
- Replace the existing facility, which is more than 30 years old and has experienced increased frequency of pavement repairs and exceeded its design capacity.

3.1.1 Population and Employment Growth

IH 635 was constructed in the late 1960's and early 1970's to serve as an outer loop freeway and provide mobility for the rapidly growing North Dallas and Farmers Branch areas. According to the Census 2000, the population of the North Central Texas region has increased from 2,506,973 in 1970 to 5,309,277 in 2000, an increase of greater than 111 percent making DFW one of the fastest growing areas in the country. A significant part of this growth has occurred in the project area of northern and western Dallas County.

At the time of construction, residential and commercial development was just approaching the IH 635 corridor from the south. The original facility was constructed with eight freeway lanes in anticipation of the continuing growth. However, what was considered aggressive planning at the time proved to be insufficient to handle the demand placed on the facility. As the development patterns continued to the north and west, the IH 635 corridor became a focal point of residential, retail, office and industrial development.

3.1.2 Traffic Projections

The growth in the corridor led to fully-developed surrounding land uses by mid-1980. The density of development was highest in the west section of IH 635 and the overall growth led to significant traffic demands throughout the corridor. Historical traffic volumes clearly indicate these growth trends. In 1976, there were approximately 105,000 vehicles per day on the IH 635 freeway lanes and that number is expected to exceed 450,000 vehicles per day by 2030.

The inter-regional travel nature of this interstate facility and the extensive development in the IH 635 corridor have resulted in the facility serving a wide variety of trip purposes. The connections to other regional facilities including US 75, DNT and IH 35E result in IH 635 serving long distance trips while the residential and commercial developments in the corridor serve as origins and destinations for shorter, local trips.

The existing facility operates at a level of service (LOS) F for the vast majority of the corridor during both of the peak periods. The standard daily congestion encountered on IH 635 is recurring congestion resulting from the volume/capacity relationship of the corridor. In addition, incidents (accidents, disable vehicles, etc.) on the facility can greatly impact congestion and cause extreme stop-and-go traffic in either or both directions. The lack of frontage roads in parts of the corridor exacerbates the problem because there is no convenient alternate route.

3.1.3 Current Condition of Facility

IH 635 from Luna Road to US 75 (West Section) is an eight-lane highway structure with four 12 feet (ft) main lanes and 10 ft shoulders in each direction, and it has non-continuous frontage roads. The existing right-of-way (ROW) width varies from 330.1 ft to 1,293.3 ft. Due to costs and ROW constraints, non-continuous frontage roads were constructed at some locations.

The section of eastbound IH 635 from Luna Road to IH 35E has been restriped to include a buffer-separated HOV lane and two through lanes. This provides for a better merging condition with the interchange ramps.

An interim fifth lane was added to the eastbound lanes from west of IH 35E to US 75, and westbound from east of Preston Road to IH 35E. This fifth lane is dedicated to HOV traffic. The HOV lane was added by restriping the mainlanes as 11 ft lanes, adding a nominal 2 ft widening to the far right lane, and reducing and reconstructing the inside shoulders. Construction of the Dallas High Five interchange provided a barrier separated managed HOV system with 12 ft lanes from east of Preston Road to west of Greenville Avenue.

The section of IH 35E to be modified as part of the Project extends from south of the Loop 12 split near Northwest Highway north to Valwood Parkway. It is an eight-lane to ten-lane roadway with four to five mainlanes in each direction which reduce to three lanes to accommodate the direct connectors at the IH 635 interchange. This section of IH 35E has a non-continuous frontage road system in each direction.

Dallas Area Rapid Transit (DART) provides rail transit and bus transportation in the Dallas area. A DART-owned light rail line (extension of the Green Line) crosses IH 635 at station 10599+00

on the east side of Denton Drive. This line is currently being tested with plans to open in December 2010.

3.1.4 Accident Rates

The extremely high volume of traffic on IH 635 has resulted in significant congestion that has extended beyond normal peak hours to include most of the day. Transportation improvements implemented on and near IH 635 have not been able to meet the ever-increasing travel demand in the area and reduce congestion on the facility. Predicted development and travel demand growth for the area indicate that the number of accidents would likely increase. This is because increased congestion interrupts normal traffic flow, leading to a greater number of vehicle conflicts. Without improvements, project area roadways and intersections are likely to have higher accident rates in the future. In addition, as traffic spreads to local roads to avoid the IH 635 congestion, the local roads are likely to experience declining operating conditions.

The existing pavement has exceeded its life span and will be replaced as part of this Project. In addition, the proposed Project will add wider lanes, additional shoulders, separated traffic lanes and continuous frontage roads all of which are intended to help reduce the number of accidents.

3.1.5 Air Quality Improvement

Traffic congestion has become one of the greatest challenges in the DFW metropolitan area, as on-road mobile sources (such as cars and trucks) contribute to air pollution. This challenge is evident as the DFW metropolitan area was ranked the ninth most congested area in the nation. Currently the DFW area is in nonattainment for ozone air quality. No other National Ambient Air Quality Standards (NAAQS) are violated.

Throughout recent decades, multiple regional and local initiatives have been planned and implemented in an effort to reduce air pollution from mobile sources. Several of these initiatives specific to the area's transportation system included increased capacity highways and roadways (through construction of additional travel lanes and bottleneck improvements), construction of HOV lanes, and the promotion of alternative transportation (e.g., hike and bike trails, bus, and light rail).

As described previously, the DFW region is expected to continue to experience economic development and increased development would be expected to increase associated emissions to the atmosphere. Air quality impacts associated with NAAQS are addressed at the regional level; however, mobile source air toxics (MSATs) are addressed at project specific level. Examples include construction of new industry as well as growth in personal and commercial vehicle miles traveled (VMT) within the region. However, despite projections of continued growth in the future, it is expected that the air quality in the DFW region would improve over time.

If the associated air emissions were unregulated, any new development in the study area would result in emissions increases in the area. These emissions increases could prevent the attainment of the ozone air quality standard and reduction of MSATs in the region and possibly lead to the future non-attainment of other air quality standards. The Texas Commission on Environmental Quality (TCEQ) and Environmental Protection Agency (EPA) measure air quality levels over a regional monitoring network to identify the potential for ambient air quality that may

approach or exceed established standards. These agencies also track changes in emissions of air pollutants to identify relationships between changing emissions and changes in air quality.
The States where the nonattainment areas are located are required to submit a State Implementation Plan (SIP) to the EPA. The SIP document is a collection of regulations that explain how the state would reduce emissions and help meet ozone standards. Nine counties are designated nonattainment for eight-hour ground level ozone in the DFW area, including: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Tarrant and Rockwall Counties. As such, the long-range financially constrained plan known as *Mobility 2030* is required to be in conformity with the SIP for air quality. Any future widening of the facility would be required to be consistent with the Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP) documents, and therefore meet conformity with the SIP. The proposed project is consistent with the currently conforming DFW MTP (*Mobility 2030*) and the TIP (FY *2008-2011 TIP).*

EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions of on-road emissions including carbon monoxide (CO), MSAT and the ozone precursors volatile, organic compounds (VOC) and nitrous oxide (NOx), on a regional level. Modeling results under the worst case conditions indicated that CO concentrations would not exceed the NAAQs for the build scenario either in 2015 or 2030. MSAT emissions would be reduced by the anticipated lessening of vehicles traveling the IH 635 mainlanes because of the diversion of traffic from the mainlanes to the Managed/HOV lanes. The additional lanes would relocate some of the traffic that would be using the main lanes or the frontage roads under the No Build Alternative to the managed/HOV in the center of IH 635 under the Build Alternative. This would move some traffic farther away from sensitive receptors along the IH 635 corridor. In addition, this would provide relief to the traffic congestion that would otherwise occur under the no-build condition. Less congestion translates into less cars traveling at lower speeds or idling conditions, for shorter periods of time during peak periods (heavy traffic) and result in less fuel combustion and lower idling emissions. A quantitative MSAT analysis indicated that by 2030, although VMT increases, MSAT emissions would decrease by 73 percent compared to 2007. Although VMT in DFW is projected to increase over time, VOC and NOx emission trends are expected to decrease over time.

Air quality cumulative impacts associated with transportation projects are addressed at the regional level by analyzing the air quality impacts in the MTP *Mobility 2030* and the fiscal year 2008-2011 TIP. The United States Department of Transportation (USDOT) is responsible for determining the conformity of the MTP and the TIP with local air quality goals as presented in the SIP. The IH 635 project appears in the MTP and the TIP and has been determined to conform to the SIP. The IH 635 project would be in compliance with federally established air quality standards. There were no identified adverse air quality impacts; therefore, no mitigation is proposed.

3.2 Goals and Objectives

Proposed improvements for achieving the purpose described in the previous section must address the following objectives:

- Alleviate existing congestion;
- Accommodate future travel demand;

- Improve safety;
- Eliminate existing transportation system deficiencies in order to accommodate both local and regional traffic;
- Avoid, minimize, or mitigate any adverse social, economic, and environmental effects; and
- Maintain accessibility to commercial centers, employment sites, and other activity areas.

4 Organizational Charts, Roles and Responsibilities

4.1 TxDOT

The DFW CDA Program Office has the overall responsibility for the design and construction of all CDA projects in the region. The LBJ CDA Project Manager, Gary Moonshower, P.E., is responsible for overall direction of the Project and ensures that resources necessary for the successful implementation of the Project are available. He is the primary contact between TxDOT and other governmental agencies. Mr. Moonshower is also responsible for ensuring that the Project is designed and constructed in accordance with the CDA documents. **Figure 4.1 and 4.2** show two organizational charts, one for the DFW CDA Program Office and one for the LBJ Project Management Office.

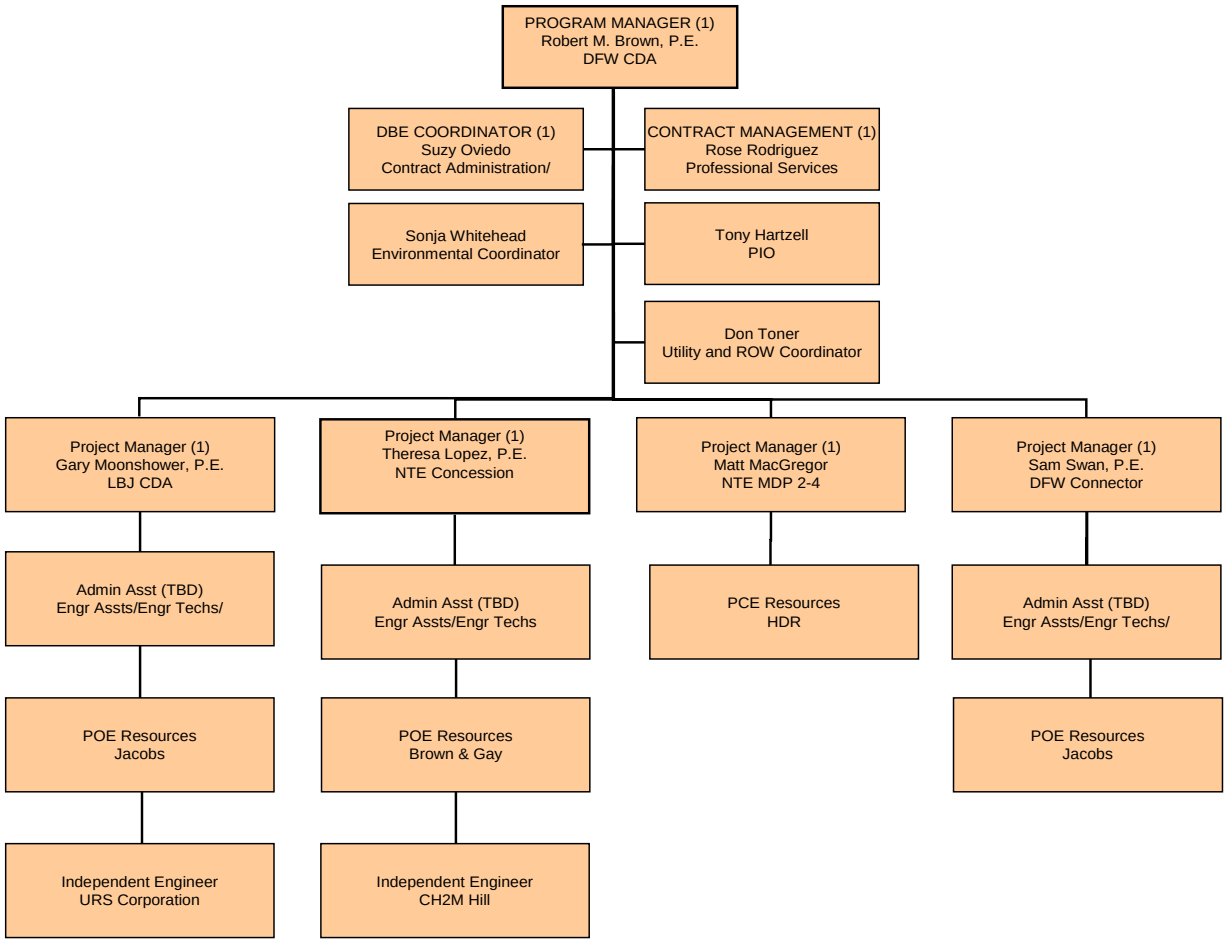

Figure 4.1. TxDOT DFW CDA Program Office

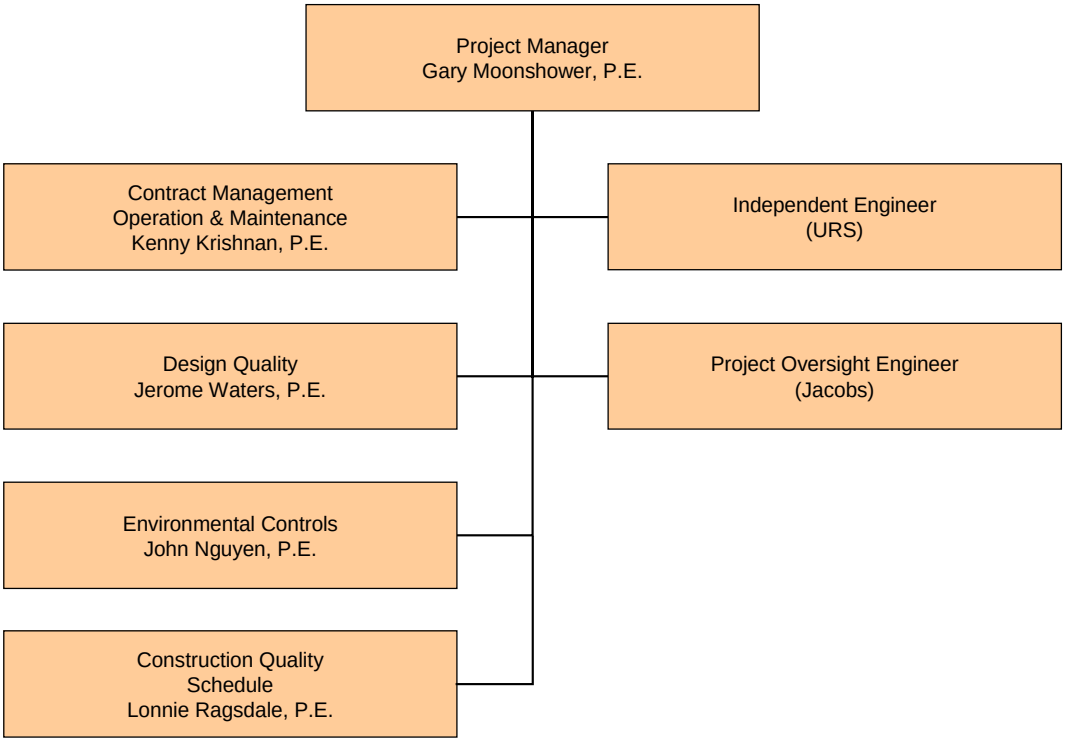

Figure 4.2. LBJ Project Management Office

4.2 FHWA

The Texas Division of the FHWA will provide oversight for the LBJ Managed Lane Project through the District Engineer. The FHWA District Engineer, Salvador Deocampo, is responsible for ensuring that TxDOT complies with all applicable Federal guidelines, is the liaison with Washington, and provides assistance with funding. The FHWA District Engineer will also oversee the approval process for the Financial Plan, consultant contracts, and the construction plans. The FHWA Texas Division organizational chart is shown in **Figure 4.3.**

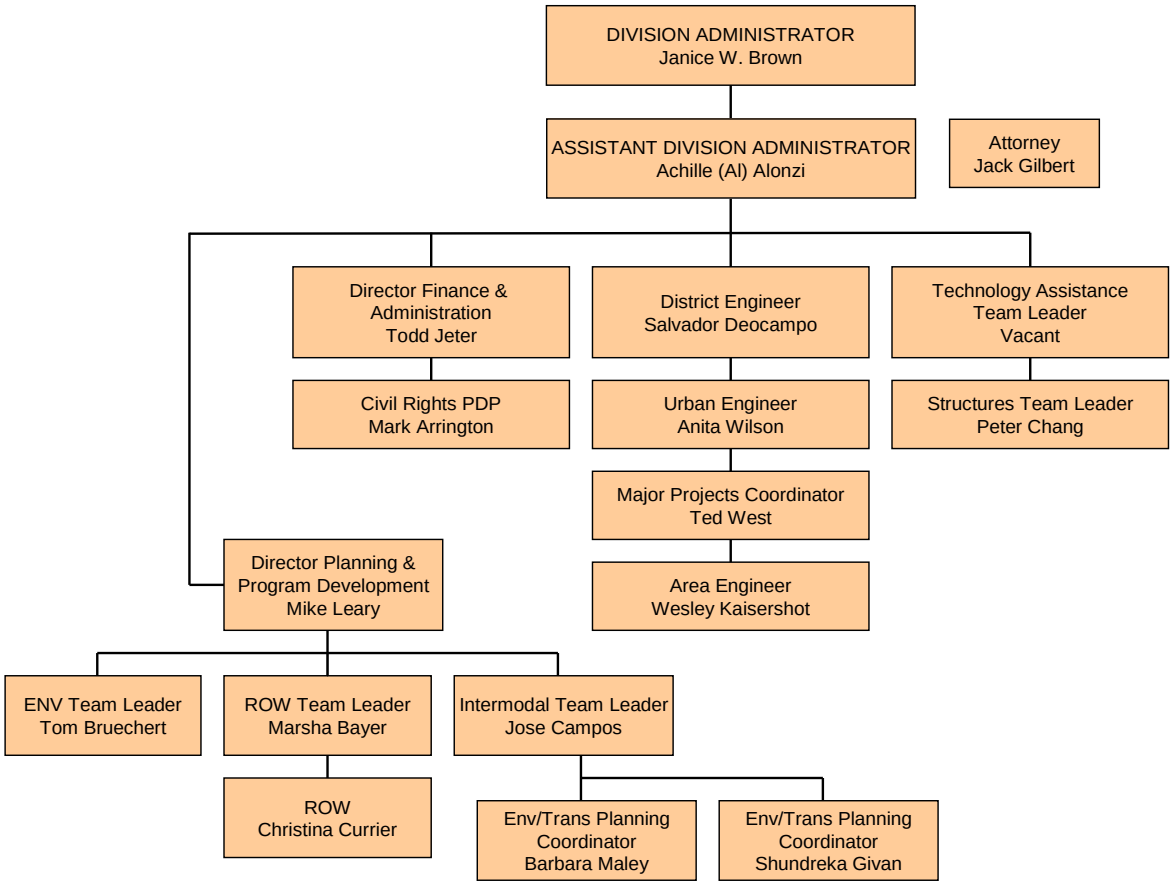

Figure 4.3. FHWA Organizational Chart
(Partial – Includes only project-related functions)

4.3 Project Team

TxDOT and the Developer, with oversight from FHWA, have organized into one group known as the Project Team (see **Figure 4.4**). The organization will evolve and change throughout the design and construction phases as necessary to meet the applicable objectives.

TxDOT will provide overall project oversight to ensure that the provisions of the CDA contract documents are being met, perform certain deliverable reviews, oversee the owner verification testing program, as well as, the coordination with Governmental Entities and Stakeholders.

The Developer has the obligation under the CDA to finance, develop, design and construct the project in accordance with the CDA documents, applicable law and good industry practice.

The Project Oversight Engineer (POE), Jacobs Engineering will assist TxDOT in the management and oversight of the design, construction, operation and maintenance work during the design-build phase. The Independent Engineer (IE) will perform oversight, inspection, testing and auditing respecting the design and construction work in accordance with Section 9.3 of Book 1 in the CDA.

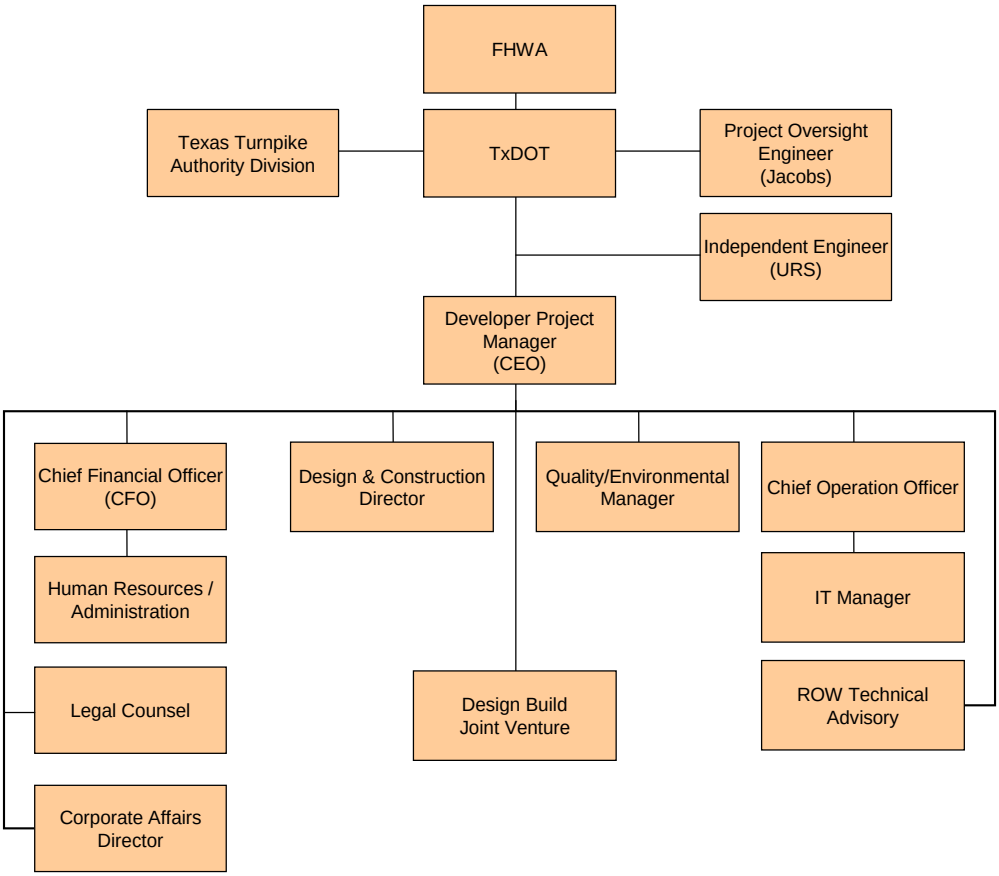

Figure 4.4. Project Team Organization Chart-Management

4.4 Agency and Stakeholders Coordination and Involvement

Extensive coordination will be required with various governmental agencies related to jurisdictional boundaries, adjacent agency roadway systems, and local municipal services. These agencies include:

TxDOT	FHWA	NCTCOG's RTC
City of Dallas	City of Farmers Branch	DART
NTTA	Dallas County	USACE

TxDOT and the Developer have implemented a stakeholder outreach plan that involves regular communications with interested parties across multiple levels.

The outreach begins at the community leadership level, where TxDOT and the Developer will meet semi-annually with local, state and federally elected and appointed officials, affected staff for the cities of Farmers Branch and Dallas, and other representative bodies as requested to brief them on the project status and obtain their input.

In addition, TxDOT and the Developer will convene a Traffic Management Committee (TMC) to meet monthly and a Fire, Security and Life Safety Committee (FSLSC) to meet quarterly (monthly via conference call, if needed). The TMC will include transportation and other project-related staff from the Cities of Dallas, Farmers Branch, Irving, Addison, Richardson and Mesquite, representatives of larger employers and Medical City to update them on project status, traffic management, utilities and sound walls. The FSLSC will include members of the Police and Fire departments from the cities of Farmers Branch, Dallas and Addison, local emergency medical services (EMS) within a 15 to 20 mile radius of the project and any former members of the FSLSC. TxDOT and the Developer will encourage the committee members to actively provide input to the development of a safe and secure project.

Finally, TxDOT and the Developer will establish Community/Business Advisory Panels with residents and businesses directly adjacent to the route and/or directly affected by the project during the construction and operation phases. These ad hoc committees and panels will meet quarterly to provide Project updates and encourage outreach to Customer Groups.

Developer shall provide ongoing information to the public concerning the development operation tolling and maintenance of the project in accordance with the Public Information and Communications Plan (PICP) prepared by Developer pursuant to Section 3 of the Technical Provisions.

The City of Dallas will provide two full time equivalent staff on the Project and the City of Farmers Branch will provide one full time equivalent staff. The City staff will represent their respective City's interest in terms of conducting reviews and providing comments on and approvals of the Developer's design of temporary and permanent traffic signals, specifications, traffic signal timing and timing plans. The City staff will coordinate with the Developer on design and implementation of signal timings in the vicinity of the Project corridor. City staff will also review, comment and approve sequence of construction plans on cross streets. The Developer will reimburse the Cities for the cost of providing the staff and provide office space and equipment (co-located with TxDOT) at the Project site.

5 Project Phases

5.1 Planning

During the planning process, the project was broken into three segments: addition of managed HOV lanes to IH 635 from Luna Road to the High Five including full reconstruction of IH 635 from IH 35E to the High Five (West Section), addition of elevated managed HOV lane connectors along IH 35E from Loop 12 to IH 635 (Loop 12/IH 35E Section), and addition of operational improvements on the IH 635 managed HOV lanes within the High Five (IH 635/ US 75 Interchange). As part of the original planning process, four public hearings were held for the Project – one for the West Section, two for the Loop 12/IH 35E Section and one for the IH 635/US 75 Interchange.

- The IH 635 West Section Public Hearing was held on June 5, 2003. On April 29, 2004, the FHWA issued a FONSI for the West Section.
- The Loop 12/IH 35E Public Hearings were held on August 19 and 20, 2002. The FHWA issued a FONSI for the Loop 12/IH 35E Section on December 11, 2002.
- The IH 635/US 75 interchange Public Hearing was held on August 19, 1992. The FHWA issued a FONSI for the IH 635/US 75 interchange on October 22, 1993.

5.2 Environmental Re-Evaluation

In early 2006, TxDOT initiated modifications to the originally approved designs in the originally approved environmental documents. The changes involve modifying the construction limits of the subsurface managed HOV lanes. As presented in the original EA (EA), the subsurface managed HOV lanes would have been constructed with a combination of open cut, cut and cover, and mined tunnel construction methods. The design modifications involve shifting the limits of each construction method and implementing a Managed HOV lane System that is compatible with the RTC's regional policy concerning managed lanes.

For the IH 635/IH 35E interchange portion of the project, there are only minor design modifications to the location of the proposed design from Loop 12/Northwest Highway to the IH 635/IH 35E interchange to incorporate existing interchanges. Instead, the modifications include operating the proposed direct connection ramps as managed HOV lanes.

Modifications to the IH 635/US 75 interchange are provided to improve operational efficiency by providing entrance and exit ramps for the managed HOV lanes west of US 75 and the interim HOV lanes east of US 75. The revised managed HOV lane configuration does not alter the amount of required ROW, displacements, or relocations stated in the original 2002 and 2004 EAs.

TxDOT has received notice from the FHWA that they have reviewed the EA Re-evaluations for the design and operational modifications that have occurred since the original issuance of the FONSI for the IH 635 West Section and the Loop 12/IH 35E Section and that the original findings remain valid. In addition, a Categorical Exclusion was obtained for operational improvements that have occurred since FHWA issued a FONSI for the IH 635/US 75

interchange in October 1993. The public meeting for these changes was held on November 16, 2006.

The notices from FHWA were received by TxDOT on June 19, 2008, June 20, 2008 and June 24, 2008 for the IH 635/US 75 Interchange, IH 635 West Section and the Loop 12/IH 35E Section, respectively.

5.3 Design and Construction

The re-evaluated schematic design has been completed for the Project. Using the developed ROW map, the TxDOT Dallas District has already acquired identified ROW necessary for project construction. If the Developer needs additional property, the acquisition services for the remaining parcels will be provided under the CDA. The Developer will also design, construct, operate, and maintain the Project for 52 years under the CDA. The Project will be completed after a maximum five year construction period.

The Developer intends to begin construction in late 2010 or early 2011.

6 Procurement and Contract Management

6.1 Procurement of Developer

The Project will be performed by the Developer under a Concession CDA. Below are the major milestones that occurred in the Project selection process:

- April 28, 2005 - Authorization by the TTC to issue request for qualifications;
- May 23, 2005 – TxDOT issued request for proposals and qualifications;
- September 22, 2005 – Deadline to submit qualification proposals;
- November 22, 2005 – TxDOT short-listed four proposers;
- October 26, 2006 – Authorization by the TTC to issue request for proposals;
- September 18, 2007 - TxDOT issued request for detailed proposals;
- January 21, 2009 – Deadline to submit proposals and TxDOT received two;
- Jan. – Feb. 2009 – TxDOT evaluation period;
- February 26, 2009 –Selection of best-value proposal identified;
- May 7, 2009 – CDA Public Hearing; and
- September 4, 2009 – Execution of CDA contracts and commercial close;
- September 28, 2009 – NTP1 was issued to authorize the Developer to start their PMP and enter TxDOT owned Project ROW;
- June 22, 2010 – Financial close.

The CDA contract scope includes design, construction, operation, and maintenance of the Project for 52 years in accordance with the CDA Documents, applicable law and good industry practice. The CDA Documents also include guidance on the following topics:

- Design requirements and procedures;
- Control of work, including Project authority, proper work documents, surveying standards, and inspection standards;
- Control of materials (material quality);
- Project records (including traffic control);
- Changes to the contract;
- Dispute and claims resolution;
- Progress measurement and payment;
- Implementation of Environmental Permits, Issues, and Commitments (EPICs);
- Worker health and safety;
- Handback requirements; and
- Implementation of the Business Opportunity Plan (BOP).

6.2 Procurement of Oversight Engineer

TxDOT hired Jacobs Engineering (Jacobs) as POE to assist them in the day-to-day management and oversight of the Developer. As POE, Jacobs will act as an extension of staff to TxDOT in its management and oversight of the Developer.

TxDOT will provide fair and objective oversight, and administration of the CDA. TxDOT will audit and monitor the Developer to ensure the Developer is performing the work in accordance with the CDA Documents.

6.3 Procurement of Independent Engineer

The IE, URS, will be required to develop and submit to TxDOT and FHWA a comprehensive Quality Assurance Plan (QAP). The QAP will address monitoring and reporting frequencies, levels of staffing, and other duties consistent with the IE scope of work and the FHWA oversight agreement. TxDOT will use the QAP to monitor and audit the IE in the performance of its obligations. The QAP will describe how the IE will:

- Monitor and audit design and construction activities;
- Report and give notice to TxDOT and the Developer;
- Review and comment on all submittals for which TxDOT reviews and comments or approval are required under the CDA;
- Satisfy FHWA oversight requirements, including requirements for Owner Verification Testing (OVT); and
- Monitor and audit the Developer during the operation and maintenance period.

7 Cost, Budget, and Schedule

7.1 FHWA Requirements

SAFETEA-LU requires that a PMP and a Financial Plan be developed and submitted for any project or program that is anticipated to exceed $500 million in construction dollars or as requested by the Secretary of Transportation. The IH 635 Managed Lane Project exceeds this construction cost threshold therefore; TxDOT is required to prepare this PMP and a Financial Plan (FP).

TxDOT, with assistance from the Project Team, has developed the Initial FP (**Appendix A**) for the Project. TxDOT will update the FP annually.

7.2 Funding Sources

TxDOT and LBJ Infrastructure Group will use a combination of funding sources to finance the design, construction, operations and maintenance of the Project. The Developer is leveraging $683 million of their equity with $445 million in public funds plus $1.58 billion in financing and $35 million in toll revenue. **Table 7.1** provides available funding estimates based on the Federal and State contributions as allocated funding sources for the Project.

Source	*($ Millions)*
Toll Revenue	35
Senior Term Facility	395
Private Activity Bonds	395
TIFIA Loan	790
Equity Contribution	683
Public Funds	445
TOTAL	2,743.0

Table 7.1. Available Funding

7.3 Cost Estimating

The FHWA conducted a formal review of the TxDOT developed cost estimate between October 19 and October 22, 2009. The objective of the review was to verify the accuracy and reasonableness of the current total cost estimate and develop a probability range for the cost estimate that represents the Project's current stage of development. The cost estimate agreed upon during this review served as a cost reasonableness comparison of the Developer's Project cost estimate.

7.4 Schedule

The CDA with the Developer was executed on September 4, 2009. The Developer has opened a co-location project office within the corridor at 4100 McEwen Road and began preliminary work in the fall of 2009. The Developer is planning to start pre-construction activities (such as geotechnical investigations, utility relocation agreements, and design) in late 2010. Construction should start 2011 and be completed within five years by 2016. See **Figure 7.1** for the overall project schedule. **Appendix B** includes detailed milestone schedule dates.

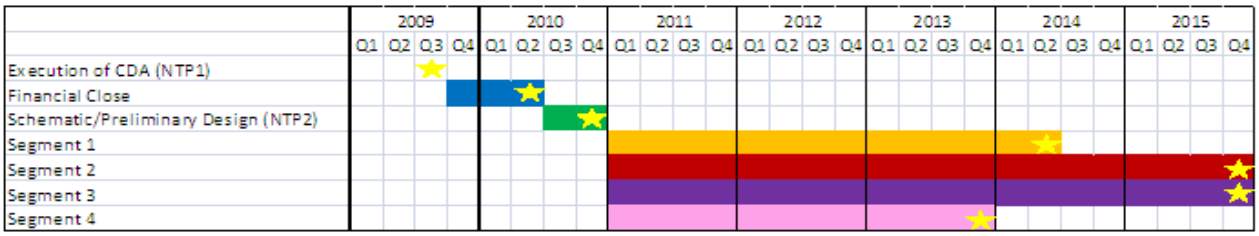

Figure 7.1. Overall Project Schedule

8 Project Reporting and Tracking

8.1 Document Management

The Developer shall establish and maintain an electronic document management system (EDMS) to store, catalog, and retrieve all project related documents in a format compatible with those employed by TxDOT. Record retention shall comply with the requirements of the Texas State Records Retention Schedule, and shall be provided to TxDOT at the time of the expiration or earlier termination of the Agreement. Unless otherwise directed by TxDOT, patron confidential information obtained by the Developer shall meet the requirements of the Toll Operations Document Retention Schedule. The Developer will use data systems, standards and procedures compatible with those employed by TxDOT. Software interface must be secure so that only authorized users have access. As an additional security measure, the Developer must back-up and store all Project-related documents in a secure off-site area.

Details on document routing, filing, control and retrieval methods are documented in the Developer's PMP.

8.2 Project Activities and Deliverables

Each month, beginning with the first full month after notice to proceed 2 (NTP2), the Developer will submit progress reports and schedule updates to TxDOT which include the following:

- Description of progress for each section and the Project as a whole, including all phases of work. Identify start date and completion dates on major areas of work. Group the information based on the work breakdown structure (WBS).
- Summarize Quality Assurance/Quality Control (QA/QC) findings.
- List any change orders that were identified or executed during the period including its status.
- Identify any relief events or compensation events that were accepted during the period.
- Identify schedule activities planned for the upcoming period.
- Identify problems and issues that arose during the period and issues that remain to be resolved.
- Summarize resolution of problems/issues raised in previous progress reports or resolved during the period.
- Identify critical path issues and proposed resolution.
- Provide a report on the milestone schedule deadlines showing the schedule dates for the immediate prior month and current month. A narrative is required to explain why the dates have changed for variances greater than 30 days. Provide monthly expenditure projection curves for the total Project.
- Identify requested and/or required TxDOT or IE actions for the next month.
- Provide digital progress photographs that accurately depict Project progress as outlined in the progress report narrative.

8.3 Action Items/Outstanding Issues

The Project Team will track a variety of issues to ensure that the Project moves steadily towards completion. The monthly progress reports and schedule updates will help facilitate TxDOT's oversight role. The tracked issues will include:

- Work progress;
- Contract compliance;
- Disadvantaged Business Enterprise (DBE) goals;
- Change orders;
- Lane availability;
- Lane rental;
- Environmental commitments;
- Hazardous material remediation costs;
- Archaeological/Paleological remediation costs;
- Utility and driveway permits;
- Utility agreements; and
- ROW acquisition, if needed.

9 Internal and Stakeholder Communication

Project communication is the exchange of project-specific information with emphasis on creating understanding between the sender and the receiver. Project communication management is the knowledge area that employs the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information.

9.1 Internal Communication

All internal communications within TxDOT will be handled through the TxDOT Project Manager. Project team members communicating with one another shall copy the Project Manager on communications (telephone conversation, memos, memorandums, correspondence, and e-mails, etc.).

9.2 External Communications

Stakeholder and external communications will be handled through the TxDOT Project Manager with the assistance of the Public Information Officer (PIO), as applicable. The TxDOT Project Manager will approve all communications prior to distribution. Public communications will be determined by the TxDOT Project Manager and facilitated through the use of the PIO. The Developer will provide assistance to the TxDOT PIO and maintain external communications.

The Developer shall provide ongoing information to the public concerning the development, operation, tolling and maintenance of the project. Procedures will be documented in the Developer's comprehensive PICP which informs, educates, and engages the general public, customer groups, and media throughout every stage of the Project. A full-time Corporate Affairs Director will be responsible for implementing the PICP. In addition, the Developer will maintain a public information office throughout the term that will be open Monday through Saturday each week.

9.3 Conflict Management Strategy

When a conflict between the Developer and TxDOT arises, the partnering process will be the first method used to reach a resolution. If that process fails and the Developer elects to pursue a formal claim or dispute with TxDOT, the procedures in Book 1 Section 17.8 establish a formal dispute resolution guideline.

10 Project Management Controls

TxDOT and the Developer comprise the Project Team and will coordinate to provide project management, scheduling, administration, review, and coordination for the Project.

10.1 Project Cost Control

Based on the committed and anticipated funding sources previously described and the executed CDA with the Developer, the primary potential risk of not receiving funding is from private equity funds due to the uncertain state of the financial industry. All Federal and State funds are currently available as evidenced by the 2008-2011 State Transportation Improvement Plan (STIP), but are subject to Federal and State funding levels.

10.2 Risks

Additional risks and mitigation strategies identified during the FHWA October 2009 Cost Estimate Review are generally described in **Table 10.1**.

Risk	*Mitigating Factors*
Multiple Large Projects under Construction Simultaneously in the Region	• There is an available labor source. • Potential for economies of scale.
Uncertainty in Design and Material Quantities	• CDA contract with lump sum design and construction price. • The Developer will perform complete design and has accepted material quantity risk as part of its lump sum CDA contract. The Developer is responsible for material escalation costs as part of its lump sum CDA contract. The price of fuel has declined.
Project Schedule	• CDA contract transfers a majority of schedule risk to the Developer. • Use of liquidated/delay damages to ensure timely completion. • Design and construction oversight by TxDOT staff and consultants dedicated to the Project.
Environmental Litigation	• This project is considered non-controversial and the National Environmental Policy Act (NEPA) lawsuit limitation has expired. • Strong local support.
Operation and Maintenance (“O&M”) Cost Escalation	• Developer is responsible for the operation and maintenance of the Project for 52 years under their lump sum contract.

Table 10.1 Risk Assessment and Mitigation

10.3 Schedule Review

The Project baseline schedule includes all major activities of work required under the CDA Documents, to monitor and evaluate design and construction progress, from commencement of the work to final acceptance of all Project segments. TxDOT approval of the Project baseline schedule is a condition of NTP2. The Developer shall update the Project baseline schedule to include the IH 35E capacity improvement section and submit the updated Project baseline schedule to TxDOT for approval no later than 90 days following TxDOT's issuance of intent to issue NTP3 under Section 7.7.2.3 of the Agreement.

Once the Project baseline schedule has been accepted by TxDOT, it can only be revised with TxDOT's acceptance. When summarized, the Project baseline schedule shall be such that the sum of payment activity prices therein equals the sum of payment activity prices in the original Project baseline schedule. The Developer shall submit to TxDOT a revised Project baseline schedule within 14 days after each change order, relief event or compensation event is executed. All approved change orders, relief events and compensation events shall be incorporated into the originally planned execution of the work. TxDOT will confirm in writing the acceptance of each revised Project baseline schedule. The accepted Project baseline schedule or current accepted revised Project baseline schedule shall remain in force until a subsequent revised Project baseline schedule is accepted by TxDOT.

All Project schedule submittals shall utilize the default settings compatible with Primavera version 6.2 default settings for the schedule calculations options and automatic cost/resource calculations rules. All other software settings shall not be changed or modified without prior TxDOT approval.

In addition to the Project baseline schedule, the Developer will submit to TxDOT all Project Status Schedule Updates to reflect the current status of the Project including recovery schedules, schedule revisions due to Relief Event Determinations, and approved Change Orders as part of the monthly Progress Report described in Section 8.3 of this document.

10.4 Oversight, Inspection and Testing

TxDOT and its authorized representative shall have the right at all times to monitor, inspect, sample, measure, attend, observe or conduct tests and investigations, and conduct any other oversight respecting any part or aspect of the Project or the Work, to the extent necessary or advisable to comply with FHWA, U.S. Army Corps of Engineers or other applicable federal agency requirements; to verify on an audit basis Developer's compliance with the CDA Documents and Project Management Plan; and to verify the IE's proper performance of its responsibilities and obligations.

The IE shall have the right and responsibility to conduct the monitoring, reviewing, inspection, testing, reporting, auditing and other oversight functions set forth in the CDA Documents and the IE agreement.

The Developer will conduct regular progress meetings with TxDOT at least once a month during the course of design and construction. The objective of these meetings is to discuss and resolve matters relating to the design work, construction work or the Project in general.

10.5 Partnering

TxDOT and the Developer have developed and intend to continue fostering a cohesive relationship to carry out their respective responsibilities through a voluntary, non-binding partnering process drawing upon the strengths of each organization to identify and achieve reciprocal goals. The objectives of the partnering process are:

- Identify potential problem areas, issues and differences of opinion early;
- Develop and implement procedures for resolving them in order to prevent them from becoming claims and disputes
- Achieve effective and efficient performance and completion of the work in accordance with the CDA documents, and
- Create mutual trust and respect for each party's respective roles and interests in the Project while recognizing the respective risks inherent in those roles.

TxDOT and the Developer have attended a team building workshop and signed a mutually acceptable non-binding partnering charter to govern the process of partnering for the Project. The charter includes non-binding rules and guidelines for engaging in free and open communications, discussions and partnering meetings between them, in order to further the goals of the partnering process. The charter also details how to select and use the services of a facilitator, where and when to conduct partnering panel meetings, who should attend such meetings, and subject to Book 1 Section 17.8.9, exchange of statements, materials and communications during partnering panel meetings. TxDOT and the Developer will address specific interface issues, oversight interface issues, division of responsibilities, communication channels, application of alternative resolution principles and other matters during these partnering meetings.

11 Quality Management Plan and Design QA/QC

11.1 Quality Management Plan

The Developer's quality sub-organization will be active during all project phases, operating independently from the design, construction, operations and maintenance sub-organizations. The Quality Director will ensure proper implementation of the quality process, proper communication with the Design and Build Team Quality Manager and receive support by the O&M Quality Manager during the operating period. The Quality Director will, through internal processes, review internal sub-organizations and, ultimately, report separately and directly to the Developer's CEO. The Developer is fully committed to integrating the ISO 9001 process to encourage continuous improvement. Key elements of the Developer's quality process include:

- Procurement controls, inspection and testing to ensure that materials conform to specified purchase requirements;
- Review of contracts with subconsultants, subcontractors and suppliers to ensure that the Developer's requirements are adequately defined and documented;
- Standardization and communication of design input requirements;
- Checking and independent verification/validation of design outputs;
- Identification, documentation, and review of design changes relative to the original specification and/or product liability;
- Process control for construction quality;
- Control of inspection, testing and measurement equipment;
- Liaison with the Environmental Compliance Team and Health & Safety personnel to ensure safety and environmental compliance;
- Control of documents, including manuals, quality records, design documents and material documentation;
- Internal and independent audits to promote continuous improvement; and
- Continuous updates to the Quality Management Plan (QMP) and related procedures.

11.1.1 Quality/Environmental Manager

The Quality/Environmental Manager will oversee TI's D&C Quality Manager's Quality Control over Design and Construction Work and will implement the O&M Quality Management Plan beginning at the commencement of the Work. He will also be responsible for environmental compliance during the Operating Period and ensure the fulfillment of the environmental requirements during the Design and Construction Phase. Irrespective of his other responsibilities, the Quality/Environmental Manager shall have defined authority for ensuring the establishment and maintenance of the PMP and reporting to TxDOT and the IE on the performance of the PMP. The Quality/Environmental Manager will be active throughout the duration of the Project and will:

- Promote and ensure the quality and environmental commitments in the Organization.

- Oversee quality management personnel dedicated to design, construction, operations and maintenance, as well as the Safety Manager and document control personnel.
- Advise the different departments/sub-organizations on implementing appropriate quality procedures and corrective actions within their areas of responsibility
- Ensure environmental compliance and assist and review Safety Manager responsibilities.
- Lead periodic Management Reviews to assess the effectiveness of the PMP including the CEPP.
- Advise the CEO on audit results, corrective action and changes to procedures
- Review Subconsultants' quality plans and procedures for compatibility with the CDA, and the PMP.
- Ensure that appropriate personnel receive training on the Quality and Environmental Management Systems and Safety
- Update the documents of the Quality and Environmental Management Systems of the Project Management Plan as necessary
- Liaise with external/independent quality and environmental auditors to schedule audits and review results

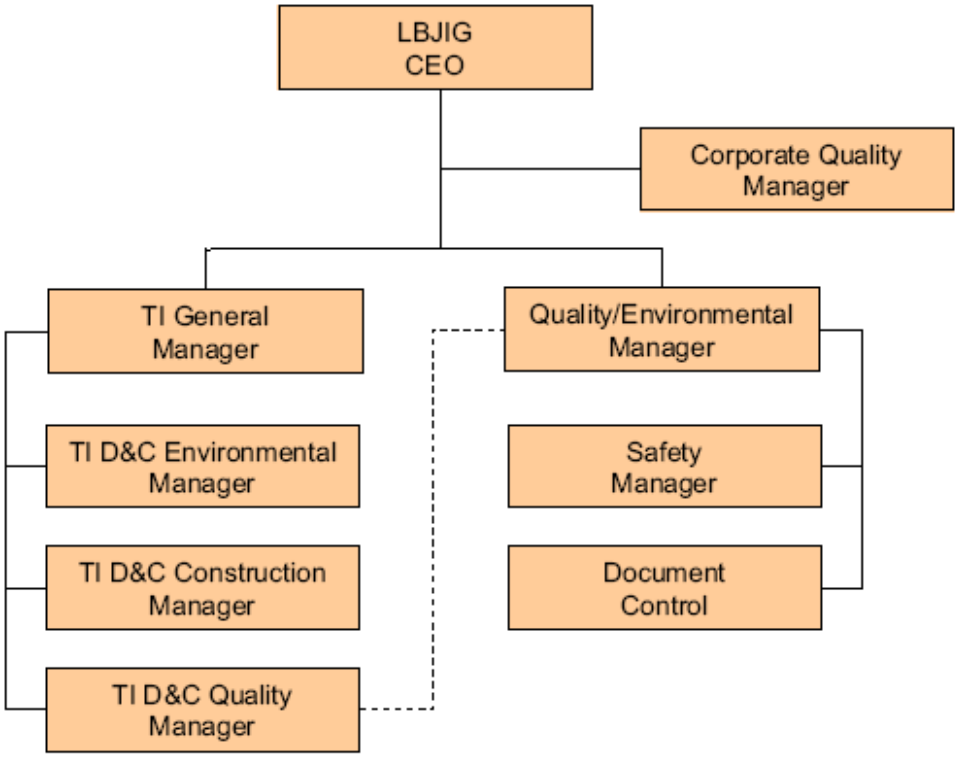

Figure 11.1. Developer Project Quality Management Organization

11.2 TxDOT's Role

The Developer will determine and implement effective arrangements for communicating with TxDOT on all aspects of the Project regarding:

- Consistency with design concept objectives;
- Project information;
- Inquiries;
- Contract or change order handling, including amendments; and
- TxDOT feedback, including TxDOT comments and monitoring notices.

A quality task force will be established at the onset of the Project to discuss QMP-related issues and to establish a line of communication between the Developer and TxDOT's oversight and quality staff.

Quality management meetings, including TxDOT and the Developer quality team representatives, will take place at least monthly throughout the design and construction of the Project. Issues that involve possible changes to in-progress work will be assigned by the Developer as action items to a responsible party, logged and tracked to resolution. Changes to future work and designs will be tracked in the meeting minutes and, when resolved, will be forwarded to the affected manager. Design changes, no matter where originated, will be communicated between construction, design, and TxDOT, and documented before the changes will be built.

TxDOT will participate in status meetings with the Developer to discuss organizational and technical agenda will be encouraged. At any coordination meeting; issues, concerns, or complaints will be presented, discussed, formally resolved, and documented. A methodology of handling issues will mutually be established and agreed upon at the early stages of the Project and through partnering processes.

11.3 Design QA/QC

Design deliverables will undergo a process to ensure appropriate consideration of constructability, usability, reliability, maintainability, availability, operability, safety, cost, and aesthetics, and comply with requirements and standards. Ultimate responsibility for the quality of all design documents produced by the Developer rests with the Design Manager. Formal reviews will be conducted in accordance with the team's formal design process procedures as described in Chapter 2A of the Developers PMP.

Regularly scheduled design team meetings and utility coordination meetings will be held as directed by the Design Manager. TxDOT may be asked to perform informal reviews at any time during the life of the Project. The reviews are not hold points that restrict the progress of design, but give TxDOT the opportunity to provide comments and feedback, or simply to examine the progression of the design.

11.3.1 Plan Package Assembly Review

This review involves successively higher levels of responsibility, culminating with the Design Consultant Project Manager and Design Manager. It is the last technical review of a Released for Construction (RFC) design package before the Design and Construction Quality Manager (DCQM) examines it to formally certify its compliance with the PMP. This verification ensures that the package is complete, that all prior review comments have been incorporated therein, and that the package is suitable for RFC and submittal to TxDOT for acceptance. The DCQM will perform a QA audit to certify that plans, specifications, calculations, and design reports in each submittal at every design stage have been checked, reviewed, and properly signed off.

11.3.2 Formal Review by TxDOT/Federal Oversight/Stakeholders

Plans and specifications will be certified by the DCQM prior to being submitted for TxDOT and stakeholder review. Drawings and specification packages will be submitted for review and comment by TxDOT and affected local jurisdictions throughout the design process.

Comments resulting from the different reviews will be consolidated on "Review Comment Summary and Resolution" (RCSR) forms. Each comment will be reviewed and investigated by an appropriate senior engineer, who will formulate and record a response. After review of the response by the Design Manager, comments will be collated, copied, and distributed to the reviewers. A review comment resolution meeting will be held to achieve mutual agreement on the disposition of each review comment. The disposition method will then be entered into the RCSR sheets. The RCSR sheets will become part of the retained quality records and are examined in the QA audits.

11.4 Design Standards

The design proposed for the Project shall conform to Good Industry Practice and the design criteria in the CDA Documents.

12 Construction QA/QC

Developer will construct the work in accordance with the released for construction documents, following a reasonable timeframe for TxDOT review and comment, together with the relevant requirements and specifications of the CDA documents.

The Quality Objective of the Developer's QMP is to establish a document which will provide overall critical direction and support for the implementation and maintenance of all Construction QA/QC activities to be performed on this Project. The Quality System defines specific quality control and quality assurance activities applicable to construction. The Developer's approach to quality will foster a systematic, consistent and authoritative construction quality management program that will result in a completed project in accordance with the CDA, on schedule, within budget, and in conformance with the PMP

The construction QMP contains detailed procedures for the Developer's QA/QC activities. The Developer's construction operations must incorporate quality processes as part of its QMP, including planned and systematic activities by a party independent of the construction process. The Developer is to undertake all QA/QC and performance verification testing in accordance with the QMP and the requirements outlined in the CDA documents.

The IE QAP meets the requirements of the IH 635 CDA , the IE Agreement, the Supplemental Engineer Agreement and the WA#1 Exhibit B for a QAP for IE services. The IE QAP:

- Documents the Independent Engineer contractual requirements for the IH 635 Managed Lane project, and the procedures and instructions to meet these requirements (IE QAP Requirements Matrix)
- Defines the roles, responsibilities and competences of staff
- Defines the procedures and instructions used to audit, monitor, review and comment on the processes and procedures implemented by Developer to accomplish the Work; to assess quality; and report dually and independently to both Developer and TxDOT.
- Is based upon, and works in concert with, Developer's Project Management Plan (PMP), and is written to a similar level of detail as the PMP.
- Defines the internal quality control and quality assurance processes and procedures and instructions in accordance with the URS Quality Management System
- The IE QAP follows the guidelines of ISO 9001, ISO 14001, and OHSA 18001 and incorporates an integrated management system approach consistent with Developer's proposal commitments.

12.1 Acceptance Testing and Inspection

The testing of Materials and Workmanship will be performed in accordance with the Design-Build Contract, the CDA, and the Project specifications. The test frequencies will be performed in accordance with the TxDOT Guide Schedule of Sampling and Testing. Oversight by the IE and by TxDOT will be carried out in accordance with CDA, Book 1 Section 7.11. Product

conformity certificates and external test results are acceptable for showing the acceptability of the product material. All product conformity certificates and external test results will be kept as a quality record for proof that the material is acceptable. Inspections and test results will be documented and retained for proof of the results of the inspections and tests performed.

Inspection and testing will be conducted to ensure that materials, products, and services incorporated in the project are inspected, tested and/or certified by the suppliers or manufacturer, in accordance with contractual requirements, documented procedures, inspections, and test plans. In general, but not all inclusive, the procedures and forms will be tailored to confirm compliance with:

- Issued for Construction (IFC) Plans and Specifications
- CDA, Technical Provisions
- TxDOT 2004 Standard Specifications for Construction of Highways, Streets and Bridges
- TxDOT 2003 Material Inspection Guide
- TxDOT 2007 Guide Schedule of Sampling and Testing

The construction team will perform daily inspections of the Construction Work items to verify the Construction Work conforms to IFC documents and the requirements of the CDA Technical Provisions. The QA staff will coordinate acceptance inspections and tests by internal/external Laboratories and LBJIG oversight. OVT performed by TxDOT/IE will be also coordinated with LBJIG's and the TI's QA Team. Inspection procedures will generally follow the TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (2004), and the responsibilities for this control will be established as a Hold Point. Test methods and frequencies will be in accordance with TxDOT's Guide Schedule of Sampling and Testing (2007). The QA Team will perform the final acceptance inspections and tests. The Design & Construction Quality Manager has the authority to stop the work for any quality-related issue.

12.2 Control of Inspection, Measuring, and Test Equipment

Inspection, Measuring and Test Equipment (IMTE) is classified into two categories. The first category is non-precision field tools and instruments such as measuring tapes, rulers, weld radius gauges, and hand levels whose accuracy of measurement is considered adequate without calibration or controls. The Design-Build Contractor will monitor the condition of this equipment and the equipment will be replaced when the accuracy or function is affected by wear and tear.

The second category of IMTE is that equipment that is used to determine the acceptability of the characteristics of the Construction Work or installation of material. This includes most items of test equipment and survey equipment and may also be applied to non-precision items that are used in Quality Test Laboratory test methods. This equipment will be identified and controlled to ensure proper selection and use based on criteria such as type, range, accuracy and tolerances. The remainder of this section will deal with this second category.

This second category of IMTE normally requires calibrations at intervals specified by the user or a certified external agency. Calibration frequencies are established by the manufacturer, program requirements, or industry standards.

To establish and maintain an effective IMTE calibration program, devices will be identified and clearly marked. Calibrated IMTE will be stored and maintained in recommended environments.

IMTE is normally supplied with the manufacturer's verification of initial calibration. Devices such as compression testing machines, which require calibration prior to operation at a new location, will be calibrated prior to use.

Calibration procedures will comply with appropriate standards like AASHTO, American Society for Testing and Materials (ASTM), and TxDOT as well as the manufacturer's requirements.

External calibrations will be performed as required by the fabricator/supplier or to the CDA requirements. However, only qualified organization staff members may perform in-house calibrations; these internal calibrations will be performed as acceptable by the fabricator/supplier. The staff member performing the calibration will ensure the calibration is performed in accordance with the relevant procedure and to the environmental conditions that are as specified by the manufacturer or calibration procedure. At the completion of the calibration, the staff member will update the IMTE calibration log and attach a calibration label or sticker to the equipment that indicates the date calibrated and the next calibration due date. All externally performed calibrations will be traceable. External calibration may be performed at the project site or at a remote facility. Records of both internally performed and external calibration will be documented by the individual, the calibration date, and a reference to the applicable calibration required. These records will be maintained as a quality record.

The Developer's Design and Construction Quality Manager or his designee will maintain a calibration log or equipment checklist with the following information:

- Equipment make, model, and serial number
- Verification /Calibration frequency
- Date calibrated

12.3 Inspection and Test Status

The status of all inspections and test results will be monitored for all ongoing Construction Work by the Developer. The status of the inspections and test results will be discussed in the weekly meeting. A current assessment of the status of the work or material is whether the Hold Point(s), (when applicable) have been released for further processing. Any deficiencies will be identified to the Segment Manager, Subcontractor, and/or supplier. When necessary, the deficiency will be further documented by the issuance of a non-conformance report to the requirements of the Developer's PPM 1.9 included in the Developer's PMP.

12.4 Documenting and Correcting Deficiencies and Noncompliance Issues

A copy of all Quality reports will be maintained in the Developer's Document Control system. A summary of quality inspections and test reports will be transmitted through LBJIG to TxDOT/IE in an electronic format in the monthly report. However, the Design-Build Contractor will submit/upload these reports to LBJIG as soon as they have been internally processed. LBJIG will keep all the quality reports in LBJIG EDMS. A list of the quality records that the Design-Build Contractor will keep can be found in Chapter 2B, Appendix 1 of the Developer's PMP. This list contains the minimum quality records to be kept and will be updated during the design and construction progress. This list will be updated as needed to address any additional documents that need to be added.

12.5 Commencement of Construction

Construction commencement will not occur any later than 60 days after NTP2. However, the Developer will not begin construction activities until the following conditions have been satisfied:

- Submittal by Developer to TxDOT and approval by TxDOT of Developer's Project design schematic.
- Submittal by Developer to TxDOT and approval by TxDOT of Developer's modified WBS.
- Submittal by Developer to TxDOT and approval by TxDOT of Developer's Schedule of values.
- Joint inspection of the existing facilities, structures and environmentally sensitive areas in the vicinity of the site, but not included as part of the work.
- Submittal by Developer to TxDOT, at least 30 days in advance, a master plan for each TxDOT owned property.
- Submittal by developer to TxDOT and approval by TxDOT and FHWA of a Preliminary Operational Signing Schematic.
- Conducting an inventory by Developer of all existing sidewalks and footpaths.
- Submittal by developer to TxDOT of the Safety Plan.
- Submittal by Developer to TxDOT and approval by TxDOT, at least 60 days in advance, of the PICP.
- Submittal by Developer to TxDOT and approval by TxDOT of plans identifying the Auditable Sections.
- Submittal by Developer to TxDOT and approval by TxDOT of the Performance and Measurement Table.
- Submittal by Developer to TxDOT and approval by TxDOT of a Project Segment Plan.
- Occurrence of Financial Close or submittal by Developer of a written request to TxDOT to issue NTP2. Issuance of NTP2 authorizes Developer to perform all other Work and activities pertaining to the Project.

12.6 Construction Procedures and QA/QC

Construction policies and procedures will be in accordance with the CDA Documents, which includes guidance on the following topics:

- Project records (including traffic control);
- Control of work, including Project authority, proper work documents, surveying standards, and inspection standards;
- Control of materials (material quality);
- Changes to the contract;
- Dispute and claims resolution;
- Progress measurement and payment;
- Implementation of EPICs;
- Worker health and safety; and
- Implementation of the BOP.

13 Environmental Monitoring

Developer will comply with the requirements of the environmental commitments, CDA Documents, environmental laws, governmental entities, governmental approvals, and all applicable federal and state laws and regulations (environmental requirements). To that end, Developer shall develop, submit for TxDOT approval, operate, and maintain a Comprehensive Environmental Protection Program (CEPP) to ensure compliance with all environmental laws and commitments. The CEPP obligates the Developer to protect the environment and document the measures taken during the performance of the work to avoid and minimize impacts on the environment from the design, construction, maintenance, operation, and rehabilitation activities of the Project. The CEPP shall effectively demonstrate the Developer's comprehensive knowledge of the environmental scope as set forth in Book 2, and shall describe the processes that will be followed during the course of the work to comply with those environmental approvals, issues, and commitments and laws. All monitoring and reporting activities shall be concise, consistent throughout the term of the agreement as applicable to the activities being performed, and in accordance with the requirements set forth in the environmental laws.

The CEPP shall identify and describe the processes to manage EPICs consistent with the environmental approvals. The CEPP shall establish a goal of zero environmental violations during the performance of all work activities. However, should violations occur, the program will detail processes for rectifying such violations in an appropriate and timely manner. Developer shall monitor and document work activities to validate full compliance with the environmental requirements.

Throughout the work, the Developer shall perform all environmental mitigation measures required under the environmental approvals, including the NEPA Approval and similar governmental approvals for the Project, or under the CDA Documents, and shall comply with all other conditions and requirements of the environmental approvals in accordance with Section 4 of the Technical Provisions. This section further details the requirements and obligations regarding environmental compliance.

13.1 Environmental Approvals

The Project schematic is based on the TxDOT-provided approvals listed below. Such approvals may require re-evaluation, amendment, or supplement as the work progresses, or in order to accommodate actions not identified in the TxDOT-Provided Environmental Approvals or covered specifically by existing resource agency coordination. Changes to the Project schematic or incorporation of additional properties into the Project may require new environmental approvals. The Developer will be responsible for ensuring compliance with the conditions and schedules set forth in amendments to any TxDOT-provided approvals or new environmental approvals.

TxDOT-provided approvals are the following:

- EA: Loop 12 From Spur 408 to IH 35E and IH 35E From Spur 482 to IH 635, Dallas County, CSJ 0581-02-077 and 0196-03-137, February 2002;

- EA: Interstate Highway (IH) 635 From: Luna Road To: US 75, Dallas County, CSJ: 2374-01-068 and 2374-07-046, April 2004.
- "FONSI, Loop 12: From Spur 408 to I.H. 35E and I.H. 35E from Spur 482 to IH 635," December 11, 2002.
- "FONSI, U.S. 75/IH 635 Interchange," October 22 1993; supplemental Categorical Exclusion for additional HOV Facilities, April 1997; and Re-evaluation, January 31, 2001.
- "FONSI, IH 635 (LBJ Freeway – West Section): From Luna Road to U.S. 75," April 29, 2004.
- Re-evaluation of the EA and FONSI for the Loop 12 / IH 35E Corridor: From Spur 408 to IH 635, June 2008.
- FONSI Re-Evaluation, Interstate Highway 635 from Luna Road to US 75, June 2008.
- Categorical Exclusion, IH 635/US 75 Interchange, Operational Improvements, June 2008.

13.2 Comprehensive Environmental Protection Program

As part of the PMP, the Developer has developed and will implement a CEPP, applicable throughout the term of the agreement to establish the approach, requirements, and procedures to be employed to protect the environment and minimize design, construction, operation, maintenance impacts. All component parts shall reflect in order of priority: impact avoidance, minimization, and as a last resort, compensatory mitigation.

The Developer's CEPP includes the following:

- A compilation of ET resumes;
- Environmental Management System (EMS);
- Environmental Protection Training Plan (EPTP);
- Hazardous Materials Management Plan (HMMP);
- Communication Plan (CP);
- Recycling Plan (RP);
- Pollution Prevention (P2) Plan;
- Environmental Compliance and Mitigation Plan (ECMP); and
- Construction Monitoring Plan (CMP).

At this time, the Developer's design does not include a tunnel. If the Developer includes a tunnel in a change request, they will add a Tunnel Emissions Mitigation Plan as a component of the CEPP.

The CEPP shall satisfy applicable FHWA, TxDOT, and resource agency requirements, including those detailed as commitments in TxDOT-provided approvals, which are briefly discussed in Section 13.4.

13.2.1 Environmental Management System

The EMS provides a structured, documented approach to managing environmental performance and responsibilities. The EMS has been developed in accordance with ISO 14001:2004, which specifies requirements for establishing an environmental policy; determining the environmental impacts of products, activities and services; planning environmental objectives and measurable targets; implementing programs to meet objectives and targets; carrying out checking and corrective action; and conducting management reviews.

13.2.2 Environmental Protection Training Plan

The purpose of the Developer's EPTP is to encourage an attitude of commitment to the Project's environmental quality among all workers, supervisory personnel and management and to convey a commitment of zero tolerance for violations. The Developer's Environmental Training Staff (ETS) will educate workers on the environmental characteristics and sensitivities of the project area and focus on the environmental commitments made in the environmental approvals, permits and agreements. The EPTP will educate project personnel on their compliance responsibilities and what actions to take to minimize environmental impacts throughout construction, operation and maintenance of the Project.

13.2.3 Hazardous Materials Management Plan

The Developer's HMMP documents the processes and procedures for safe handling, storage, treatment, and disposal of hazardous materials encountered or brought onto the project site during performance of the work. The HMMP includes provisions for making all on-site workers aware of the potential hazardous materials to which they may be exposed.

The Developer shall manage, treat, handle, store, remediate, remove, transport and dispose of all hazardous materials and recognized environmental conditions, including contaminated groundwater, for which Developer is responsible under Section 7.9 of the CDA. Implementation and updates of this plan will be the responsibility of designated ET members.

13.2.4 Communication Plan

The CP will describe, in detail, the communication hierarchy for information distribution related to compliance with the CEPP. The CP will include names and contact information (including emergency contact information), and the preferred methods of routine and emergency communication distribution.

13.2.5 Recycling Plan

The RP shall document and fully detail the Developer’s commitment to recycling, waste minimization and the use of “green products” during all aspects of work. It will also include the Developer’s recycling initiatives, as well as methods and procedures for maximizing the use of recycled materials in all aspects of the work. If recyclable materials shall be used in lieu of TxDOT approved construction and maintenance materials, Developer shall follow the TxDOT specification DMS 11000.

13.2.6 Pollution Prevention Plan

A P2 plan is required und the Texas Waste Reduction Policy Act of 1991 (30 TAC 335), if the Developer is classified as either a large quantity generator or small quantity generator of

hazardous waste, or a conditionally-exempt small quantity generator if the Developer reports to the EPA on the Toxic Release Inventory Form R.

13.2.7 Environmental Compliance and Mitigation Plan

The ECMP establishes schedules, protocols, and methodologies to be used for the work including requirements for monitoring, reporting, corrective action and adaptive management. it fully details mitigation requirements contained in the governmental and TxDOT-provided approvals and provides a method for monitoring, documenting, evaluating and reporting environmental compliance during construction. In addition, the ECMP includes the following:

- Compliance Action Plan (CAP) – defines the triggers for initiating environmental compliance actions including noise mitigation measures;
- EPIC Sheets - identifies applicable permits and environmental commitments including those required to ensure that any discharge from the Project site into a sanitary sewer system complies with appropriate codes and standards of the sewer owner.
- Standard Operating Procedures for the following activities:
  - Controlling dust during construction;
  - Mitigating vibration during construction;
  - Mitigating light intrusion on adjacent properties; and
  - Complying with jurisdictional waters and wetlands permit.
- Procedures to comply with the Environmental commitments provided in the TxDOT-provided approvals.

13.2.8 Construction Monitoring Plan

The Developer's CMP identifies times, locations, and other conditions where monitoring of construction activities are to be performed to maintain and cause compliance with environmental laws, environmental approvals, and the CDA Documents. The CMP establishes and/or documents schedules, protocols and methods to be used for monitoring work with an emphasis on timely reporting, corrective actions and adaptive management. Should any non-compliance or violation be observed that represents an imminent danger to human health or the environment, the CMP includes procedures to cause immediate notification of TxDOT.

The CMP includes the following provisions: Prior to NTP2, the Developer and TxDOT shall jointly inspect existing facilities, structures, and environmentally sensitive areas in the vicinity of the site but not included as part of the work. The Developer shall provide a minimum two-week advance notice to TxDOT of this joint inspection. This inspection shall document the pre-construction condition of vegetation, streets, sidewalks, landscaping, residential and commercial property, creeks, storm drainage and infrastructure. The purpose of the inspection is to provide a point of reference from which TxDOT can determine if any facility, structure and environmentally sensitive area damaged during the work is restored to its pre-construction condition. The Developer shall document the inspection with a report that shall include photographs, sketches, maps and narratives clearly depicting the pre-construction site condition.

The post award inspection shall inspect the municipal separate storm sewer system located within and adjacent to the site. Specific deficient items to be noted are listed in Book 2A, Section 4.3.6. Following construction of the Project, the Developer shall conduct a yearly inspection to monitor and repair deficiencies in the storm water system.

13.3 Environmental Personnel

The Developer, acting through the Environmental Compliance Manager (ECM), shall designate an ET to prevent, minimize, and/or correct any violation of or noncompliance with Environmental Approvals. Environmental personnel shall include the following:

- Environmental Compliance Manager:
  - The Developer shall designate a full-time ECM for the work. The ECM shall report and coordinate all issues directly with TxDOT and the Developer's Project Manager. The ECM shall be an employee of an independent firm not affiliated with the Developer. The Developer shall not have the ability to relieve the ECM of his or her duty without the written consent of TxDOT. The ECM's experience shall meet the requirements listed in Book 2A, Section 4.4.1.
  - The ECM shall immediately report any violation or non-compliance to TxDOT and the Developer, and shall include with the report the appropriate recommendations for corrective action including stoppage of work.
  - The ECM shall coordinate with TxDOT, the Developer, and appropriate governmental entities. The ECM shall submit all necessary environmental documentation and monitoring reports to the appropriate governmental entities and, when applicable, through TxDOT to the extent necessary to maintain compliance with applicable environmental approvals.
  - The ECM shall be responsible for selecting the ETS.
- ETS:
  - Under the direction of the ECM, the ETS shall develop, schedule, and conduct environmental awareness and environmental compliance training for the Developer's personnel including the Environmental compliance Inspectors.
  - ETS members shall have at least one year of experience providing environmental compliance inspection for urban freeway construction.
- Environmental Compliance Inspectors (ECI):
  - The ECIs shall conduct on-site environmental monitoring, prepare documentation, and report daily to the ECM all violations, compliance, and noncompliance with Environmental Approvals. The ECIs shall immediately report any violation or non-compliance to the ECM, and shall include with the reports the appropriate recommendations for corrective action, including stoppage of work.
  - ECIs shall have at least one year operational control experience of storm water pollution prevention plan (SW3P) activities.

- Cultural Resource Management Personnel:
  - The ECM shall designate an archeologist, architectural historian, historian, and historical architect to provide expertise in monitoring impacts to cultural resources during the course of the work.
  - The ECM shall designate personnel in the event that a need arises for renewed activities to comply with cultural resources laws.
- Natural Resource Biologist:
  - The ECM shall designate a Natural Resource Biologist to provide expertise in monitoring impacts on wildlife and the natural environment during the course of the Project.
  - The ECM shall designate personnel in the event that a need arises for renewed activities to comply with natural resources laws.
- Water Quality Specialist:
  - The ECM shall designate a water quality specialist to provide expertise in permitting delineation, SW3P, and the protection of jurisdictional waters during the course of the work.
  - The water quality specialist shall have verifiable experience implementing SW3P in the State of Texas and be able to demonstrate a working knowledge of National Pollutant Discharge Elimination System (NPDES) requirements applicable to the Project.
- Hazardous Materials Manager (HMM):
  - The ECM shall designate a HMM to provide expertise in the safe handling of hazardous materials required to perform the work and those that may be discovered/impacted during the duration of the agreement.
  - The HMM shall have verifiable leaking petroleum storage tank investigation and remediation experience within the State of Texas and meet the experience requirements listed in Book 2B, Section 4.4.7.
  - Regarding hazardous materials, the HMM is responsible for training, verifying employee certifications, maintaining records of all incidents, and notifying the ECM, TxDOT and appropriate authorities in writing of such incidents.

13.4 NEPA Approval and Commitments

The Project schematic is based on the granted NEPA approvals as discussed in Section 2.2 and listed in Section 13.1. Because the Loop 12/IH 35E and the U.S. 75/IH 635 Interchange NEPA documents include scope that is outside of the Project limits, only the environmental commitments associated with the Project limits are summarized in the following subsections.

Additionally, the CMP includes the provision for Developer and TxDOT to jointly inspect existing facilities, structures, and environmentally sensitive areas in the vicinity of the site but not included as part of the Work, prior to NTP2. If the Developer damages or impacts any of these, the Developer is responsible for restoring them to their pre-construction condition. Refer to Section 13.2.8 for additional details.

13.4.1 Threatened/Endangered Species, Vegetation and Wildlife Habitat

No threatened or endangered plant species have been identified within this portion of Dallas County. According to the investigation performed, it was also determined that there are no native prairie remnants that would be impacted by the proposed project.

TxDOT shall be responsible for mitigation of unregulated woodlands identified in the EA documents. In the IH 635 West Section EA, three wooded areas were identified within the project ROW. A total of approximately 5.52 acres of trees ranging in size from saplings to 36 inches diameter breast height would be impacted by the project. Woodland impacts will be compensated at a 1:1 ratio. A complete Tree Mitigation Study is on file with the TxDOT Dallas District Office. Additional details concerning wooded areas located along the project corridor are provided in **Chapter IV, Section J of the 2004 EA**.

In accordance with Provision (4)(A) (ii) of the TxDOT – Texas Parks and Wildlife Department (TPWD) Memorandum of Understanding (MOU) and at the TxDOT District's discretion, habitats given consideration for non-regulatory mitigation during project planning would include:

- Habitat for Federal candidate species if mitigation would assist in the prevention of the listing of the species.
- Rare vegetation series (Sl, S2, or S3) that also locally provide habitat for a state-listed species.
- All vegetation communities listed as S1 or S2, regardless of whether or not the series in question provide habitat for state-listed species.
- Bottomland hardwoods, native prairies, and riparian sites.
- Any other habitat feature considered to be locally important.

TxDOT would try to minimize the loss of vegetation by preserving as many trees as possible. The area around the IH 35E/IH 635 interchange was originally considered to be the first choice for on-site mitigation, but because of the number of trees involved, TxDOT is considering other options for non-regulatory mitigation. An alternative being considered is a mitigation bank with the City of Dallas which would plant the trees within the city limits. TxDOT will coordinate with TPWD per the TxDOT-TPWD MOU to ensure the commitments are met.

If any State-listed species or unregulated habitat is encountered during performance of the work, the Developer shall mitigate according to the EAs within the IH 35E/IH 635 interchange or other TxDOT approved sites.

13.4.2 Floodplains

Within the Project limits, IH 635 crosses four areas which have been established as 100-year floodplain areas by the Federal Emergency Management Agency (FEMA). The floodplain areas are located where IH 635 crosses the following waterways:

- Farmers Branch Creek - (Flood Insurance Rate Map (FIRM) Map Number 48113C 0170J panel 170 of 725 - August 23, 2001). (Originally referred to as Rawhide Creek in IH 635 EAs)

- Tributary of Farmers Branch Creek - (FIRM Map Number 48113C 0170J panel 170 of 725 - August 23, 2001). (Originally referred to as Farmers Branch Creek between Luna Road and IH 35E in IH 635 EAs)
- Cooks Branch - (FIRM Map Number 48113C 0170J panel 170 of 725 - August 2001).
- White Rock Creek between Hillcrest Road and Park Central Road (FIRM Map Number 48113C 0195J - August 23, 1991). (Originally referred to FEMA Map Number 480171 in IH 635 EAs)

The hydraulic design of the proposed roadway improvements will be in accordance with the current TxDOT and FHWA policy standards, including the subsurface roadway sections. The Project will permit the conveyance of design year flood without causing damage to the roadway or adjacent properties. The proposed project will not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. If during the performance of the work, there are impacts to the Trinity River Regulatory Zone, the Developer shall be responsible for obtaining a Corridor Development Certificate (CDC) as required from the local floodplain/CDC administrator for any development within the Trinity River floodplain designated as a regulatory zone.

The Developer will coordinate with the regulatory agencies to obtain all water-related permits required for construction of the Project. The Developer will also provide to the local flood plain administrators all information and technical data needed to obtain Letters of Map Revision (LOMR) from the FEMA.

The Developer shall model FEMA flows in order to meet the National Flood Insurance Program criteria and requirements. However, the Developer must size structures based on flows determined in accordance with the requirements of Book 2A Section 12.3.1.2.

The depressed managed lanes drainage systems shall prevent flooding, shall not contribute to flooding of other Project elements, and shall meet the requirements of Section 12.

13.4.3 Waters of the U.S., Including Wetlands

The Developer is responsible for documenting how they will comply with the terms and conditions for Section 404 permit(s) TxDOT by the U.S. Army Corps of Engineers (USACE) and associated Section 401 State Water Quality Certification(s) as administered by the TCEQ as well as any additional Section 404 permits and 401 certifications issued to the Developer during the life of the Project. The Developer's ECMP will include the following:

- Processes for training personnel to recognize jurisdictional waters;
- Process for communicating the terms and conditions of all USACE 404 permits and TCEQ 401 certifications;
- Procedures for carrying out any required mitigation;
- Procedures for handling off-ROW Project Specific Locations (PSL) as required by all Section 404 permit(s) issued to either TxDOT or the Developer by the USACE.

The Developer shall undertake and be fully responsible for all the obligations of TxDOT identified in the March 4, 2009 letter from the Fort Worth District, USACE authorizing Nation Wide Permit (NWP) 14, "Linear Transportation Crossings" and the February 5, 2009 USACE NWP Preconstruction Notification (PCN) (Revised) including obtaining extensions and reauthorizations. The authorization of the construction activities under this NWP is valid until March 18, 2012.

As identified in the NWP 14 PCN, the Project includes seven crossings of waters of the U.S., which included two intermittent streams, five ephemeral streams and five herbaceous wetlands. Maps of these waters are provided in the NWP 14 PCN. The waters of the U.S. associated with the seven crossings are subject to USACE jurisdiction under Section 404. All crossings involving streams will be bridged or routed through culverts so as to prevent flow restriction.

Each separate crossing meets the requirements to be authorized by NWP 14, Linear Transportation Projects, with each crossing constituting a single and complete project. Of the seven crossings, three would be considered for authorization under NWP 14 without PCN- However, four of the crossings would involve discharge of fill materials greater than 0.10 acre of waters of the U.S. and/or include impacts to wetlands. Therefore, these four crossings necessitate the submittal of the PCN. Only the crossings requiring PCN are described in detail in the NWP 14 Authorization.

The USACE authorization of the NWP 14 PCN included special conditions. The NWP 14 PCN requires that the Developer purchase 4.4 credits from the Trinity River Mitigation Bank. The Developer shall complete the mitigation bank credit purchase and provide documentation to the USACE that the purchase has occurred prior to commencing any ground-disturbing activity within waters of the U.S. The Developer shall submit to the USACE any design changes that result in an increase in impacts to a water of the U.S. of more than 1/10 acre, an increase in impacts that exceed that 0.5-acre limit of NWP 14, or those that include a change in type water of the U.S. The Developer shall submit those design changes prior to construction of those crossings and receive approval from the USACE before proceeding. Additional conditions are provided in the USACE authorization.

The Developer is responsible for obtaining any additional permits required for impacts to jurisdictional waters not identified in the NWP 14 PCN mentioned above.

13.4.4 Water Quality

As a component of the Developer's ECMP, the Developer will document how they will comply with the TCEQ, Section 402: Texas Pollutant Discharge Elimination System (TPDES), General Permit for Construction Activity. The Developer's ECMP at a minimum will include the following:

- Process for training personnel on the requirements and conditions of the Texas Construction General Permits for Storm Water Discharges from Construction Sites (CGP);
- Procedures for incorporating additional properties outside the original NEPA approved schematic and any off- ROW PSL within one linear mile of the project limits to comply with the CGP and the project's SW3P;

- Procedures for handling non-compliance issues;
- Escalation procedures for SW3P items.

The Developer is responsible for submitting a Notice of Intent (NOI) to TCEQ and will have a SW3P in place prior to the initiation of grading activities. The SW3P will be based on best management practices (BMPs) and include techniques to reduce the amount of total suspended solids form entering streams. In addition, the Developer is responsible for complying with the specifications and conditions provided in the NWP 14 USACE authorization and shall ensure that appropriate steps are taken to control water pollution throughout the construction work and operating period and shall ensure that appropriate steps are taken to control water pollution throughout the construction Work and operating period.

The Developer shall complete preliminary design of the stormwater storage facilities to meet requirements for water quality, water quantity, and rate control, as determined by the Texas NPDES regulations. Local requirements, if more stringent, shall be handled with a third party agreement.

13.4.5 Hazardous Materials

A re-evaluation of the Limited Phase I Environmental Site Assessment was performed for the project. Results of this assessment are summarized herein. The regulatory agency database listed 310 sites within their respective ASTM search radii. Of these sites listed, 49 were determined to have the potential to contaminate groundwater at the subject corridor. The 49 sites were identified as sites with documented or probable contamination of groundwater.

After further review, the identified 49 sites were ranked according to the level of risk posed to the subject corridor. Seven sites were determined to be of moderate risk and the remaining 42 sites were determined to be of low risk. Refer to Figure 1 in the Expanded Phase I Re-evaluation, November 2007, for Map ID locations. The sites determined to be of moderate risk all involved spills and are as follows:

- Southbound IH 35E 500 ft past Valley View exit (Map ID 13), Dallas, TX due to potential groundwater contamination as a result of a 30 gallon diesel spill in 1998.
- IH 635 and Coit Road (Map ID 11), Dallas, TX due to potential groundwater contamination as a result of an 800 gallon gasoline spill in 1995.
- IH 35E and Valley View Lane (Map ID 9), Dallas, TX due to potential groundwater contamination as a result of a 100 gallon diesel spill in 1998.
- Admiral Merchant Motor Freight (Map ID 1) IH 35E just south of IH 635, Dallas,
- TX due to potential groundwater contamination as a result of a 50 gallon diesel spill in 1998.
- McClendon Trucking Company (Map ID 6), E LBJ Freeway at Josey Lane Exit, Dallas, TX due to potential groundwater contamination as a result of a 200 gallon diesel oil spill in 1998.
- Flint, Inc. (Map ID 6), E LBJ Freeway at Josey Lane Exit, Dallas, TX due to potential groundwater contamination as a result of a 50 gallon solvent ink spill in 1998.

- US Fleet Services (Map ID 2), IH 35E and Valwood Pkwy, Farmers Branch, TX due to potential groundwater contamination as a result of a 100 gallon diesel spill in 1998, a 60 gallon diesel spill in 1990, a 46,000 lb calcium lignosulfate spill in 1992, a 100 gallon diesel spill in 1994, and a 200 gallon diesel spill in 1998.

Groundwater levels throughout the corridor are widely variable and frequently fluctuate therefore, only groundwater depths at the time of construction are useful in determining the potential risk of contaminated groundwater to activities at the subject corridor.

The identified regulatory sites are located along existing IH 635, IH 35E, and US 75. Further assessment and investigation, if needed, is addressed in the Developer's HMMP.

TxDOT shall compensate Developer for 50% of Developer's reasonable out-of-pocket costs and expenses directly attributable to the handling, transport, removal and disposal of Pre-existing hazardous materials encountered by Developer (the "total chargeable Hazardous Materials costs") that exceed $6,000,000 (the "Hazardous Materials Allowance") but do not exceed $12,000,000, and 100% of the total chargeable hazardous materials costs that exceed $12,000,000.

13.4.6 Traffic Noise

The IH 635 2004 EA approved thirteen noise walls to mitigate noise impacts. The 2008 IH 635 FONSI Re-evaluation included revised noise modeling to account for design modifications and 2030 traffic data. As a result of the re-evaluation, one new noise wall between Ridgeview Circle and Hillcrest Road along the westbound frontage road (2008 IH 635 FONSI Re-evaluation, NW No. 13) was proposed.

The IH 635 revised noise models indicated that there would be no additional impacts to receivers and that the noise walls recommended by the IH 635 2004 EA were still reasonable and feasible. Any subsequent project design changes might require a reevaluation of this preliminary noise barrier proposal. The final decision to construct the proposed noise barriers would not be made until completion of the project design, utility evaluation, and polling of adjacent property owners. Land use activities in the areas along the sections of IH 35E and Loop 12 within the Project limits currently consist of retail, commercial and undeveloped land. Therefore, no noise receivers that would be impacted by traffic noise and benefit from feasible and reasonable noise abatement measures.

As a component of the ECMP, the Developer shall document how they will address traffic noise mitigation. The documentation at a minimum shall include:

- Process for carrying out noise mitigation measures as identified and discussed in the approved NEPA document and schematic;
- Process for carrying out noise mitigation measures determined throughout the life of the project;
- Process to handle changes that may occur to proposed permanent noise mitigation in the approved NEPA document and schematic.

The Developer will construct the noise walls in the early construction phases of the Project to help minimize construction noise. Prior to initiating construction work on any portion of frontage roads, managed lanes or general purpose lanes located in the vicinity of a portion of a required noise wall, the Developer shall construct the said portion of required noise wall. The NEPA document states that provisions will be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work hour controls and proper maintenance of muffler systems.

13.4.7 Historic Structures and Archeological Sites

The Developer is responsible for ensuring for ensuring compliance with cultural resource Laws on the Project through the Term. TxDOT shall perform consultation for the Project according to current procedures for implementing Section 106 of the National Historic Preservation Act, and the Antiquities Code of Texas. Developer shall document efforts to avoid impacts to cultural resources. that are listed on or eligible for inclusion in the National Register of Historic Places (NRHP), or that are designated as State Archeological Landmarks.

A review of the NRHP, lists of Recorded Texas Historic Landmarks, State Archeological Landmarks, and Texas Historic Sites Atlas revealed no historic-age properties have been previously designated or recorded within the area of potential effects (APE), which for this project is 150-feet beyond the proposed ROW. This 150-ft APE was approved through coordination with the TxDOT Environmental Affairs Division (ENV). The project was previously coordinated with Texas Historical Commission (THC) in December 2001 with a finding of no historic properties present in the 150-ft APE (Appendix F in the April 2004 EA). Design changes presented in the re-evaluated NEPA documents will not alter the original findings pertaining to historic structures. However due to these design changes, this project was coordinated in-house on August 7, 2007 in accordance with the 2005 Programmatic Agreement (PA) between TxDOT, FHWA, THC, and the Advisory Council on Historic Preservation (ACHP). The result was a finding that no historic properties are present in the APE.

If evidence of a possible historic property is encountered during the course of the work, Developer will immediately cease work in the immediate area and contact TxDOT to initiate post-review discovery procedures under the provisions of the PA among TxDOT, State Historical Preservation Office (SHPO), FHWA, and ACHP as well as the MOU between TxDOT and the THC. Developer will take appropriate measures to protect the site from further intrusion to the extent feasible until an appropriate evaluation of the site can be made by a qualified representative. Work will not be resumed in the area until Developer receives notification and approval from TxDOT.

The proposed project was evaluated by TxDOT archeologist and it was concluded that the Project did not warrant a survey and warranted no further work on May 17, 2007. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease and TxDOT archeological staff will be contacted to initiate post-review discovery procedures under the provisions of the PA and Memorandum of Understanding (MOU).

13.4.8 Socio-Economic Impacts

The IH 635 2004 EA included displacements of 23 business facilities and 66 businesses and the 2008 IH 635 FONSI Re-evaluation included no additional displacements. Besides the displaced businesses, no other commercial businesses would be adversely affected by this project because current access would be maintained during and after construction. Reasonable measures would be taken to minimize inconvenience to the vehicles using the facility during the construction phase.

According to the Loop12/IH 35E 2002 EA, the proposed improvements along IH 35E and Loop 12 required displacement of 20 businesses. TxDOT is responsible for acquiring the ROW and relocating property owners.

13.4.9 Community Cohesion

The proposed project would not affect, separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups because the proposed project would only be an expansion of an existing roadway. Access would be maintained and traffic signals would accommodate pedestrian crossings.

The Developer's design shall accommodate existing and proposed bikeweb and veloweb facilities published by the North Central Texas Council of Governments. The Joe Ratcliff walkway reconstruction may be stopped on a continuous basis for a maximum period of 3 months, to coincide with summer break from schools.

13.4.10 Public Facilities and Services

Utility relocation/replacement plans would be prepared in accordance with the CDA Documents. The purpose of such a plan would be to reduce and eliminate the extent and duration of possible utility impacts during construction, with particular emphasis on minimizing service interruptions. Recommendations within the plan would be incorporated into the construction phase of the project where possible to facilitate overall project timing.

13.4.11 Aesthetic Considerations

Aesthetic values for the area have been emphasized in the design of this Project. Moreover, TxDOT would design and promote construction practices that minimize adverse effects on existing vegetation. It is a TxDOT policy to construct pleasing roadways to blend with the aesthetic quality of the area. The proposed improvements are expected to blend with the character of the community. With few exceptions, the Project involves the incorporation of depressed sections resulting in a minimal visual impact to the adjacent area.

The Developer will provide a roadway corridor with continuity and an aesthetic scheme that is comprehensive and thorough. The cost of the aesthetic and landscaping elements will not be associated with standard construction cost and shall not be less than ten million dollars. The aesthetic and landscaping elements will be detailed in the Aesthetic and Landscaping Plan.

The Developer's Aesthetic and Landscaping Plan will include additional trees and greenery at the IH 635/IH 35 and IH 635/DNT interchanges, as well as special overhead sign column

supports, hardscape and landscape improvements at cross streets and special fencing on structures at cross street overpasses.

13.4.12 Invasive Species and Beneficial Landscaping

Permanent soil erosion control features would be constructed as soon as feasible during the early stages of construction through proper sod and/or seeding techniques. Disturbed areas will be restored and stabilized as soon as the construction schedule permits and temporary sod will be considered where large areas of disturbed ground would be left bare for a considerable length of time. Book 2A, Section 4.3.2 requires the Developer to restore and stabilize disturbed areas in accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with seeding specifications that are in compliance with Executive Order 13112. Moreover, abutting turf grasses within the ROW are expected to re-establish throughout the Project length. Soil disturbance will be minimized to ensure that invasive species will not establish in the ROW.

13.4.13 Prime, Unique, and Special Farmland Impacts

The Project area is within a developed, urbanized, or zoned for urban use (municipal and commercial) corridor, and no prime or unique farmland would be affected by the proposed Project. Therefore, the Project is exempt from the requirements of the Farmland Protection Policy Act and requires no coordination with the Natural Resources Conservation Service.

13.4.14 4(f) Properties

The proposed Project will not require the use of nor substantially impair the purposes of, any publicly-owned land from a public park; recreational area; wildlife and waterfowl refuge lands; or historic sites of national, state, or local significance; therefore, a Section 4(f) Evaluation is not required.

Four public parks are adjacent to the Project area: Morning Star Park, Kerr Park, Valley View Park, and Anderson Bonner Park. The proposed Project does not require any additional ROW from these parks. Access and park use will not change. The bike trail connecting Anderson Bonner Park and Valley View Park would be retained.

The Developer is required to maintain and keep operational all bicycle and pedestrian facilities during construction and throughout the Term of the Agreement. In addition, the Developer's design will accommodate existing and proposed bikeweb and veloweb facilities published by the NCTCOG. The Developer’s facilities shall meet the requirements of the AASHTO Guide for the Development of Bicycle Facilities.

14 ROW Acquisition

14.1 ROW Acquisition Process

TxDOT has acquired the necessary ROW to construct the approved schematic. If during the detailed design and construction it is determined that minor additional ROW is required, then the Developer is responsible for the acquisition and must meet the requirements of the CDA documents. The Developer's ROW Acquisition Management Plan is described Chapter 7 of their PMP, which simply outlines the major ROW process and procedures. If additional properties are identified during the detailed design phase, they will further develop the necessary procedures to comply with Texas laws, CDA requirements, TxDOT ROW Manual, and the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) and will update their plan in accordance with Section 7.2.3 of Book 2B of the CDA Documents

14.2 Utility Adjustments

The Developer, as part of their CDA contract, will be responsible for relocating all utilities within the Project limits, necessary to accommodate construction, operation, maintenance and/or use of the Project in its initial configuration and the future construction shown on the Loop 12/IH 35E Schematic and the LBJ West Section Environmental Schematic in the RID. The Developer will manage the utility adjustment process as defined in the CDA Documents, FHWA's Alternate Procedures, and Utility Accommodation Rules.

According to the CDA documents, the Developer is responsible for obtaining the cooperation of the each utility owner as necessary for utility adjustments. If the Developer is unable after diligent efforts to reach an agreement with a utility owner, they may request TxDOT's assistance to obtain cooperation form the utility owner.

15 Safety and Security

The Developer will be responsible for the safety of its personnel and of the general public affected by the Project. The Developer has submitted to TxDOT for approval a comprehensive safety plan ("Safety Plan") that is consistent with and expands upon the preliminary Safety Plan submitted with the Proposal. The Developer is required to take full account of the unique attributes of this Project in preparing the Safety Plan, including, but not limited to, the highly urban environment, the heavy traffic conditions, potentially extensive subsurface construction and facilities, and the size and scope of the Project and those affected by it. The Safety Plan shall fully describe the Developer's policies, plans, training programs, work site controls, and incident response plans to ensure the health and safety of personnel involved in the Project and the general public affected by the Project during the term of the agreement. Book 2A Section 24.2.3 outlines in detail the requirements of this plan.

The Developer shall have a Safety Manager and onsite shift safety representatives who will implement, maintain, and enforce the Safety Plan rules and policies. The Developer's Safety Plan defines the roles and responsibilities of the Safety Manager and the safety staff, the hierarchical relationship between the Safety Manager and other managers, supervisors, and employees, and how responsibility and accountability for safety will be incorporated at all levels.

As part of the Developer's Operations Management Plan (OMP), a comprehensive Incident Management Plan (IMP) shall be developed and documented to ensure that the Developer has considered planned, addressed and trained for all likely natural and man-made events or situations that are Incidents or Emergencies, and has established protocols, procedures, and guidelines to mitigate the impacts and respond to and recover from such events. An Incident is defined as any unplanned event within the Project Right of Way that causes potential or actual disruption to the free flow of traffic. An Emergency is any unplanned event within the Project Right of Way that:

- Presents an immediate or imminent threat to the long term integrity of any part of the infrastructure of the Project, to the Environment, to property adjacent to the Project or to the safety of Users or the traveling public;
- Has jeopardized the safety of Users or the traveling public; or
- Is recognized by the Texas Department of Public Safety as an emergency.

Specific requirements of the IMP are detailed in Book 2A Sections 22.3.5 and 24.2.4.

The FSLSC was established in the proposal phase of the Project for the purpose of discussion, coordination and input regarding any aspect of Project safety and security. The Developer is required to continue to convene the FSLSC and the Developer's PMP outlines meeting schedules. One of the main objectives of the FSLSC is to establish and interactive forum whereby the Developer can receive input on design and procedural issues related to fire, security and life safety.

The Developer's design should demonstrate that all components of the Project can be safely constructed, operated, maintained, and demolished or decommissioned, backfilled and/or removed when no longer required. This requirement may be accomplished by means of a comprehensive risk assessment. Several specific design requirements are outlined in Book 2A Section 24.3. In general, they include requirements for fire suppression and fire alarm systems, emergency access and response time requirements, emergency services communications, fire protection, computer aided dispatch, railroad, commuter rail and light rail safety.

The Developer is also required to comply with the NCTCOG Hazardous Materials truck routes requirements. The Developer's OMP shall establish Hazardous Materials routing information. Hazardous Materials traffic will not be permitted on any part of the Managed Lanes system.

The Developer will design and specify all materials, components, software, and programming necessary to provide fully functional communication systems for Emergency response activities. Communications include, but are not limited to: AM/FM rebroadcast systems, two-way emergency response radio systems, and personnel telephone systems.

16 Traffic Management

16.1 General Traffic Management

During the operating period, the Developer will be responsible for the general management of traffic on the Project. Traffic will be managed to preserve and protect safety of traffic on the Project and adjacent transportation facilities and to the maximum extent possible, to avoid disruption and interruption. Developer shall prepare and implement a Traffic Management Plan (TMP) for managing traffic on the Project which will address:

- Orderly and safe movement and diversion of traffic on related transportation facilities during Project construction;
- Orderly and safe movement of traffic on the Project;
- Orderly and safe diversion of traffic on the Project and related transportation facilities necessary in connection with field maintenance and repair work or renewal work or in response to incidents, emergencies and lane closures.

The Developer will provide TxDOT and the IE sufficient time for review of, and comment on, the TMP. TxDOT retains the right to require revision and re-submittal of the TMP within a reasonable amount of time. TxDOT shall at all times have the right to issue directive letters to the Developer regarding traffic management and control (with which Developer shall comply), or directly assume traffic management.

The Developer is responsible for producing a traffic control plan for each and every phase of Work which impacts traffic and involves traffic control details. Each traffic control plan shall be submitted to TxDOT for review a minimum of 10 days prior to implementation. The traffic control plan shall include details for all detours, traffic control devices, striping, and signage applicable to each phase of construction. Information included in the traffic control plans shall be of sufficient detail to allow verification of design criteria and safety requirements, including typical sections, alignment, striping layout, drop off conditions, and temporary drainage. The traffic control plans shall clearly designate all temporary reductions in speed limits. Changes to posted speed limits will not be allowed unless specific prior approval is granted by TxDOT.

16.2 Lane Closure Guidelines

For planned lane closures and emergency lane closures, the Developer will coordinate lane closures that may affect crossing TxDOT facilities with appropriate TxDOT area offices to ensure no conflicts occur. The Developer will provide the advance notification of all lane closure notices to the appropriate TxDOT district and area office. TxDOT will provide appropriate contacts and information upon request.

Fourteen days prior to the publication of any notices of placement of any traffic control devices associated with lane closures, detour routing or other change in traffic control requiring lane closures (except routine closures of less than 24-hour duration), the Developer is to issue a Lane Closure Notice (LCN) to TxDOT and affected governmental entities. If the LCN affects a non-TxDOT controlled facility, the Developer must secure concurrence in writing from the

controlling governmental entity. Each LCN must outline the estimated date, time, duration and location of the proposed work.

If an emergency condition should occur, a LCN shall be provided to TxDOT within two days after the event. For non-TxDOT controlled facilities, the Developer shall immediately notify the controlling governmental entity. The Developer shall keep TxDOT informed of any and all changes or cancellations of proposed lane closures prior to the date of their implementation.

Details on traffic control plans and lane closures are documented in Book 2A Section 18.3.1. Lane rental by the Developer may be accomplished following Book 1 Section 3.4 of Exhibit 21.

17 Project Communication

TxDOT and the Developer view the Project communication strategy as important as its construction strategy. This is particularly the case in the DFW area, which has a well-informed and engaged group of transportation leaders and public. The Developer will not only be viewed as TxDOT's representative on this Project, but will also represent the concession as a model for future projects in the DFW area and around the State. The Developer is responsible for planning and implementing a proactive stakeholder/customer group outreach program to manage interactions with the public successfully and positively over the life of the Project. This will be outlined in the Developer's PICP. The Developer's public information and communication requirements are outlined in Book 2B Section 3 of the Agreement.

The purpose of the Developer's PICP is to inform, educate, and engage customer groups throughout the Project. The PICP focuses on a flexible and continuous system of communications and collaborative problem solving. In order to be successful, the Plan must be flexible and adaptable to changes in public opinion. The goal of the PICP will be the achievement of a generally positive attitude toward the Project by the customer groups. Customer group involvement and ongoing input to the PICP will be critical. The main principles governing the PICP are:

- Fostering full consultation and cooperation between all parties;
- Promoting a transparent and reliable information policy;
- Dealing with issues as soon as they occur and involving all concerned parties in discussions;
- Making non-confidential information available to interested parties upon request, along with sufficient explanatory documents as needed to enable proper consideration of the information;
- Assigning the necessary resources to allow communication to flow in a reliable and efficient way; and
- Ensuring that all personnel understand the importance of the Project's public image and training them accordingly.

The Developer will have a Public Information Office throughout the term of the Project. This office will have a readily available room or rooms capable of hosting community/stakeholder meetings. The room(s) shall be convenient for, accessible to, and facilitate attendance by Customer Groups. The Developer shall provide a 24-hour manned telephone response line during the design-build phase. Refer to Section 3 of Books 2A and 2B of the CDA for further public involvement and communication requirements.

18 Civil Rights Program

TxDOT's Office of Civil Rights is responsible for employee Title VII (Civil Rights Act of 1964) discrimination/nondiscrimination investigations, affirmative action and Title VI (Equal Employment Opportunity contract compliance). TxDOT follows the requirements of 49 CFR Part 26 (Participation by DBEs in Department of Transportation Financial Assistance Programs). The CDA documents require a DBE participation percentage goal of 12.12% of the total design work and other professional services dollars and 12.12% of the total planned construction dollars. The Developer shall exercise good faith efforts to achieve the goal for the Project through implementation of the Developers approved DBE Performance Plan.

19 Project Closeout Plan

The purpose of a project closeout plan is to define the contract closeout process to ensure that all specified work is completed in accordance with the contract, all record documents have been received, and all financial aspects of the contract are settled.

19.1 Completion of Construction Work

The Developer has substantially completed the construction work when the project is in a condition that it can be used for safe vehicular travel including a fully operable electronic toll collection system and subject only to punch list items. A punch list will be created for work which remains to be completed after substantial completion and before final acceptance. Specific requirements for substantial completion are outlined in Book 1 Section 7.8.

19.1.1 Submission of Quality Records

Within 90 days of a Project segment service commencement, the Developer will submit to TxDOT a complete set of record drawings for the Project segment opened to traffic. The record drawings and documentation shall be an organized, complete record of plans and supporting calculations and details that accurately represent what the Developer constructed. The Developer shall ensure that the record drawings reflect the actual condition of the constructed work. Within 30 days after undertaking any O&M work that result in a significant change to the Project, Developer shall update the record drawings to reflect such change.

19.1.2 Final Acceptance

After achieving substantial completion for each Project segment, the Developer will perform all remaining construction work for the project segment, including completion of all punch list items, all landscaping other than vegetative ground cover and aesthetic features. The Developer will prepare and adhere to a timetable for planting and establishing vegetative ground cover landscaping, taking into account weather conditions necessary for successful planting and growth. The timetable will provide for vegetative ground cover landscaping to be planted and established by 12 months after substantial completion for the Project segment. Final acceptance will occur when the events and satisfaction of all the conditions in Book 1 Section 7.8.4.2 are met and confirmed by TxDOT's issuance of a final acceptance certificate.

19.1.3 Payment of Public Funds

TxDOT will pay the Developer, as reimbursement pursuant to CDA Section 2.2.2 in the amount of $445,000,000 or as described in CDA Section 4.1.4.5. The Developer's achievement of financial close is a condition precedent to the Developer receiving compensation.

The Developer will submit draft payment requests to TxDOT and the IE at a maximum frequency of once every three months. The payment request will include a list of completed payment activities, the three corresponding progress reports for the period covered by the payment request and a certificate and supporting documents. Requirements for draft payment requests are described in detail in Exhibit 7 Section 2 of the CDA.

Payment request review and progress status meetings with TxDOT and the IE will be scheduled within seven days after draft payment request submittal. These meetings will address activity schedules, total payment earned, incorporation and summary list of approved change orders, critical path analysis, list of considerations and concerns. Upon approval by TxDOT, TxDOT and the Developer will sign the draft payment request indicating that it has been approved.

Within seven days after each payment request review meeting, the Developer will submit to TxDOT the payment request based on the approved draft. Within 30 days after receipt by TxDOT of each complete payment request, TxDOT will pay the Developer subject to the maximum payment curve established in the CDA Exhibit 7 Section 4.4.

19.2 Handback

The Project will be transferred to TxDOT at the end of the term of the Agreement. At least 60 months before the anticipated Termination Date, the Developer shall prepare a Handback Plan that contains the activities to be undertaken to meet the Handback Requirements at the end of the Term of the Agreement. Developer shall submit the Handback Plan, including a Residual Life Methodology Plan, to TxDOT for review and approval. The Required Final Residual Life shall be in accordance with the requirements specified in Book 2B Table 19-2.

The Developer and TxDOT will conduct inspections of the Project at the times and according to the terms and procedures specified in the Handback Requirements. These inspections will verify residual lives, estimate costs of renewal work and establish timing of renewal work. TxDOT will verify that that the renewal work has been properly performed and completed in accordance with the Handback Requirements. Beginning five full calendar years before the end of the term, the Developer will be required to fund the Handback Requirements Reserve so that it is funded according to the schedule and amounts required under CDA Exhibit 14. If the Developer is unable to complete the renewal work prior to the Termination Date, TxDOT may utilize the funds in the Reserve account to complete the work. Section 8.11 of Book 1 details the procedures surrounding use of the Handback Requirement Reserve account.

20 Project Documentation

As discussed in Section 8.1, the Developer is responsible for keeping and maintaining all project related documents. This includes Project ROW, utility adjustments or work, including copies of all original documents delivered to TxDOT. Project documents must be kept and maintained by the Developer in accordance with the CDA documents including Attachment 1 to Exhibit 8 and Books 2A and 2B, Section 2.1.2, the Texas State Records Retention Schedule, and the Developer's PMP or if not addressed in these documents, for a minimum of five years after the date the record or document is generated. Records which relate to claims and disputes or actions brought under the dispute resolution procedures, litigation, or open records request cannot be destroyed until the actions are finally resolved.

For all project related documents internal to TxDOT, the Texas State Records Retention Schedule will be followed, or if not addressed in this document for a minimum of five years after the date the record or document is generated. Non-record copies may be destroyed without formality once their purpose has been served.

This PMP will be reviewed and updated regularly and at least annually. Subsequent revisions will be issued either as addendum sheets or revised publication. Each revision will be noted on the cover page of the PMP.

21 Operations and Maintenance

The O&M obligations and requirements are defined in the CDA documents, specifically in Book 1 Section 8, and Books 2A and 2B, sections 19 and 22. The Developer will operate and maintain the Project from the Operating Commencement Date that first occurs to 52 years after the Effective Date which occurred on September 4, 2009.

21.1 Maintenance Management Plan

The Developer is responsible for O&M of the Project, including the existing elements during the design-build phase. The Developer's Maintenance Management Plan (MMP) addresses the general maintenance obligations described below:

- Maintain the Project and related transportation facilities in a manner appropriate for a facility of the character of the Project.
- Minimize delay and inconvenience to users to the extent that the Developer is able to control users of related transportation facilities.
- Identify and correct all defects and damages from incidents.
- Monitor and observe weather and weather forecasts to proactively deploy resources to minimize delays and safety hazards due to heavy rains, snow, ice, or other severe weather events.
- Remove debris, including litter, graffiti, animals, and abandoned vehicles or equipment from the Project ROW.
- Minimize the risk of damage, disturbance, or destruction of third-party property during the performance of maintenance activities.
- Coordinate with and enable TxDOT and others with statutory duties or functions in relation to the Project or related transportation facilities to perform such duties and functions.
- Perform systematic Project inspections, periodic maintenance, and routine maintenance in accordance with the provisions of the Developer's MMP and Developer's Safety Plan.

The Developer is responsible for providing all resources necessary for the performance of all activities in the MMP. The MMP includes performance requirements, measurement procedures, threshold values at which maintenance is required, inspection procedures and frequencies, and subsequent maintenance to address noted deficiencies for each physical element of the Project, as described in Book 2B Section 19.4, including impacts to related transportation facilities. The MMP shall identify response times to mitigate hazards and permanently repair defects. The Developer shall differentiate response times for defects that require prompt attention due to immediate or imminent damage or deterioration and response times for other defects. The Developer shall update this plan as required, or at least annually.

The MMP includes procedures for managing records of inspection and maintenance activities, including appropriate measures for providing protected duplication of the records. Inspection and maintenance records shall be kept for the term of the CDA and shall be provided to TxDOT

at the time the Project is delivered to TxDOT, at either the expiration of the term or earlier termination of the CDA.

The Developer will be assessed Noncompliance Points and potential liquidated damages, as described in Book 1 Exhibit 21, for failure to operate and maintain the Project per the approved MMP.

21.2 Renewal Work

The Developer shall perform renewal work to maintain compliance with performance requirements outlined in the CDA Technical Provisions. Within ninety days after the end of each calendar year, the Developer will deliver to TxDOT and the IE a written report of the renewal work performed. The report shall describe by location each type of work performed, dates of commencement and completion, and the cost.

Not later than ninety days before the beginning of each calendar year, the Developer will prepare and submit to TxDOT and the IE for their review and comment either a revised renewal work schedule or a written statement that the existing renewal work schedule is to continue in effect without revision. At TxDOT's or the IE's request, the Developer and its O&M contractors shall meet to discuss the renewal work schedule. In the event of a dispute over a revision to the renewal work schedule, the current renewal schedule will remain in effect.

21.3 Operations Management Plan

The Developer is responsible for operations Work on each section from each Service Commencement to the Term of the Agreement. The Developer's Operations Management Plan (OMP) addresses the general operations obligations below:

- Employment and training of competent personnel to carry out all aspects of the OMP;
- Coordination of activities of other entities with interests within the Project limits;
- Monitoring the condition and operational performance of the Project;
- Incident response, management and reporting;
- Traffic operations restrictions, including periods of lane closure restrictions;
- Tolling integration with other tolling agencies;
- Standard operating and communication procedures for Emergency preparation, response, and recovery, including impacts from extreme weather conditions
- Planning and coordination with all affected Governmental Entities, including Emergency Services;
- Liaison with any Traffic Management Centers that TxDOT or other entities may establish;
- Analysis of vehicular accident patterns to identify safety issues and implement cost effective solutions to maximize safety;
- Identification, containment and disposal of Hazardous Materials spills;
- Prompt investigation of reports or complaints received from all sources;
- Policing of the Project.

As part of the Developer's OMP, the IMP includes the following items:

- Procedures to identify Incidents and notify Emergency Services providers and establish traffic control for Incident management activities in a timely manner;
- Procedures for removal of stalled, broken down, wrecked or otherwise incapacitated vehicles from the travel lane, including coordination with Emergency Services/law enforcement;
- Procedures to provide a maximum response time of 15-minutes by Developer and all measures to be instituted by Developer to clear the Incident and return lane availability within 15-minutes of arriving at the Incident site;
- Procedures for clean up of debris, oil, broken glass, etc. and other such objects foreign to the roadway surface;
- Procedures to communicate IMP information to Developer's public information personnel and notify the public of traffic issues related to Incidents in keeping with the requirements of Section 3 – Public Information and Communications;
- Descriptions of contact methods, personnel available, and response times for any Emergency condition requiring attention during off-hours.

The IMP is discussed further in Section 15.

22 Executive Leadership Endorsement

The following agents of the Texas Department of Transportation and the Federal Highway Administration endorse this Project Management Plan for the LBJ Managed Lane Project. This endorsement officially initiates the procedures and requirements as set forth in the plan.

The effectiveness of the plan will be continuously evaluated and revisions will be issued as the Project progresses in order to generate the most effectively managed Project, and to meet the Project objectives.

_____ _____
Date

_____ _____
Amadeo Saenz, Jr., P.E. Date
Executive Director
Texas Department of Transportation

_____ _____
Salvador Deocampo, P.E. Date
District Engineer
Federal Highway Administration, Texas Division

Appendix A
Initial Financial Plan

Appendix B
Schedule Milestones