FM 1103 Route Study

FINAL Study Report

Report Date: 11/26/2007

FINAL Report
prepared and submitted by:

Rodolfo "Rudy" J. Rivera, P.E.
RJ RIVERA Associates, Inc.

Date

Approved by:

Judy Friesenhahn, P.E.
Texas Department of Transportation

Date

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Study Overview 1
1. 1.1 Current Construction 2
1.2 Report Overview 4
1.3 Route Study Process 4
1.3.1 Purpose & Need and Goals & Objectives 5
1.3.2 Preliminary Constraints Map 6
1.3.3 Initial Route Envelopes 6
1.3.4 Initial Envelopes Screening 6
1.3.5 Conceptual Alternatives 6
1.3.6 Detailed Analysis 6
1.3.7 Final Screening 6
1.3.8 Recommended Alternative 7

2.0 PURPOSE AND NEED FOR IMPROVEMENT 8

2.1 Purpose and Need Statement 8
2.1.1 Local Thoroughfare Plans 8
2.1.2 Forecast Traffic 9
2.1.3 Existing and Historic Traffic 10
2.1.4 Population Growth 12
2.1.5 Local Mobility Options 14
2.1.6 System Linkage 14
2.1.7 Trans-Texas Corridor 16
2.1.8 Drainage 16
2.1.9 Intersection at FM 78 16
2.1.10 Pedestrian and Bicycle Accommodation 16
2.2 Study Goals and Objectives 16

3.0 ENVIRONMENTAL BASELINE DATA COLLECTION & CONSTRAINTS MAP 18

3.1 Preliminary Constraints Map Inputs 18
3.1.1 Existing and Planned Land Use 18
3.1.2 Historic and Archaeological Resources 19
3.1.3 Hazardous Waste 19
3.1.4 Soils, Geology, and Water 19
3.1.5 Biological Assessment 19
3.1.6 Floodplains 19
3.1.7 Wetlands 20
3.2 Preliminary Design Conference 20
3.3 Stakeholder Workshop #1 20

4.0 INITIAL OPTIONS 23

4.1 Development 23
4.1.1 Existing FM 1103 Improvements 23
4.1.2 FM 1103 Extension 23
4.2 Screening 25
4.2.1 Existing FM 1103 25
4.2.2 FM 1103 Extension 28
4.3 Stakeholder Workshop #2 30
4.3.1 Existing FM 1103 31

4.3.2 FM 1103 Extension 34
4.4 Individual Stakeholder Meetings 37
4.4.1 City of Cibolo - December 21, 2005 37
4.4.2 TxDOT, Seguin Area Office - January 10, 2006 37
4.4.3 City of Cibolo - January 10, 2006 37
4.4.4 City of Schertz - February 3, 2006 37
4.4.5 Mr. and Mrs. Michael Arizpe, Mr. Jason Sheppard, and Mr. Robert Schulze - February 16, 2006 38
4.4.6 Mr. and Mrs. Nolan Bartoskewitz- March 2, 2006 38
4.4.7 Mrs. Raymond Krueger - March 2, 2006 38
4.4.8 City of Cibolo and TxDOT, SAT District Office-April 4, 2006 38
4.4.9 TxDOT, Cibolo Vista Developers, and Bison Ridge Developers -April 5, 2006 ... 38
4.4.10 City of Schertz -April 6, 2006 39

5.0 REFINED ALTERNATIVES 40

5.1 Refinement. 40
5.1.1 Existing FM 1103 40
5.1.2 FM 1103 Extension 43
5.2 Evaluation 46
5.2.1 Existing FM 1103 46
5.2.2 FM 1103 Extension 47
5.3 Stakeholder Workshop #3 52
5.4 Individual Stakeholder Meetings 52
5.4.1 City of Schertz - May 25, 2006 52
5.4.2 Pastor Gene Tone - May 25, 2006 52
5.4.3 Fairway Ridge and Neighbors - June 1, 2006 53
5.4.4 City of Schertz Work Session - June 27, 2006 53
5.4.5 City of Cibolo Council - June 27, 2006 53
5.4.6 City of Schertz Council - July 18, 2006 53
5.4.7 Cude Engineering -August 3, 2006 53
5.4.8 SEC Development Company - August 8, 2006 54
5.4.9 Mr. Bruce Jensen, TxDOT, ENV - August 22, 2006 54
5.4.10 Ms. Belinda Plutska, ISO Superintendent - August 24, 2006 54
5.4.11 City of Cibolo - September 1, 2006 54
5.4.12 Cities of Schertz and Cibolo - September 1, 2006 54
5.4.13 TxDOT, Right-of-Way - September 6, 2006 55
5.4.14 Mr. Ted West, FHWA-September 14, 2006 55
5.4.15 Mr. Michael Arizpe and Mr. Robert Schulze - September 26, 2006 55
5.4.16 Mr. Arthur Linares - September 26, 2006 55
5.4.17 Mr. Robert Schulze - October 25, 2006 55
5.4.18 Mr. Michael Arizpe - October 25, 2006 56
5.4.19 Mr. James Twenter - October 25, 2006 56
5.4.20 City of Cibolo - November 13, 2006 56
5.4.21 City of Schertz- November 13, 2006 56
5.5 Final Screening 57

6.0 STUDY RECOMMENDATION 58

6.1 Recommended Conceptual Alternative 58
6.1.1 Existing FM 1103 58
6.1.2 FM 1103 Extension 58
6.2 Further Refinements 58

6.2.1 Existing FM 1103 58
6.2.2 FM 1103 Extension 59
6.3 Public Meeting 63
6.4 Final Recommendation Refinements 68
6.4.1 Additional Historical Site Considerations 68
6.5 TxDOT Development Process 68

7.0 NEXT PHASES 69

7.1 Engineering Design and Schematic 69
7.2 Environmental Documentation 69
7.3 Public Involvement 69

LIST OF FIGURES AND TABLES

Figure 1 - Study Area with Directional Orientation 2
Figure 2 - Two Lane Section: IH 35 to "Bend" 3
Figure 3 - Two Lane Section: IH 35 to "Bend" at Public Roads 3
Figure 4 - Two Lane Section: "Bend" to FM 78 at "Bend" 3
Figure 5 - Two Lane Divided Section: "Bend" to FM 78 at High School 4
Figure 6 - Two Lane Divided Section with Center Left Turn Lane: "Bend" to FM 78 4
Figure 7 - Route Study Approach 5
Figure 8 - City of Cibolo Master Plan and Future Land Use Map (January 2005) 9
Figure 9 - FM 1103 ADT Graph 10
Figure 10 - 2003 Area Traffic Counts 11
Figure 11 - Planned Developments Near FM 1103 13
Figure 12 - Arterial Spacing for Longer Local Trips 14
Figure 13 - Regional Connectivity 15
Figure 14 - FM 1103 Preliminary Constraints Map 22
Figure 15 - FM 1103 Extension Initial Route Envelopes Map 24
Figure 16 - FM 1103 Existing Route Screening by Section 27
Figure 17 - FM 1103 Initial Options Screening Matrix 30
Figure 18 - Preliminary Widening Recommendation Map, North-South 32
Figure 19 - Preliminary Widening Recommendation Map, East-West.. 33
Figure 20 - FM 1103 Extension Route Options Amalgamated Matrix 35
Figure 21 - FM 1103 Extension Initial Options Map 36
Figure 22 - Six Lane Section: IH 35 to Rodeo Drive 40
Figure 23 - Five Lane Section: Rodeo Drive to Future City Street Southwest of Steel High School 41
Figure 24 - Four Lane Section: Future City Street Southwest of Steele High School to Main Street 41
Figure 25 - Four Lane Section: Main Street to FM 78 42
Figure 26 - Six Lane Section: Refined FM 1103 Extension Alternatives 44
Figure 27 - FM 1103 Extension Refined Alternatives Map 45
Figure 28 - Final Screening and Evaluation Matrix 51
Figure 29 - Recommendation Resources 57
Figure 30 - Final Screening and Evaluation Matrix after Reanalysis 61
Figure 31 - Existing FM 1103 North - South Widening Recommendation 65
Figure 32 - Existing FM 1103 East-West Widening Recommendation 66
Figure 33 - FM 1103 Extension Route Study Recommendation 67
Figure 34 - TxDOT Development Process 68

Table 1 - Annual Average Daily Traffic (AADT), 1995 - 2005 11
Table 2 - Percentage Growth of Traffic along FM 1103 and Surrounding Corridors 12
Table 3 - Estimated Cost to Construct Roadway 49
Table 4 - Estimated Cost to Purchase Property for Right-of-Way 50
Table 5 - Estimated Cost of Improvements for Impacted Structures 50
Table 6 - Summary of Refined Cost Estimate for Study Recommendation 59
Table 7 - Summary of Refined Cost Estimate for Study Recommendation 63

APPENDIX A - STAKEHOLDER CORRESPONDENCE

APPENDIX B - FM 1103 TXDOT TRAFFIC ANALYSIS

APPENDIX C - REFINED COST ESTIMATE FOR EXISTING FM 1103 STUDY RECOMMENDATION

APPENDIX D - REFINED COST ESTIMATE FOR FM 1103 EXTENSION STUDY RECOMMENDATION

APPENDIX E - FM 1103 STUDY PRESENTATION

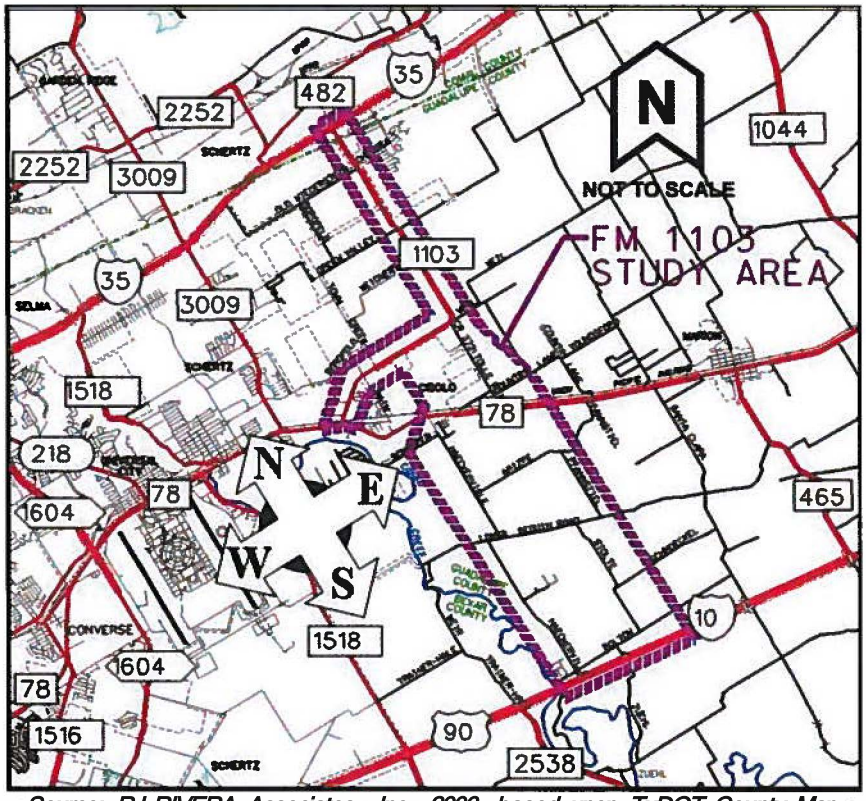
1.0 INTRODUCTION

1.1 Study Overview

RJ RIVERA Associates, Inc. (RJRA) was contracted by the Texas Department of Transportation (TxDOT) San Antonio District (SAT) to conduct the FM 1103 Route Study. The purpose of the FM 1103 Route Study was to determine the need and feasibility of improving existing FM 1103 between IH 35 and FM 78 additional to the current construction and also to determine the long-term need and feasibility of extending FM 1103 to IH 10. If improvements were needed and feasible, the study team was to determine approximate right-of-way routes for future planning purposes. Subsequently, the overarching purpose of this study was not near-term construction, but to provide local jurisdictions direction on an appropriate route, if feasible, so that they may be able to preserve the necessary right-of-way before further development limits this opportunity.

TxDOT was asked by the local jurisdictions to perform the study because of the potential for this route to be built in the future using both state and federal funds. Also, because no single entity held authority over the entire study area, TxDOT was a capable and appropriate agency to perform the study across the various jurisdictional boundaries.

As Figure 1 illustrates, the study area for FM 1103 consists of two segments: the existing FM 1103 segment and the FM 1103 extension. The existing FM 1103 segment starts at the intersection of FM 1103 and IH 35 and continues along the corridor until the terminus of the roadway at the intersection of FM 1103 and FM 78. The width of the study area along existing FM 1103 is approximately one-third of a mile wide. The new location study area continues south of the existing FM 1103 corridor (from the east-west bend of existing FM 1103 near Brite Road) for approximately 6 miles until reaching IH 10. South of the "bend" the study area is approximately 2.1 miles wide. The study area is partially located within the cities of Cibolo and Schertz as well as the extraterritorial jurisdiction of San Antonio. It is predominantly located within Guadalupe County with a small portion of the northern area being located in Comal County. Figure 1 also gives the directional orientation used in the FM 1103 study.



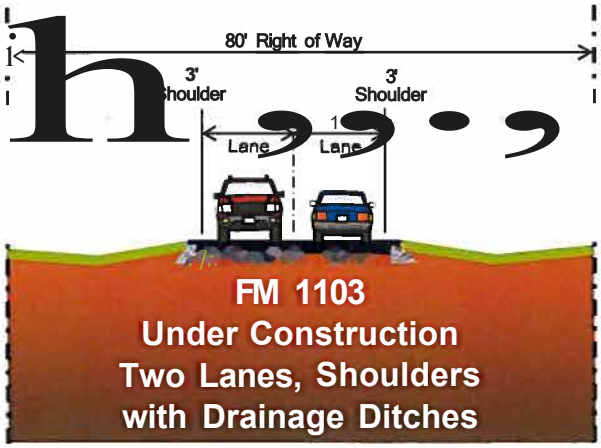
Source: RJ RIVERA Associates, Inc., 2006, based upon TxDOT County Map.

Figure 1 - Study Area with Directional Orientation

The purpose of this route study began as and has remained long-term. If a route extension is justified by possible future needs and a route is still viable through this constrained corridor, the study should recommend an approximate route location for local jurisdictions to preserve before dense development occurs. Planning for possible future growth benefits the public in the long run by minimizing future right-of-way cost and reducing potential impacts to future community assets such as new homes and businesses. The study also enables stakeholders in the study area to plan based on the route location (or absence of the route if the No Build option were recommended). At the conclusion of the study, local jurisdictions and local property owners will remain in control of future development of the area and the preservation of the right-of-way using local planning tools.

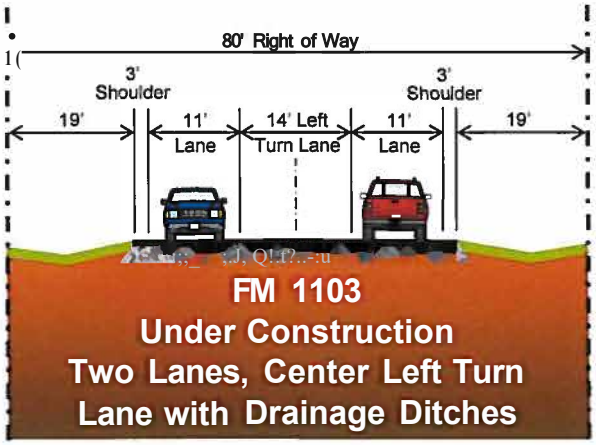
1.1.1 Current Construction

TxDOT is currently performing construction improvements along the existing two-lane FM 1103, separate from the Route Study. Running north and south from IH 35 to the "bend" in FM 1103, the current construction project will provide a center left turn lane at public roads. Running east and west from the "bend" in FM 1103 to FM 78, the current construction project will provide a center left turn lane at public roads and Steele High School, as well as a right turn lane at the school. The current construction project is expected to be completed by fall 2007. Typical sections for FM 1103 current construction are depicted in Figure 2 through Figure 6.



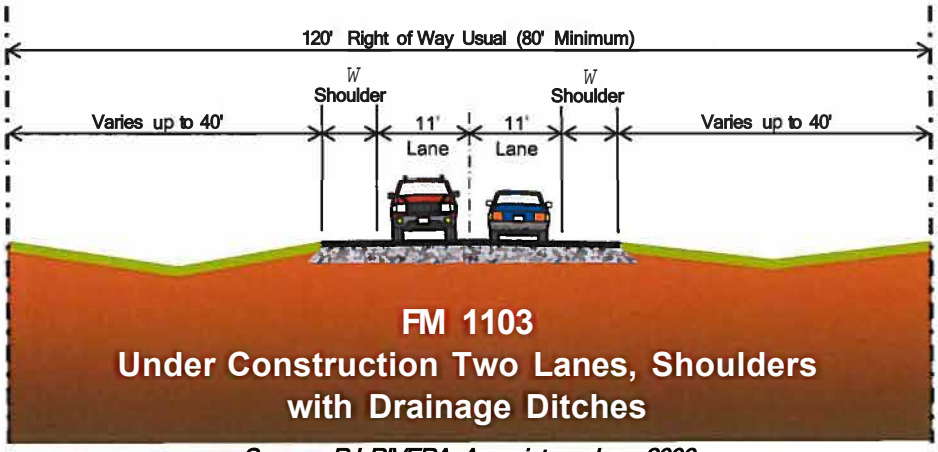
Source: RJ RIVERA Associates, Inc., 2006

Figure 2 - Two Lane Section: IH 35 to "Bend"



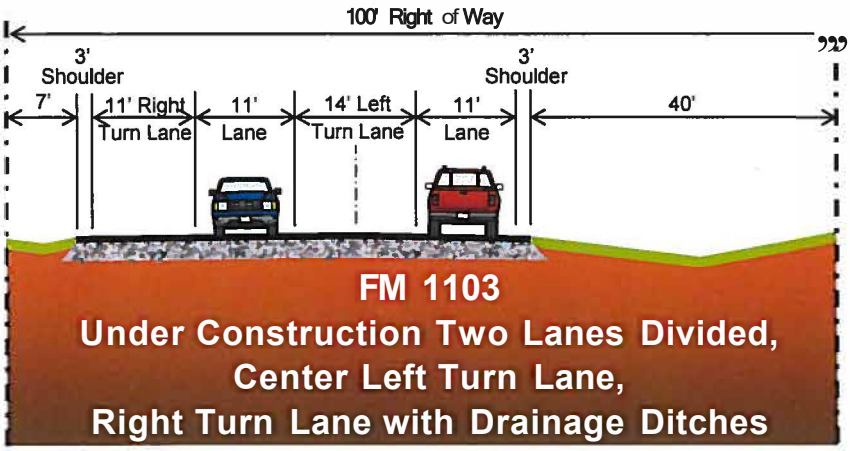
Source: RJ RIVERA Associates, Inc., 2006

Figure 3 - Two Lane Section: IH 35 to "Bend" at Public Roads



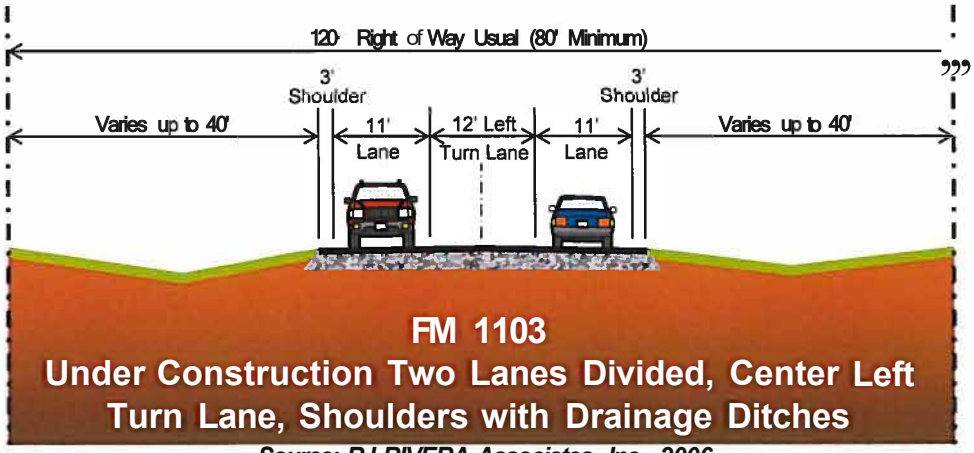
Source: RJ RIVERA Associates, Inc., 2006

Figure 4 - Two Lane Section: "Bend" to FM 78 at "Bend"



Source: RJ RIVERA Associates, Inc., 2006

Figure 5 - Two Lane Divided Section: "Bend" to FM 78 at High School



Source: RJ RIVERA Associates, Inc., 2006

Figure 6 - Two Lane Divided Section with Center Left Turn Lane: "Bend" to FM 78

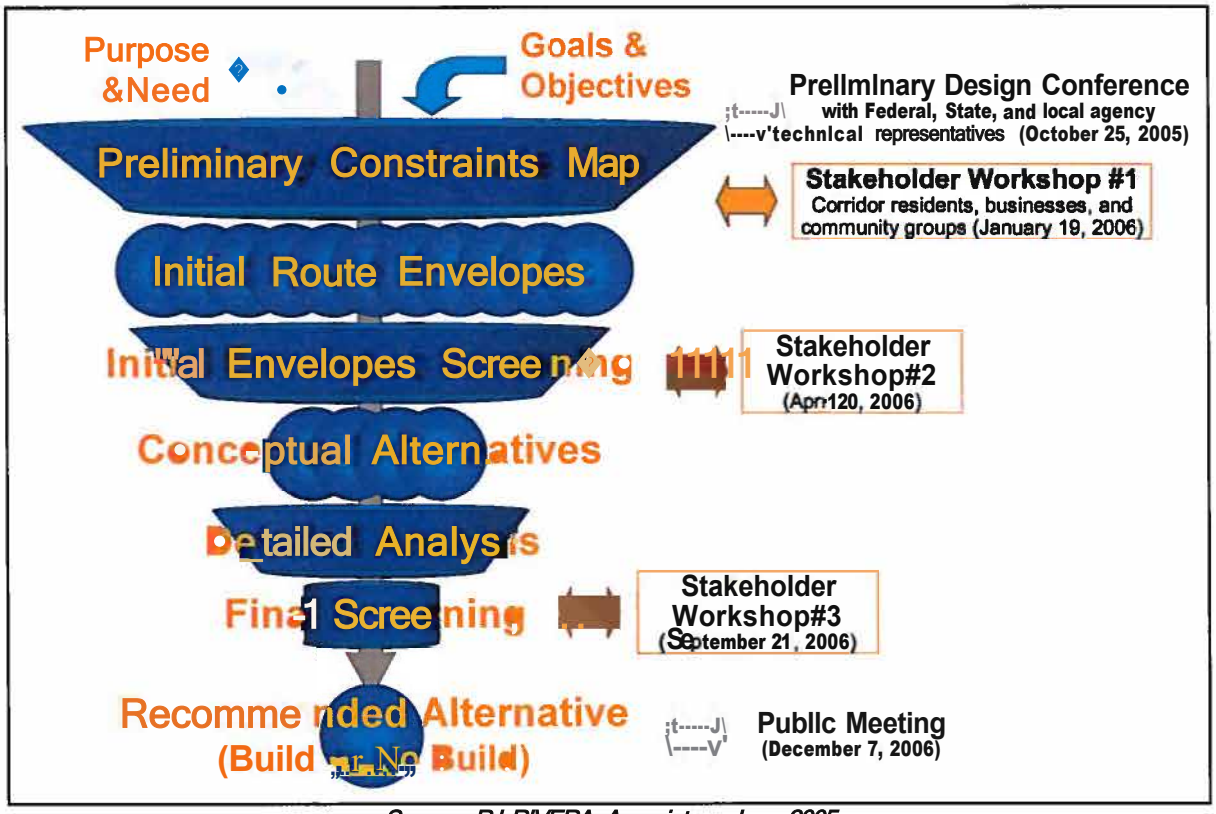
1.2 Report Overview

The purpose of this report is to delineate the activities and efforts undertaken as part of the FM 1103 Route Study. These tasks include definition of the purpose and need, goals and objectives, data assembly and review, development and screening for initial options, refined alternatives, and a study recommendation. The items are discussed in order along with descriptions of the actions taken to complete each task. After the project efforts have been dissected, future possible task activities will be discussed. Individual technical memorandums, which are submitted as part of the study once finalized, are also incorporated in this report.

1.3 Route Study Process

The approach the study team took in performing the FM 1103 Route Study is a "funnel" type process in which a large number of options are narrowed down to a single recommended alternative by analyzing the options through various relevant criteria. Below, Figure 7 depicts the route study approach "funnel" as applied to the FM 1103 Route Study.

Throughout the route study process, the study team is constantly receiving input from outside resources. The opportunities for external input may include preliminary technical meetings, stakeholder workshops, individual stakeholder meetings, public meetings, and public hearings. For these activities TxDOT utilizes a public involvement approach. Summaries of stakeholder correspondence can be found in Appendix A. For more detailed information, please refer to *FM 1103 Public Involvement Approach Technical Memorandum.* Subsections 1.3.1 through 1.3.8 describe the route study process in further detail and how the steps are interrelated.



Source: RJ RIVERA Associates, Inc., 2005

Figure 7 - Route Study Approach

1.3.1 Purpose & Need and Goals & Objectives

The study process begins by identifying both the purpose and need for the study and the goals and objectives the study wishes to fulfill. The purpose and need states why a transportation study is needed in this study area. It recognizes the problems and shortcomings of the present transportation system and declares that they can be solved with a transportation solution, in this case through improvements to existing FM 1103 beyond current construction and also through a proposed extension of FM 1103. Section 2.0 describes the efforts the study team took in defining the purpose and need.

The goals and objectives state what the study wants to accomplish. It identifies the benefits the study should provide as well as acknowledging the acceptable level of negative consequences that can occur. Section 2.2 gives more detail in regards to the goals and objectives developed for the FM 1103 Study.

1.3.2 Preliminary Constraints Map

From the purpose and need item and goals and objectives, a preliminary constraints map is developed that identifies relevant features within the study area that may be impacted by a new route. In distinguishing possible constraints, the study team is able to attempt to develop options that minimize negative impacts in later steps. Section 4.1 describes the efforts in generating the Preliminary Constraints Map for the FM 1103 Study.

1.3.3 Initial Route Envelopes

In the initial route envelopes step of the process, the study team begins identifying possible alignments for a new route. While these initial route envelopes may or may not be feasible, it is important to consider all possible envelopes so as not to eliminate any options without significant analysis. Development of initial route envelopes for the extension of FM 1103 is delineated in Section 4.1.

1.3.4 Initial Envelopes Screening

The initial envelopes screening involves narrowing down all the initial route envelopes to a more manageable number of alternatives for detailed analysis. The initial screening includes eliminating options that do not fulfill the purpose and need or the goals and objectives. The remaining options are then subjected to further evaluation based mostly on qualitative criteria, then screened accordingly. The study team's efforts and methods for initial envelopes screening for the FM 1103 Study are explained in Section 4.2.

1.3.5 Conceptual Alternatives

The options that remain after the initial screening are developed in more detail and are refined into conceptual alternatives, represented by the decreasing number of spheres in Figure 7. These conceptual alternatives adhere to general design standards and are aligned so as to purposely avoid constraints they may have previously impacted. The conceptual alternatives for the FM 1103 Study are noted in Section 5.1.

1.3.6 Detailed Analysis

After refinement, the conceptual alternatives are then subjected to detailed analysis. This stage of analysis involves more in-depth and quantitative study. The results of this analysis are numerical indications of the level of negative impacts and preliminary cost estimates. The study team's detailed analysis for the FM 1103 Study is described in Section 5.2.

1.3.7 Final Screening

Once the detailed analysis is completed and input from all parties involved in the route study is collected, recorded, and considered, the study team performs the final screening of alternatives. In this step, the study team is required to make decisions as to which alternative best fulfills the purpose, need, goals and objectives of the route study. The decision involves consideration of what impacts are more acceptable than others and how the cost of an alternative is related to its benefits. Figure 28 gives the final screening for the FM 1103 Study.

1.3.8 Recommended Alternative

The result of the final screening is a single recommended alternative. The alternative selected by the study team may be a build alternative or it may be the No Build alternative. In addition to stating the recommended alternative, the study team must also state the reasoning behind the selection. The recommended alternative for the FM 1103 Study is detailed in Section 6.1. The recommendation of an alternative does not signify that the alternative will be constructed. The recommended alternative must continue through more project stages before construction even begins, including undergoing sufficient environmental documentation. These future stages, however, are not part of the route study process.

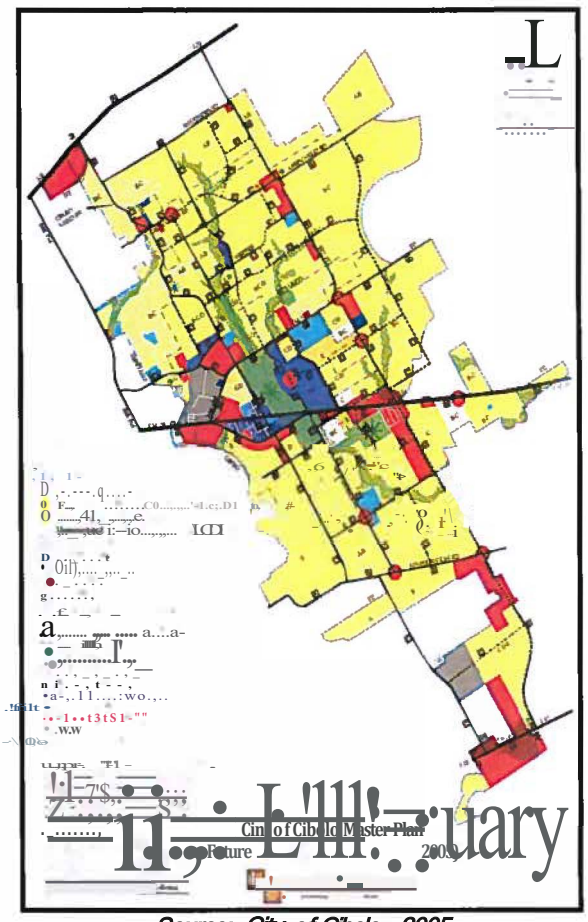
2.0 PURPOSE AND NEED FOR IMPROVEMENT

2.1 Purpose and Need Statement

In order to describe the various transportation issues that existed in the study area, the study team developed a Purpose and Need Statement at the initiation of the project as the document *FM 1103 Route Study Purpose and Need Statement* (March 2006). As the project progressed and the study team gained greater understanding of the area, the purpose and need for possible improvements continued to be refined. Data was also collected from local stakeholders and the Preliminary Design Conference meeting. When or if the next steps of environmental documentation for a project are pursued, the purpose and need will be revisited to assess conditions at that future date. For the current study, the purpose and need for possible improvements considers mobility and safety issues, as well as local jurisdiction plans and regional planning efforts, as described below.

2.1.1 Local Thoroughfare Plans

The study team first examined local plan documents. In the City of Cibolo's Master Plan, existing FM 1103 is planned to serve as a primary arterial for the area. Additionally, the FM 1103 extension to IH 10 has already been planned by local jurisdictions as an integral part of the existing and future local street network. As shown in Figure 8, the City of Cibolo illustrated a potential new route location extending FM 1103 toward IH 10.



Source: City of Cibolo, 2005

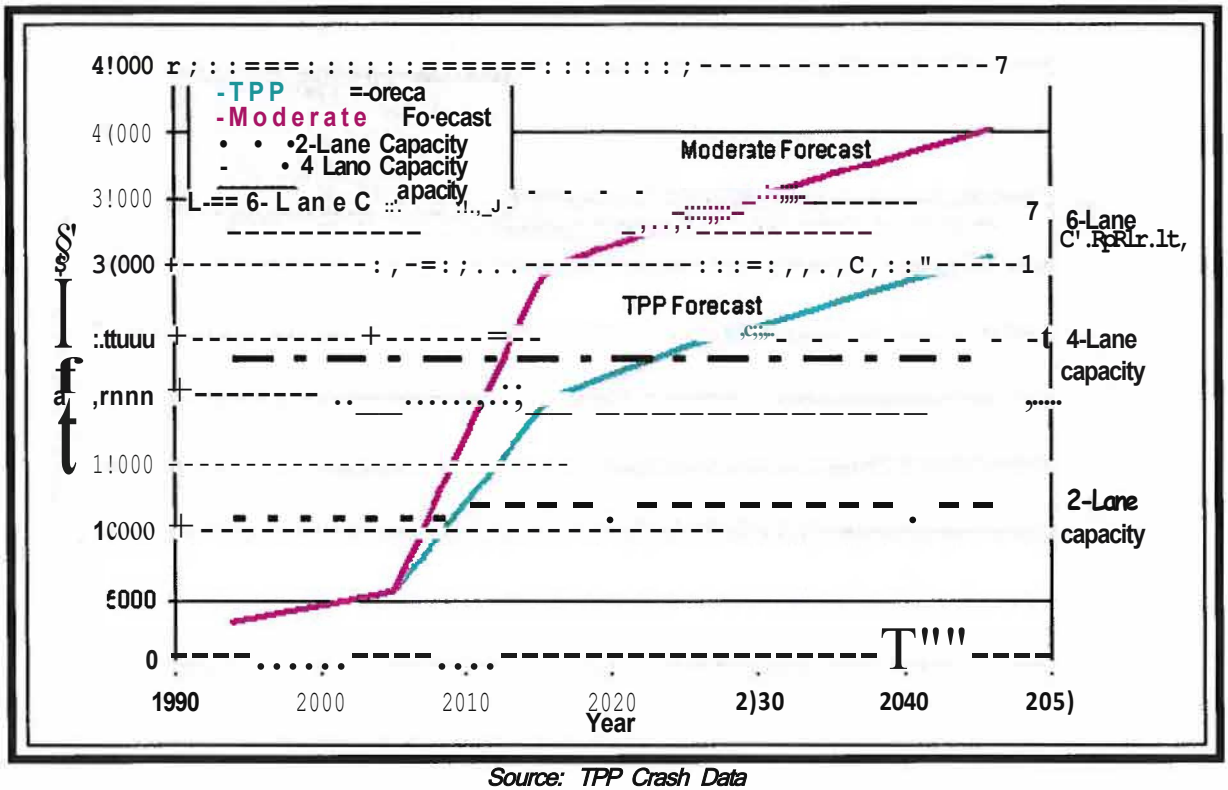
Figure 8 - City of Cibolo Master Plan and Future Land Use Map (January 2005)

2.1.2 Forecast Traffic

The TxDOT Transportation Planning and Programming (TPP) Division studied potential FM 1103 existing and extension routes, which provided some perspective on expected growth in traffic along the FM 1103 corridor. The assumption was based upon no improvement to existing FM 1103 which had a capacity of 4 lanes, thus was capacity-constrained. Despite this constraint, the TPP forecast predicts a demand that exceeds the capacity of four-lane section in approximately year 2024, as shown in Figure 9 as a blue line based upon the guidelines for assessing daily traffic level of service. By year 2046, also included in the TPP forecast, the forecast demand nears the capacity of a 6-lane section. TPP projects traffic growth along the existing and extension sections to achieve 20,400 ADT by 2016 and 30,600 ADT by 2046. For a copy of TxDOT's Traffic Analysis please see Appendix B.

As discussed with local agency and public stakeholders at meetings during the study process, the TPP forecast is nonetheless modest with respect to known growth parameters for this study area. That is, the City of Cibolo early in the study identified 14 subdivisions with approximately 4100 lots already Master Planned, with others on the way. This increase is continuing at a rate of 800-1000 lots being developed per year. The activity has continued at this pace throughout the study. Prior to receipt of the TPP forecast, an exercise was performed by the study team to estimate and distribute the

approximate 100,000 additional daily trips (10,000 peak hour trips) from these known lots being developed, resulting in the Moderate Forecast shown in the pink line in Figure 9. Even if growth after this ten-year period of known development follows the trend forecast by TPP, it is clear that the Purpose and Need for improvements supports a 6-lane facility for FM 1103.

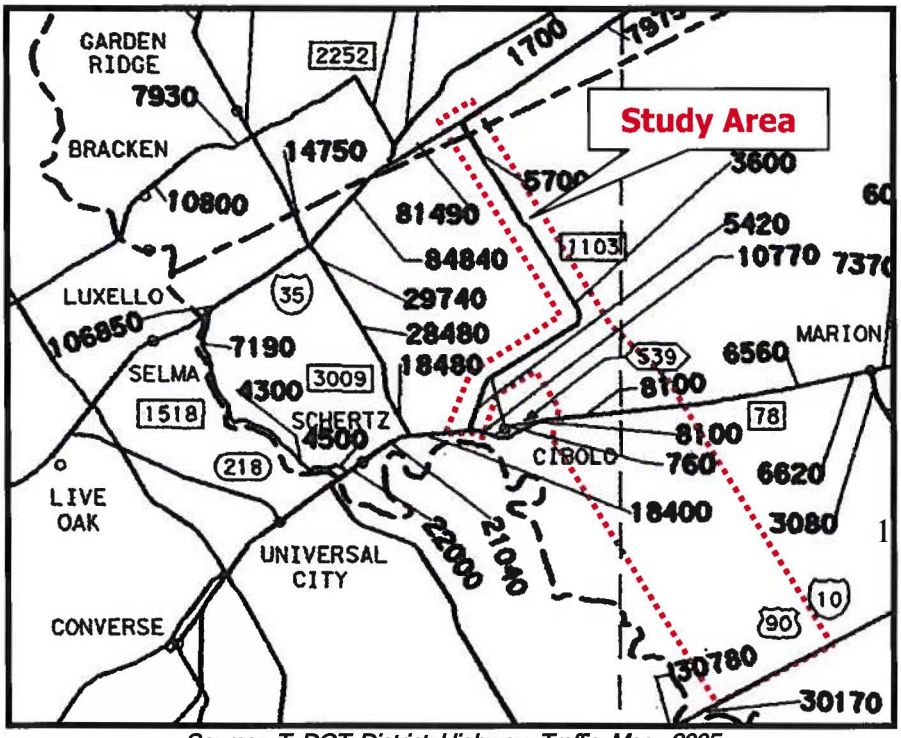


Source: TPP Crash Data

Figure 9 - FM 1103 ADT Graph

2.1.3 Existing and Historic Traffic

Just as the traffic growth rates along nearby corridors provide good insight into the potential traffic for a new location roadway, this traffic also indicates the increasing traffic burden being born by the existing roadways, primarily rural roads not built to withstand this type or level of traffic. At the study initiation, the study team collected historic traffic counts for a 10-year period between 1993 and 2003. Guadalupe County traffic counts for 2003 are shown in Figure 10 with the study area highlighted for reference.



Source: TxDOT District Highway Traffic Map, 2005

Figure 10 - 2003 Area Traffic Counts

A detailed traffic count chart showing the evolution of the number of vehicles using adjacent roads is listed in Table 1, and the ten-year percent growth for these roads are listed in Table 2. The growth rates in the corridor and in similar corridors nearby show an increase in vehicular traffic indicative of an area under development. Existing FM 1103 between IH 35 and FM 78 is a corridor that is central to the City of Cibolo, serving both residential and commercial access within the city and for longer local trips accessing the state system - FM 78 and IH 35. This corridor demonstrates an impressive growth rate - increasing over 50% over the ten-year period. FM 1518, FM 3009, and FM 465, each at stages of development comparable to existing FM 1103, are also showing signs of increased traffic growth the result of surrounding development.

Table 1 -Annual Average Daily Traffic (AADT), 1995 - 2005

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
FM 1103 North of FM 78	3600	3800	3800	3700	3400	3800	3600	3800	5500	4700	5420
FM 3009 North of FM 78	9600	10700	11100	14000	11700	12600	13600	8200	14900	16600	18480
FM 1518 North of IH 10	4900	5300	5100	6000	5000	5700	5600	4800	5400	5400	5150
FM 1518 South of FM 78	5600	6500	5500	6500	5500	8200	8100	5300	6800	6000	7440
FM465 South of FM 78	1350	1800	1450	1700	1650	1300	1750	2100	2200	2400	2690

Source: TxDOT District Highway Traffic Maps, 1995 to 2005.

Table 2-Percentage Growth of Traffic along FM 1103 and Surrounding Corridors

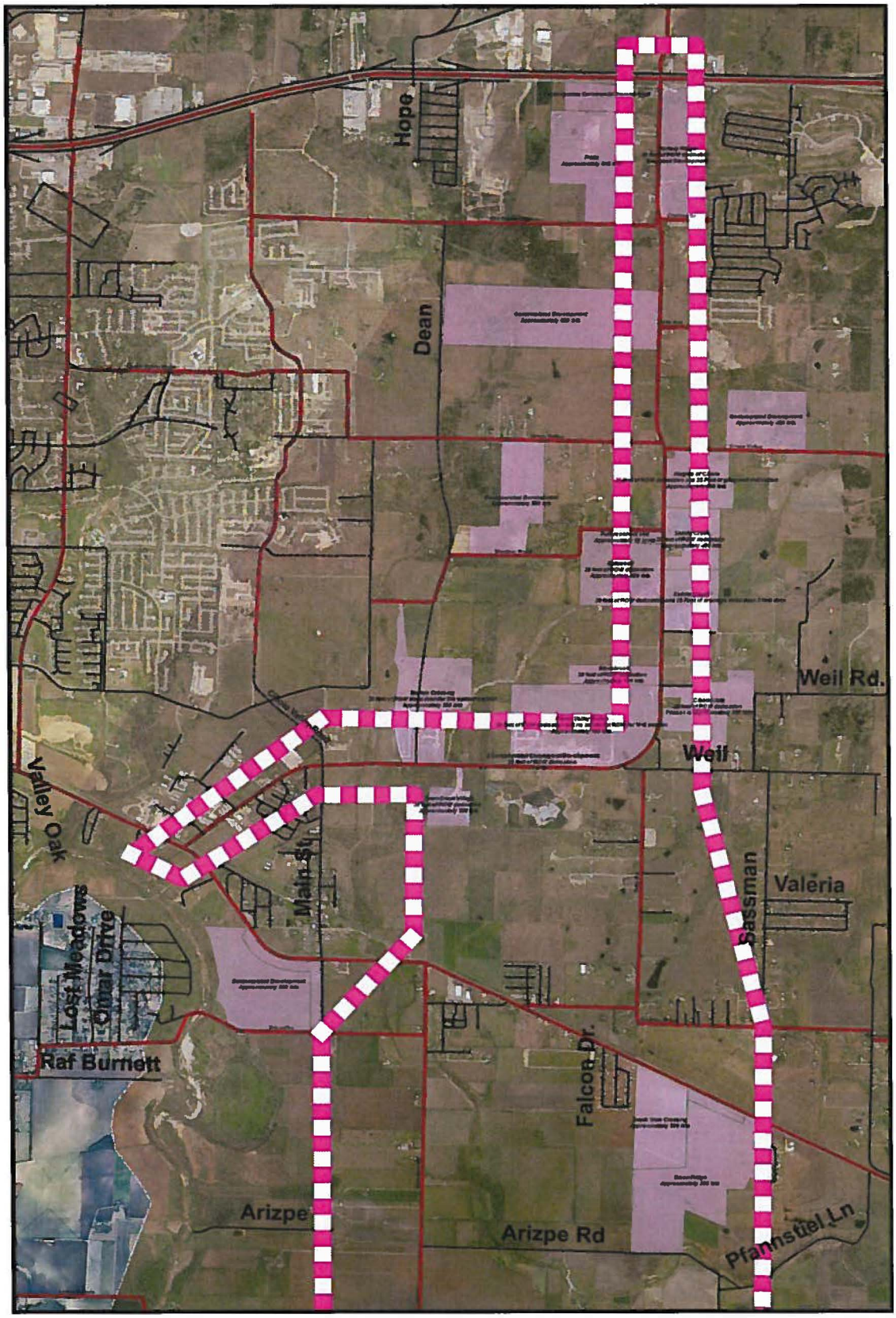
	10 Year Growth Rate
FM 1103 North of FM 78	51%
FM 3009 North of FM 78	93%
FM 1518 North of IH 10	5%
FM 1518 South of FM 78	33%
FM465 South of FM 78	99%

Source: TxDOT District Highway Traffic Maps, 1995 to 2005.

2.1.4 Population Growth

The traffic growth, discussed above, correlates to population growth in the study area. Between the 1990 and 2000 Census, Guadalupe County increased over 37% according to the Texas State Data Center. The City of Cibolo estimated the 2004 population was 7,600 and has forecast the 2015 populations to be 36,326. This represents a 480% growth in population.

Population may grow at even faster rates in the coming decade because, as illustrated in Figure 11, there are, currently, a total of 20 neighborhood developments within and proximate to the FM 1103 study area; and further developable land is available within the study area. Every pink polygon indicates a planned or proposed future residential development. As this growth continues, the population will almost double by 2010 (in comparison to the population in 1990) and will place increasing strain on the existing roadway network, both state-system roads (including FM 78, FM 3009, and FM 1103) and local city and county jurisdiction roads (including Old Wiederstein, Green Valley, Tolle, Lower Seguin, and Stolte roads).



Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

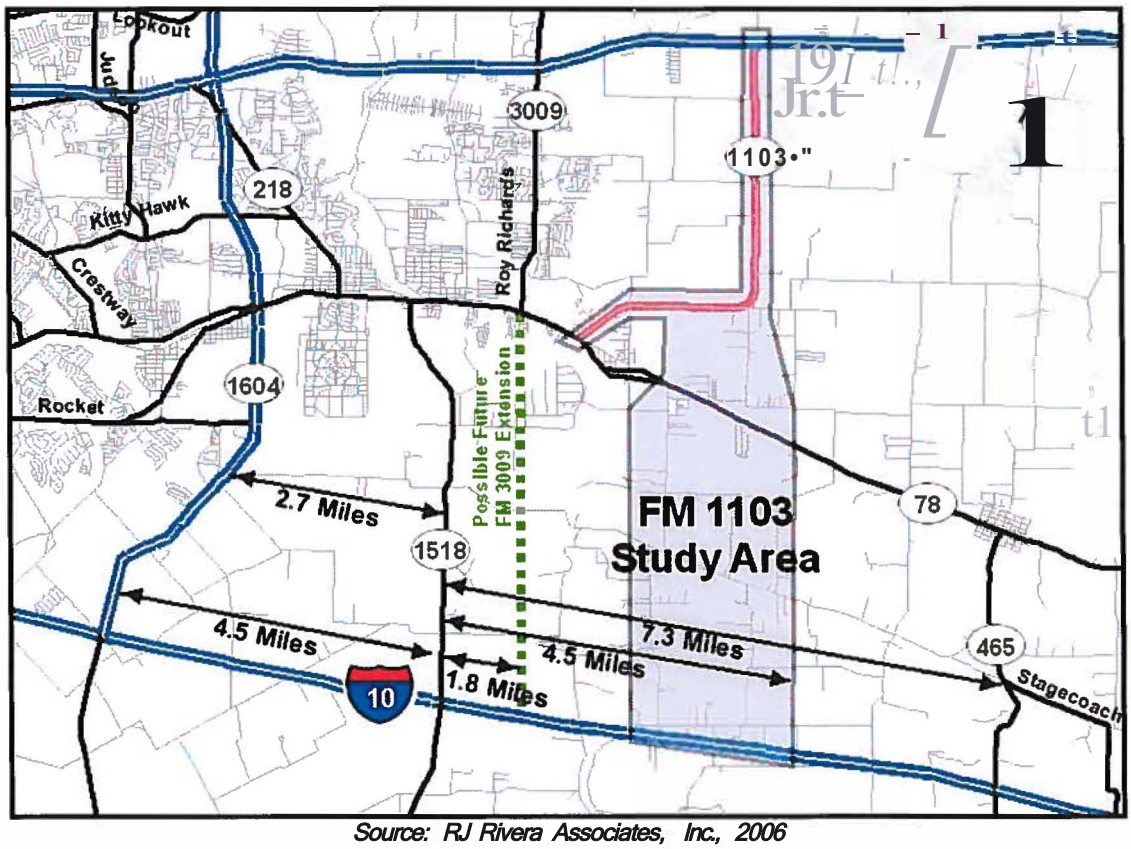
Figure 11 - Planned Developments Near FM 1103

2.1.5 Local Mobility Options

Of particular concern for the FM 1103 study area is that the possible extension of FM 1103 to IH 10 would provide options for longer local trips including:

- Residential
- Commuter Trips
- Deliveries to Local Businesses
- Tourist and Visitor Trips

These longer local trips may otherwise utilize existing rural roads not built for this type or level of traffic. A new location route will benefit local stakeholders by providing an alternative route for local drivers to efficiently access IH 35 and IH 10 for their longer local trips. Figure 12 below shows arterial spacing for longer local trips relative to the study area.



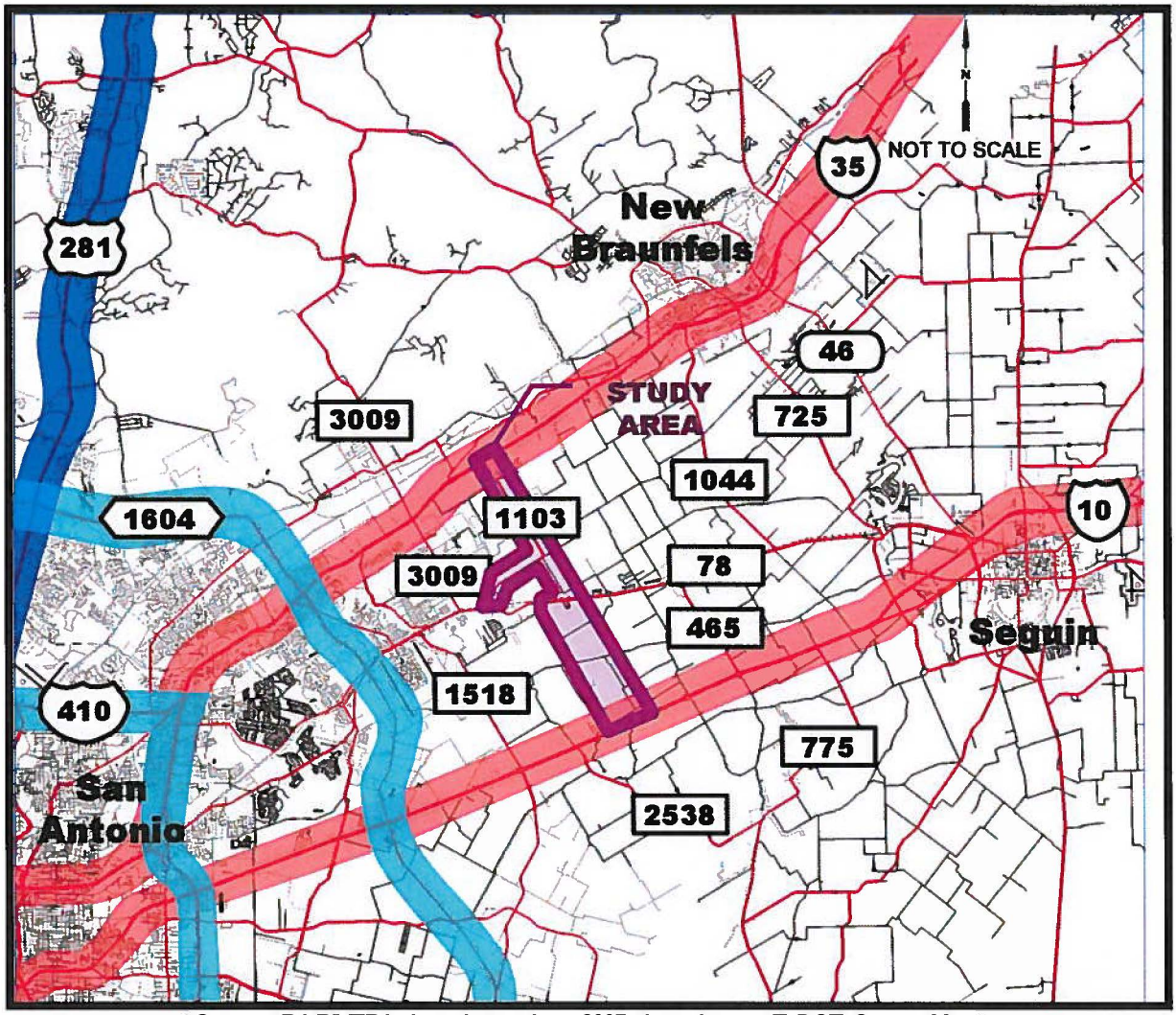
Source: RJ Rivera Associates, Inc., 2006

Figure 12-Arterial Spacing for Longer Local Trips

2.1.6 System Linkage

The state roadway system complements city and county roadways by serving longer local trips, including access to the interstate and nearby freeway system. FM 1103 currently serves a regional role, as illustrated in Figure 13. FM 1103 operates as part of the arterial grid network serving the Cities of Schertz and Cibolo, as well as other residents and

businesses in the Greater San Antonio area. Extending FM 1103 to IH 10, would increase the overall connectivity of the grid system in this area.



Source: RJ RIVERA Associates, Inc., 2005, based upon TxDOT County Map.

Figure 1 3 - Regional Connectivity

Increasing connectivity between IH 10 and IH 35 would potentially benefit local residential and business users, as well as tourists and visitors to the area. East of LP 1604, the only state route that connects IH 35 to IH 10 is FM 1518, a winding two-lane that jogs at FM 78. FM 465, a state route to the east of the study area only connects FM 78 to IH 10, and it is a two-lane rural route. Increased connectivity would enhance the total transportation systems operation in the area by providing longer trips an alternate route to IH 10. A new roadway would also provide improved development potential for the area affected.

FM 1103 has experienced a 53% increase in traffic over the past decade. The corridor is currently experiencing substantial growth in residential development. Current construction to improve intersections and add left turn lanes is anticipated to only offer short-term relief. As the communities of Schertz, Cibolo, and unincorporated areas of Bexar and Guadalupe Counties continue to develop, commuter and local business traffic will likely place increased strain on existing state and local roadways.

2.1.7 Trans-Texas Corridor

An additional need for the FM 1103 Study was the possibility that Trans-Texas Corridor IH-35 (TTC-35) would be constructed within or near the study area. Should this possibility occur, traffic movement towards the IH 10 direction of the study area potentially would increase dramatically due to the large size and scope of the TTC-35 Project. TTC-35, a multi-modal, multi-use facility still in planning stages at the time of this report, would potentially bring sizeable development along its corridor, which would then increase commuter traffic through the FM 1103 study area as employment opportunities arise. If TTC-35 was implemented, the traffic forecast for the FM 1103 study would likely be much higher than what was previously projected in this report. However, the exact route for TTC-35 had not been selected at the time of the FM 1103 Study, nor was the implementation of any TTC-35-type facility certain. Due to the FM 1103 Study and the ambiguity involving the future of the TTC-35 project, the need to accommodate any possible traffic was given strong consideration by the study team.

2.1.8 Drainage

Drainage is of concern in this area, particularly in the area of Cibolo Creek, Dietz Creek and the area around CR 373 (Tolle Road). Potential improvements at a minimum should not worsen drainage conditions, but provide an opportunity for enhanced travel past low-lying areas and improvement of overall drainage conditions.

2.1.9 Intersection at FM 78

The at-grade crossing of the Union Pacific Railroad line near the intersection of FM 1103 at FM 78 has been a source of many safety and mobility problems. At-grade crossings of railroads allow for the collision of roadway vehicles, bicyclists, and pedestrians, with the trains on the railroad line. The at-grade crossing also creates a significant queue of traffic movements from FM 1103 to FM 78 (and vice versa) while a train is passing across FM 1103. This can be especially harmful when emergency vehicles are prevented from providing efficient services due to the delay caused by the train crossing at the intersection.

2.1.10 Pedestrian and Bicycle Accommodation

Currently, FM 1103 has no facilities available for safe use by pedestrians or bicyclists. The lack of sidewalks, bicycle lanes, and crosswalks not only endangers the safety of pedestrians and bicyclists, it also potentially affects flow of traffic on the roadway as vehicles must change lanes, decrease speed, or brake suddenly to avoid collisions with pedestrians and bicyclists.

2.2 Study Goals and Objectives

After identifying the purpose and need for improvement of FM 1103, the study team then determined the goals and objectives of the FM 1103 extension. Similarly to the purpose and need, as the study progressed and more was discovered about the nature of the study area and the desires of the community, the study goals and objectives were continually updated and refined. For this new location facility, the needs were primarily related to Safety, Mobility, Community and Environment, Design, and Cost Effectiveness. The Safety and Mobility Goals were the chief benefits of any transportation project. The Community and

Environmental Goal balanced transportation needs with potential negative impacts to community and environment. The Design Goal made certain that the study will adhere to basic engineering principles. The Cost Effectiveness goal was helpful in ensuring that public funds were well managed. The goals are provided below, with objectives included as sub-bullets:

- Safety Goal
  - Grade separated rail crossing (bridge) at FM 78
  - Provide a route less susceptible to flooding
  - Accommodate bicycles and pedestrians
- Mobility Goal
  - Provide additional capacity to relieve existing roads
  - Provide an alternate route between IH 35 and IH 10
  - Community and Environmental Goal
  - Minimize impacts to community assets such as residential property, cemeteries, schools, historic features, and farmlands
  - Minimize impacts to environmental assets such as floodplains and natural habitats
- Design Goal
  - Consider Driver Expectancy
  - Consider Constructability
  - At a minimum do not worsen drainage in the area
- Cost Effectiveness Goal
  - Consider absolute cost
  - Consider cost effectiveness (benefit for money spent)

3.0 ENVIRONMENTAL BASELINE DATA COLLECTION & CONSTRAINTS MAP

In order to identify the environmental, economic, and social constraints within the FM 1103 Route study area, the study team performed an environmental baseline data collection and a constraints analysis. This analysis was done in sufficient detail to assess feasible and practical conceptual alternatives and identify impacts that differentiate between the alternatives. From the study's inception, the question from local jurisdictions was, particularly for the existing portion of FM 1103, whether a roadway can be planned that will be able to accommodate future developments while minimizing impacts to existing constraints. Thus, the constraints identification and analysis was key to this study.

3.1 Preliminary Constraints Map Inputs

In order to perform the analysis, the study team coordinated with TxDOT and other federal, state, and local resources and regulatory agencies. The analysis incorporates comments received from stakeholders, involved agencies, TxDOT's environmental staff, data from previous studies in the project vicinity, and applicable federal, state, and local guidelines.

The data collected under the environmental baseline data collection effort is documented in greater detail in the technical memorandum "FM 1103 Corridor Study - Existing Conditions Along Identified Alignments", Civil Associates, Inc., October 26, 2006.

3.1.1 Existing and Planned Land Use

Before initiating the field investigation, the study team contacted the City of Cibolo in order to determine the zoning along FM 1103. Within the Cibolo city limits, parcels adjacent to FM 1103 are zoned as both residential and commercial properties. The land use along the existing FM 1103 is residential, grassland, fallow agricultural fields, and undeveloped land platted as residential. Some commercial properties exist along the southern portion of FM 1103 as it nears FM 78.

The proposed extension of FM 1103 would be almost entirely outside the city limits of Cibolo and, therefore, not zoned. The land use along each of the three alignments is primarily agricultural. As the alignments leave the existing FM 1103 roadway, the areas are interspersed with single-family residential developments. Alternative 3 would follow Tolle Road and impact approximately seven properties of some of these residential developments and one potential structure in the southern project area. Alternatives 2 and 4 would each pass through established residential developments and potentially require four and three displacements, respectively.

Information on specific land uses was collected through study team field reconnaissance efforts with the major effort occurring in September, 2005. The study team displayed the constraints map at each of the workshops-Preliminary Design Conference and each Stakeholder Workshop-soliciting further input from residents and property owners in the study area. Please refer to Figure 14 for the Constraints Map displayed at the workshops. New information about land use (or corrections) was followed up with additional field reconnaissance efforts to verify the information and map it correctly on the constraints map. These types of land uses-primarily residential, commercial, civic, and industrial-were shown on the Constraints Map categorized by type.

For land parcels under development in the immediate future, the study team was provided information by various entities-the City of Schertz, the Schertz and Cibolo Independent School Districts, and individual property owners. This information was displayed as future development to distinguish it from existing community assets and constraints.

As previously mentioned, future land use represented much more of an unknown for a project with a possible implementation horizon as far into the future as the FM 1103 Study. The study team asked local jurisdiction representatives at the Preliminary Design Conference held at the beginning of the study to discuss as a group the potential future land uses in the area because of the multiple jurisdictions involved and the lack of a comprehensive future land use plan,. Together, county and local city jurisdictions agreed that most of the future land use in the study area would likely be residential with smaller pockets of commercial and civic land uses to serve the residential. Participants also predicted an increase of commercial developments along IH 10. This information about possible general future development in the longer-term future was not included in the Constraints Map.

3.1.2 Historic and Archaeological Resources

The first resources accessed in identifying historic and archaeological resources were the Texas Historical Commission and the Texas Archaeological Resource Laboratory (TARL) databases. In addition to these two resources, the study team received consultation from Civil Associates, Inc. (CAI) and the historic archaeologists of Ecological Communications Corporation (EComm).

3.1.3 Hazardous Waste

CAI was consulted to conduct a review of state and federal regulatory databases. The review was conducted to determine if any known sites producing, storing, and/or disposing of toxic or hazardous materials are located along the project area.

3.1.4 Soils, Geology, and Water

The Nature Resource Conservation Service was contacted to determine if prime, unique or special farmland soils are present within the project area. In regards to water features, such as streams, rivers, and lakes, the study team received data from TxDOT, U.S. Geological Service (USGS) and CAI.

3.1.5 Biological Assessment

CAI conducted a biological investigation to identify sensitive habitat for wildlife, especially species listed by Texas Parks and Wildlife Department or US Fish and Wildlife Service or local sources as threatened and endangered.

3.1.6 Floodplains

A review and documentation of the most recent Federal Emergency Management Agency Flood Insurance Rate Maps for Guadalupe County and the City of Cibolo was completed to determine whether the proposed alignments would cross the 100-year floodplain.

3.1.7 Wetlands

Wetlands evaluation was completed by CAI using National Wetland Inventory (NWI) Maps. Wetland maps were compared to infra-red aerial photographic images to rectify wetland boundaries.

3.2 Preliminary Design Conference

The study team contacted planning and engineering professionals from several entities and invited them to a Preliminary Design Conference (PDC) on October 25, 2005. The goal of the PDC was for the participants to come to a consensus on purpose and need, goals and objectives, and suggest preliminary design specifications for possible improvements to FM 1103. The preliminary route options developed during this meeting were compiled into the initial route options. For in-depth discussion concerning the PDC, please refer to the *FM 3009 E and FM 1103 Preliminary Design Conference Report* by RJRA.

3.3 Stakeholder Workshop #1

Stakeholder Workshop #1 was held on Thursday, January 19, 2006, at the Cibolo City Hall. The objective of the meeting was to introduce the FM 1103 Study to the residents and property owners in the study area and allow individuals to help identify constraints and possible routes within the corridor. Participants were given time to ask questions, make comments, draw on maps, and answer questions in the workbook provided by the study team. An invitation postcard was mailed out to the landowners and other invested people within the study area. Over 158 representatives of the public and government agencies attended the workshop.

The input gathered by the study team from Stakeholder Workshop #1 provided information on the various needs and constraints contained within the study area that participants felt needed to be addressed. Notably 68% of participants at the first stakeholder workshop thought that FM 1103 needed to be widened beyond the current project. Participants' top safety concerns included:

- Left-turn crossings into opposing traffic
- Off-set intersections
- Flooding
- At-grade railroad crossing
- Bicyclist and pedestrian safety

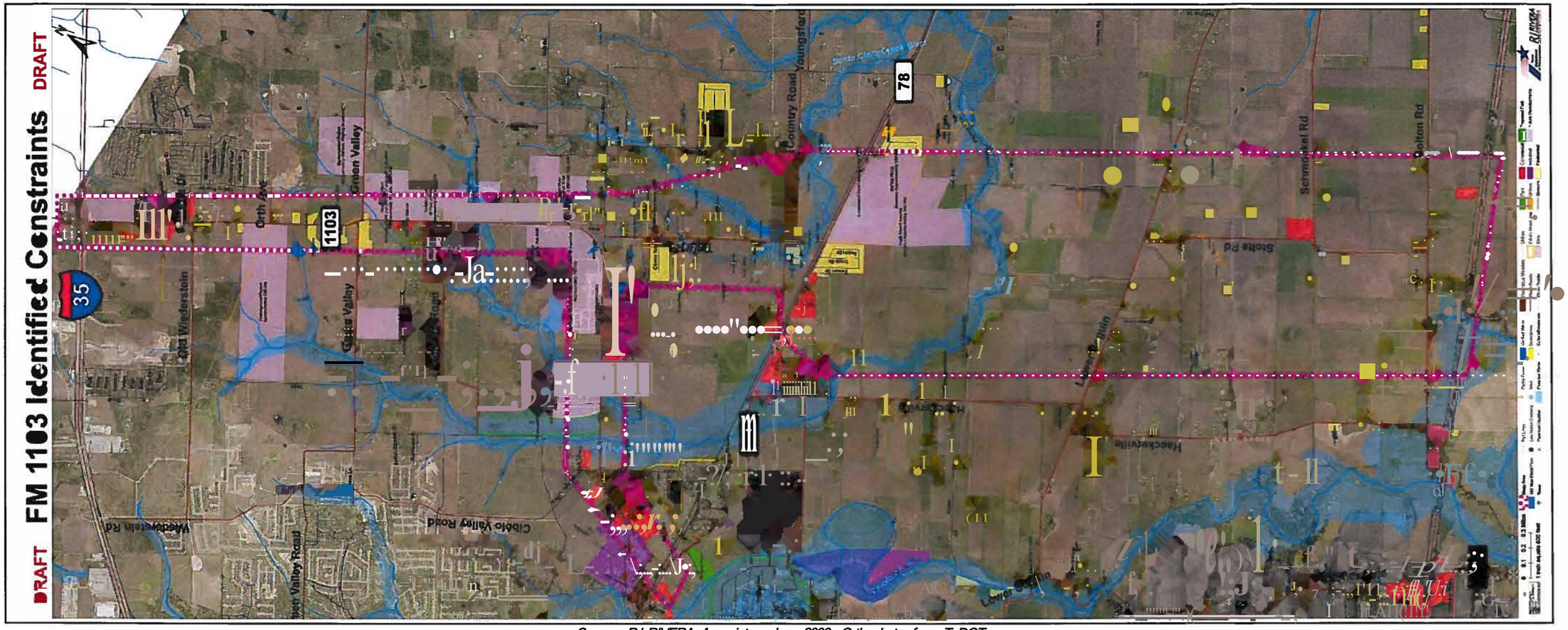
When reviewing ideas for a possible extension to FM 1103, 72% of participants thought that there was a need for a future additional major road between FM 78 and IH 10 within the study area. Participants' top safety concerns for the extension included:

- Increasing traffic between FM 78 and IH 10 (88%)
- Local roads being used by heavier traffic loads and volumes than they were designated for (75%)
- Delay due to flooding between FM 78 and IH 10 (70%)
- Few route options to and from IH 10 (62%)

- Few route options to and from IH 35 (60%)

For more detailed information on Stakeholder Workshop #1, please refer to the *FM 1103 Stakeholder Workshop #1 Report* by RJRA.

Due to the large amount of people in attendance at Stakeholder Workshop #1, several individuals attended an encore presentation instead, held on February 16, 2006. The purpose of the Stakeholder Workshop #1 Encore was to allow those who volunteered the opportunity to participate in the workshop and provide their input on the route study. Over 17 representatives of the public and government agencies attended the encore workshop. For more detailed information on Stakeholder Workshop #1, please refer to the *FM 1103 Stakeholder Workshop #1 Encore Report* by RJRA.



Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 1 4 - FM 1103 Preliminary Constraints Map

(Original Size 36" x 90")

4.0 INITIAL OPTIONS

4.1 Development

Based on the needs identified during the PDC and Stakeholder Workshop #1, an initial set of improvements was considered for the existing FM 1103 section between IH 35 and FM 78. In addition, 27 initial route envelopes with multiple start/end points were developed for the FM 1103 extension based upon a "fatal flaw" analysis and existing data.

4.1.1 Existing FM 1103 Improvements

After analyzing the assets and constraints that could be impacted by widening existing FM 1103, the study team developed a Preliminary Widening Concept (PWC), which was later presented in detail at Stakeholder Workshop #2 as the Preliminary Widening Recommendation (PWR). Top considerations when developing the PWC included residential, potential historic property, bodies of water, and areas under development.

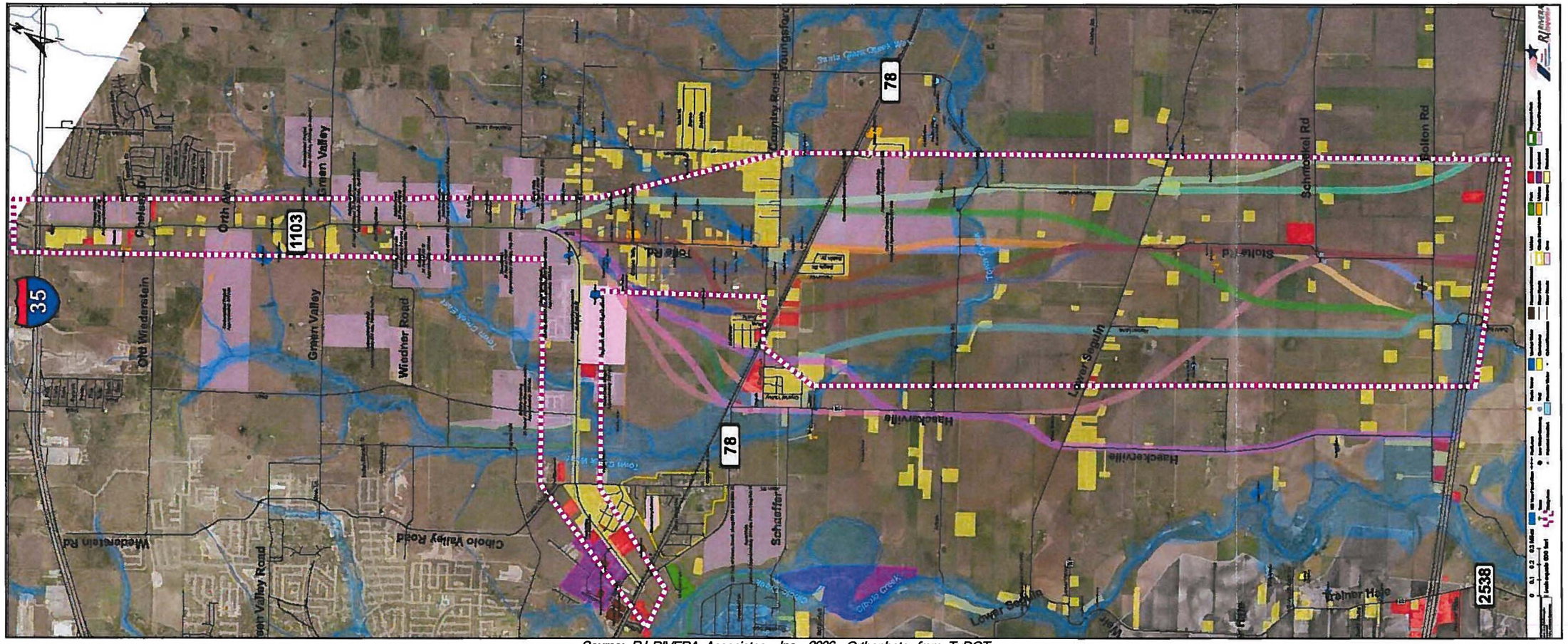
For existing FM 1103, the study team began by defining 3 initial build options (in addition to the No Build) for widening existing FM 1103 an additional 70 feet:

- Equally from the center, 35 feet on each side,
- 70 feet to the west side, and
- 70 feet to the east side.

4.1.2 FM 1103 Extension

All the possible route envelopes provided by previous studies, agency stakeholders at the Preliminary Design Conference, local stakeholders at the Stakeholder Workshop #1, and the study team were compiled and digitized. In total, there were 27 250-feet wide route envelopes (including the No Build) for the FM 1103 extension, as depicted in Figure 15. These options were developed by considering the balance of the different goals.

In addition to the route options, the study team developed an initial typical section. The number of lanes was based on traffic projections in the year 2030 and the dimensions and features were based on input from the PDC and standard TxDOT typical sections. The typical section option for the FM 1103 extension recommended a road that was six lanes divided with a raised median. The section contained a 150-foot proposed right of way (ROW), with wider ROW at intersections. It also called for a bike lane, sidewalk, curb and storm drain.



Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 1 5 - FM 1103 Extension Initial Route Envelopes Map

(Original Size 36" x 90")

4.2 Screening

Because each of the potential improvements had advantages and disadvantages, criteria were developed to evaluate the alternatives. These criteria, which differed between the existing and new location sections, were applied to the level necessary to differentiate between the initial set of options for each section to arrive at six viable initial options to be considered for further refinement and analysis.

4.2.1 Existing FM 1103

The PWR called for a four lane, 120-foot East-West section and a six lane 150-foot North-South section. In order to accommodate these needed improvements trade-offs were necessary, primarily a need for additional ROW. Assets and constraints were analyzed on each side of FM 1103 based upon many factors including the number of residential parcels, number of structures, cemeteries, potential school properties and other constraints and assets.

The East-West section was centered off of existing ROW (60' north and 60' south), except at the High School, where land would be acquired from the school side (south) to avoid residential on north side. Acquiring land from the high school was deemed acceptable because the land is not considered a functional part of school or public recreational activities.

The North-South segment of existing FM 1103 was further evaluated in sections according to public cross-streets - Section 1 was defined from IH 35 to Chelsea/Old Wiederstein, which is a jogged intersection, Section 2 went from Chelsea/Old Wiederstein to Green Valley, and Section 3 traveled from Green Valley to the bend off FM 1103 near Brite Road. This evaluation served to analyze the impacts of widening to 4 lanes versus 6 lanes and to evaluate which side of the road the ROW widening would minimize impacts and maximize design goals.

The study team made a recommendation to widen east in Section 1, east in Section 2, and west in Section 3 of the North-South section, except at Green Valley where the study team took advantage of a 20-foot developer dedication on the east side and then moved back to the west.

<u>Widening Options Screening Criteria</u>

In preparation for Stakeholder Workshop #2, the study team developed 13 criteria in which to evaluate the widening options. These criteria focused mostly on quantitative characteristics of the Widening Options and are tallied based on impacts to the constraints listed below:

- Number of Residential Parcels
- Number of Residential Structures
- Number of Potential Residential Parcels
- Cemeteries
- Potential School Property
- Farms/Ranchland
- Hazardous Materials Sites
- Number of Commercial Parcels
- Number of Commercial Structures
- Bodies of Water
- Significant Potential Drainage Structure
- Constructability
- Design

Widening Options Screening Matrix

The purpose of the Widening Options Screening Matrix was to provide the study team with quantitative information about each section of the FM 1103 North-South Segment so that they may be able to develop a PWR to be taken to Stakeholder Workshop #2 for review by stakeholders. This evaluation also served to determine the impacts of widening to 4 lanes versus 6 lanes and to evaluate which side of the road the ROW should be acquired. The Widening Options Screening Matrix can be found in Figure 16.

Section 1	4 Lane			6 Lane		
Impacts to:	East	Center	West	East	Center	West
Number of residential parcels	0	9	9	0	9	9
Number of residential structures	0	3	3	0	3	5
Number of *potential* residential parcels	45	0	0	45	45	0
Cemeteries	0	0	0	0	0	0
Potential School Property	0	0	0	0	0	0
Farms / Ranchland	+	+	+	+	+	+
Hazardous materials sites	1	1	1	1	1	1
Number of commercial parcels	1	3	3	1	3	3
Number of commercial structures	1	2	2	1	2	2
Archeological / Historical Sites	0	0	0	0	0	0
Bodies of water	0	0	0	0	0	0
Significant potential drainage structure	0	0	0	0	0	0
Constructability	+	[illegible]	+	+	[illegible]	+
Design	+	+	+	+	+	+

Section 2	4 Lane			6 Lane		
Impacts to:	East	Center	West	East	Center	West
Number of residential parcels	6	14	8	6	14	8
Number of residential structures	0	0	3	2	3	3
Number of *potential* residential parcels	0	0	0	0	0	0
Cemeteries	0	0	0	0	0	0
Potential School Property	0	0	0	0	0	0
Farms / Ranchland	[illegible]	[illegible]	[illegible]	-	-	-
Hazardous materials sites	0	0	0	0	0	0
Number of commercial parcels	0	0	0	0	0	0
Number of commercial structures	0	0	0	0	0	0
Archeological / Historical Sites	1	0	0	1	1	0
Bodies of water	0	1	1	0	1	1
Significant potential drainage structure	0	0	0	0	0	0
Constructability	+	[illegible]	+	+	[illegible]	+
Design	+	+	+	+	+	+

Section 3	4 Lane			6 Lane		
Impacts to:	East	Center	West	East	Center	West
Number of residential parcels	5	9	4	5	9	4
Number of residential structures	0	0	0	2	0	0
Number of *potential* residential parcels	21	0	9	78	38	44
Cemeteries	0	0	0	0	0	0
Potential School Property	0	1	1	0	1	1
Farms / Ranchland	[illegible]	[illegible]	[illegible]	-	-	-
Hazardous materials sites	0	0	0	0	0	0
Number of commercial parcels	0	2	2	0	2	2
Number of commercial structures	0	0	0	0	0	0
Archeological / Historical Sites	0	0	0	0	0	0
Bodies of water	0	0	0	0	0	0
Significant potential drainage structure	1	0	0	1	1	0
Constructability	+	[illegible]	+	+	[illegible]	+
Design	+	+	+	+	+	+
Utility Structures	1	1	0	1	1	0
Greenbelt	1	0	0	1	1	0

• bl' the trandlon Scliolw *2 and 3, an* lddlJr:lN/ -/dert/a/ *sttu:lut9 la Impacted that Is net dhoNn har9 dua IDlla raa,mmand«/ tNllgnmant for• & at NCIon 2 and • Wast section 3*

Level of Service	4 Lane	6 Lane
2006	C	B
2036	E	C

Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 1 6 - FM 1103 Existing Route Screening by Section

4.2.2 FM 1103 Extension

Due to the difficulty in evaluating 27 different route envelopes, it was necessary to screen the envelopes down to 6 viable initial options (5 build options and the No Build) for more detailed analysis.

As collected from the first Stakeholder Workshop, criteria identified as being most critical to stakeholders were as follows:

- Minimize impacts to residential property and structures;
- Minimize impacts to floodplains;
- Minimize impacts to cemeteries;
- Minimize impacts to schools;
- Minimize impacts to farmlands/ ranchlands.

In order to further reduce the number of viable route envelopes to 5 build options, the study team screened the remaining possibilities by the additional following criteria:

- "Best Intent" of the option, as some options provided limited improvements,
- The similarity of routes (for routes where the impacts differed, the route with fewer impacts was chosen to move forward), and
- The similarity of routes (for routes that were close in alignment, one representative route was chosen based upon least impacts).

After the screening was complete, there were 6 remaining options: 5 build options and a No Build option remaining for further study. Of the 5 build options, there were multiple ending points along IH 10. None of the build options were "perfect solutions", and all of the options had trade-offs with different balances of addressing needs and minimizing impacts.

Initial Options Screening Criteria

In preparation for Stakeholder Workshop #2, the study team developed 29 criteria in which to evaluate these initial options. These criteria focused mostly on qualitative characteristics of the Initial Options and are listed below:

- Safety Goal
  - Grade Separate Rail Crossings (at FM 78)
  - Provide a Route Less Susceptible for Flooding
  - Accommodate Bicycles, Pedestrians
- Mobility Goal
  - Provide Additional Capacity to Relieve Existing Roads
  - Provide Additional Route Options Between FM 78 and IH 10
  - Provides Continuous Major Route Between IH 35 and IH 10

- Community and Environment Goal
  - Minimize Impacts to Residential Structures
  - Minimize Impacts to Potential Residential Property
  - Minimize Impacts to Floodplains
  - Avoid Cemeteries
  - Minimize Impacts to Schools
  - Minimize Impacts to Farmlands/ Ranchlands
  - Avoid Impacts to Parks and Recreational Facilities
  - Minimize Impacts to Water Wells
  - Minimize Impacts to Bodies of Water
  - Minimize Possible Noise Impacts
  - Minimize Impacts to Hazardous Materials Sites
  - Minimize Impacts to Archaeological and/or Historical Sites
  - Minimize Impacts to Commercial Properties
  - Minimize Impacts to Major Utility Features
    - Minimize Impacts to the GVEC Substation
    - Minimize Impacts to Existing Minor Utility Stations
  - Mitigate Impacts to Wetlands
  - Mitigate Impacts to Faith-Based Organizations
  - Mitigate Impacts to Civic Organizations (not incl. schools)
- Design Goal
  - Driver Expectancy
  - At a Minimum do not Worsen Drainage in the Area
  - Constructability
  - FM 78 Crossing
  - IH 10 Intersection Design
- Cost Effectiveness Goal
  - Approximate Total Cost

Initial Options Screening Matrix

The purpose of the Initial Options Screening Matrix was to provide stakeholders enough information about each option at that stage of the study so that they may be able to state their initial impression of the options. Due to the qualitative nature of the Initial Screening Criteria, evaluation performed by the study team was mostly through assessment and/or estimates. The Initial Options Screening Matrix was developed as a means to present the preliminary evaluation of the Initial Options in an organized and accessible fashion. At the time of the presentation of the Initial Options Screening Matrix, insufficient data concerning

impacts to wetlands was available, even for estimation; therefore, an assessment was not made. The Initial Options Screening Matrix can be found in Figure 17.

Criteria by Goal	Measure	Options:	A	B	C	D	E	F
Safety Goal								
Grade Separate Rail Crossing (at FM 78)	Grade separation at RR	no, yes	No	Yes	Yes	Yes	Yes	Yes
Provide a Route Less Susceptible for Flooding	No Build or Build	no, yes	No	Yes	Yes	Yes	Yes	Yes
Accommodate Bicycles, Pedestrians	No Build or Build	no, yes	No	Yes	Yes	Yes	Yes	Yes
Mobility Goal								
Provide Additional Capacity to Relieve Existing Roads	Additional capacity	no, yes	No	Yes	Yes	Yes	Yes	Yes
Provide Additional Route Option Between FM 78 and IH 10	Additional route	no, yes	No	Yes	Yes	Yes	Yes	Yes
Provides Continuous Major Route Between IH 35 and IH 10	Continuity along major route	no, yes	No	Yes	Yes	Yes	Yes	Yes
Community and Environment Goal								
Minimize Impacts to Residential Structures	Number of structures	-,0,+	None	15-19	15-19	10-14	10-14	10-14
Minimize Impacts to Potential Residential Property	Potential impacts to known developments	-,0,+	+	0	0	+	+	-
Minimize Impacts to Floodplains	Acres of floodplains	-,0,+	+	0	0	+	0	0
Avoid Cemeteries	Possible design constraint	-,0,+	+	+	+	+	+	+
Minimize Impacts to Schools	Potential impacts	-,0,+	+	+	+	0	+	0
Minimize Impacts to Farmlands / Ranchlands	Splits to large parcels	-,0,+	+	0	0	-	-	-
Avoid Impacts to Parks and Recreational Facilities	Impacts to parks	-,+	+	+	+	0	0	+
Minimize Impacts to Water Wells	Number of wells	-,0,+	+	+	0	0	+	0
Minimize Impacts to Bodies of Water	Possible design constraint	-,0,+	+	0	0	-	0	-
Minimize Possible Noise Impacts	Sensitive receptors	-,0,+	+	0	0	-	0	-
Minimize Impacts to Hazardous Materials Sites	Number of hazmat sites	-,0,+	+	+	+	+	+	+
Minimize Impacts to Archaeological and/or Historical Sites	Number of sites	-,0,+	+	+	+	+	+	+
Minimize Impacts to Commercial Properties	Number of properties	-,0,+	+	0	0	0	0	+
Minimize Impacts to Major Utility Features								
Minimize Impacts to the GVEC Substation	Potential impact	-,0,+	+	+	+	+	+	+
Minimize Impacts to Existing Minor Utility Stations	Number of stations	-,0,+	+	+	+	+	+	+
Mitigate Impacts to Wetlands	Unknown at this stage	N/A	+	[illegible]				
Mitigate Impacts to Faith-Based Organizations	Proximity	-,0,+	+	+	+	+	+	+
Mitigate Impacts to Civic Organizations (not incl. schools)	Potential impact	-,0,+	+	+	+	+	+	+
Design Goal								
Driver Expectancy	Concept familiarity	-,0,+	+	+	+	+	+	+
At a minimum do not Worsen Drainage in the Area	Design parameter	-,0,+	0	0	0	0	0	0
Constructability	Assessment	-,0,+	+	0	0	0	0	+
FM 78 Crossing	Assessment	-,0,+	-	0	0	0	0	0
IH 10 Intersection Design	Assessment	-,0,+	-	-	+	+	-	+
Cost Effectiveness Goal								
Approximate Total Cost	Planning level estimate	-,0,+	+	0	0	0	0	0

Source: RJ RIVERA Associates, Inc., 2006

Figure 1 7 - FM 1103 Initial Options Screening Matrix

4.3 Stakeholder Workshop #2

Stakeholder Workshop #2 took place on Thursday, April 20, 2006 in the Byron S. Steele High School cafeteria. The objectives of Stakeholder Workshop #2 were to re-introduce the route study to residents and property owners in the study area and to narrow down the six Initial Route Options within the corridor to three build options for further detailed consideration, along with the No Build option. The workshop also served as an opportunity to present the PWR to stakeholders for public input. An invitation was mailed out to property owners within the study area. More than 100 representatives from in or around the study area attended the workshop.

After the attendees were reminded of the study purpose and process, as well as the occurrences of the last Stakeholder Workshop #1, they were presented with the PWR for review.

4.3.1 Existing FM 1103

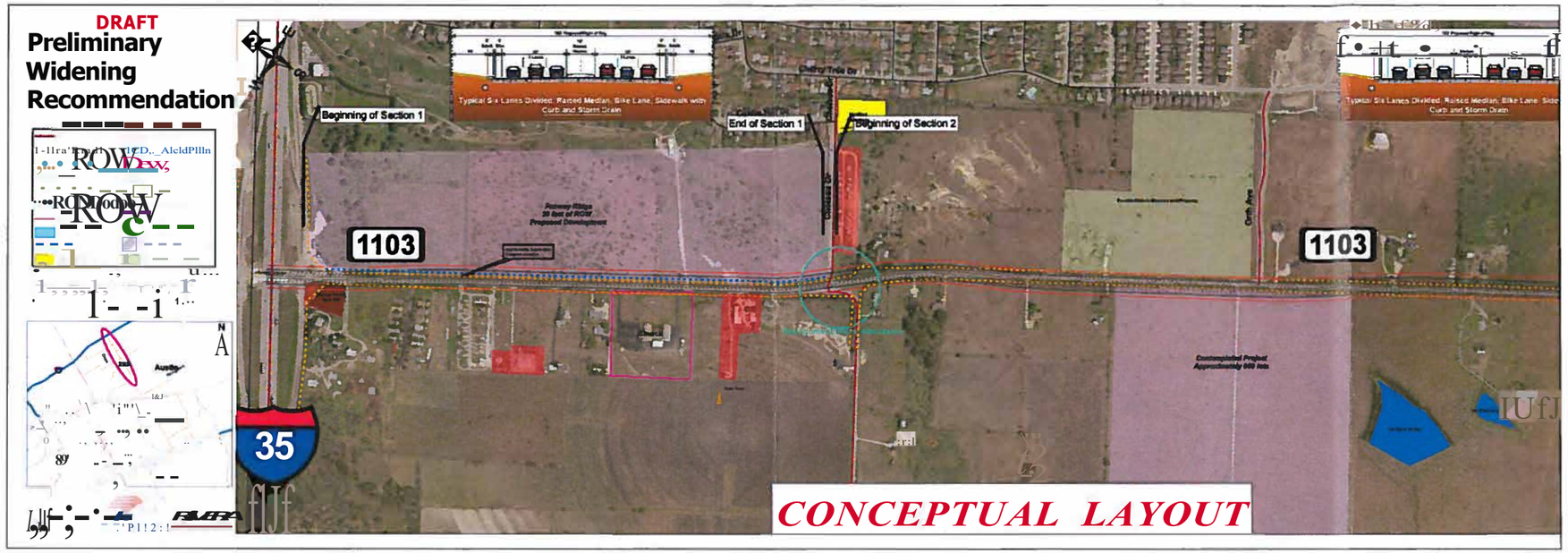
The PWR for existing FM 1103 was presented in two sections. The existing characteristics of the East-West Section, from Steele High School to FM 78, included a mostly 120-foot right-of-way already available and an urbanizing character due to the high school, main street intersection, post office, and commercial developments. The characteristics of North-South Section currently contains mostly 80-foot ROW, serves access to IH 35 and is in transition from a rural to suburban area. The PWR from Stakeholder Workshop #2 is shown in Figure 18 through Figure 19.

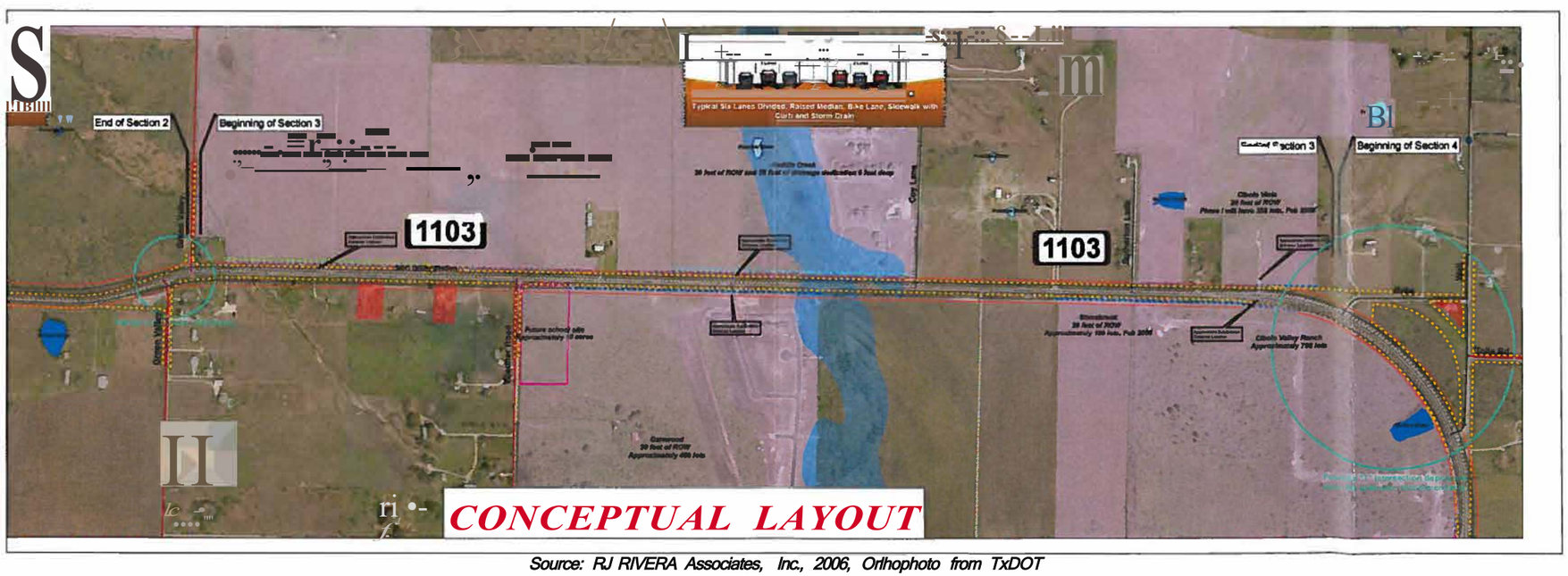
The study team also developed 3 initial typical section options for existing FM 1103 improvements. The determined number of lanes was based on TPP traffic projections and the dimensions and features were based on input from PDC attendees and standard TxDOT typical sections.

The North-South Section travels from IH 35 to Steele High School and includes design recommendations of a typical 150 foot ROW containing divided six lanes with a raised median. This section also contains a bike lane, sidewalk, curb, and storm drain. Intersections will have a wider ROW. Because there is only 80 feet of existing ROW there is a need for an additional 70 feet of ROW to equal the necessary 150 feet ROW in the **PWR.**

The East-West Section travels from Steele High School to FM 78 and includes design recommendations of a typical 120 foot ROW containing four lanes divided with a raised median. This section also contains a bike lane, sidewalk, curb, and storm drain. Intersections will have a wider ROW.

In conjunction with the above sections the PWR also includes a transition area along Steele High School containing five lanes divided with a raised median. This section also contains a bike lane, sidewalk, curb, and storm drain, with a right-turn lane serving the school.





Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 1 8 - Preliminary Widening Recommendation Map, North-South

(Original Size 103" x 18")

4.3.2 FM 1103 Extension

Next, possible extension options for FM 1103 were presented. Attendees were asked to discuss the six routes in their groups, agree on which option they liked best and why, and then rank the options. The six remaining routes included:

- Option A - Option A, or the No Build option, is to not construct an extension for FM 1103. The No Build option will always be considered a viable option and will be researched further. Please note that Option A is not displayed below.
- Option B - Option B extends FM 1103 from Brite Road to Zuehl Road at IH 10. This route utilizes Tolle and Stolte Roads, veering west to the existing intersection at Zuehl Road and IH 10.
- Option C - Option C is similar to Option Bin that it runs along Tolle and Stolte Roads toward IH 10, but Option C continues down straight to intersect IH 10 at a new location approximately 1/2 mile east of Zuehl Road.
- Option D - Option D extends FM 1103 from Brite Road to a new IH 10 intersection located roughly 1/2 east of Zuehl Road This route option travels west of Tolle Road, intersecting FM 78 near the Country Lane intersection.
- Option E - Option E extends FM 1103 from Brite Road to the Zuehl Road interchange at IH 10. This route runs along Tolle Road for approximately 6/10 of a mile, and then runs along a new location for the remainder.
- Option F - Option F extends FM 1103 from Brite Road to a new intersection location east of Zuehl Road This option goes east of Tolle Road and after crossing Lower Seguin Road also runs east of Stolte Road

After the small group workshop, all the attendees reconvened and shared their group's findings with the rest of the audience. The four options with the most group votes were chosen to move forward in the study process. The final rankings from the groups were inserted into a spreadsheet and given an overall ranking based upon the small group rankings. The rankings can be seen in the Amalgamated Matrix in Figure 20.

	A (no build)	B	C	D	E	F
Group 1	6	3	1	5	2	4
Group 2	1	6	5	4	2	3
Group 3	6	4	1	3	5	2
Group 4	1	6	5	3	4	2
Group 5	6	5	3	1	4	2
Group 6	1	3	2	6	4	5
Group 7	6	2	1	4	5	3
Group 8	1	4	2	3	5	6
	28	33	20	29	31	27
Total	3	6	1	4	5	2

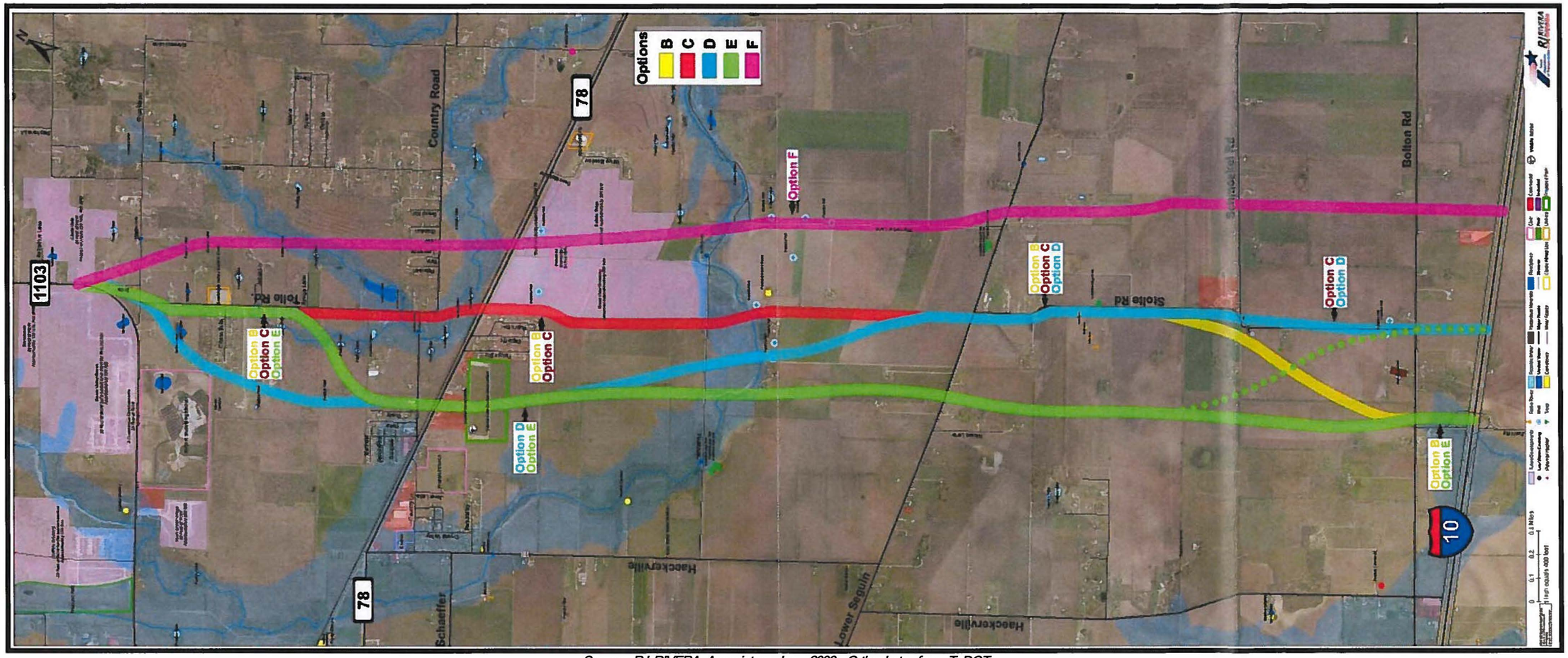
Source: RJ RIVERA Associates, Inc., 2006

Figure 20 - FM 1103 Extension Route Options Amalgamated Matrix

Please note, while some groups did rank the No Build option, other groups did not because they were under the impression that it had already been chosen as an option to advance to the next stages of development. There was brief debate on the issue before the study team recorded the ranking "as is". Because any re-ranking of the "No Build" portion would not change the relative order, each group ranked for the build options.

Consequently, the four extension options that continued for further study were Option A - No Build, Option C - Along Tolle and Stolte Roads, Option D - West of Tolle Road before connecting with Stolte Road, and Option F - East of Tolle and Stolte Roads. All of the options taken to Stakeholder Workshop #2 can be seen in Figure 21.

For more detailed information on Stakeholder Workshop #2, please refer to *FM 1103 Stakeholder Workshop #2 Report* by RJRA.



Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 21 - FM 1103 Extension Initial Options Map

(Original Size 36" x 90")

4.4 Individual Stakeholder Meetings

In addition to the larger stakeholder workshops, the study team also organized and attended ten Individual Stakeholder Meetings up to the date of the second Stakeholder Workshop. These meetings were held with any local or agency stakeholders that wished to discuss specific issues concerning the FM 1103 Route Study. The ten Individual Stakeholder Meetings held prior to Stakeholder Workshop #2 are summarized in subsections 4.4. 1 through 4.4.10.

4.4.1 City of Cibolo - December 21, 2005

The purpose of this meeting with Todd Parton of the City of Cibolo was to gather information concerning the Cibolo Comprehensive Plan items in addition to those provided at the PDC. Also, the study team was informed about new development updates, known developer right of way dedications, and Traffic Impact Analyses the City requires. Mr. Parton also presented photographs of flooding along FM 1103 that he had mentioned during the PDC. Finally, the typical section that the study team presented during the PDC was discussed.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #1 Report* by **RJRA.**

4.4.2 TxDOT, Seguin Area Office-January 10, 2006

The purpose of this meeting with the TxDOT Seguin Area Office was to gather information concerning developer ROW dedications and the current construction project along existing FM 1103 and also generally discuss the route study progress with the Seguin Area Office.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #2 Report* by **RJRA.**

4.4.3 City of Cibolo - January 10, 2006

The purpose of this meeting with Peggy Cimics and Bud Dailey of the City of Cibolo was to confirm the meeting time and location for Stakeholder Workshop #1, deliver City Council Stakeholder Workshop #1 invitations that were incorrectly addressed, follow-up on additional stakeholders Todd Parton had previously mentioned, and verify Cibolo city limits.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #3 Report* by **RJRA.**

4.4.4 City of Schertz - February 3, 2006

The purpose of this meeting with Nancy McBeth, Amy Madison, David Richmond, and Leonard Truitt of the City of Schertz was to discuss proposed development projects and proposed roadway improvement projects in the FM 1103 area.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #4 Report* by **RJRA.**

4.4.5 Mr. and Mrs. Michael Arizpe, Mr. Jason Sheppard, and Mr. Robert Schulze - February 16, 2006

The purpose of this meeting was to listen to Mr. Arizpe's concerns and those of his neighbors, particularly with regard to the flooding/drainage situation in his area along one of the FM 1103 Initial Route Options.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting* #5 *Report* by RJRA.

4.4.6 Mr. and Mrs. Nolan Bartoskewitz - March 2, 2006

The purpose of this meeting was to update Mr. and Mrs. Nolan J. Bartoskewitz about the route study and inform them of possible impacts to their property. The existing FM 1103 plans as well as the possibility of an FM 1103 extension were discussed. Furthermore, the map of initial route options taken to Stakeholder Workshop #1 was discussed during the meeting. Please refer to Figure 22 for the initial route options map.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #6 Report* by RJRA.

4.4.7 Mrs. Raymond Krueger- March 2, 2006

The purpose of this meeting was to speak with Mrs. Krueger about a possible cemetery located near their property and to inform her and her husband of the status of the current FM 1103 study.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting* #7 *Report* by RJRA.

4.4.8 City of Cibolo and TxDOT, SAT District Office-April 4, 2006

The purpose of this meeting was to update members of the City of Cibolo on the progress and findings concerning the FM 1103 Route Study and get their input as a local jurisdiction prior to the upcoming Stakeholder Workshop #2. Discussion items included existing FM 1103 improvements, proposed typical sections, and ROW widening. This meeting also served as an opportunity to review ROW and other issues for the extension, possible implications for the FM 3009 E study, drainage issues, and new work authorizations items.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting* #8 *Report* by RJRA.

4.4.9 TxDOT, Cibolo Vista Developers, and Bison Ridge Developers - April 5, 2006

The purpose of this meeting was for the developers of Buffalo Ridge and Creek View Crossing to meet with TxDOT and be updated on the FM 1103 Route Study. This included a discussion of drainage issues and how the route study would affect the developments.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting* #9 *Report* by RJRA.

4.4.10 City of Schertz - April 6, 2006

The purpose of this meeting was to update members of the City of Schertz on the progress and findings concerning the FM 1103 Route Study and get their input as a local jurisdiction prior to the upcoming Stakeholder Workshop #2. City staff had been invited to the meeting with TxDOT and the City of Cibolo on April 4, 2006, but had not attended; TxDOT staff was not able to attend this meeting, so they requested RJRA attend and update City of Schertz staff on what had been discussed at the April 4th meeting and get their input.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #10 Report* by RJRA.

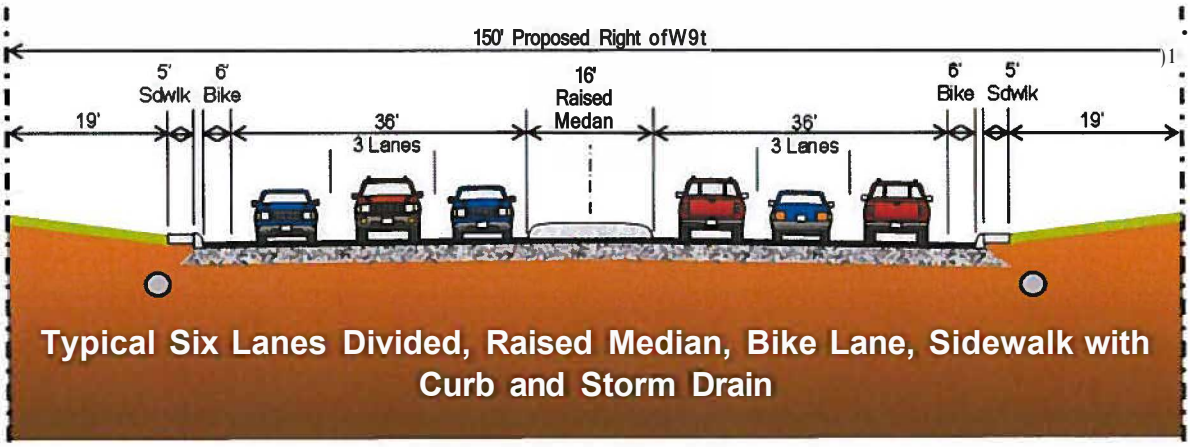
5.0 REFINED ALTERNATIVES

5.1 Refinement

5.1.1 Existing FM 1103

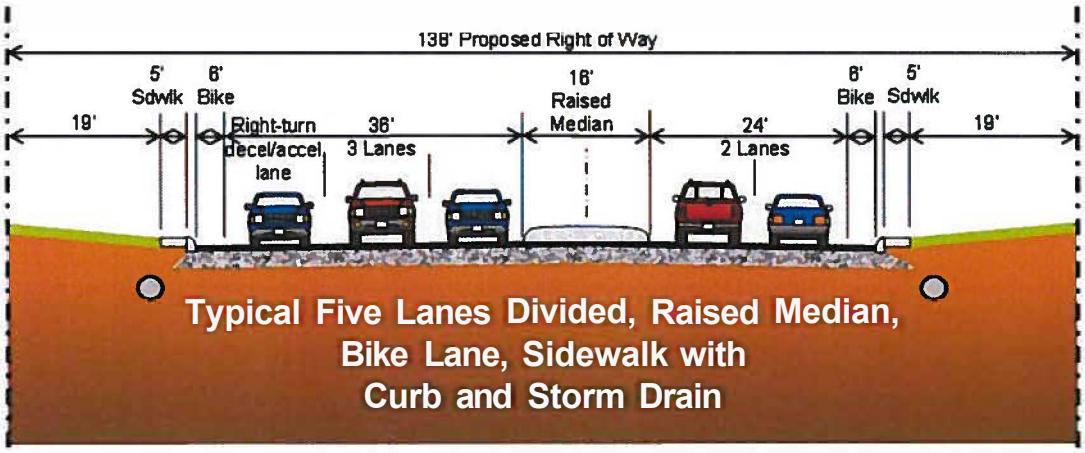
After Stakeholder Workshop #2, at the request of City of Schertz staff and Cude Engineering, the study team developed an Alternative Widening Concept (AWC) of a 35-feet/35-feet split for existing FM 1103 from IH 35 to Chelsea/Old Wiederstein. This evaluation was completed because the developer team for the Fairway Ridge development had requested through Schertz City Council members that city staff talk to TxDOT about re-evaluating the PWR. The AWC was presented during Individual Stakeholder Meeting #13 to inform and solicit comments from abutting property owners regarding the need for the possible acquisition of additional ROW on FM 1103, and the possible impacts of the AWC to parties on both sides of the road. During this time the study team continued to refine the PWR as the most viable option.

Refined typical sections were developed for existing FM 1103. From IH 35 to Rodeo Drive the typical section was a 6-lane urban section with a curb, storm drain, and 150 feet of ROW. The transition area from Rodeo Drive to the future city street southwest of Steele High School contained a 5-lane urban section with a curb, storm drain, and 138 feet of ROW. Proceeding from the future city street southwest of Steele High School to Main Street there would be a 4-lane urban section with a curb, storm drain, and 120 feet of ROW. As part of the refinements the study team revised the remaining section of existing FM 1103 from Main Street to FM 78 to include a flush median. Other characteristics for the 4-lane urban section, including a bike lane and sidewalk, would remain the same as previously designed. The typical sections used for the PWR are shown in Figure 22 through Figure 25.



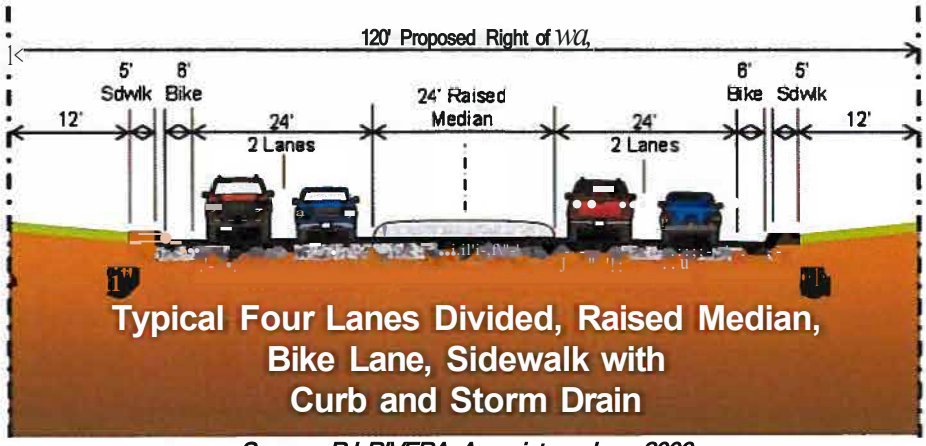
Source: RJ RIVERA Associates, Inc., 2006

Figure 22 - Six Lane Section: IH 35 to Rodeo Drive



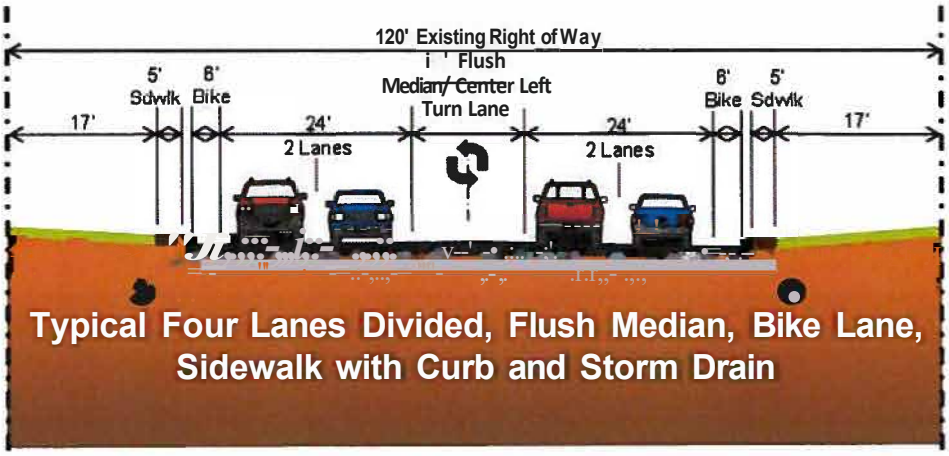
Source: RJ RIVERA Associates, Inc., 2006

Figure 23 - Five Lane Section: Rodeo Drive to Future City Street Southwest of Steel High School



Source: RJ RIVERA Associates, Inc., 2006

Figure 24 - Four Lane Section: Future City Street Southwest of Steele High School to Main Street



Source: RJ RIVERA Associates, Inc., 2006

Figure 25 - Four Lane Section: Main Street to FM 78

5.1.2 FM 1103 Extension

After Stakeholder Workshop #2, the four options selected to move forward in the study were subjected to even further refinement into Conceptual Geometric Alternatives. First, the options were re-designated as the following:

Option A renamed as Alternative 1 - No Build

Option D renamed as Alternative 2 - West of Tolle Road before connecting with Stolte Road

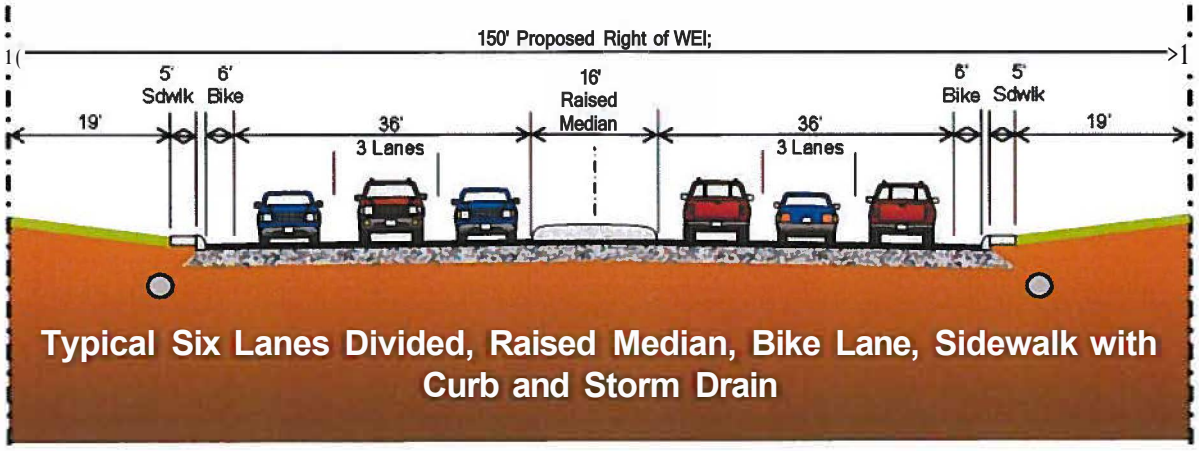
Option C renamed as Alternative 3 - Along Tolle and Stolte Roads

Option F renamed as Alternative 4 - East of Tolle and Stolte Roads

After being renamed, the alternatives were designed to sufficient detail to differentiate the build alternatives as well as the no build alternative. At this stage, there was enough information to design sufficiently on the horizontal plane. The true routes (pavement edges, lane striping, and access assumptions) were all drawn using MicroStation. Road curves were designed to the specified design speed of 45 miles per hour (mph). However, further information will be needed to sufficiently design the vertical profile. During the design refinement, there was significant effort dedicated to minimizing impacts. The study attempted to maximize the potential of each alternative by realigning the route to avoid or minimize impacts to constraints when possible. In spite of this effort, the alternatives had not yet been surveyed and any design performed was limited to a planning level. Any further possible design will be performed in the Engineering Design and Schematic Phase.

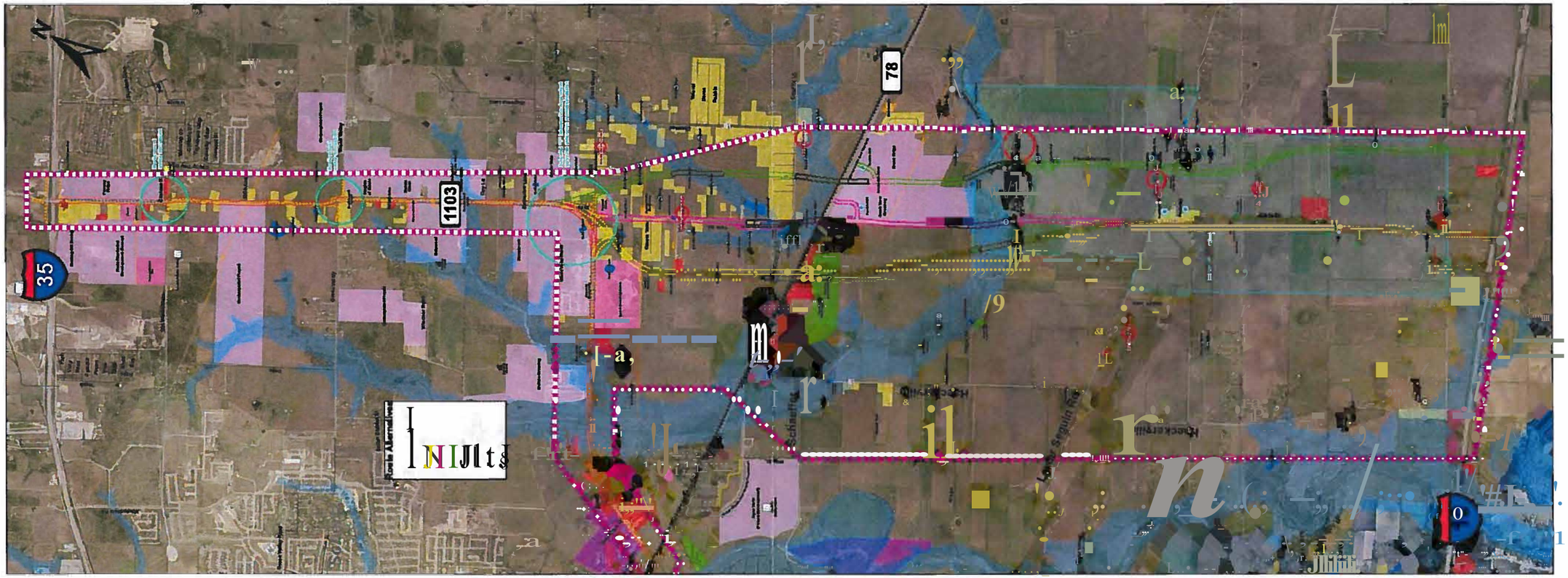
In addition to the route refinements, the typical section for each alternative was assigned. One typical section was utilized for the remaining alternatives and consisted of a 6-lane urban section with curb, storm drain, and 150 feet of ROW. The typical section used for the Refined Alternatives is shown in Figure 26.

Both of the efforts in refining the route and the typical section contributed to the development of the Refined Alternatives. The four alternatives (including the No Build Alternative) are depicted in Figure 27.



Source: RJ RIVERA Associates, Inc., 2006

Figure 2 6 - Six Lane Section: Refined FM 1103 Extension Alternatives



Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 27 - FM 1103 Extension Refined Alternatives Map

(Original Size 36" x 90")

5.2 Evaluation

After the PWR and the Refined Alternatives were developed, the study team further refined and modified them according to comments made during and after Stakeholder Workshop #2. The evaluation performed in this stage was more detailed and in-depth than in previous stages.

5.2.1 Existing FM 1103

The study team conducted an evaluation of the AWC and the PWR in order to determine which option should proceed as the study recommendation widening scenario. Per the request of Cude Engineering, the study team gathered additional information and evaluated the AWC in comparison to the PWR with the following findings:

Comparative qualitative impacts of each scenario supported the PWR:

- Differentiators among community and environmental features continued to be existing residential, commercial, and civic (church) impacts versus impacts to potential future residential parcels.
- Other differentiators favoring the PWR included constructability – widening from the center was considered to be less desirable for traffic safety and mobility during construction, with associated implicit impacts to schedule and cost;
- Schedule and cost implications of impacting both sides of utilities versus one side; and
- Noise implications of widening toward existing homes and a sensitive receptor (the church).

Comparative quantitative cost impacts of each scenario also supported the PWR. Differentiators from a cost perspective included:

- In favor of the PWR:
  - Avoided higher costs for existing land and improvements;
  - Avoided "cost to cure" expenses associated with impacts to the septic systems of Rancho Vista Park and the Kahn Subdivision and the internal circulatory street and community services building of Rancho Vista Park, each property representing residential impacts to multiple families, as well as commercial impacts to each proprietor;
  - Avoided cost of damages to Other Existing Residential structures not considered under the previous planning-level screening- approximately $140,000; and
  - Avoided costs associated with impacts to utilities on both sides of the road under the AWC versus primarily one side of the road under the PWR.
- In favor of the AWR:
  - Avoided costs for lots for proposed residential (20 units already platted) and
  - Avoided replacement cost and damages for the Fairway Ridge subdivision entrance sign

From the Route Study perspective with consideration to the planning process under the National Environmental Policy Act (NEPA), additional consideration was paid to the timeline of analysis to arrive at the PWR. That is, the preliminary analysis was conducted in March 2006 and Initial Options screening occurred based upon information available at that time. This re-examination considered costs which occurred after that time, including the consideration of the cost of the platted lots of Units 1 and 2 in Fairway Ridge, as well

as the replacement cost and damages for the subdivision entrance sign which was constructed. The Fairway Ridge developer moved quickly from entirely undeveloped property in early 2006 and proceeded rapidly to improve the property during the route study. Consideration of future values in the determination of a route study recommendation could be considered inappropriately speculative - for example, the study team had to be cautious about assuming that improvements between "today" and project implementation would be completed and would only occur on the Fairway Ridge side. Thus, the study team's recommendation was to proceed with the Study Recommendation based upon the best known information for "today" and compensate parties in the future when the project may be implemented, as appropriate. This approach was consistent with alternatives analysis requirements under NEPA.

5.2.2 FM 1103 Extension

Final Screening and Evaluation Criteria

Based on the input received at Stakeholder Workshop #2, the initial screening and evaluation criteria were revised for use in screening the conceptual alternatives. The criteria were refined so that a more quantitative approach was used in evaluating the criteria. The recommended alternative was established using the below criteria followed by the measure in which they are assessed:

- Safety Goal
  - Grade Separate Rail Crossings (at FM 78)
  - Provide a Route Less Susceptible for Flooding
  - Accommodate Bicycles, Pedestrians
- Mobility Goal
  - Provide Additional Capacity to Relieve Existing Roads
  - Provides Continuous Major Route Between IH 35 and IH 10
- Community and Environment Goal
  - Minimize Impacts to Residential Property
  - Minimize Impacts to Residential Structures
  - Minimize Impacts to Proposed Residential Parcels
  - Minimize Floodplain Traversal
  - Avoid Cemeteries
  - Minimize Impacts to Schools
  - Minimize Impacts to Farmlands/ Ranchlands
  - Avoid Impacts to Parks and Recreational Facilities
  - Minimize Impacts to Water Wells
  - Minimize Noise Impacts
  - Minimize Impacts to Hazardous Materials Sites
  - Minimize Impacts to Archaeological Sites

  - Minimize Impacts to Historical Sites
  - Minimize Impacts to Commercial Properties
  - Minimize Impacts to Commercial Structures
  - Minimize Impacts to Proposed Commercial Structures
  - Minimize Impacts to the GVEC Substation
  - Minimize Impacts to Existing Minor Utility Stations and Structures
  - Mitigate Impacts to Natural Habitat
  - Waters of the U.S.
  - Wildlife Vegetation
  - Mitigate Impacts to Faith-Based Organizations
  - Mitigate Impacts to Civic Organizations
  - Consider Environmental Justice
- Design Goal
  - Driver Expectancy
  - At a Minimum do not Worsen Drainage in the Area
  - Constructability
- Cost Effectiveness Goal
  - Approximate Total Cost
  - Approximate Construction Cost
  - Approximate Paved Road Construction Cost
  - Approximate Structure Construction Cost
  - Approximate Other Project Development Costs
  - Approximate Right-of-Way (ROW) Costs

Environmental Analysis

An environmental analysis of the FM 1103 study area was conducted by CAI. Their efforts consisted of documenting previously identified conditions and performing a field investigation to determine if any other environmental impacts existed in the route study area. Various environmental constraints were assessed during the field investigation, which include:

- Land use and zoning, including existing parks
- Historical and archeological sites
- Hazardous materials sites
- Soil and geologic conditions
- Waters of the U.S./Wetlands
- 100-year floodplains

- Sensitive wildlife habitat

For more information concerning the environmental analysis, please refer to *FM 1103 Corridor Study- Existing Conditions Along Identified Alignments* by CAI.

A windshield survey performed by a historical architect from Ecological Communications Corporation (Ecomm) revealed ten sites within and surrounding the study area. The age range of the structures was determined to be circa 1890 to 1925. A potential Rural Historic District was also identified between Arizpe Road/Pfannstiel Lane and IH 10. This area would encompass all three proposed alignments in this section of the corridor. These historic features were plotted on the constraints map and considered during the alternatives analysis. The study team made an effort to avoid as many potential historic sites/structures as possible. Historical and Environmental impacts will be studied in more depth as part of a planned future Environmental Assessment.

Please note that the environmental analysis performed at this step of the FM 1103 Study does equate to the environmental assessment that may be performed after the conclusion of this study.

Conceptual Cost Estimates

In addition to evaluating the physical characteristics of the alternatives, the study team also considered the estimated costs. The study team developed cost estimates for the purpose of comparing the cost to construct each alternative against the others. The cost estimates the study team considered were the route construction costs, the extra costs associated with utility relocation, engineering and construction management, and cost associated with ROW purchasing.

As shown in Table 3, the bases of the cost estimates for construction were the typical section concepts: the four lane urban section, the six lane urban section, and the four lane rural section. From these typical sections, the cost estimates were divided into three categories: roadway at grade, roadway on bridge approaches, and roadways on bridge structures. These costs were estimated per mile. The study team then utilized a detailed spreadsheet acquired from TxDOT to calculate the quantities needed for construction.

Table 3 - Estimated Cost to Construct Roadway

Roadway Type	Cost of 6-Lane Urban Section ($ per mile)
On Bridge Structure	$31,128,923.47
On Bridge Approach	$10,714,862.66
At Grade	$5,135,993.12

Source: TxDOT San Antonio District, 2005

The extra costs associated with utility relocation, engineering, and construction management were estimated as percentages of the total construction cost for each alternative. The percentages used are listed below:

- 50% - Construction Cost Contingency
- 5% - Preliminary Engineering
- 10% - Final Engineering

- 11% - Utility Relocation
- 10% - Construction Engineering and Inspection

The study team estimated the cost for ROW purchases by tabulating the acres of property and the number of structures each alternative impacted. Every type of property or structure (residential, commercial, civic, etc.) incurred a different cost. The cost per square foot of property purchases for ROW is given in Table 4. Additionally, the cost for improvements to structures impacted is depicted in Table 5.

All the cost were then added and given as the estimated cost for purchasing ROW.

Table 4 - Estimated Cost to Purchase Property for Right-of-Way

Property Type	Unit Cost to Purchase ($ per ft2)
Rural Property, Farm and Ranchland	$1.00
Residential	$1.00
Commercial	$4.00
Industrial / Utility	$1.70
Church / Civic/ Schools/Park	$1.50
Proposed Commercial	$4.00
Proposed Residential	$1.00

Source: TxDOT San Antonio District Right of Way Acquisition Division, 2006

Table 5 - Estimated Cost of Improvements for Impacted Structures

Structure Type	Cost of Improvements ($ per improvement)
Home or Small Business	$100,000.00
Garage or Barn	$20,000.00
Large Commercial or Industrial	$250,000.00
Minor Utility Station	$150,000.00
Existing Civic Structure	$500,000.00
Small Faith-Based Organization Structure	$250,000.00
Large Faith-Based Organization Structure	$500,000.00

Source: TxDOT San Antonio District Right of Way Acquisition Division, 2006

Final Screening and Evaluation Matrix

In order to present all the final screening and evaluation data in an organized and accessible form, the study team generated the Final Screening and Evaluation Matrix in much the same fashion as the Initial Options Screening Matrix. The purpose of the Final Screening and Evaluation Matrix was to allow the study team and stakeholders to view pros and cons of each alternative. Due to the more quantitative nature of the Final Screening and Evaluation Criteria, evaluation was performed by the study team through more numerical methods, such as generating analysis models in GIS, making detailed counts from aerial photography, and utilizing other tools provided by TxDOT and other resources. The Final Screening and Evaluation Matrix can be located in Figure 28.

FM 1103 Extension Route Study Altematives

Screening and Evaluation Matrix

Criteria by Goal			Notes	1	2	3	4
			Altematlves:	1	2	3	4
Safety Goal							
Grade Separate Rail Crossing (at FM 78)				no	yoa	yi>tl	yes
Provide a Route Less Susceptible for Flooding				no	yes	yes	yos
Accommodate Bicycles, Pedestrians				no	yen	ye	yes
Mobility Goal							
Provide Additional Capacity to Relieve Existing Roads				no	yon	yes	yos
				no	yoa	yes	yoa
Community and Environment Goal							
Minimize Impacts to Residential Property				0	24	24	27
Minimize Impacts to Residential Structures				0	5	8	3
Minimize Impacts to Proposed Residential Parcels				0	0	59	51
				0.0	3.6	11.7	12.0
Avoid Cemeteries				+	+	+	+
Minimize Impacts to Schools				+		+	
Minimize Impacts to Farmlands / Ranchlands				+		+	
Avoid Impacts to Parks and Recreational Facilities				+		+	+
Minimize Impacts to Water Wells				0	2	1	1
Minimize Noise Impacts				+	0	0	0
				+	+	+	+
Minimize Impacts to Archaeological				+	+	+	+
				+	0	0	0
Minimize Impacts to Commercial Properties				0	3	2	2
				0	0	0	1
Minimize Impacts to Proposed Commercial				0.0	0.0	0.0	1.6
Minimize Impacts to the GVEC Substation				+	+	+	+
Minimize Impacts to Existing Minor Utility Stations and Structures				+	+	-	+
Natural Environment Goal							
W.-,orullio US				0	1	3	3
Wildlife Vegetation				+	0	0	0
				+	+	0	0
Minimize Impacts to Civic Organizations				+	+	+	+
Consider Environmental Justice				+	+	+	+
Design Goal							
Driver Expectancy				+	+	+	+
At a Minimum do not Worsen Drainage in the Area				Yes	Yes	Yes	Yes
Constructability				+	+	0	+
Cost Effectiveness Goal							
Approximate Total Cost				$.0 M	$77.6 M	$93.1 M	$101.3 M

FM 1103 Screening Matrix
9121/2006

Texas Department of Transportation

5.3 Stakeholder Workshop #3

Over 100 representatives of the public and government agencies attended Stakeholder Workshop #3, held on September 21, 2006 at Byron P. Steele High School cafeteria. The objectives of the workshop were to re-introduce the route study to residents and property owners in the study area and present the PWR along with the three potential build alternatives to be studied in greater detail verses the No Build option to not extend FM 1103. An invitation was mailed to landowners and other people invested in the study area. If an email address was given to the study team, stakeholders were also sent an email reminder about the meeting. Approximately 100 agency representatives and stakeholders from in or around the FM 1103 study area attended the workshop.

The goal of Stakeholder Workshop #3 was not to choose a single route alternative for further study, but for stakeholders to inform the study team of the pros and cons of each alternative and comment on how each alternative could be further improved. To assist the stakeholders in performing this task, the stakeholder groups were provided with draft copies of the Alternatives Screening Map and the Final Screening and Evaluation Matrix. For more detailed information on Stakeholder Workshop #3, please refer to the *FM 1103 Stakeholder Workshop #3* Report by RJRA.

5.4 Individual Stakeholder Meetings

In addition to the larger stakeholder workshops, the study team also organized and attended sixteen Individual Stakeholder Meetings between Stakeholder Workshop #2 and the Final Screening. These meetings were held with any local or agency stakeholders that wished to discuss specific issues concerning the FM 1103 Route Study. The sixteen Individual Stakeholder Meetings held between Stakeholder Workshop #2 and the Final Screening are summarized in subsections 5.4.1 through 5.4.21.

5.4.1 City of Schertz - May 25, 2006

The purpose of this meeting was to meet with City of Schertz staff to discuss consideration of an AWC requiring a 30 feet/40 feet split of additional ROW for the section of existing FM 1103 between IH 35 and Chelsea/Old Wiederstein. This request was made by the Fairway Ridge development team through City of Schertz Council.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #11 Report* by RJRA.

5.4.2 Pastor Gene Tone - May 25, 2006

The purpose of this meeting was to prepare for the individual stakeholder meeting held on June 1, 2006 (see below). RJRA went into the study area to alert the property owners directly adjacent to FM 1103 of the upcoming meeting. During this time an informal stakeholder meeting was also conducted between RJRA, Pastor Gene Tone, and Matt Webb which discussed the movement of utilities and the acquisition of church property.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #12 Report* by RJRA.

5.4.3 Fairway Ridge and Neighbors - June 1, 2006

The purpose of this meeting was to inform and solicit comments from stakeholders regarding the possible widening of FM 1103 specifically between IH 35 and Old Wiederstein Road. Topics discussed at the meeting include the current construction project, the need for the expansion of FM 1103, the need for the possible acquisition of additional right-of-way, and the possible impacts of the project to parties on both sides of the road.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #13 Report* by RJRA.

5.4.4 City of Schertz Work Session - June 27, 2006

The purpose of this meeting was for TxDOT to update elected officials about the progress of the FM 1103 Route Study and to explain the previous meeting held on June 1, 2006 (see above), with stakeholders along existing FM 1103.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #14 Report* by RJRA.

5.4.5 City of Cibolo Council - June 27, 2006

The purpose of this meeting was to update the City of Cibolo Council on the current FM 1103 study being conducted by TxDOT and RJRA. Information from the PDC, Stakeholder Workshops #1 and #2 was reviewed during the meeting and a question and answer session was held between council members and the study team.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #15 Report* by RJRA.

5.4.6 City of Schertz Council-July 18, 2006

The purpose of this meeting was to respond to a request made by the City of Schertz for an update on the status of the FM 103 Route Study. The update was presented during a regularly scheduled City Council meeting. TxDOT's update, agenda item #20, was presented by Greg Malatek, P.E., TxDOT, and Karen Lorenzini, P.E., A.I.C.P., RJRA.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #16 Report* by RJRA.

5.4.7 Cude Engineering-August 3, 2006

The purpose of this meeting was to ask Cude Engineering, representing the property owner and developer of the Fairway Ridge development, for a right-of-way envelope that would be acceptable to them. This right-of-way envelope was then examined and analyzed against the PWR.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #17 Report* by RJRA.

5.4.8 SCC Development Company - August 8, 2006

The purpose of this meeting was to update SCC Development Company on the FM 1103 Route Study because of their interest in the Hubertus Family property surrounding the Quix convenience store at FM 1103 and IH 35. Because the company was located in Austin, Joel Guerrero, TxDOT gave permission for SCC to visit the RJRA office and be updated by Ms. Karen Lorenzini, P.E., RJRA.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #1 B Report* by RJ RA.

5.4.9 Mr. Bruce Jensen, TxDOT, ENV - August 22, 2006

The purpose of this meeting was to gather information regarding a potential rural historical district and potential rural historic sites in relation to the proposed routes for FM 1103. This meeting also served as an opportunity to provide Mr. Jensen with an overview of the route study process.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #19 Report* by RJRA.

5.4.10 Ms. Belinda Plutska, ISO Superintendent - August 24, 2006

The purpose of this meeting was to discuss planning within the school district and its affect on both FM 1103 and FM 3009 East Route Studies. Proposed plans included finding land for a high school site, fine arts/athletic facility, and an elementary school.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #20 Report* by RJRA.

5.4.11 City of Cibolo- September 1, 2006

The purpose of this meeting was to gain feedback from TxDOT and the City of Cibolo representatives on the Alternatives Screening Map and Screening and Evaluation Matrix created for the FM 1103 route study extension options that were presented at Stakeholder Workshop #3.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #21 Report* by RJRA.

5.4.12 Cities of Schertz and Cibolo - September 1, 2006

The purpose of this meeting was to prepare for Stakeholder Workshop #3. This meeting served as an opportunity for RJRA to gain feedback from TxDOT, City of Cibolo and Schertz representatives on the PWR Maps and Evaluation Worksheet created for the existing FM 1103 route study that were presented at Stakeholder Workshop #3.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #22 Report* by RJRA.

5.4.13 TxDOT, Right-of-Way- September 6, 2006

The purpose of this meeting was to gather information regarding potential utility issues and costs for the existing and proposed extension routes for FM 1103. This meeting also served as an opportunity to learn more about ROW issues that may have existed from IH 35 to Old Wiederstein.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #23 Report* by RJRA.

5.4.14 Mr. Ted West, FHWA- September 14, 2006

The purpose of this meeting was to talk to Mr. West about the implications and advantages or disadvantages of completing an Environmental Assessment (EA) as part of the study for either the FM 3009 East or FM 1103 extension.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #24 Report* by RJRA.

5.4.15 Mr. Michael Arizpe and Mr. Robert Schulze- September 26, 2006

The purpose of this meeting was to speak with Mr. Arizpe and Mr. Schulze about a possible realignment of Alternative 2 south of Arizpe Road. They requested that the alignment be altered to stay within Mr. Arizpe's property as long as possible so that Alternative 2 would not triangulate Mr. Schulze's farmland and so that improved access would be provided to both properties in the event of a flood.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #25 Report* by RJRA.

5.4.16 Mr. Arthur Linares- September 26, 2006

The purpose of this meeting was to inform Mr. Linares of the FM 1103 Study and answer any questions he may have had regarding the study. Mr. Linares did not attend the FM 1103 Stakeholder Workshop #3, but it was discovered through other stakeholders that Mr. Linares was planning on building structures on his property, which were directly in the path of Alternative 2 and Alternative 3.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #26 Report* by RJRA.

5.4.17 Mr. Robert Schulze - October 25, 2006

The purpose of this meeting was to meet with Mr. Schulze to present proposed adjustments within his property for Alternative #2 per their previous meeting September 26, 2006 (see above), and to answer any questions he may have had.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #27 Report* by RJRA.

5.4.18 Mr. Michael Arizpe - October 25, 2006

The purpose of this meeting was to meet with Mr. Arizpe to present proposed adjustments within his property for Alternative #2 per their previous meeting September 26, 2006 (see above), and to answer any questions he may have had.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #28 Report* by RJRA.

5.4.19 Mr. James Twenter - October 25, 2006

The purpose of this meeting was to meet with Mr. Twenter and discuss how the FM 1103 Route Study affected his property and horse business. It also served as an opportunity to answer questions he had regarding Alternative #2.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #29 Report* by RJRA.

5.4.20 City of Cibolo - November 13, 2006

The purpose of this meeting with City of Cibolo staff was to discuss the information that was to be presented at the Public Meeting on December 7, 2006, specifically route realignments and median breaks along existing FM 1103.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #30 Report* by RJRA.

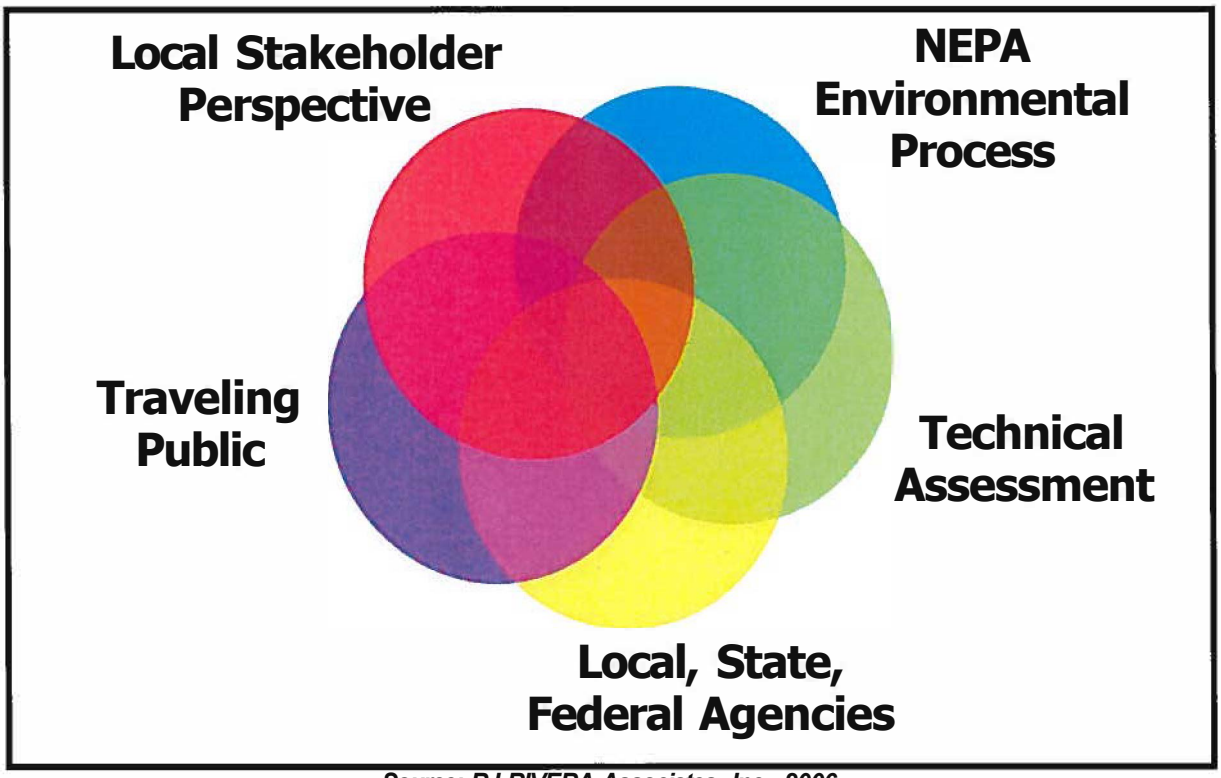
5.4.21 City of Schertz - November 13, 2006

The purpose of this meeting with City of Schertz staff was to acquaint Mr. Steve White, who replaced Ms. Amy Madison as the City of Schertz Economic Development Director, with the FM 1103 route study. During this meeting the study team also updated Mr. White and Mr. Leonard Truitt on the Final Widening Recommendation for the existing portion of FM 1103, gathered input concerning median openings and the possibility of a "Cibolo Parkway" concept.

For more detailed information concerning this meeting, please refer to the *Individual Stakeholder Meeting #31 Report* by RJRA.

5.5 Final Screening

After all input from agency and local stakeholders had been collected and reviewed, the study began its analysis for Final Screening. Using the evaluation data from the Final Screening and Evaluation Matrix, along with input from stakeholders and the purpose and need, the study team was able to give its final recommendation. Figure 29 below is a symbolic representation of all the resources that factor into the final decision:



Source: RJ RIVERA Associates, Inc., 2006

Figure 29 - Recommendation Resources

6.0 STUDY RECOMMENDATION

6.1 Recommended Conceptual Alternative

6.1.1 Existing FM 1103

The study team recommended the PWR and that the City of Schertz be advised that the AWC had been fully investigated. Futhermore, that TxDOT proceed to finalize the Route Study Widening Recommendation so that all parties - the City of Schertz, the Fairway Ridge developer, and other property owners along FM 1103 may make their plans for the future accordingly.

6.1.2 FM 1103 Extension

The study team recommended to TxDOT Alternative 2 for the FM 1103 Route Study. This decision was made because Alternative 2 had significantly fewer impacts to existing and proposed residential and commercial properties and structures than the other build options and the No Build. The recommendation also had fewer creek crossings and a lower total project cost. Finally Alternative 2 was able to fulfill all of the safety and mobility goals sufficiently.

6.2 Further Refinements

After selecting the Recommendations, the study team performed further refinements prior to the presentation at the Public Meeting. These refinements were made in response to the comments received from Stakeholder Workshop #3.

6.2.1 Existing FM 1103

Left-turn Conflicts

A raised median was proposed along existing FM 1103 to address safety and mobility concerns related to left-turn conflicts. The City of Cibolo Zoning Ordinance #609 denotes the importance of maintaining street hierarchical function, which can be accomplished through the implementation of raised medians. The additional design criteria integrated along existing FM 1103 included median openings at a minimum of every ¼ mile and I.Hlm placement at existing significant public roads in order to preserve capacity of cross-street intersections while providing additional access opportunities for local traffic.

Access Assumptions

After speaking with the city and TxDOT staff, access assumptions were modified based upon available updated information. The City of Cibolo requested that a median opening be added at Coy Lane because it was a master planned road in the City's Thoroughfare Plan. They claimed that it would ultimately serve cross-city flow and at a minimum be classified as a collector street. The study team accommodated this request and also added u-turns at appropriate intervals on both sides of Coy Lane. This refinement required the removal of a previously proposed opening at a nearby subdivision entrance because of the close proximity to Coy Lane and also due to the fact that it was not a master planned street.

The study team also noted on the Widening Recommendation Maps (refer to Figure 31 through Figure 32) that an additional bulb-out would be necessary for u-turns planned between Steele High School and FM 78 because the planned 120 feet ROW would not accommodate the necessary turning radius.

Realignment at Green Valley

The Green Valley intersection of existing FM 1103 was realigned to curve closer along its current location so as not to create a large portion of un-usable land and cause a negative effect on the Landmark Pointe Development. The alignment was also refined to include a perpendicular intersection with FM 1103 in preparation for possible future signalization.

Refinement of access to Steele High School main entrance

In order to improve traffic conditions at Steele High School's main entrance the study team removed the dedicated right-turn lane onto Rodeo Drive in order to accommodate dual left-turn lanes. Raised medians through the intersection and for intersection protection were also implemented to increase safety near the school.

Refined Cost Estimates

Once all the other refinements had been made, the study team performed an in-depth cost estimate for the Existing FM 1103 Study Recommendation that included details that had not been considered in previous cost estimates. This estimate was *purposefully over-conservative* in both unit costs and units needed. Unlike previous cost estimates, which had been used for comparison purposes, the Refined Cost Estimate was used as a gauge of the actual expected project cost. A summary of the Refined Cost Estimate is provided in Table 7 below:

Table 6 - Summary of Refined Cost Estimate for Study Recommendation

Estimated Construction Costs	$36.9 Million
Estimated ROW Costs	$3.8 Million
Other Estimated Project Development Costs (includes Utilities)	$10.8 Million
GRAND TOTAL	**$51.6 Million**

Source: RJ RIVERA Associates, Inc., 2006

Details for the Refined Cost Estimate can be found in Appendix C.

6.2.2 FM 1103 Extension

Reanalysis of Final Screening and Evaluation Matrix

Prior to the Final Screening, the study team performed a final check of the Screening and Evaluation Matrix in order to assure that they were making the best informed decision in regards to a recommendation. Upon performing this final check, the study team noticed that the number of properties and structures impacted for the alternatives differed from the number shown at Stakeholder Workshop #3. Due to the discrepancy between the matrix and the observed potential impacts, it was decided that the values for the number of

parcels and the number of structures impacted would be recounted for both the commercial and residential categories for all alternatives.

During this recount, the study team determined the discrepancy was partly due to the difficulty in identifying a specific definition and classification for the term structure. It was decided that structural impacts would be put into two separate categories: One category included main structures, which constitute houses (in terms of residential impacts), businesses and offices (in terms of commercial impacts). The second category included garages, barns, and/or other structures. Main structure numbers would continue to be displayed in the same fields as they were before with the smaller structure (garages, barns, etc.) numbers would be displayed in parenthesis next to the main structures number.

Another source of deviation was the issue of which parcels were to be considered as rural or farmland/ranchland and which were to be considered as residential. Previously, if a large parcel contained a residential structure on its premises, the entire property was considered a residential property. For the reanalysis, it was decided that a property impacted was only considered a residential property if an alternative passed significantly close to the residential structure, otherwise, it was considered a rural or farmland/ranchland property. Figure 30 is the Final Screening and Evaluation Matrix that resulted from this analysis.

FM1103 Extension Route Study Alternatives

Screening and Evaluation Matrix

Criteria - Goal	[illegible]	[illegible]	Not.as	Altematlvn: 1	2	3	4
				[illegible]	FM 1103 (Left) to State	[illegible]	FM 1103 (Right) to Plantlet
Safety Goal							
[illegible]	[illegible]	[illegible]	[illegible]	no	yes	yes	yes
Provide a Route Less Susceptible for Flooding	[illegible]	[illegible]	[illegible]	no	yes	yes	yes
Accommodate Bicycles, Pedestrians	[illegible]	[illegible]	[illegible]	no	yes	yes	yes
Mobility Goal							
Provide Additional Capacity to Relieve Existing Roads	[illegible]	[illegible]	[illegible]	no	yes	yes	yes
Provides Continuous Major Route Between IH 35 and IH 10	[illegible]	[illegible]	[illegible]	no	yes	yes	yes
Community and Environment Goal							
Minimize Impacts to Residential Property		[illegible]	[illegible]	0	24	24	27
Minimize Impacts to Residential Structures	# structures	[illegible]	[illegible]	0	5	8	3
Minimize Impacts to Proposed Residential Parcels		[illegible]	[illegible]	0	0	50	51
[illegible]	[illegible]	[illegible]	[illegible]	0.0	J,ll	11.7	12.0
Avoid Cemeteries	[illegible]	[illegible]	[illegible]	+	+	+	+
Minimize Impacts to Schools	[illegible]	[illegible]	[illegible]	+	[illegible]	+	0
[illegible]	[illegible]	[illegible]	[illegible]	+	[illegible]	+	0
[illegible]	[illegible]	[illegible]	[illegible]	+	0	+	+
Minimize Impacts to Water Wells	[illegible]	[illegible]	[illegible]	0	2	1	1
[illegible]	[illegible]	[illegible]	[illegible]	+	0	0	0
Minimize Impacts to Hazardous Materials Sites	[illegible]	[illegible]	[illegible]	+	+	+	+
[illegible]	[illegible]	[illegible]	[illegible]	+	+	+	+
[illegible]	[illegible]	[illegible]	[illegible]	+	0	0	0
[illegible]	[illegible]	[illegible]	[illegible]	0	3	2	2
[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	1
Minimize Impacts to Proposed Commercial	[illegible]	[illegible]	[illegible]	0.0	0.0	0.0	1.6
Minimize Impacts to the CMEC Substation	[illegible]	[illegible]	[illegible]	+	+	+	+
[illegible]	[illegible]	[illegible]	[illegible]	+	+	[illegible]	+
Impacts							
[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	+	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	+	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	+	+	[illegible]	[illegible]
Consider Environmental Justice	[illegible]	[illegible]	[illegible]	+	[illegible]	+	+
Design Goal							
Driver Expectancy	[illegible]	[illegible]	[illegible]	+	+	[illegible]	+
At a Minimum do not Worsen Drainage in the Area	[illegible]	[illegible]	[illegible]	Yes	Yon	y...,	Yon
Constructability	[illegible]	[illegible]	[illegible]	+	+	0	+
Cost Effectiveness Goal							
Approximate Total Cost	[illegible]	$	[illegible]	$.0 M	$77.6 M	$93.1 M	$101.3 M
Approximate Construction Cost		$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Approximate Paved Road Construction Cost	[illegible]	$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Approximate Structure Construction Cost		$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Approximate Other Project Development Costs	[illegible]	$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Approximate Right of Way (ROW) Costs	[illegible]	$	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Fii 1103 Screening Matrix
1Dr:25/2006

Texas Department of Transportation

RIJ!¾

Additional Intersection Capacity at FM 78

A second access road was added from FM 1103 to FM 78 in order to increase intersection capacity. After studying traffic data received during the FM 3009 East Route Study the study team concluded that traffic flow on FM 78 moving east from the Metro area had necessitated an additional access road. This addition made it possible to implement a raised median at the intersection along this area, which would encourage the utilization of right turn movements.

Minor Realignment Refinements to Reduce Impacts

Following Stakeholder Workshop #3 the study team further refined the FM 1103 Extension Recommendation previously known as Alignment #2. The alignment differences are listed below along with an explanation as to why the changes were made.

- The route was adjusted to impact the Steele High School property as little as possible. This included moving the route further back to touch the east comer of the school property.
- The FM 1103 extension connecting at the "bend" of existing FM 1103 near Weil and Brite was configured to be more functional. This included pulling the extension in closer to existing FM 1103 and adding two access roads on the east and west sides of the extension. Modifications were also made to abandon existing FM 1103 between the extension (near Brite) and the proposed access road and also to abandon Weil between the FM 1103 extension and Tolle Road.
- The alignment displayed during Stakeholder Workshop #3 caused a triangulation configuration of Mr. Robert Schulze property. In order to address this concern the study team re-aligned its recommendation to make the split property more square. The route was also moved partially onto Mr. Arizpe's property to accommodate both stakeholders. For more detailed information concerning these meetings, please refer to the *Individual Stakeholder Meeting #27 and #28 Reports* by RJRA.
- The route was realigned onto a mobile home property (near Lower Seguin Road) to avoid direct impacts to four residential structures/properties.
- The route was re-aligned to maintain a perpendicular approach to IH 10.

The above refinements also resulted in corresponding construction and ROW cost changes.

Trans-Texas Corridor Considerations

Finally, since the possibility that Trans-Texas Corridor-35 (TTC-35) would be located in or near the study area, the study team considered the possibility that the FM 1103 route would need to accommodate the potential TTC-35 route. The TTC-35 Project, at the time this report was written, was still in the planning stages and did not have an exact route developed, so the study team did not purposefully plan the Recommendation to provide accommodation to TTC-35. However, the study team did consider the list below are possibilities for future results of the TTC-35 Project. The potential possibilities will be utilized in order to assist any possible future engineering and design efforts for FM 1103. The possible future results are listed below:

- If TTC-35 is not implemented in or near the FM 1103 study area, the study team would recommend that the FM 1103 Study Recommendation remain as described in this report.

- If TTC-35 is implemented southeast of IH 10 near the FM 1103 study area, the study team would prefer that the FM 1103 extension continue past the intersection with IH 10 and connect with TTC-35.
- If TTC-35 is implemented northwest of IH 10 within the FM 1103 study area, the study team would prefer that the FM 1103 extension connect with TTC-35 and continue past it to intersect with IH 10.
- If TTC-35 is implemented along the current alignment of IH 10, the study team would prefer that the FM 1103 Study Recommendation remain as described in this report save reconsiderations of the extension's intersection at IH 10.

At the time of this study, the study team did not know if FM 1103 would be granted access to TTC-35, if it was implemented. TxDOT would grant access to TTC-35 for intersecting interstate highways and state highways, Farm-to-market roads however, such as FM 1103 and its possible extension, would be required to meet certain traffic volume requirements in order to have access. Generally, local road networks would continue to function at the same or a comparable level of service. In some cases, crossovers or equipment underpasses might be constructed, or access roads might be constructed to allow access between properties from the nearest road, crossover or underpass. Spacing between access points has not yet been established. The spacing and need for access points along the TTC-35 route would be determined through analysis of existing and anticipated conditions and through the public involvement process for TTC-35.

Regardless of the final results of the TTC-35 Project, the FM 1103 study team considered it too uncertain at the time of the FM 1103 Study to incorporate any TTC-35 features into the FM 1103 Study Recommendation.

Refined Cost Estimate

Once all the other refinements had been made, the study team performed an in-depth cost estimate for the FM 1103 Extension Study Recommendation that included details that had not been considered in previous cost estimates. This estimate was *purposefully over-conservative* in both unit costs and units needed. Unlike previous cost estimates, which had been used for comparison purposes, the Refined Cost Estimate was used as a gauge of the actual expected project cost. A summary of the Refined Cost Estimate is provided in Table 7 below:

Table 7 -Summary of Refined Cost Estimate for Study Recommendation

Estimated Construction Costs	$52.1 Million
Estimated ROW Costs	$7.2 Million
Other Estimated Project Development Costs {includes Utilities)	$19.3 Million
GRAND TOTAL	**$78.6 Million**

Source: RJ RIVERA Associates, Inc., 2006

Details for the Refined Cost Estimate can be found in Appendix D.

6.3 Public Meeting

After the development of the conceptual alternatives and the identification of recommendations for existing and extension FM 1103 had been completed, the study team

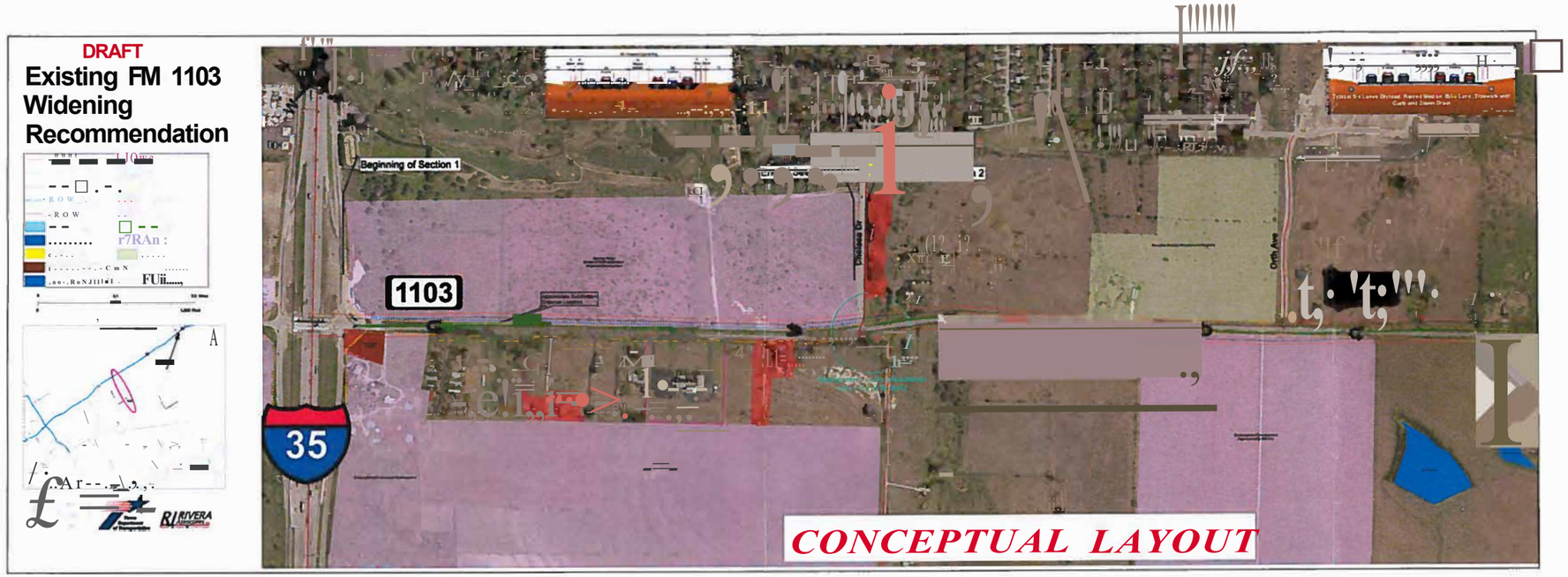
held a Public Meeting on December 7, 2006 in the Byron P. Steele High School cafeteria to provide information to the public about the study process, development criteria, and the recommendations. The public meeting also served to collect input and feedback from the public.

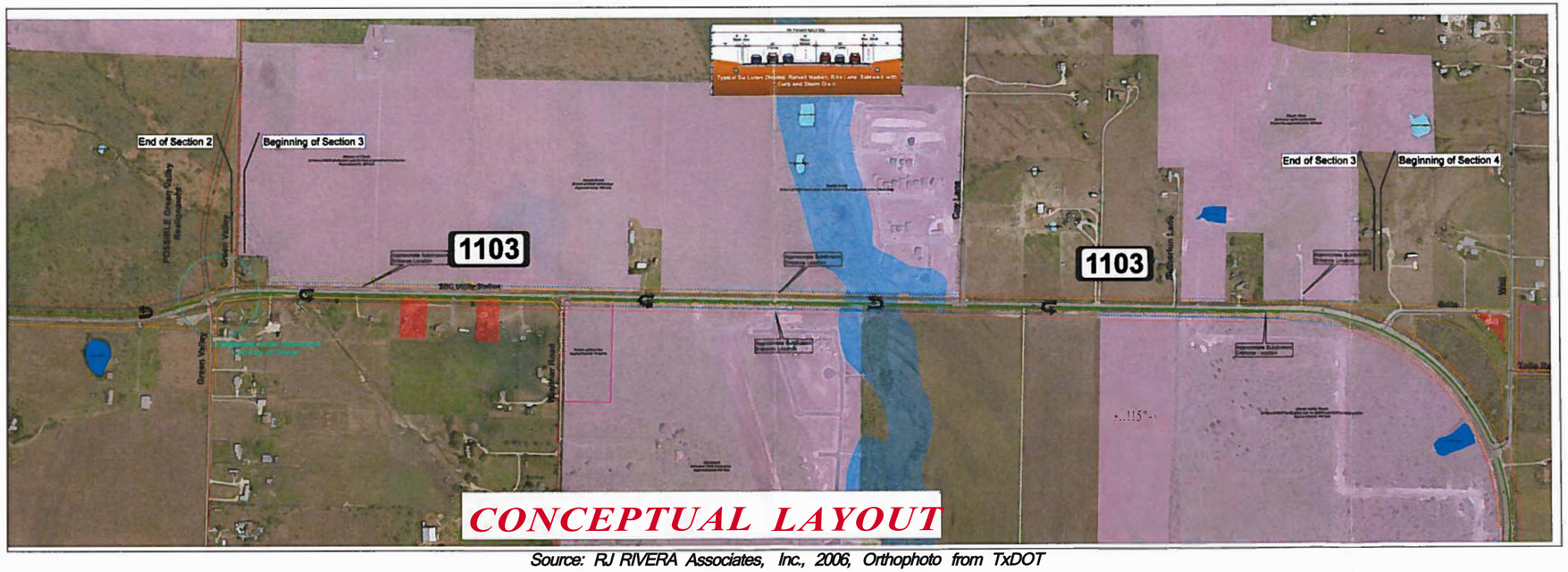
The study team employed numerous methods to inform the public of the Public Meeting. In addition to mailed invitations to stakeholders in both the FM 1103 Study and the nearby FM 3009 East Study stakeholder databases, the study team placed changeable message signs located at various major intersections within the study area, contacted the Cities of Schertz and Cibolo to request that they include the public meeting on their city website calendars, had three local newspapers publish the legal notice of the meeting, and created a media release and media advisory announcing the meeting.

At 7:00 PM, Karen Lorenzini of RJRA gave a presentation reviewing the study and also explaining the reasoning behind the choice of the Study Recommendations. Please refer to Appendix E for the presentation slides. The Study Recommendation maps can be viewed in Figure 31 through Figure 33. After Ms. Lorenzini's presentation, the members of the public were welcomed to present their thoughts and opinions concerning the study and the recommendations with the attendees of the meeting. Once all those who wanted had spoken, the open house continued and the meeting participants were free to view the stations and ask questions as long as they pleased.

Meeting attendees were also given the opportunity to fill out comment cards that gathered input about the study steps described at each station and also asked about the participants' support of the Study Recommendations.

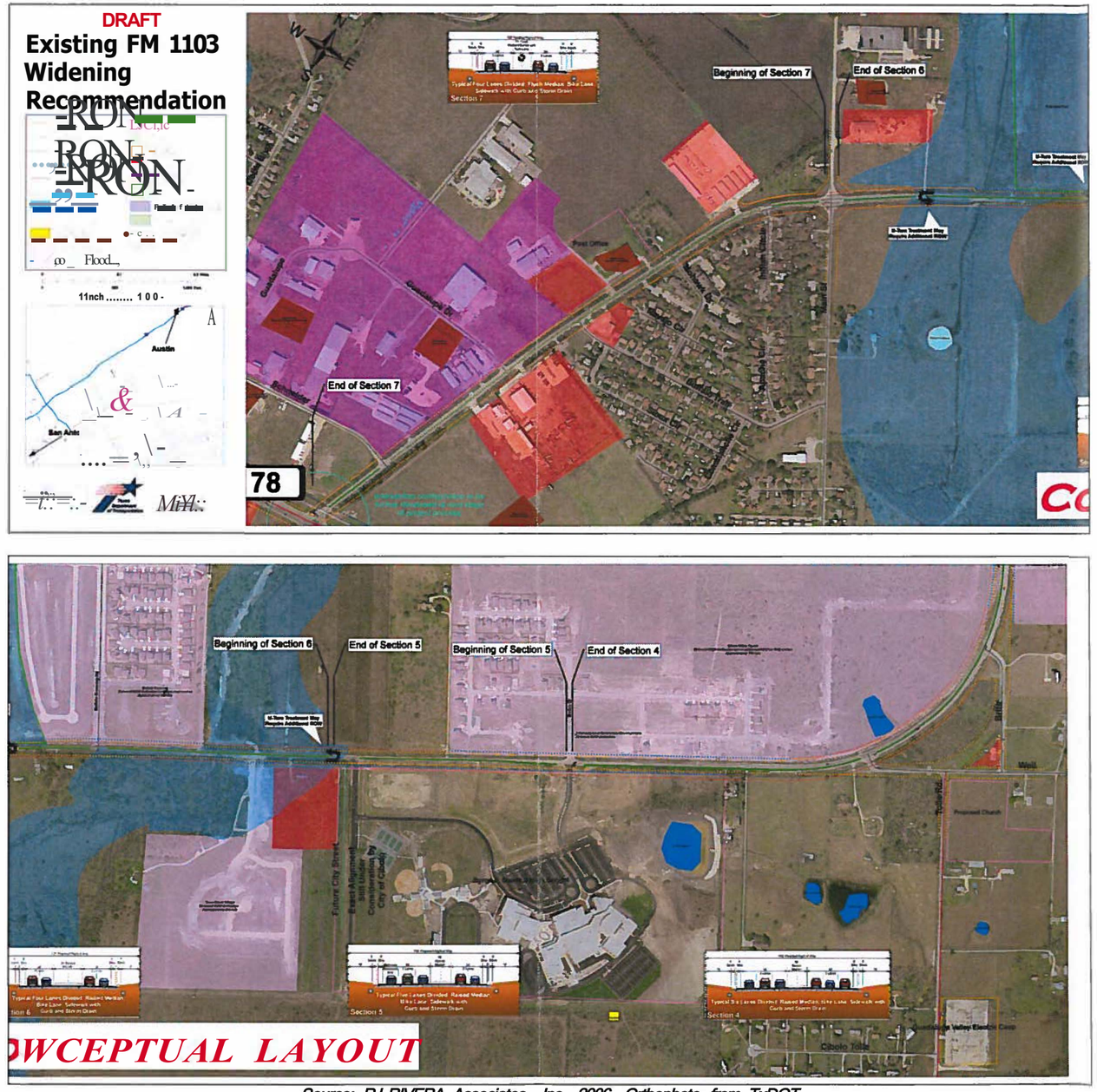
The results of the comment cards as well as details and additional information concerning the meeting can be found in the *FM 1103 Public Meeting Report* by RJRA.





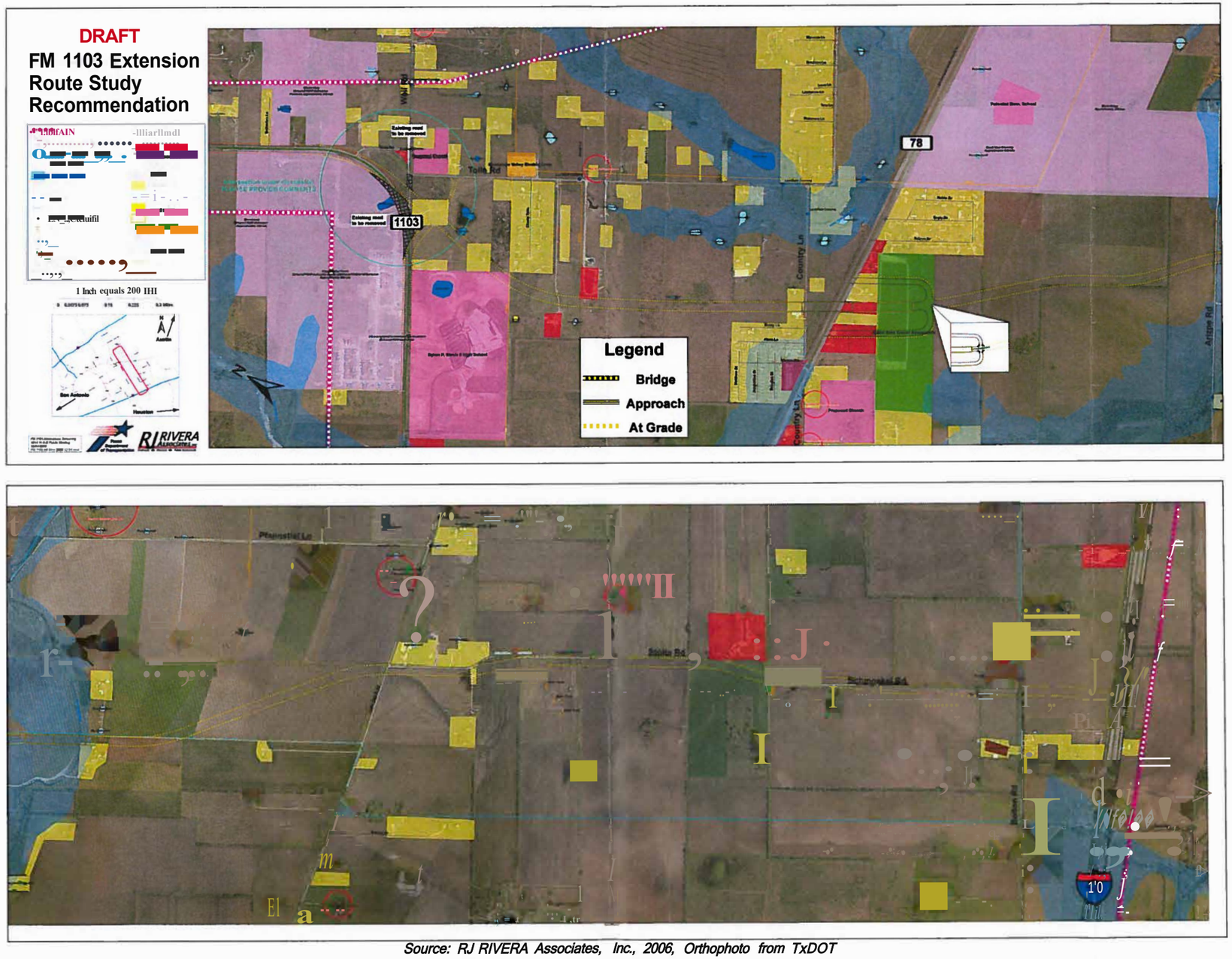
Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 31 - Existing FM 1103 North-South Widening Recommendation (Original Size 200" x 36,,)



Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 32 - Existing FM 1103 East - West Widening Recommendation (Original Size 148" x 36")



Source: RJ RIVERA Associates, Inc., 2006, Orthophoto from TxDOT

Figure 3 3 - FM 1103 Extension Route Study Recommendation

(Original Size 192" x 36")

6.4 Final Recommendation Refinements

After the Public Meeting, the study team performed a final round of refinements in response to comments and information received from the Public Meeting. These refinements were made in preparation for the next step in the TxDOT Development Process - the geometric schematic.

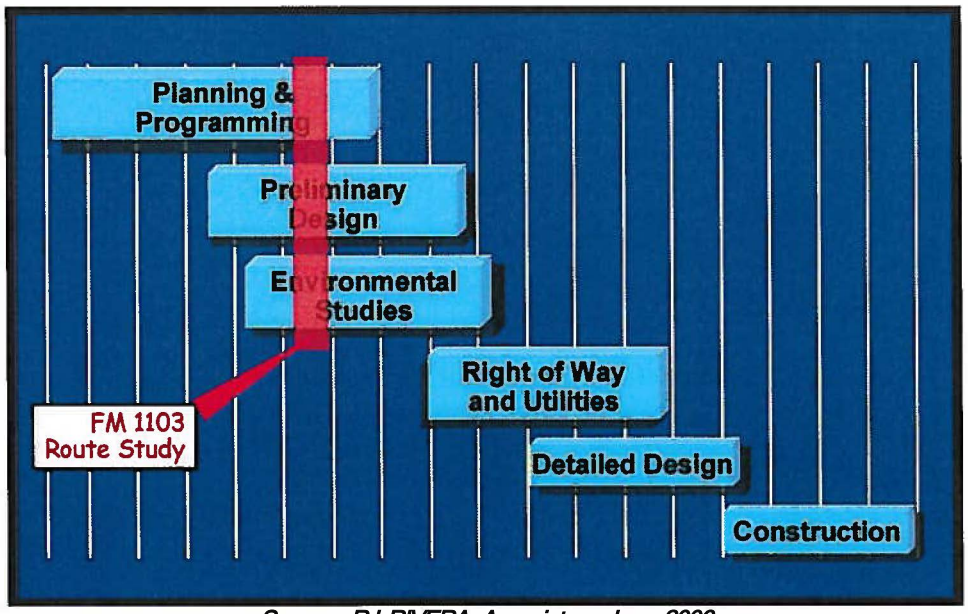
6.4.1 Additional Historical Site Considerations

Additional environmental analysis performed by Ecomm determined that the potential historic homestead located along existing FM 1103 may not be eligible for listing on the National Registrar of Historic Properties (NRHP). If it is not, the necessary 70 feet of ROW may be acquired from the homestead property in order to avoid impacts to residences on the opposite side of FM 1103. If ineligibility is determined the geometric schematic and EA would change at that time and a re-evaluation would be prepared.

6.5 TxDOT Development Process

The implementation of the FM 1103 Route Study results is expected to be long term and conditional in nature. As seen in Figure 34 the end of the route study occurs near the beginning of the TxDOT Development Process. There are still many more steps to complete before any construction can begin. Additionally, realization of the Study Recommendation is dependant on numerous factors that are planned to be studied or have not yet been encountered. Some of the steps that will yield these critical determinates are discussed in sections 7.1 through 7.2.

Once the route study is completed the Widening Recommendation and Study Extension Recommendation alignments will be forwarded to local city and county jurisdictions for consideration and inclusion in plan documents. These alignments may be reviewed and considered as part of future development plans.



Source: RJ RIVERA Associates, Inc., 2006

Figure 34 - TxDOT Development Process

7.0 NEXT PHASES

7.1 Engineering Design and Schematic

Because of the rapid pace of development occurring along the Existing FM 1103 study area, the Widening Recommendation for Existing FM 1103 will proceed to the next phase of the TxDOT Project Development Process. Occurring soon after the preliminary planning phase, more in-depth engineering work will begin for the existing section of FM 1103. This phase will include additional field reconnaissance and survey, developing roadway and operational design criteria, pavement design, geometric schematic, and refined cost estimates.

7.2 Environmental Documentation

After the geometric schematic is sufficiently developed, a detailed study into the environmental impacts of the schematic will be performed for the existing section of FM 1103. In accordance with the National Environment Policy Act (NEPA), this study will need to conduct an environmental assessment (EA). If there are not any significant, adverse environmental impacts that result from implementing the proposed recommendation, a Finding of no Significant Impact (FONSI) will be issued. If there is a significant, adverse environmental impact, an Environmental Impact Statement (EIS) will be required and a Record of Decision (ROD) issued.

7.3 Public Involvement

The opportunity for a public hearing currently has not taken place for the FM 1103 Route Study. However, the opportunity for a public hearing needs to be conducted as the final step of the Public Involvement effort for this route study.

APPENDIX A - STAKEHOLDER CORRESPONDENCE

\01\.\,,8 i -e, f,L\ '5('9)

HERALD

HN
Karkn Lo1·enzini
3200 Steck Ave. #210
Austin, TX 73757

049J82032194
$00.87Q
01/04/2007
MailRdom 78247
US POSTAGE

JANUARY 4, 2007

VOL. 50, NO. 1

State .ch_oeses allern:ate ro:uteTfo;rfuture.:·FM 11_oa:e·xtens1io1n

Submitted to the Ht:rald

Representatives from the Texas Department of Transp0rtation announced the final, recommendation for the poss1ble widening ·of Farm Road 1103 from Interstate 35 to Farm Road 78, as well as the recommended route for the possible extension of F M 1103 from FM 78 to I-Jo.

The state 'agency selected what was called Qption 2 - an extension that would follow a 150-foot wide new route from the existing 1103 at Brite Road, just west ofTolle Road, reconnecting at Stolte Road.and eventually reaching 10.

The announcement marks the end of a yearlong- study conducted by :rxDoT and was made at a Dec..7 meeting at Steele High School attended by mQre than 150 area residents.

The F M 1103 Route Study was initiated to explore feasibility of widening and extending the mostly two-lane farm road in -addition to current improvements that are either taking place or are planned.

The current road bas seen a 57 percent jump in traffic between 1994' and 2004, according to TxDoT traffic counts. Much of the increase is due to residential, development, the construetion of· Steele High Scbooll and an influx of small businesses, especially ·close to 78.

The recommendations revealed at the public meeting are the results ofthis preliminary assessment and include the following ents. If funding is identified, tQe existing 1103 project will need the purchase 9f additional rigbts-of-way, in most 1places, to accommodate an ultimate six-lane section from 1-35 to Steele High, and a four-lane section from Steele to 78.

•It was a difficult study with many

See Fli ll03 Page 6

INSIDE

1Cl:L Teacher of Year

VleseT
aseg-
a the
1 000
seni@r
bs.
=r has
iewas
@ for
ninify
ee in
2004-

She was also named to "Who's Who Amol)g America's Teachers• for tlie 2005-2006 school)al'. In addition to. her teaching role, Wieser is the school's Math Glub sponsor, a reading-and math tutoi; and a SAMM Shelter volunteer. She also is a member ofthe Association of Texas Public Educators and the International Reading Associatjon.

"I tbinkthat it is important-to each of us gives as much back to the community and others as we poSSJ'b)y can,• she said.

Submitted Photo

BBDCJBOSS DOIL&TIOIf

Frank t1qo of San Antonio was lhe winner of a $50 gift c e @ at a Nadonal @ of Retired Federal Employees monthlymeeting when he chose the American Rod Cross as the recipient.The gk cer,ificate was p.....,.. by jlmny Peet, nwerse morqap @ of Financial Solutions.The NARFE 1420 ,roup meets u IOkOOa.m. on ttte first Thursday of uch month at tho Prince of Peace Lutheran Church on RJIlon DriYe. Pictured are-ileroy Henze. Jimmy Peet and Frank Mayo.

ils.
tgram
: out-
i the
here's

ction
nsat
allo-
from
I last

efini-
If the
: said
ready
@leto
,nnor

ferry
sup-
@ e r
t the
linis-

trators to @ w h a t near-tenn fixes could be implementecl.

"We're looking forward to doingwhat we can at the barn. I don't want a Band-Aid solution to the problems theres though, and then have to come back three years from now. Let's do this right,• said Scott Harrod, board president.

Fl(1103 From P i p l

constraints, but the peo_ple along- F M 1103 were wonderful: said TxDoT engineer Judy Friesenhahn. 'Their participation and feedback throughout the process was incrc4Il>ly valuable and helped us get to the point where we are toclay:'

Three previous stakeholtler workshops were held earlier this :rear to gain feedbadt from more tban 900 residents and property owners within the study area as the study progressed.

The findings 0£ this atndy are preliminary and future -construction will require additional studies and evaluations, as well 11S the identification of @ding. The widening recommendation for existing F M 1103 could occur 10 to 15 years from today, TxDoT officials said.

· Similarly, construction of the @-siQn recommendation remains long-term and could take as long as 15 to 20 ycat5. These timelines could be shortened if appropriate funding partners came forward and requested that the timeline be moved up.

For more information on the public meeting or the F M 1103 .Route Stud.y, contact Maggie Rios at 615-5$36 or mrios@dot.state,.tx.us.

Sr:dFF WRITER EDMOND -0JrTIZ CONTIIIIUTED TO n t I SSTORY.

zy!§©!§U !§
DEC 2 8 2006

Don and Loretta Reel
5576FM 1103
Cibolo, Texas 78108
December 26, 2006

The Honorable Edmund Kuempel
Texas State Representative
523 East Donegan, No. 102
Sequin, TX 78155

Dear Sir:

I am a long-time resident of Schertz, Texas, and I am writing to express my concern about recent discussion and the pending decision to impose eminent domain upon existing property owners on FM 1103 between Interstate Highway 35 and Old Wiederstein Road, east of IH-35, whereby anywhere from 30-70 feet of their respective property will be appropriated through eminent domain. I understand that the decision is being considered to enable road widening that will accommodate increasingly heavier traffic.

Over the years, the traffic on FM 1103 has clearly increased to the point that we reasonably do need the expansion. In addition, the new homes that are planned to be built immediately to the northeast and across the road from my home will further aggravate that situation. In consideration of the property lines of the existing, long-term, property owners/residents (myself among them) versus the previously mentioned new home construction, which was only recently acquired by the Armadillo Homes developers, it does not seem that due consideration is being given to those residents who are already living in the area of concern, and preferential treatment is being given to the new construction and existing non-residential property owners, specifically the Cibolo Valley Baptist Church and the Alamo Hanger Manufacturer; I will elaborate on this point momentarily.

In an effort to better understand all the facts pertaining to this matter, I have personally undertaken the following actions:

1) August, 2006: I visited a neighbor property owner, the Alamo Hanger Company, and spoke with the owner. He said that the city of Schertz intends to build a road from FM 1103 to exit into the new neighborhood, to be built to the southwest of our properties. As he walked out with me to my vehicle, he pointed out all the trailers in the trailer park and said that "they need to go." It should be noted that he actually referred to the trailers not as "trailers", but as "trailer trash." He

explained that the Schertz City Attorney had told him that the trailer park would be gone in just a matter of time, implying that conclusive decisions of eminent domain had already been reached. Rather by definition, taking 35 feet of the trailer park's property would ruin their septic system, essentially destroying the viability of that park.

I should disclose to you that I myself live in a double-wide trailer, though it sits on almost an acre private property and has had significant improvements to its structure to the point it is difficult to tell the house is actually a manufactured home.

2) November 1, 2006: I inquired of Mr. Raymond Tarin of CUDE what the purpose of a steel pin placed 35 feet into and on our property was. He informed me that it was a Texas Department of Transportation (TxDOn requirement for future road widening of FM 1103 to stake out the intended area of eminent domain. He also said the corresponding 35 feet of church property (to the immediate south of my property) to be acquired under eminent domain was contingent upon the church getting their septic system connected to the developer's sewage system. He implied that this was a strong suggestion placed upon the City of Schertz by the church itself to avoid potential conflict with the church.

3) On November 2, 2006, I spoke with the Mayor Baldwin of Schertz to recommend that all property to be acquired by eminent domain for the widening of FM 1103 be taken from the northeast side of FM 1103. The logic behind that suggestion is that the land to the northeast has been an abandoned section of property for at least the 16 years that I have lived here, and at present there are no homes that exist there that would be inconvenienced. This would cause inconvenience to the fewest number of existing households. The Mayor asked if I lived in a trailer and further inquired if I have 70 feet between my trailer and FM 1103, because he and his staff were considering taking the 70 feet entirely from the southwest side of FM 1103.

I cannot help but wonder if this question was made with the intent to intimidate me, as well as being a further reference to the "trailer trash,, remark that seems to have been propagated from the city attorney to the owner of the Alamo Hanger Company. Is taking all 70 feet from the southwest side still on the agenda, or is a split still under consideration?

The Mayor discussed the potential expense the developer and home builder would suffer if road widening went entirely into their property. He mentioned a 35 foot/35 foot split that had been discussed between him and his staff. He then stated that the city was not responsible for the location of road placement, and said that this is a TxDOT decision, implying that he has no input into that decision. He recommended that we keep applying pressure on the state to appropriate the

land from the northeast side, and provided us with the contact infonnation for our State Representative, the Honorable Edmund Kuempel.

The Mayor's statements seem to be self-conflicting. If the decision as to where to appropriate the land sits with TxDOT, then why is the Mayor discussing with his staffhow the land to be appropriated should be split?

4) November 6, 2006: As CUDE said that the pin was a TxDOT requirement, I contacted TxDOT to gain a better understanding of why my property was being surveyed The individual with whom I spoke to at TxDOT said that they were unaware of why our property was being surveyed, and recommended that I contact CUDE directly. Clearly, items 2 and 4 are circular in nature and will not result in an answer.

In addition to the above, there are numerous factors that I believe are being overlooked by those in positions of authority to make decisions on behalf of the citizens.

1) The Green Valley Water Supply Company abandoned an asbestos/concrete water line 15 feet into the property lines along the southwest side of FM 1103. In light of the fact that the Federal Government has determined asbestos to be a health hazard, will part of the land appropriation through eminent domain include the removal of this asbestos water line? If so, at whose expense - the tax payers or Green Valley Water Supply Company?

2) Funds for the completion of the road expansion are currently budgeted to be available in 2016, long after the new housing development to the northeast of FM 1103 will be built. At present, the city indicates the decision as to how to split the land taken by eminent domain won't be made until the funds become available, (again, not until 2016). Would it not be more prudent to delay the construction of the new homes on the northeast side of FM 1103 until after the funds for the road expansion are available? Should the decision be made to take more property from the northeast side of FM 1103 be made after the new homes are constructed, this would clearly be far more expensive than taking it from the southwest side where homes are generally of the manufactured type. In the meantime, this leaves existing residents with the nagging question as to what will happen to their property within the next decade.

3) We are citizens of Texas, even if we live in trailers/mobile homes, and we deserve no less than the same information provided to the Cibolo Valley Baptist Church or the Alamo Hanger Company.

Considering the information that I have collected by speaking directly with various individuals, and further in consideration of the above-disclosed facts, it is therefore requested that the City of Schertz, CUDE, and TxDOT disclose in its entirety all

information in their possession as to how this split of the land to be taken by eminent domain will be handled. It is further requested that this happen within the next few months, and not 10 years from now - it is unfair to leave us guessing as to what will happen to our property and what our property values will be 10 years from now. Part of some peoples' retirement fmancials are based on the perceived value of their real-estate holdings. Depending on the outcome of this, I cannot afford to wait for 10 years for an answer to that question.

Can a cost comparison be drawn up that compares a 35/35 foot split versus a 0/70 foot split today, before the new housing development is created? Can we modify the TxDOT meetings to allow for actual discussion of the facts and not allow the moderator to cut off questions from the audience without providing sufficient information or justification? At the last TxDOT meeting in which I was in attendance, that is exactly what happened: only excuses were provided and the meaning of previously established facts were redefined by the moderator.

Sincerely,

Do;y•U Reel
U.S.Navy
Nuclear Quality Control Welding Engineer, Retired

cc: Mayor Hal Baldwin
1400 Schertz Parkway
Schertz, Texas 78154

Mr. Brien Rocher
Texas Department of Transportation
125 E. 11th Street
Austin, Texas 78701

Ms. Karen Marie Lorenzini, PE., AICP
RJ Rivera Associates, Inc
3200 Steck Avenue, Suite 220
Austin, Texas 78757

Mr. John P. Campell, P.E.
Texas Department of Transportation
Director, Right of Way Division
118 E. Riverside Drive
Austin, Texas 78704

Zach,
Please add this item below to our log of interest received for this study. I will let you know if I have a conversation with the Commissioner.
Karen

Karen Marie Lorenzini, P.E., AICP
RJ RIVERA Associates, Inc.
email lorenzini@rjrivera.com

From: Karen Lorenzini [mailto:lorenzini@rjrivera.com]
Sent: Monday, July 03, 2006 10:05 AM
To: 'JEllis@ci.schertz.tx.us'; 'wolverton@co.guadalupe.tx.us'
Subject: RE: FM 1103

Thank you, Janette.

Mr. Wolverton, I received this email and your voice mail. I will be in and out of the office today working at another site, but happy to answer any questions I can about the FM 1103 Route Study, at your convenience. I can also refer you to my TxDOT contacts:

Mr. Greg Malatek, P.E.
Area Engineer
New Braunfels and Seguin Area Offices
Texas Department of Transportation
(830) 625-6278

And

Ms. Judy Friesenhahn, P.E.
Director of Planning
San Antonio District Office
Texas Department of Transportation
(210) 615-5814

Thank you,
Karen

Karen Marie Lorenzini, P.E., AICP
RJ RIVERA Associates, Inc.
email lorenzini@rjrivera.com

From: JEllis@ci.schertz.tx.us [mailto:JEllis@ci.schertz.tx.us]
Sent: Friday, June 30, 2006 3:24 PM
To: wolverton@co.guadalupe.tx.us
Cc: lorenzini@rjrivera.com
Subject: FM 1103

Commissioner Wolverton,
Per our conversation this afternoon, for information and maps for the proposed widening and alignment of FM 1103 please contact Ms. Karen Lorenzini with RJ Rivera Associates. Ms. Lorenzini is very knowledgeable

about this project and provide you with the information you need. If you have any questions, please don't hesitate to contact me.

Karen Lorenzini, Engineer
R J Rivera Associates, Inc.
5316 Hwy 290 West
Suite 400
Austin, TX 78735

515-467-1136- office
512-371-1137-fax
lorenzini@rjrivera.com

Have a good holiday weekend!
Janette

Karen,
Guadalupe County Commissioner Jim Wolverton has requested some information regarding FM 1103 project and I thought it best for him to get the information from you since you have all the data at your office. It was really good seeing you last Tuesday night - and as always you gave a great presentation. After the meeting several people in the audience made reference that you "really know your stuff". As always, if you need anything from me, just let me know.

Hope you and your family have a safe, wonderful holiday weekend!
Janette

Janette Ellis
Marketing Research Specialist
Economic Development Department
City of Schertz
1400 Schertz Parkway
Schertz, TX 78154
210-658-7477 ext. 1130
210-658-9627-fax
jellis@ci.schertz.tx.us

1135 W. Woodlawn
San Antonio, Texas 78201
Tel: 210.835.4694
www.rjrivera.com

RJ RIVERA Associates inc

Fax

To:	George Farinacci	From:	Linda Alvarado-Vela
		CC:	Karen Lorenzini, PE, RJRA
Fax:	210-658-0299	Date:	February 24, 2006
Phone:	210-658-0299	Job no.:	1014-8 and 1014-11
Re:	FM 1103 and FM 3009 E Info	Pages:	2

Comments:

Mr. Farinacci:

Attached for your information are the frequently asked questions for both FM 3009 E and FM 1103, copies of the invitations mailed for each project, and an update that was handed out at last night's meeting with updates on other area projects. Please review the information and let me know if I can be of further assistance.

Sincerely,

Linda Alvarado-Vela

FM 1103 Expansion

Austin Texas Real Estate
Only Austin broker with over 20,000 aerial photos and virtual tours.

Homes for. S rug
INest® New Homes & Builder Gulde - Search Our Watauga Directory Now!

Ads by Goooooogle

Showing posts 1 - 2 of 2

Jim *La Grange, IL*	*Apr 21, 2006* Flag for Review I Reply » I went to the meeting to discuss the expansion of FM 1103 to IH-10 on 4/20/2006. I didn't feel that we are hearing everything concerning this expansion. It Is my understanding the reason to have FM 1103 expanded Is due to the building of new homes In the area. The other reasons, that we are not hearing, Is It also to relleve the traffic from IH-35, FM 46, and FM 1604. This would be another way for the 18 wheelers to get to the other side of San Antonio without using the existing roads. Because of the poor design and poor planning for expansion by TXDOT, the existing roads would cost to much to widen. The residents of Cibolo area would have to deal with the Hazardous Cargo 18 wheelers plus many others. This Is going to destroy the country living we are accustom to, the noise Is going to be overwhelming. If TXDOT Is worried about getting residents off of 1-35 there are many back roads to get to 1-10. My question to TXDOT is how many residents need on the East side of 1-10, there Is not much over there. I admit I go to downtown where I work and I use 1-10 to get there, but I use existing roads to get there. I feel there are small number of residents In the Cibolo area that need to use 1-10 to get to work or do their shopping. Another thing TXDOT Is not making known to the Cibolo residents Is that they are talking about extending FM 3009 to IH-10, along with an expansion of FM 1518 because they are building subdivisions along FM 1518. If the expansion of FM 3009 Is expanded to IH-10 there are going to be more subdivisions bull! along that route. I have also heard about another loop around San Antonio which would be further out than FM 1604. What Is this road suppose to accompllsh?
Concerned Citizens *Marion, TX*	*Aug 9, 2006* Flag for Review I Reply » We as well went to the so called,astakeholders"; meetings and the proposed six lane road that got narrowed down to three choices directly Impacts our ranch and home. We moved here to this area to get away from congestion and In our opinion there Isn't any! Why on earth would you need a six lane road that goes through farm and ranch land, If you (Cibolo city councll types) were not wanting growth? All subdivisions do Is crowd and congest, without adding to the tax base, as It Is all eaten up by schools and such. This area Is such a disaster, we dally kick ourselves for moving here. And then there Is the TTC-351

Showing posts 1 - 2 of 2

HOME
LINKS
CONTACTS
ABOUT b mrtx
NEIGHBORHQOD GRQUPS
EVENTS
IQ O MUCH WATER
TQQ LITTLE WATER
ELOQDING
FM3009 ROUTE STUDY

BEARTX.ORG

TxDoT's Local Pride

TxDoT employed the service o f an Austin-based company to do the dirty work required to get Federal funding on this roadway project. RJ Rivera, that Austin-based company, apparently considered the residents ofBexar & Guadalupe Counties to be too stupid to understand the complexities o f the subject matter that they could have presented, so at the first workshop they explained that they would be talking to us at the *"ki11dergarte11 lever.* This was horribly offensive to all o f us that picked up on that comment.

At a subsequent meeting, a resident brought up the issue that there are several significant land holdings within the study area that are titled to Friesenhahn family members, and that this project was being overseen by TxDoT's Judy Friesenhahn, thereby implying a possible conflict o f interests. On this

Hidden Agenda

At the first workshop, we were told that we, the stakeholders, would be selecting all o f the routes, and we would thin them down to a single route by the third workshop. They said it was that route that would be presented at the public meeting. At the second workshop TxDoT said that they began with 55 route suggestions from the first workshop and that they thinned them down to 10 routes at a private meeting.

The objective o f the second workshop was for the public to select three routes from the 10. At this point TxDoT forced in Alternative 4 as a mandatory selection, reducing the public's participation to select 2 other routes, not all 3. When this was vehemently opposed, TxDoT told us that we could submit a complaint, but that Alternative 4 would remain.

Showing our Deeply Felt Gratitude

Judith Zaffirini

We are grateful to the work o f our Stat< Senator, Judith Zaffirini and her Legisl: Director, Larkin Tackett, for compellin TxDoT district office to finally reply to unanswered written information reques

Tommy Adkisson

We are also indebted to Tommy Adkis! and his Chief o f Staff, Mario Llano, in pressing for an analysis o f this route selection. His office appears to be coinJ to avoid increasing floodplain hazards ı assuring that the our Park retains its lev solitude and wildlife experiences. Indic are that Tommy Adkisson's office will advise the Bexar County Commissione: Court, and will initiate a termination re at the State level i f TxDoT continues to wrong. Please take the time to commen Tommy Adkisson and Mario Llano for good intentions. (www.bexar.org/commct/cmpct4/pct4.1

Our thanks also extend to the many offi in our local governments and within Pa and Public Works departments and alsc

subject, Ms. Friesenhahn went ballistic, trying to counter the issue by stating that Friesenhahn is her married name, not her maiden name. As ineffective as her reply was in setting aside the raised suspicions, it did indicate that there is a point where she was willing to mount a strong defense.

Why didn't Ms. Friesenhahn go ballistic when RJ Rivera called all ofus down here too dumb to understand the material? Even though we've replayed these comments to TxDoT and RJ Rivera on several occasions, to date neither has apologized for this inappropriate elitist comment.

The third workshop was intended to allow us to select one of the three, however, again TxDoT changed the rules. Workshop #3 would serve no purpose at all, as the public would not be permitted to reduce the number of selections any further. Instead, TxDoT revealed that they would make the final selection behind closed doors, and would present their decision at the public meeting. Guess which route they decided upon? It was the unwanted Alternative 4 that TxDoT forced upon us in violation of their public process. Is this the way that TxDoT conducts the public process that government agencies are expected to follow?

friends at the San Antonio River Autho All of these folks provided assistance ii helping us to develop a deeper understa of the issues and discussed their prefen

We are so very grateful for the many ci and the local newspapers that have corr together to push this issue into the light day.

Finally, we thank the many TxDoT employees that have indicated that theil preference differs from the one that wa: chosen by their superiors.

Floodplain Deception

At the first workshop, many participants asked why we weren't allowed to consider a route using Haeckerville Road as a possible solution. We were told that TxDoT determined that there's a small section of Haeckerville Road that is in the floodplain, therefore it would not be an acceptable route candidate. That was a relief to those ofus that live in a worse floodplain. We easily followed the logic that TxDoT considered floodplains to be far too dangerous a place for locating a new roadway.

However, when TxDoT's forced in their route at a subsequent workshop, it went directly through the very worst floodplain in all of Bexar County. Cibolo Creek, as

TxDoT Blames Others

TxDoT stated at the workshops that they took their cues for their selection from route suggestions made by Schertz and the SA MPO. This is an absolute misrepresentation. Neither of these entities were so stupid as to suggest a route straight through the worst floodplain in the area. Only TxDoT could make such an absurd recommendation, and they should take full credit for this, rather than trying to blame our local governing agencies that are aware and sensitive to floodplain issues.

TxDot makes no mention of our other neighboring city, Cibolo, when they claim that they are following local governmental desires. Why? Because Cibolo favors a route that uses Haeckerville Road.

TxDoT Ayoids Public Participation

FM3009 between FM78 and I is at capacity, and there are nc inexpensive options available improving this condition. The residents along FM3009 woul seriously impacted by a route will further increase the traffi< along FM3009. These stakehc were never informed about th, workshops, and the TxDoT w- provides no information that ♦ have allowed them to enter in1 public process.

At the first workshop, upon a request from a staff editor at f Herald Newspaper, TxDoT sa they would keep the paper inf. so that it could keep the comn informed. It seems that TxDo' no intention of following thro- on this commitment, and it wt

apposed to Haeckerville Road's unnamed minor arroyo, has cost the County and Federal governments millions of dollars over the past decade in dealing with the consequences of the 1997, 1998 and 2002 floods. If one were to put Haeckerville Road into the selection process, it would create an excellent choice for dealing with connecting the two interstate highways and directly provides relief for the area where rapid growth is assured.

TxDoT has also stated at their workshops that they met with local entities, such as the Parks Department and the San Antonio River Authority, and in these meetings, the TxDoT plans were accepted. We've subsequently met with the same entities and have been told exactly the opposite. Not only have these entities not liked the TxDoT proposal, we were told that they recommended against them.

until many months later when FMI 518 residents contacted ti newspaper that all ofus realiz that the Herald and the FM30< community were left out of th loop.

In addition, some of us reside1 asked if we could attend the neighboring FMI 103 workshc and we were told by TxDoT ti were not welcomed. We atten anyway. Is this the way that T performs their public process'i

Engineering Delayed is no Engineering at all

The route that TxDoT wants to put through our area presents many engineering challenges. These challenges are so significant that one would expect most engineers to ask why the specific location was chosen as apposed to the many better alternatives. However, without engineering being done now, which is the way the TxDoT is proceeding, the worst possible route will become the reality. It is extraordinarily important to identify these engineering challenges up-front. At the early workshops, TxDoT said that they would be analyzing the alternatives to increasingly greater detail as the number of selections were reduced. This never happened, at least in terms of the engineering issues.

Federal Floodplain Requirements

TxDoT admits that the bridges that they will build must comply with Federal floodplain requirements. TxDoT also says that this road will be built to the 25-year flood standard. However the Federal standards require that the 100-year flood is not worsened by any structures placed in the floodplain, including roads and bridges. TxDoT says that they are able to build a 25-year flood standard bridge that will not worsen the 100-year flood event. A glaring problem with this statement is that every published hydrologist says exactly the opposite. Once the horizontal elements of the bridge are in the water, the backwater will rise. There are more than a dozen homes that will be flooded when the TxDoT's bridge raises the backwater another 3 feet. Further, flood standards emphasize that any roadway or bridge within a floodplain must cross the floodplain at or near right angles to the water flow,

What docs PE mean?

Many of the TxDoT and RJ Rivera persot associated with this route selection proc♦ licensed professional engineers (PE). As ♦ they carry a burden to perform their professional duties to an honorable stand1:

National Society of Professional Engineers Code of Ethics

Engineering Is an Important and learned profE As members of this profession, engineers are expected to exhibit the highest standards of I- and integrity. Engineering has a direct and vlt impact on the quality of life for all people. Accordingly, the services provided by engine• require honesty, Impartiality, fairness, and eq• and must be dedicated to the protection of th1 public health, safety, and welfare. Engineers 1 perform under a standard of professional beh that requires adherence to the highest prlncip ethical conduct.

Engineers, in the fulfillment of their professior duties, shall:

1. Hold paramount the safety, health, anc welfare of the public.
2. Perform services only In areas of their competence.
3. Issue public statements only In an obje and truthful manner.
4. Act for each employer or client as faith agents or trustees.
5. Avoid deceptive acts.

The route that TxDoT selected is generally 40 feet below the adjacent lands. It is where Cibolo Creek has etched its path and remains mostly farmland since the consequences of occasional floods are too significant for development to occur in the deepest portions of this valley.

It is our understanding that TxDoT has not taken core samples to understand the soil beneath their intended bridge structures. Other local entities, such as CCMA and the Beck Landfill, have placed projects at depth in our local soils and should be able to testify about the inadequacy of the local soils to show any structural elements.

In this valley along the Cibolo Creek, the soil is silt and clay to depths greater than 50 feet, revealing no dependable structure. Geological maps and atlases available from the University of Texas make this structural issue quite clear.

In order for these TxDoT's bridges to pass high volumes of floodwater with negligible rise of the backwaters, the bridges will have to be placed on widely-spaced piers. Piers, and the massive objects that they support, derive their stability from the thereby avoiding being parallel to the flow. TxDoT will also be ignoring this doctrine.

Yet another Federal requirement is that for any roadway placed in a floodplain, using Federal funds, that that roadway must provide itself as an emergency exit if no other escape road exists. In this case, with the bridge raising the backwaters of the 100-year flood, many more residents are put into harm's way, without any exit possibility other than helicopter extraction. The 9 properties at the north end of Lost Meadows Drive get isolated by a low water crossing early in most heavy rain events. If the waters continues to rise, as in the 100-year flood, these residents have absolutely no exit option. TxDoT is obligated to address this issue if they intend to use Federal funds for the project.

The lands that TxDoT intends to use include properties that were bought by FEMA because of the severe, damaging floods of the recent past. The backyards of the residential properties that they also intend to go through were in these flood waters just as significantly. FEMA doesn't want this development, and the Stafford Act requires that the open space is virtually free of structures. TxDoT will be using the talents of their legal staff to set aside this Federal law.

The public park that TxDoT will go through, and be adjacent to, is also protected

6. Conduct themselves honorably, respo1 ethlcally, and lawfully so as to enhanct honor, reputation, and usefulness of th profession.

From a longer standing Code of Etl

"If a builder has built a house for a man and t made the work sound, and the house has fall, down and caused the death of the household builder shall be put to death.•

Hammurabi, King of Babylon 1800 B.C.

Hopefully the TxDoT and RJ Rivera emp will reflect on the oaths that they made in obtaining their certification. Cibolo Creek< floodplain violations and further increasir congestion along FM3009 are life and dei matters. We call for responsible engineeri front.

By TxDoT's own writings, this study was follow "fatal flaw" principles. Numerous attempts by citizens to get the many fatal acknowledged by TxDoT were ignored w explanation. lfTxDoT had considered tra volume along FM3009 and/or the floodin. issues in the valley, they were expected tc remove this option from the selection pro, After all, they have the PE code of ethics guide them.

The only way that TxDoT can get Federal funding for their route is to claim that thei no practicable alternative. Will they be adhering to the highest principles of ethic conduct when they submit the environme1 impact statement, or will they use decepti and wordsmithery to accomplish their hid agenda?

soils in which they are placed. If the soils are not able to support the worst-case static and dynamic loads with a considerable safety factor, the bridges will begin to sink into the underlying soils.	from this intrusion by several Federal laws including a few that stem from an executive order. TxDoT has indicated that they can ignore these Federal policies, also.	

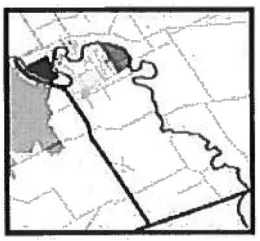
How Flat is Flat?	Where's the Growth?	It isn't that they Couldn't, i that they Shouldn't
The land in this valley is so flat that any developer interested in taking a risk still has to consider the high costs of retention ponds and storm-water removal systems. When lands are almost flat, the storm-water pipes need to be very large as the water moves toward the creek at a much slower rate. Additionally, these very same pipes will bring the waters within a flooding creek up into the communities, which will worsen, rather than mitigate, flood damages. Flood studies of the area are being elevated in importance by citizen involvement and are being presented to the responsible agencies. There are reasons to believe that the requirements on developers in the future will tend to reduce predicted population density.	TxDoT's projection for growth in this area has not taken into account the large swatches of uninhabitable land. One of the developers in the area has already announced that his project will proceed at a much slower rate. Others will follow. The school boards in this area are also scaling down their projections for regional growth. FM1518's traffic load is so low that it would be the envy of most road users in the San Antonio area. This is borne out in TxDoT's own studies. In its present configuration, FM1518 being widened to 4 lanes, along with the planned roadways south of Randolph Air Force Base, the growth in this area could continue for 30 or more years before we experience the traffic congestion familiar to most San Antonio residents.	Tax dollars pay for route stuc and tax dollars pay for road systems. It is in the interest o tax payers that their dollars g spent most efficiently and effectively. No part of TxDo process reflects this intent. In TxDoT admits that Altemath a more expensive route than , accepted alternatives. It seems that the only remedy this point should be to write-1 prior effort as a learning expt: and to begin the workshop pr all over again, this time inclu public openness. Also in this effort, the study area should include the possibilities of a 1 from IH35 near FM482 dowr IH10 near Haeckerville Road

BearTx
12231 Lost Meadows Drive
Cibolo, TX 78108-3815

C Copyri&ht 2005-2006, BearTx, All Rights Reserved
This site was last updated on December 19th, 2006

HOME
LINKS
CONTACTS
ABOUT beartx
NEIGHBORHOOD GROUPS
EVENTS
TQOMUCHWATER
TOO LITTLE WATER
FLQODING
FM30Q9 RQUIE SIUDY

BEARTX.ORG



TxDOT's Alternative 1, $52 Million Approximately

- Called 'No Build', Alternative 1 depends greatly on improvements to FM1518
- Connectivity between IH35 & IHlO its not improved along this segment o f the interstates
- Restricted roads are generally not enough to discourage development in a growing area
- Traffic lines during peak travel hours could get very long

TxDOT's Alternative 2, $86 Million Approximately

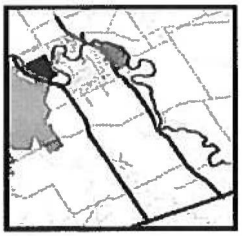
- The Schertz Parkway community is not looking forward to increased traffic levels
- The north end o f this solution ends within the 100-year floodplain, and passes by the high school, library & city offices
- Construction and routing around the Beck land fill site will be tricky
- This solution is the straightest north-south run, which might appeal to some

TxDOT's Alternative 3, $78 Million Approximately

- Connects FM3009 to FM1518 by passing over the Family Dollar and Dairy Queen
- Travel distance to the Randolph Air Force Base area, and the queues, will be longer
- TxDOT's principle o f designing the bridges o f secondary arterials at the 25-year flood level affects Alternatives 2, 3 & 4
- The small clip that this route makes with the CCMA property is acceptable to its operators

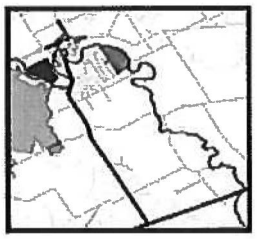
TxDOT's Alternative 4, $139 Million Approximately

- Connects FM3009 with Trainer Hale Road at Weir Road, and requires additional improvements to FM1518



- Flooding of IH 10 at Cibolo Creek & Woman Hollering Creek prevent east/west travel
- This roadway's surface is 40 feet lower than the alternatives, going under water in large floods, needing to be shut down
- The long bridges of this solution will back-up water, thereby increasing the size of the 100-year floodplain

Our Alternative 5, $78 Million Approximately

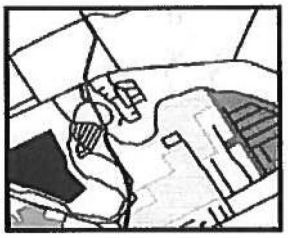


- Connects FM3009 to FM1518 by going over the empty Riedel's furniture store
- All connections, including those with FM78, permit travel without stoplights
- Alternative 5 is a modification to Alternative 3, where the intersection is improved & the affect on developed properties is reduced
- The cost of this solution is compatible with TxDOT's Alternative 2 & 3 and is well below 4, while the benefits are much greater

TxDOT's Alternative 2 Intersection Will Add 2 Stoplights

- This low-cost intersection impedes the free flow of traffic
- T-bone accidents are much more likely for this intersection design, which TxDOT should be trying to avoid
- Using TxDOT's Roadway Design Manual, and their costing guidelines, no rational justifies this compromise in safety
- Why design an intersection which requires more time to get emergency vehicles to accidents that are more likely to occur

TxDOT's Alternative 3 Intersection Will Add 2 Stoplights



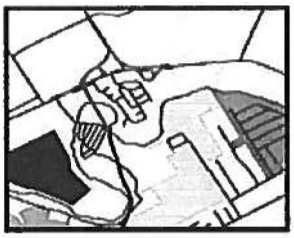
- This low-cost intersection also impedes the free flow of traffic
- T-bone accidents are much more likely for this intersection design, which TxDOT should be trying to avoid
- Using TxDOT's Roadway Design Manual, and their costing guidelines, no rational justifies this compromise in safety
- Why design an intersection which requires more time to get emergency vehicles to accidents that are more likely to occur

TxDOT's Alternative 4 Intersection Will Add 2 Stoplights

- This low-cost intersection also impedes the free flow of traffic
- T-bone accidents are much more likely for this intersection design, which TxDOT should be trying to avoid
- Using TxDOT's Roadway Design Manual, and their costing guidelines, no rational justifies this compromise in safety
- Why design an intersection which requires more time to get emergency vehicles to accidents that are more likely to occur

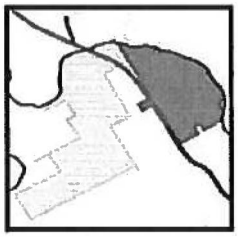
Our Alternative 5 Intersection Requires No Stoplights

- This intersection provides a free flow of traffic in all directions
- Along with the usual kinds of emergencies, this roadway provides for evacuations dming flood events
- It is essential that the roadway (including its bridges) be built above



the 100-year floodplain
- There are several funding sources for addressing this 100-year flood height improvement

TxDOT's Alternative 4 Detracts From Our Park & The CCMA Utility

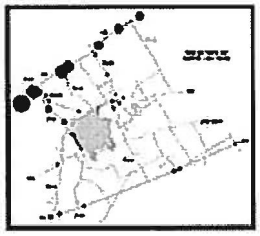


- Alternative 4 passes through a neighborhood park where its noise & pollution will chase away wildlife and human visitors
- The lands of the park are intended to be protected by FEMA's Hazard Mitigation Grant Program (HMGP)
- The bridge structure within the HMGP land is equivalent to illegally placing 13 homes on piers below the 100-year flood level
- Alternative 4 also passes through our waste water treatment plant's property, adding to the expense of their operation

TxDOT's Alternative 4 Provides No Solution

- At the first workshop, TxDOT rejected using Haeckerville Road as a solution because a small portion of it is in the floodplain
- At the next workshop, TxDOT forced in Alternative 4, which is mostly within present and anticipated floodplains
- The area to be served by Alternative 4 is dominated by several large entities that will limit growth potential
- Limited access from the East means that Alternative 4 could only serve half the usual population of a secondary arterial

Traffic Volume In This Area Is Very Low



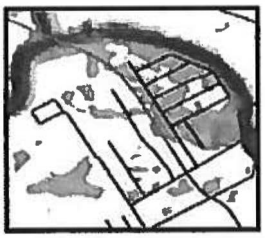
- 2 years ago, traffic along IH35 near FM3009 was about 100,000 vehicles per day
- The north end of FM3009 had 26,000 while the south end had less than 17,000 vehicles per day
- Traffic along IH10 near FM1518 was about 30,000, while FM1518 had only 5400 at its south end
- The FM1518 need for a roadway is, and will remain, much less than most growth areas of the San Antonio Metro Area

TxDOT's Alternative 4 Will Worsen Flooding And Emergency Services

- Federally supported County law prohibits building anything in a floodplain that will raise the level of the 100-year flood
- The same laws prohibit building anything in the floodplain that will increase the velocities of the 100-year flood
- These laws also prohibit building a road in the floodplain that couldn't be accessed during a 100-year flood
- TxDOT intends to violate all of these laws, and several others that deal with 'Open Space' & public parks

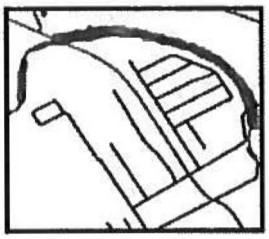
Preliminary 10-year Flood Depths Exceeding 1 Foot

- This image will be replaced with 25-year & 100-year flood data soon



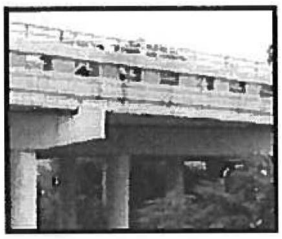
- Channel flow for 2004 = 24,200 cfs, 2002 = 39,000 cfs, 1998 = 98,100 cfs, 1997 = 69,600 cfs
- This analysis used less flow (20,000 cfs), imagine the affects with any of the other recent floods
- Backwater rise from the bridge affect requires TxDOT to compensate those that could be affected

Preliminary 10-year Flood Velocities Exceeding 3 Feet Per Second



- This image will be replaced with 25-year & 100-year flood data soon
- Actual TxDOT test is for the 100-year flood event against erosion & 500-year flood event against scour failure
- Cibolo Creek reaches super-critical flow well below the 100-year flood event
- Super-critical flow is the point where the water becomes highly turbulent and erosive

TxDOT's Alternative 4 Goes Where No Road Belongs



- FEMA, NFIP, and Bexar County law prohibits placing a single home in this 100-year floodplain
- The displaced volume of the TxDOT bridge in a 100-year flood event would be about 4,500,000 cubic feet
- Building the TxDOT bridge here is equivalent to placing 500 homes in the floodplain, each being inundated to the 4 foot level
- Or relocating the Alamodome to the same location within this floodplain

Alternative 4 Passes Over a Narrow Flood Channel

- The narrow 'V' forces the floodwater to higher velocities and higher levels
- The pier sets must cope with high erosive velocities
- To see an example of this affect, walk down to the base of the Cibolo Creek Bridge on FM78
- The bridge's foundation is being undercut, and the creek bed itself is eroding away

Alternative 5 Passes Over a Wide Flood Channel

- This wider channel accommodates floodwaters by spreading into the wider channel that's available
- Spreading out minimizes the levels and velocities to a significant degree
- The supporting pier sets suffer less stress when the velocities are low
- Lower velocities mean that the water passes with less backwater rise

BearTx
12231 Lost Meadows Drive
Cibolo, T X 78108-3815

C> Copyrii:ht 2005-2006, BearTx, All Rights Reserved

Texas Department of Transportation

P.O. BOX 29928 •SANANTONIO, TEXAS 78229-0928 • (210) 615-1110

November 8, 2006

The Honorable Hal Baldwin
Mayor, City of Schertz
1400 Schertz Parkway
Schertz, TX 78154

Re: FM 1103 Route Study - Widening Recommendation

Mr. Baldwin,

Thank you very much for your continued interest in the FM 1103 Route Study. As you are aware, existing FM 1103 lies primarily in the City of Cibolo, but one section of the roadway, between IH 35 and Chelsea/Old Wiederstein, is within the jurisdiction of the City of Schertz.

Due to the fast-paced development along existing FM 1103, the Texas Department of Transportation (TxDOT) presented a Preliminary Widening Recommendation at Stakeholder Meeting #2 on April 20, 2006. This Recommendation was created to assist local jurisdictions and stakeholders in evaluating on-going development decisions with the best assessment of the preliminary findings from the FM 1103 Route Study. According to the Recommendation, the segment of FM 1103 between IH 35 and Chelsea/Old Wiederstein would sustain the least impacts, while realizing the greatest benefits by securing the necessary additional 70 feet of right of way along northeast side of the road. The Fairway Ridge development was, at that time, in the early stages of project development. In anticipation of Stakeholder Meeting #2, the study team had informed City of Schertz staff of these findings on April 6, 2006.

On May 25, 2006, City of Schertz staff met with TxDOT and the consultant team to discuss an Alternative Widening Concept for this segment of existing FM 1103. By this time, the City of Schertz had approved the final plat for Fairway Ridge, Unit 1 (7 units backing up to FM 1103) on April 21, 2006, and the preliminary plat for Unit 2 (13 units) on May 10, 2006. The Fairway Ridge Developer had requested through City Council members, that City staff talk to TxDOT about re-evaluating the Preliminary Widening Recommendation, and recommend TxDOT use the 20-foot right of way dedication Fairway Ridge had previously allotted in the Master Plan, plus a 10-foot greenbelt buffer that had been recently added to the Plan. Upon realizing the widening of FM1103 would require well more than was originally assumed, City staff and the Fairway Ridge Developer requested that TxDOT re-examine the Preliminary Widening Recommendation and consider securing the necessary 70 feet of additional right of way by acquiring 30 feet along the east (Fairway Ridge) side of FM 1103 and 40 feet along the west side of FM 1103.

Following a meeting held June 1, 2006, which TxDOT held to solicit comments from other stakeholders along this segment of FM 1103, the Developer adjusted their suggestion to be an "even split" (35-feet/35-feet) from each side of FM1103.

TxDOT has conducted the additional analysis comparing the two widening concepts and has concluded that the original Preliminary Widening Recommendation continues to be supported by the technical analysis. The analysis can be summarized into the following considerations:

- *Comparative qualitative impacts of each scenario support the Preliminary Widening Recommendation:*
  - Differentiators among community and environmental features continue to be **existing** residential, commercial, and civic (church) impacts versus impacts to potential **future** residential parcels.
  - Other differentiators favoring the Preliminary Widening Recommendation include constructability - widening from the center was considered to be less desirable for traffic safety and mobility during construction, with associated implicit impacts to schedule and cost;
  - Schedule and cost implications of impacting both sides of utilities versus one side; and
  - Noise implications of widening toward existing homes and a sensitive receptor (the church).
- *Comparative quantitative cost impacts of each scenario also support the Preliminary Widening Recommendation.* Differentiators from a cost perspective include:
  - In favor of the Preliminary Widening Recommendation:
    - avoid higher costs for existing land and improvements;
    - avoid "cost to cure" expenses associated with impacts to the septic systems of Rancho Vista Park and the Kahn Subdivision and the internal circulatory street and community services building of Rancho Vista Park - each property representing residential impacts to multiple families, as well as commercial impacts to each proprietor;
    - avoid cost of damages to Other Existing Residential structures not considered under the previous planning-level screening; and
    - avoid costs associated with impacts to utilities on both sides of the road under the Alternate Widening Concept versus primarily one side of the road under the Preliminary Widening Recommendation.
  - In favor of the Alternate Widening Concept:
    - avoid lot costs for proposed residential (20 units currently platted)
    - avoid replacement cost and damages for the Fairway Ridge subdivision entrance sign

- Finally, and *most importantly, in consideration to the planning process under the National Environmental Policy Act (NEPA),* an additional consideration should be paid to the timeline of analysis to arrive at the Preliminary Widening Recommendation. That is, the preliminary analysis was conducted in March 2006 and Initial Options screening occurred based upon information available at that time. This re-examination has considered costs which have arisen since that time, including the consideration of the cost of the platted lots of Units 1 and 2 in Fairway Ridge, as well as the replacement cost and damages for the subdivision entrance sign, which was recently constructed. The Fairway Ridge developer has moved quickly from entirely undeveloped property in early 2006, to proceed rapidly to improve the property during the route study. However, the study team has been advised by the San Antonio District right of way staff that consideration of future values in the determination of a route study recommendation could be considered inappropriately speculative. Thus, our conclusion is to proceed with the Study Recommendation based upon the best known information for "today" and compensate parties in the future when the project is implemented, as appropriate. This approach is consistent with alternatives analysis requirements under NEPA.

Thus, after an exhaustive investigation of this issue at the request of the City of Schertz, TxDOT has concluded that the Preliminary Widening Recommendation is the final Study Recommendation for existing FM 1103 between IH 35 and Chelsea/Old Wiederstein. All parties - the City of Schertz, the Fairway Ridge developer, and other property owners along FM 1103 should make their plans for the future accordingly.

Please feel free to contact me with any further questions.

Sincerely,

Judy Friesenhahn, P.E.
Transportation Planning Director

cc:
Amy Madison, City of Schertz
Leonard Truitt, City of Schertz
Clay Smith, TxDOT
Greg Malatek, TxDOT
Joel Guerrero, TxDOT
Mia Herbold, Cude Engineering
Carlos Sandoval, Fairway Ridge
Rudy Rivera, RJRA
Karen Lorenzini, RJRA
File

REC'D NOV 10 2006

1014-11 11-2-V (6)

FAX PAX FA.X FA.X F/\X FAX FAX I"AX FAJ(FAX FAX

ROIIERT E FIIr.LERJUN
10J CIIIOLO TOLLE DR
CU:JOI.O. TTIXAS 78108
(210) 659 6077

10 L IIJV4./\ /21 V.J:.1Uo;.1-Vte2 A
.7'-3](-ff4/ 3....

SUHJ E t T r-:.,_,, In

Phone
659-6077

,,.fnQ\ \

fnb rt er (J. \ \ @Js-\iC, Yle.

We, my wife and I. mi 5ed the fin.t meeting, so when we received the material about th second mc Ling that gaw uc hoth some time to talk about what had uccured over the 20 plu:, years we have been here. I recall the first time I d,ow nut here from ,an Antonio. My impres iun W&S, hen; is a lot of undt..-rutili7.cd land.. In just u few year-$ thl' subdiVl ion dcvtdopers will looking for affordable land. Shortly thcn:aftCT the real estate business crac;hed. otherwise then; would he wall lo wall houses. and the }-M 1103 improvt=ment would more than likely compkted, ruid crossing SR78 and moving soulh towards m IO at lellSt partially complete.. r !,udder to think wbal il probably wuuld have been. nothing more than no ugly. \\ide roadway. having kit hehind a Jul of ill feelings and los! ....hopefully havt: nn opportunity to make this project :,ometh1ng to proud of, and create an inviroment that wi11 encourage henificial growth..
1can ,;8Ualize a mix of ckan ioum,1Ty. affordable and atlr4ctive housillg. schools and M) forth. All producing a tax base to enable the counties and cities to meet the needs of citizen:, and businec;es in there re,;pectivc jurisdictions.
I had seen in sever.11 other places we hnvc lived. both good and had rood and I-tre.et proj\:cL'i and the result. where the only cunsid ration wa-. to move tr,dlic. was no\ a pos,tiv oulwme

Tliis is why I believe we must have tl1c as our ultimate goal for this projccL. to look at it heing an evolution of Il "Parkway". and what sort of developmmt would be <It'sirnhle for Cvt! one

If nnyont thinks for even a minute that how we go nbout our jnb of plnuning and building mndways hos nothing tu do with (X:onomic ond social ic;sues. that individual is mistaken, nnd should first consider that this country is whnt it is now cnuse of trmsportntion, and is. in reality an ongiong process thal m\lc;t ervc th citizens. 1cxa.-. has . in my opinion the- best system of roads and higbwa:,,s in the Uniled Stntes. however, I see a trend towards ma-.sive highway pn,jects thot will he bring loss nnd di:-.TUrrtfon. Those who stand to gain the most are in a position tn influence these proj ts which will result in ruining the lives and livelyhood. of lhc le-.s fortwiate.

As to the: FM 1103 project, if we can somehow direct it in i.uch a way that when completed, we can be pruud of what we did now and the ycan. to come.
Whatever our perception of th.is project il; we cawiot deny that perception hecomes reality.
So we muc;t not forgel that this and ulher -r,r(1iects in this area are not j usl transportation, rather arc about serving the wiuer interest of all the citizens. 1am and have always heen prouJ. Il> be a TEXAN, t us all band together and work together to make this a succcasful project.
1hank you Md all of the very protes.-sional peopJc \I.ho an, working very hunt to JUSke lhis much needed prujel1 succesful.

Sincerely

Rnb Fullerton

PS You or anyone else on the staff are welcome to call anylime <luring working hour..

Texas Department of Transportation

P.O. BOX 29928 •SANANTONIO, TEXAS 78229-0928 • (210) 615-1110

December 15, 2006

Mr. Carlos Lomelin
JMLG Holdings, Ltd.
12710 Cranes Mill
San Antonio, TX 78230

Re: FM 1103 Route Study - Widening Recommendation

Mr. Lomelin,

Regarding our recent meeting, I understand that the final Study Recommendation for the FM 1103 corridor, particularly the section within the City of Schertz, between IH 35 and Chelsea/Old Wiederstein, is causing your company significant consternation. As we discussed in the meeting, let me offer for your consideration a summary of the circumstances and implications of our planning efforts on FM 1103.

In light of the fast-paced development that is occurring along FM 1103 between IH 35 and FM 78, the cities of Schertz and Cibolo requested the Texas Department of Transportation (TxDOT) to consider the long-term transportation needs along this route. As such, TxDOT conducted what is commonly referred to as a "route study" to investigate relevant issues and possible expansion scenarios along FM 1103. A Route Study is a "plan" which offers decision-makers and planners a basic understanding of what will be required in order to accommodate travel demand on the area's transportation network in light of development activity. The bulk of the FM 1103 corridor study phase of project development concluded last Thursday, December 7, 2006 with a Public Meeting. The study team explained the route study process, the analysis and findings from the FM 1103 Route Study, and described the widening recommendation that emerged from the study. This meeting will be documented in a report that will be publicly available (presentation attached). Because of the pace of development along this corridor, TxDOT is completing a draft Environmental Assessment and geometric schematic, both of which will enter the internal TxDOT review process in early Spring 2007 and are scheduled to be presented at a Public Hearing by Summer 2007. At that point, **project progress will <u>stop</u> pending availability of funding.** TxDOT will NOT proceed with subsequent activities in the typical project development process (like purchasing right of way, adjusting utilities, or construction) unless and until construction funds become more certain.

According to current funding plans, FM 1103 is not scheduled for expansion (the addition of more lanes) before 2016 using traditional funding sources (motor fuel taxes). Non-traditional funding strategies would require a significant commitment (financial) on the part of local jurisdictions. Currently, we are not aware of any interest to pursue non-traditional financing strategies by either the City of Schertz or the City of Cibolo.

With regard to the timing of the study, the study team recognizes the challenges of property owners and residents who may potentially be impacted by the study improvements. **This is why TxDOT performed this route study this year - to provide this information as soon as possible - and why we do our best to keep all parties within the study area informed as the study progresses.** In this case, due to the particularly fast-paced development along existing FM 1103, TxDOT presented preliminary guidance on the direction of the analysis early in the study process: we presented the Preliminary Widening Recommendation at Stakeholder Meeting #2 on April 20, 2006, precisely to assist local jurisdictions and stakeholders such as yourself in evaluating on-going development decisions. According to the Preliminary Widening Recommendation, the area between IH 35 and Chelsea/Old Wiederstein would sustain the least impacts and offer the most benefits by widening the necessary additional 70 feet of right of way to the northeast side of the road - toward the site of the Fairway Ridge development which was, at that time, in the early stages of project development. As the study progressed, the TxDOT continued to evaluate input and information, including a request by the City of Schertz to revisit the analysis of the area between IH 35 and Chelsea/Old Wiederstein (letter to Mayor Hal Baldwin attached).

The Study Recommendation is based upon the best available information that is available at the time of the analysis. The National Environmental Policy Act (NEPA) requires that an environmental document be prepared to demonstrate full consideration of the potential impacts to a myriad of resources in the natural and man-made environment for the proposed alternative. It is a distinct possibility that land uses - on both sides of FM 1103 - will continue to change along FM 1103 before traditional construction funds actually become available to implement any expansion improvements. The environmental document will be updated every three years to address new guidelines and changes that occur along the corridor.

I hope I have adequately explained the circumstances and implications of our planning efforts on FM 1103. Please feel free to contact me with any further questions at (210) 615-5814.

Sincerely,

Judy Friesenhahn, P.E.
Transportation Planning Director

Attachments:
Public Meeting, December 7, 2006, presentation
Letter to Mayor Hal Baldwin, November 8, 2006

cc:
Mayor Hal Baldwin, City of Schertz
Leonard Truitt, City of Schertz
Clay Smith, TxDOT
Greg Malatek, TxDOT
Joel Guerrero, TxDOT
Carlos Sandoval, Fairway Ridge
Rudy Rivera, RJRA
Raymond Tarin, Cude Engineers

APPENDIX B - FM 1103 TXDOT TRAFFIC ANALYSIS

,/ FILE

MEMORANDUM

Texas Department of Transportation

TO: William B. Casteel. P.E.
Attention: Clay Smith, P.E.

DATE: January 17, 2006

FROM: William E. Knowles, P.E.

FILE: TPP (T)
(512) 486-5100

SUBJECT: Traffic Data
CSJ: 1268-01-900
FM 1103 from IH 35 to FM 78 and from FM 78 to IH 10
Comal County

Attached are tabulations showing traffic analysis for highway design for 2016 to 2036 twenty year period and for 2016 to 2046 thirty year period and **data** for air and noise analysis for the described limits of the routes. These tabulations assume that no improvements have been made to FM 3009.

Please refer to your original memorandum dated October 28. 2005 and October ; 9, 2005.

If you have any questions or need any additional information, **please** contact Paul L. Tiley at (512) 486-5030.

Attachment

lo.f cc: Kenneth Zigrang, San Antonio District
Design Division

ftJ

William E. Knowles

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

San Antonio Oittrlct — Janua_l 12, 2306

Otsor1pt0f1 of location	Average Daily Traffic 2016	Average Daily Traffic 20JG	Dir Otst	Base Year Factor	Base Year PPrcent Trucks AOT	Base Year PPrcent Trucks Olill	ATHIVLD	Percent Tandem Axttisin A.TIIWLD	Total Tumber of Equivalent 18k Single Aldo Load Applicaiaons One Direction Expected for a 20 Y•ar Period (2016 to 2036) Fle>ibl• PavfTICnt	S N	Rigid P.w11ment	SLAB
EM.1lm												
Section 1												
Widen existing FM 1IOJ lu 4 lanes IH 35 south lo FM 78	20,400	27,600	74 -26	\3.3	12.0	9.0	12,700	60	8,360,000	3	11,348,000	8"
Guadalupe County												

Data for Usa In Air & Noise Anahrsis

Vehicle Class	B u e Year 'Y,ofAOT	B u e Year %ofDIfV
LiglHDutv	88	91
Medium DulY	4.5	3.4
He•VY Dutv	75	S.6

NOT INTENDED FOR CONSTRUCTION
BIOOI ;G OH PFRMff PURPOSES
Williorn t:ric• Knowles, P.E.
Senai /lluonber 84704

Oesctiption of Locatiioo	MerageDaBy Trallic 2016	MerageDaBy Trallic 2t<6	Dir Otsl	Base Year Factor	Base Year J.Iere''nl AOT	Base Year J.Iere''nl OHi/	ATHWLD	Percenl Tall<!din Aides h ATHWLD	Total Nuf11bor ol Equ1valerr 18k ⊕ing1e JJtP. load Applicahons One Direchon Expeclod-lor a JD Yoor Ponod (2016 to 2046) Fte,lblc Pavement	S N	Rigid PavR•flt	SLAB
0 0 I m												
Section 1												
Widen eicisling FM 1103 D 4 lanes IH 35 soulh lo FM 78	20,400	30,600	74-26	13.3	12.0	9.0	12.800	60	13.325,000	3	18,086,000	S'
Guadal\.D<> Countv												

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

San Anionic D!s.b'lct

JinU.lll_ 12 200&

Desc1tpt0f1 of Localian	Average Daily Traflr. 2016	Average Daily Traflr. 2036	Dir Dist %	K Faclor	Percent Trucks AOT	Percent Trucks OHV	ATHWLO	Percent Tandem Axle5 In ATHWLO	Total !lumber of Equivalent 18 Single Axle Load Applicat,ons One Ilitection E1<P8Clad for a 20 Year Per10d (2016 lo 2036) Floxi>lc P,,'1smumt	S N	Ri9id Pa°'err-tlr.l	SLAB
FM 1103 Section 2 Su,td new 4 1ane FM FM 78 soulh to IH to Gua<lalu0e Counlv	20,400	27,600	74 -26	13.3	12.0	90	12,700	60	8,360,000	3	11,346,000	8"

Data for Use in Air & Noise Analvsls

Vehicle Closs	Base Year %ofADT	Base Year % ofDHV
LlahtlMv	88	91
Medium Dcltv	4.5	3.4
Heavv Dcltv	75	5.6

NOT INTENDED FOR CONSTRUCTION
BIDDiNG OR PERMIT PURPOSES
William ,':rick :<nowles, P.E.
Serial Numhcr84704

Oescripuon of Locafio:i	A>lerage03ily Traflic 2016	A>lerage03ily Traflic 2046	Oir Oisl %	K FaclOr	Percent frucs ADI	Percent frucs ntlV	ATHWLD	Percenl Ta!"\dom A'<tcs in AfHWID	Tol.JI cro!Equiv lcnl 18k S-iyre Allie Loa Appl1.:al!ons Ono Direci,on Expecled for a JO Year Penod 12016 lu 2046) Flex1 Pavement	S N	n,ϕid Pt'1vemcn1	SLAO
FM 11tl3 Section 2 Build now 4 lane FM FM 78 south lo IH 10 GuadalIII]e County	20,400	30,600	74-26	13.3	12.0	9.0	12,800	60	13,325,000	3	1,806,600	a·

/ FILE

MEMORANDUM

Texas Department of Transportation

TO: Wliiiam 8. Casteel, P.E.
Attention: Clay Smith. P.E.

DATE:, January 17, 2006

FROM: William E. Knowles, P.E.

FILE: TPP (T)
(512) 486-5100

SUBJECT: Traffic Data
CSJ: 0915-36-034
FM 3009 from FM 78 to IH 10
Guadalupe County

Attached are tabulations showing traffic analysis for highway design for 2016 lo 203€ twenty year period and for 2016 to 2046 thirty year period and data for air and noise analysis for the described limits of the route. These tabulations assume that no improvements have been made to FM 1103.

Please refer to your original memorandum dated October 28, 2005.

If you have any questions or need any additional information. please contact Paul L Tiley at (512) 486-5030.

Attachment

cc: Kenneth Zigrang, San Antonio District
De,;ga □,; ;o,

TRAFFIC ANALYSIS FOR HIGHWAY DESIGN

S.n Antonio D'11rtd

Jonu- fff 12, 2005

Oescription or Location	Ar'lenge Daily Traffic 2016	Ar'lenge Daily Traffic 2036	Ba5o Yoar mr Ost %	Ba5o Yoar K Factor	Ba5o Yoar Percent Trucks ADT	Ba5o Yoar Percent Trucks OHV	ATHWLO	Percent Tandem Alles in ATHWLD	Total Numcerol Equ,valenl 18k Single Aide I oad Applicalions One Direction Expucled for a 20 Year Period (201610_2-?36) Flexible Pavemcnl	S N	RiUtd Pa.,cmont	SLAB
FM 3009 Build new 4 lane FM road From FM 78 soulh lo 11110 Bexar County	23,600	32,2U0	(4 . 2e	13.3	12.6	9.5	13,000	60	10,202,000	3	13,849,000	6"

Data for Use in Air & Noise Analysis	Basov. ,	
Vehicle Class	%ufADT	% ofDHV
Uahl Duty	87.4	90.5
Medium DulY·	4.7	3.5
Heaw Dutv	7.9	6

NOT INmIDEO FOR CONSTRUCTION
BIDDING OR PERMIT PURPOSES
William ::,ic!, :,nowles, P.E.
Serial Nun·,t:er 04704

Description ol Lcocalion	Averago Daily Traffic 2016	Averago Daily Traffic :2046	BilsoYear Dlr Dist %	BilsoYear K F•etor	BilsoYear Percent Trupks AOT	BilsoYear Percent Trupks OHV	ATHWLD	Percent Tnndcm Ax.les u, ATHY/LO	Total Number o(Eou,valcnl 10k Sir,gle M e Load Apphcalla;i:. Ono Direction F.•pected ror o 30 Year)Jr.nod (2016 b 204fl) Flexibte Pavement	S N	Rigtd Pa•,emcnt	SLAB.
FM 3009 Build new 4 lane FM road From FM 78 south to 11110 Bexar County	23,600	35,500	74 -26	13.3	12.6	9.5	13,100	60	16,208,000	3	22,003,000	8"

AC Group, LLC

Location:	Interstate Hlahwav 35 SB Fmntaae and RM 1103
# : t	86-06
Norlh-Soulhmet:	H 35 SB Fmntaae
East-W.ststrHI:	RM 1103
77me Patiod:	4 I400-600PM
Data raconied:	November 20, 2006
Commentr.	

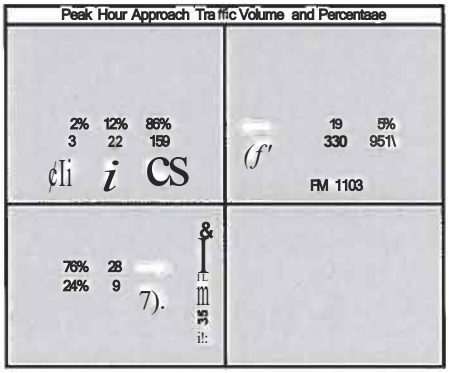
AC GROUP LLC
Traffic Data Surveyors

Mowment		Southbound /ell		Southbound thru		Southbound		Westbound /ell		Westbound thru		Westbound		Westbound /ell		Westbound th.u		Westbound	
V.h/c/e T,,..		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
4:00PM	4:15PM	-	-	-	-	·	-	30	0	6	0	4	0	-	·	5	0	0	0	88	0	5	0	-	-
4:15PM	4.30PM	-	-	-	-	·	-	45	0	5	0	1	0	-	·	2	0	3	0	77	0	9	0	-	-
4,30PM	4,45PM	-	-	·	-	-	-	35	0	1	0	0	0	-	-	5	0	0	0	95	0	3	0	-	·
4:45PM	5.00PM	-	-	-	-	-	-	31	0	9	0	0	0	-	-	5	0	1	0	88	0	7	0	-	-
5,00PM	5,15PM	-	-	-	-	·	-	31	0	7	0	1	0	·	-	5	0	0	0	81	0	5	0	-	-
S,15PM	5,30PM	-	-	·	-	-	-	46	0	2	0	1	0	·	-	11	0	4	0	85	0	4	0	-	-
5,30PM	5.45PM	-	-	·	-	-	·	51	0	4	0	1	0	·	-	7	0	4	0	76	0	3	0	-	-
NSPM	6:00PM	-	-	·	-	-	·	34	0	6	0	1	0	·	-	10	0	2	0	73	0	8	0	-	-
Total		0	0	0	0	0	0	303	0	40	0	9	0	0	0	50	0	14	0	883	0	44	0	0	0
Peak Total		0	0	0	0	0	0	159	0	22	0	3	0	0	0	28	0	9	0	330	0	19	0	0	0
Peak Movement Tofil		0		0		0		159		22		3		0		28		9		330		19		0	
Pe k Turn Percent		0%		0%		0%		86%		12%		2%		0%		76%		24%		95%		5%		0%	
Pe k ♦,♦ ach Total		0						1114						37						349					

Peak Hour 4:45 RM - 5,45 RM
Percent Trucks 0%

Tnno		I.J.Tums			
DIXJflch:					
Veh/c/e T,-		C	T	C	T
12.00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12,00AM				
12:00AM	12,00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12.00AM	12:00AM				
12:00AM	12:00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percent		0%		0%	

Peak Hour Approach Traffic Volume and Percentaae



AC Group, LLC

Location:	Interstate Hlahwav 35 NB Frontaoe and FM 1103
#:	86-06
Nohsouth -	IH 35 NB Frontaoe
Easl-W,slrllfft	FM 1103
Time,riod:	1 17;00 - 9:00 AM
O.te /K0/1:fed:	November 20. 2006
Comments	

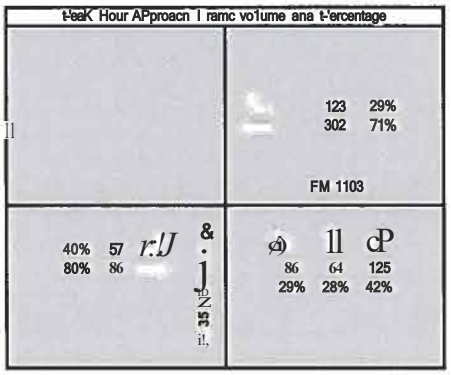
AC GROUP LLC
Traffic Data Surveyors

		Nohbund						==bound												westbound					
Movement		/ell		thru				left		thru				left		thru				/ell		thru			
Vehicle T		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
7:00AM	7:15AM	35	0	13	0	26	0	-	-	-	-	-	-	13	0	12	0	-	-	-	-	94	0	18	0
7:15AM	7:30AM	21	0	18	0	23	0	-	-	-	-	-	-	6	0	27	0	-	-	-	-	64	0	13	0
7:30AM	7:45AM	30	0	17	0	26	0	-	-	-	-	-	-	13	0	18	0	-	-	-	-	79	0	32	0
7.45AM	8.00AM	24	0	17	0	35	0	-	-	-	-	-	-	26	0	28	0	-	-	-	-	81	0	32	0
8.00AM	8.15AM	15	0	27	0	32	0	-	-	-	-	-	-	g	0	20	0	-	-	-	-	64	0	36	0
8:15AM	830AM	17	0	23	0	32	0	-	-	-	-	-	-	g	0	20	0	-	-	-	-	58	0	23	0
8:30AM	8.45AM	18	0	11	0	41	0	-	-	-	-	-	-	10	0	16	0	-	-	-	-	72	0	23	0
8:45AM	9.00AM	18	0	7	0	34	0	-	-	-	-	-	-	12	0	24	0	-	-	-	-	75	0	23	0
Total		178	0	133	0	249	0	0	0	0	0	0	0	98	0	165	0	0	0	0	0	807	0	200	0
Peak Total		86	0	64	0	125	0	0	0	0	0	0	0	57	0	86	0	0	0	0	0	302	0	123	0
Peak Movement Total		B6		64		125		0		0		0		57		86		0		0		302		123	
Peak Tum Percent		29%		28%		42%		0%		0%		0%		40%		80%		0%		0%		71%		29%	
Peak ADOroach Total		295						0						143						425					

Peak Hour 7.30AM - 8·30AM
Percent Trucks 0%

Time		U-Turns			
Adr					
Vehcle T		C	T	C	T
7:00AM	7:15AM				
7:15AM	7:30AM				
7.30AM	745AM				
7.45AM	8.00AM				
8.00AM	815AM				
8:15AM	830AM				
8:30AM	845AM				
8.45AM	9.00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Tum Percen1		0%		0%	

t-eaK Hour APproacn I ramc vo1ume ana t-'ercentage



AC Group, LLC

IDcation:	IInterstate HiahWav 35 NB Fmntaae and FM 1103
◆ 1 1 :	t 86-06
Notth-Soulh -	UH 35 NB Fmntaae
[redacted]	IFM 1103
Tjme Felicd	4 14:00 • 6:00 PM
Dai.IWCOtded,	INovember 20, 2008
Comm.nts:	

AC GROUP LLC
Traffic Data Surveyors

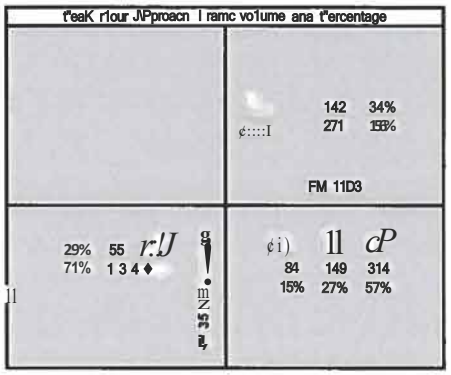
Movement		Eastbound						Westbound					
		/ell		Ihfll				/ell		Ihfll			
Vehicle T. -		C	I	C	T	C	T	C	T	C	T	C	T
4.00PM	4:15PM	30	0	38	0	63	0	-	-	-	-	-	-
4.15PM	4.30PM	16	0	38	0	59	0	-	-	.	.	-	-
4.30PM	4.45PM	21	0	JO	0	62	0	-	-	-	-	-	-
4.45PM	5:00PM	23	0	31	0	66	0	-	-	-	-	-	-
5.00PM	5.15PM	17	0	31	0	74	0	-	-	.	-	-	-
S 15PM	5.30PM	22	0	4"	0	77	0	-	-	-	-	-	-
5.30PM	5:45PM	22	0	43	0	77	0	-	-	.	-	-	.
5.45PM	6.00PM	18	0	47	0	91	0	.	-	.	-	-	.
Total		171	0	302	0	569	0	0	0	0	0	0	0
Peak Total		84	0	149	0	314	0	0	0	0	0	0	0
Pt1k Movement Total		84		149		314		0		0		0	
Peak Turn Percent		15%		27%		57%		0%		0%		0%	
PHk • ♦.a.c h Total		547						0					

Movement		Eastbound						Westbound					
		/ell		Ihfll				/ell		Ihfll			
Vehicle T. -		C	T	C	T	C	T	C	T	C	T	C	T
4.00PM	4:15PM	13	0	22	0	-	-	-	-	67	0	36	0
4.15PM	4.30PM	16	0	31	0	-	-	-	-	62	0	35	0
4.30PM	4.45PM	11	0	32	0	-	-	-	-	88	0	36	0
4.45PM	5:00PM	9	0	27	0	-	.	-	-	69	0	36	0
5.00PM	5.15PM	14	0	22	0	-	-	-	-	75	0	4"	0
S 15PM	5.30PM	18	0	42	0	-	-	-	-	61	0	28	0
5.30PM	5:45PM	14	0	43	0	-	-	-	-	66	0	34	0
5.45PM	6.00PM	7	0	38	0	-	-	-	-	59	0	17	0
Total		104	0	257	0	0	0	0	0	547	0	268	0
Peak Total		55	0	134	0	0	0	0	0	271	0	142	0
Pt1k Movement Total		55		134		0		0		271		142	
Peak Turn Percent		29%		71%		0%		0%		49%		34%	
PHk • ♦.a.c h Total		189						413					

Peak Hour 4.45 PM - 545PM
Percent Trucks 0%

Time		U-lums			
•neh:					
Veh/c/ar		c;	T	c;	T
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12.00AM				
12:00AM	12:00AM				
12:00AM	12.00AM				
12:00AM	12:00AM				
12.00AM	12:00AM				
12:00AM	12:00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percenl		0%		0%	

t'eaK r1our JVProecn I ramc vo1ume ana t'ercentage



AC Group, LLC

Location:	FM 1103 and Orth
Project #:	86-06
Nolth-Soulh s1tH1:	Orth
Eost-W.st - t	FM 1103
77ine Period:	1 17:00 • 9.00 AM
Dafe I'l<:Oltled:	November 21, 2006
Comments:	

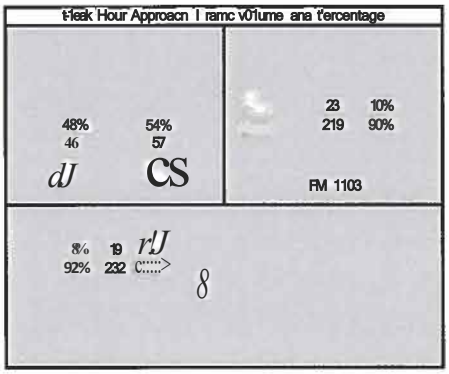
AC GROUP LLC
Traffic Data Surveyors

77ine	Nolthbo<Hld						SOUlhbound						Eastbound						W.stbo<Hld					
Movoment	le/1		lhru		n		le/1		lhru		13		le/1		lhru				le/1		lhru			
Vehlc/e Tl!!le	C	T	C	I	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
7.00AM 7.15AM	-	-	-	-	-	-	19	0	-	-	11	0	1	0	48	0	-	-	-	-	61	0	2	0
7:15AM 7:30AM	-	-	-	-	-	-	25	0	-	-	16	0	1	0	47	0	-	-	-	-	41	0	3	0
7:30AM 7:45AM	-	-	-	-	-	-	16	0	-	-	14	0	5	0	57	0	-	-	-	-	55	0	9	0
7.45AM BOOAM	-	-	-	-	-	-	18	0	-	-	10	0	2	0	61	0	-	-	-	-	53	0	4	0
8.00AM 8:15AM	-	-	-	-	-	-	9	0	-	-	11	0	7	0	62	0	-	-	-	-	60	0	2	0
8:15AM 8:30AM	-	-	-	-	-	-	14	0	-	-	13	0	5	0	52	0	-	-	-	-	51	0	8	0
8.30AM 8:45AM	-	-	-	-	-	-	6	0	-	-	6	0	5	0	46	0	-	-	-	-	54	0	6	0
8.45AM 900AM	-	-	-	-	-	-	5	0	-	-	10	0	2	0	48	0	-	-	-	-	52	0	2	0
Total	0	0	0	0	0	0	112	0	0	0	91	0	28	0	421	0	0	0	0	0	427	0	36	0
Peak Total	0	0	0	0	0	0	57	0	0	0	48	0	19	0	232	0	0	0	0	0	219	0	23	0
Peak Movement Total	0		0		0		57		0		46		19		232		0		0		219		23	
Peak Turn Percent	0%		0%		0%		54%		0%		46%		8%		92%		0%		0%		90%		10%	
Peak ... aruIch Total	0						105						251						242					

Peak Hour 7"30AM - 8.30AM
Pertent Trucks 0%

Time	LJ.Tums			
Aoomach:				
Vehlc/e IIDI	C	T	C	T
7:00AM 7.15AM				
7:15AM 7:30AM				
7:30AM 7:45AM				
7:45AM 8.00AM				
BOO AM 8:15AM				
8:15AM 8:30AM				
B:J0AM 8:45AM				
8:45AM 9;00AM				
10181	0	U	0	0
Peak Total	0	0	0	0
Peak Movement Total	0		0	
Peak Turn Percenl	0%		0%	

t-leak Hour Approacn I ramc v01ume ana t'ercentage



AC Group, LLC

Location:	IFM 1103andOrth
	I 86-06
Notth-SoulhrllHI:	I Orth
East-W.stsl7NI:	I FM 1103
TimePetiod:	I 4 14:00 - 8,00 PM
Date raconled:	INovember 21, 2006
Commentr.	

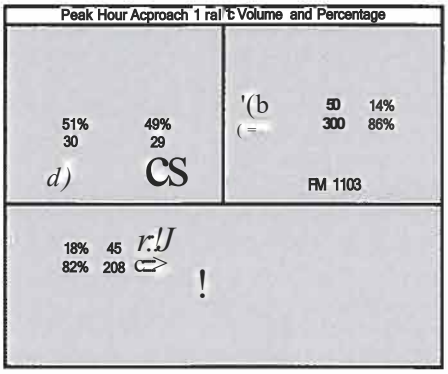
AC GROUP LLC
Traffic Data Surveyors

Time		Notthbound						Southbound						Eastbound						Westbound					
Mowment"		fell		lm		n		/ell		lm				/ell		lm				fell		lm		jr	
Vehicle·-			I	C	T	C	T	C	T		T	C	T	C	I	C	I	C	T	C		C	T	C	
4:00PM	4:15PM	-	-	-	-	-	-	a	0	-	-	6	0	6	0	55	0	-	-	-	-	71	0	18	0
4:15PM	4:30PM	-	-	-	-	-	-	14	0	-	-	7	0	12	0	66	0	-	-	-	-	93	0	13	0
4:30PM	4:45PM	-	-	-	-	-	-	5	0	-	-	5	0	15	0	38	0	-	-	-	-	67	0	12	0
4:45PM	5:00PM	-	-	-	-	-	-	4	0	-	-	12	0	12	0	49	0	-	-	-	-	69	0	7	0
5:00PM	5:15PM	-	-	-	-	-	-	9	0	-	-	5	0	17	0	65	0	-	-	-	-	53	0	10	0
5:15PM	5:30PM	-	-	-	-	-	-	4	0	-	-	6	0	20	0	66	0	-	-	-	-	83	0	13	0
5:30PM	5:45PM	-	-	-	-	-	-	9	0	-	-	4	0	12	0	65	0	-	-	-	-	49	0	9	0
5:45PM	6:00PM	-	-	-	-	-	-	5	0	-	-	10	0	15	0	61	0	-	-	-	-	59	0	7	0
ootal		0	0	0	0	0	0	56	0	0	0	55	0	109	0	466	0	0	0	0	0	544	0	89	0
Peak Total		0	0	0	0	0	0	29	0	0	0	30	0	45	0	208	0	0	0	0	0	300	0	50	0
F?ak 1Movement ITotal		0		0		0		29		0c		a		45		208				0		300		50	
Peak Tum Percent		0 %		0%				49%				51%		18%		82%		0%		0%		lla%		14%	
Pt1k'⁴♦1chuTotal										591						253						350			

Peak Hour 4:00 PM - 5.00 PM
Percent Trucks 0%

Time		U-Turns			
an⊕ch:					
Vehide 7		C	T	C	T
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Tum Percenl		0%		0%	

Peak Hour Acproach 1 ral 't Volume and Percentage



ACGroup,UC

Local/on:	IFM 1103 and Brite Road
- 1 1 ;	I 88-06
Norlh-soulhllteet	I Bmo Rd
East-W.stslrfft	I RM 1103
Tlll!e Period;	1 17:00 • 9:00 AM
uata rwcorded:	November 17, 2006
Commentc	

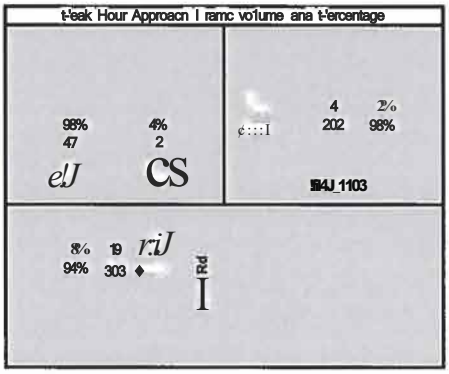
AC GROUP LLC
Traffic Data Surveyors

															Elstbound									
		/el!		ftu		n		/el!		ftu		n		/el!		ftu				/el!		ftu		
Vlhic/eff			J		T			C	J	C	T	C	T		T		T	C	J	C	T		T	C	T
7:00AM	7:15AM	-	-	-	-	-	-	0	0	-	-	u	0	3	0	62	0	-	-	-	-	35	0	0	0
7:15AM	7:30AM	-	-	-	-	-	-	0	0	-	-	13	0	3	0	(i)	0	-	-	-	-	34	0	0	0
7:30AM	7:45AM	-	-	-	-	-	-	0	0	-	-	14	0	5	0	76	0	-	-	-	-	43	0	2	0
7:45AM	11:00AM	-	-	-	-	-	-	1	0	-	-	17	0	6	0	76	0	-	-	-	-	49	0	1	0
8:00AM	8:15AM	-	-	-	-	-	-	1	0	-	-	8	0	5	0	63	0	-	-	-	-	83	0	1	0
8:15AM	8:30AM	-	-	-	-	-	-	0	0	-	-	8	0	3	0	88	0	-	-	-	-	47	0	0	0
8:30AM	8:45AM	-	-	-	-	-	-	1	0	-	-	7	0	6	0	48	0	-	-	-	-	52	0	0	0
8:45AM	9:00AM	-	-	-	-	-	-	0	0	-	-	4	0	3	0	22	0	-	-	-	-	30	0	0	0
Total		0	0	0	0	0	0	3	0	0	0	85	0	34	0	495	0	0	0	0	0	353	0	4	0
Peak Total		0	0	0	0	0	0	2	0	0	0	47	0	19	0	303	0	0	0	0	0	202	0	4	0
PHk Movement Total		0		0		0		2		0		47		19		a 1 3		0		0		202		4	
Peak Turn Pen:ent		0%		(l%		(l%		4%		(l%		[illegible]		6%		94%		1)%•		(l%		98%		2%	
P11kf'Vjmachffiotal		0						49						322						206					

Peak Hour 7:30AM - 830AM
Percent Trucks 0%

Time		U-Turns			
Veh/c/e·-		C	T	C	T
7.00AM	7:15AM				
7.15AM	7:30AM				
7:30AM	74SAM				
7.45AM	8:00AM				
8.00AM	8.15AM				
8.15AM	8:30AM				
8.30AM	B·4SAM				
845AM	9.00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percent		0 %		0%	

t-eak Hour Approacn I ramc vo1ume ana t-ercentage



AC Group, LLC

Location,	FM 1103 and Brill Road
- # :	86-06
Notth-SouthlinHJt:	Brito Rd
iEasl-W.st - -	FM 1103
Time Period:	4 14:00 • 6:00 FM
Dat. IICOnfed:	1Novombor 17. 2006
Commenta:	

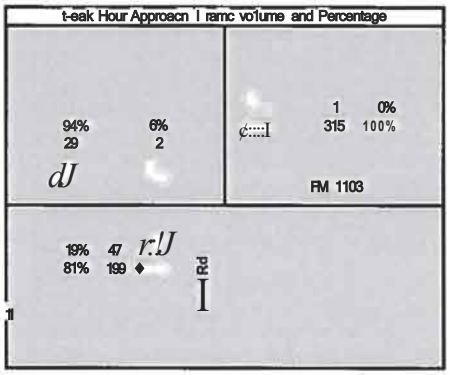
AC GROUP LLC
Traffic Data Surveyors

		North						GMIDOLIN						sth·ound						Westbound					
		Jell		/m		right		Jell		I.lhu				Jell		I.Jlii		n		/ell		I.Jlii		n	
Voh/cle		C		C		C	J	C	T	C	T	C	T	C	T	C	T	C		C		C	T	C	T
4:00PM	4:15PM	-	-	-	-	-	-	1	0	-	-	e	0	14	0	46	0	·	-	-	-	90	0	0	0
4:15PM	4:30PM	-	-	-	-	-	-	1	0	-	-	9	0	9	0	57	0	-	-	-	-	100	0	1	0
4:30PM	4:45PM	-	-	-	-	-	-	0	0	-	-	7	0	11	0	50	0	-	-	-	-	56	0	0	0
4:45PM	5:00PM	-	-	-	-	-	-	0	0	-	-	5	0	13	0	46	0	-	-	-	·	69	0	0	0
5:00PM	5:15PM	·	-	-	·	-	-	0	0	-	-	7	0	19	0	43	0	-	-	·	·	65	0	3	0
5:15PM	5:30PM	-	-	-	-	-	-	1	0	-	-	17	0	12	0	50	0	-	-	-	-	(1)	0	0	0
5:30PM	5:45PM	-	-	-	-	-	-	0	0	-	-	9	0	10	0	39	0	-	-	-	-	59	0	1	0
5:45PM	6:00PM	-	-	-	-	-	-	0	0	-	-	6	0	12	0	46	0	-	-	-	-	53	0	0	0
Total		0	0	0	0	0	0	3	0	0	0	es	0	100	0	377	0	0	0	0	0	552	0	5	0
Peak Total		0	0	0	0	0	0	2	0	0	0	29	0	47	0	199	0	0	0	0	0	315	0	1	0
P11k MovemanhTotal		D		D		0		2		D		29		47		199		0		0		315		1	
PHk'Turn,P.ercent		0%		0%		0%		6%		0%		94%		19%		81%		0%		0%		100%		0%	
P.11k:ach'Total		0						31						246						316					

Peak Hour 4,00 FM - 500 FM
Percent Trucks 0%

Time		U-Turn			
- ch:--					
Vehicle		C	T	C	7
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
Total		0	0	0	0
Peak Total		0	0	0	D
Peak Movement Total		0		0	
Peak Turn Percent		Oob		0%	

t-eak Hour Approacn I ramc vo1ume and Percentage



AC Group, LLC

Locamn:	1 FM 1103 and Chelsea Drive
- # ;	88-06
North-South -	Chelsea Dr
East-Weststrfft	FM 1103
Period:	1 17:00 • 9:00 AM
fKOl'rled:	Novombor 13, 2006
Comments:	

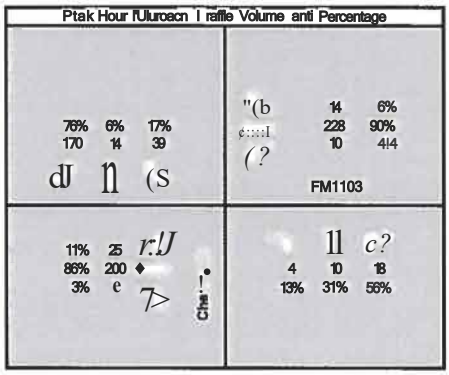
AC PLLC

Time		Northbound						Southbound												Westbound					
Movement		left		t.Jtu		right				t.Jtu				left		t.Jtu		right		left		t.Jtu			
Vlh/c/e		C	T	C	C	C	T	C	T	C	T		T	C	T	C	T	C	T	C	T	C	T	C	T
7:00AM	7:15AM	4	0	0	0	4	0	11	0	3	0	38	0	5	0	27	0	1	0	2	0	55	0	1	0
7:15AM	7:30AM	0	0	3	0	2	0	7	0	13	0	41	0	8	0	41	0	0	0	1	0	56	0	2	0
7:30AM	7:45AM	2	0	1	0	4	0	18	0	11	0	39	0	3	0	35	0	2	0	6	0	65	0	2	0
7:45AM	8:00AM	1	0	6	0	3	0	7	0	1	0	38	0	8	0	55	0	0	0	1	a	58	a	3	0
8:00AM	8:15AM	1	0	2	0	4	0	5	0	1	0	52	0	6	0	59	0	3	0	1	0	55	0	3	0
8:15AM	8:30AM	0	0	1	0	7	0	q	0	1	0	43	0	8	0	51	0	3	0	2	0	50	0	6	0
8:30AM	8:45AM	1	0	0	0	8	0	7	0	0	0	20	0	q	0	39	0	3	0	3	0	53	0	3	0
8:45AM	9:00AM	0	0	0	0	4	0	5	0	3	0	30	0	13	0	46	0	2	0	3	0	53	0	5	0
Total		1	0	1•	0	34	0	69	0	33	0	299	0	60	0	353	0	14	0	19	0	445	0	25	0
Peak Total		4	0	10	0	18	0	39	0	14	0	170	0	25	0	200	0	e	0	10	0	228	0	14	0
P11k1Movement Total		4		10		18		39		14		170		25		2111				10		228		14	
P k Turn Pon:ent		13%		31%		56%		1%		6%		71l%		11%		86%		3%		4%				6%	
P.11kADDm1ch Total								223						233						252					

Peak Hour 7:30AM - 6:30AM
Percent Trucks 0%

Tara		U-Tums			
."ch:					
Vehl<:le		C	T	C	T
tOOAM	t:15AM				
7:15AM	7:30AM				
7:30AM	7:45AM				
7:45AM	8.00AM				
8:00AM	8.15AM				
8:15AM	8.30AM				
8:30AM	845AM				
8:45AM	9.00AM				
Total		u	u	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percen1		0%		0%	

Ptak Hour fUlurocn I raffe Volume anti Percentage



AC Group, LLC

Location:	FM 1103 and Chelsea Drivo
- # :	86-06
North-Southlbfft:	Chelsea Dr
&st.W,ststrHt	FM 1103
r,meP.fiod.	4 14;00. 6.00 PM
Date taeolded:	November 13, 2006
Comments:	

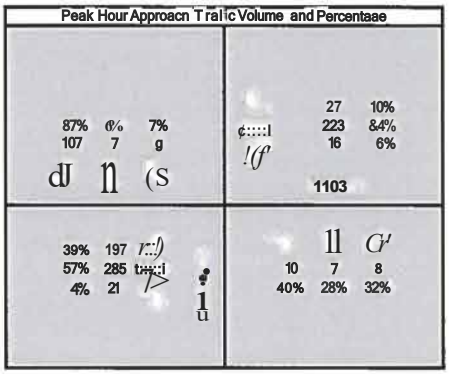
AC GROUP LLC
Traffic Data Surveyors

Movement		Northbound						Southbound						Eastbound						Westbound					
				lhtu				/ell		lhtu				/e'l		lhtu				1ll		lhru			
		C	T	C	T	C	T		T	C		C	T	C	T	C	T	C	T	C	T	C		C	T
4:00PM	4:15PM	0	0	0	0	0	0	2	0	1	0	12	0	27	0	61	0	2	0	5	0	46	0	8	0
4:15PM	4:30PM	2	a	2	0	3	0	4	0	3	0	25	o	23	0	64	o	1	o	4	0	77	o	g	0
4:30PM	4:45PM	0	a	3	o	o	o	6	o	2	o	27	o	26	0	57	a	3	0	4	o	68	a	5	o
4:45PM	5:00PM	o	a	1	o	3	0	3	o	1	a	27	o	36	o	5)	o	4	0	2	o	67	a	5	o
5:00PM	5:15PM	3	0	1	0	1	o	o	o	1	0	20	o	50	0	59	0	9	0	10	0	51	o	8	o
5:15PM	5:30PM	1	0	2	o	2	o	1	o	1	o	26	o	42	0	71	0	2	o	1	o	47	o	2	D
5:30PM	5:45PM	1	D	4	o	2	o	3	o	o	o	22	o	52	o	82	D	4	0	2	0	71	0	9	D
5:45PM	6:00PM	5	0	0	0	3	0	5	0	5	0	39	0	53	0	73	D	6	0	3	0	54	0	8	D
Total		12	0	13	0	14	0	24	o	14	0	198	0	309	0	517	0	31	0	31	0	481	0	[illegible]	0
Peak Total		10	0	7	0	8	0	9	0	7	0	107	o	197	0	285	0	21	0	16	0	223	0	27	D
PakMovemont Total		10		7		8		g		7		107		197		285		21		16		23		27	
Pak Tum Percent		40%		28%		32%		7%		6%		[illegible]		39%		5%		4%>		8%		84		10%	
Pe k"ãon: ı choTotal		25						123						503						286					

Peak Hour 5·00PM - 6:00 PM
Percent Trucks 0%

I_		U-Tums			
Ao,c/c:					
VohlcloT)'I>◂		<.	T	C	T
12·00AM	12·00AM				
1200AM	12·00AM				
1200AM	12·00AM				
1200AM	12·00AM				
12 COAM	12·00AM				
1200AM	12·00AM				
12.00AM	12·00AM				
1200AM	12·00AM				
Total		0	0	0	0
Peak Total		0	0	0	D
Peak Movement Total		0		0	
Peak Tum Percenl		0%		0%	

Peak Hour Approacn Tralic Volume and Percentaae



AC Group, LLC

Location:	FM 1103 and FM 78
	86-05
North-South	FM 1103
East-West	FM 78
Time Period:	7:00- 9:00 AM
Date recorded:	November 14, 2005
Comments:	

ACna PLLc

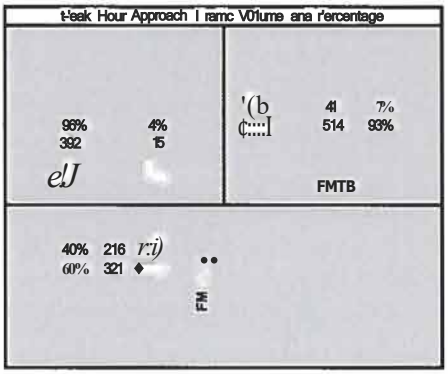
Time		Northbound						Southbound						Eastbound						Westbound					
		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right	
Vehicle Type		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
7:00AM	7:15AM	-	-	-	-	-	-	4	0	-	-	116	0	42	0	55	0	-	-	-	-	112	0	3	0
7:15AM	7:30AM	-	-	-	-	-	-	4	0	-	-	92	0	42	0	82	0	-	-	-	-	118	0	12	0
7:30AM	7:45AM	-	-	-	-	-	-	3	0	-	-	99	0	57	0	98	0	-	-	-	-	148	0	9	0
7:45AM	8:00AM	-	-	-	-	-	-	4	0	-	-	85	0	77	0	91	0	-	-	-	-	136	0	17	0
8:00AM	8:15AM	-	-	-	-	-	-	4	0	-	-	89	0	65	0	57	0	-	-	-	-	110	0	9	0
8:15AM	8:30AM	-	-	-	-	-	-	1	0	-	-	74	0	71	0	80	0	-	-	-	-	106	0	6	0
8:30AM	8:45AM	-	-	-	-	-	-	4	0	-	-	58	0	44	0	67	0	-	-	-	-	95	0	5	0
8:45AM	9:00AM	-	-	-	-	-	-	4	0	-	-	37	0	32	0	45	0	-	-	-	-	85	0	5	0
Total		0	0	0	0	0	0	28	0	0	0	630	0	431	0	540	0	0	0	0	0	910	0	66	0
Peak Total		0	0	0	0	0	0	15	0	0	0	392	0	216	0	321	0	0	0	0	0	514	0	41	0
Peak Movement Total		0		0		0		15		0		392		218		321		0		0		514		41	
Peak Turn Percent		0%		0%		0%		4%		0%		96%		40%		60%		0%		0%		93%		7%	
Peak Approach Total		0						407						539						555					

Peak Hour 7:00AM - 800AM

Percent Trucks 0%

Time		V-Turns			
Approach:					
Vehicle Type		C	T	C	T
7:00AM	7:15AM				
7:15AM	7:30AM				
7:30AM	7:45AM				
7:45AM	8:00AM				
8:00AM	8:15AM				
8:15AM	8:30AM				
8:30AM	8:45AM				
8:45AM	9:00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percent		0%		0%	

Peak Hour Approach Traffic Volume and Percentage



AC Group, LLC

Location:	FM 1103 and FM 78
#./	88-08
Notth-Soulh	FM 1103
&st-WHt - -	FM78
Time Period:	4 ⅜ 00 - 6 00 FM
Dal919C01ded:	November 14, 2006
Comments:	

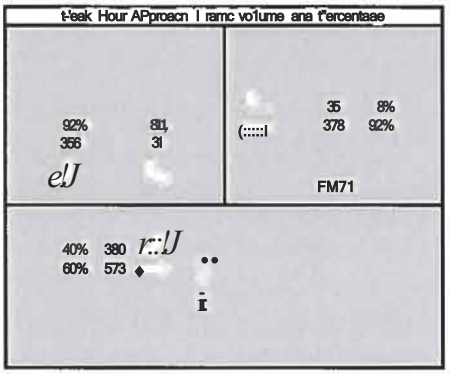
AC GROUP LLC
Traffic Data Surveyors

Time		North																							
Mowment		/ell		thlU				/ell		thlU				/ell		thlU				/ell		thlU		right	
V.h.,,	Type	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
4:00PM	4:15PM	-	-	-	-	-	-	5	0	-	-	51	0	61	0	115	0	-	-	-	-	63	0	12	0
4:15PM	4:3aPM	-	-	-	-	-	-	4	0	-	-	73	0	79	0	124	0	-	-	-	-	114	0	9	0
4:3aPM	4:45PM	-	-	-	-	-	-	5	0	-	·	111	0	79	0	119	0	-	-	-	-	78	0	7	0
4:45PM	5:00PM	-	-	-	-	-	·	5	0	-	·	60	0	100	0	144	0	-	-	-	-	103	0	13	0
5:00PM	5:15PM	-	-	-	-	-	-	18	0	-	·	115	0	101	0	148	0	-	-	·	-	101	0	6	0
5:15PM	5:30PM	-	-	-	-	-	-	3	0	-	·	70	0	100	0	162	0	-	-	-	-	96	0	9	0
5:30PM	5:45PM	-	-	-	-	-	-	11	0	-	·	60	0	92	0	137	0	-	-	-	-	73	0	3	0
5:45PM	6:00PM	-	-	-	-	-	-	7	0	-	-	46	0	89	0	147	0	-	-	-	-	86	0	14	0
Iotal		0	0	0	0	0	0	58	0	0	0	586	0	721	0	1091	0	0	0	0	0	734	0	73	0
Peak Total		0	0	0	0	0	0	31	0	0	0	356	0	380	0	573	0	0	0	0	0	376	0	35	0
Peak MovomonhTolal		0		0		0		31		0		356		380		573		0		0		378		35	
Peak Turn Porcont		0%		0%		0%		1%		0%		92%		40%		60%		0%		0%		92%		8%	
P.11k-nnm1ch ..otal		0						387						V53						413					

Peak Hour 4:30 PM - 5 30 PM
Percent Trucks 0%

7ine		U-Turns			
anch.					
VehlcloTIIDI		C	I	C	I
12-00AM	12-00AM				
12-00AM	12-00AM				
12-00AM	12-00AM				
12:00AM	1200AM				
12.00AM	12.00AM				
12:00AM	12.00AM				
12-00AM	12-00AM				
12 COAM	12 00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percenl		0%		0%	

t-eak Hour APproacn I ramc vo1ume ana t"ercentaae



ACGroup,UC

LDcat;on:	I RM 1103 and Green Vallev Road
:II:	I 86-06
North-South -	I Green Valov Rd
Ea.st-W..strinfft:	I RM 1103
ITUNEPeriod:	1 17:00 • 9:00 AM
Date IWCOlded:	INovember 13, 2006
Comments:	

AC 1ra PLb

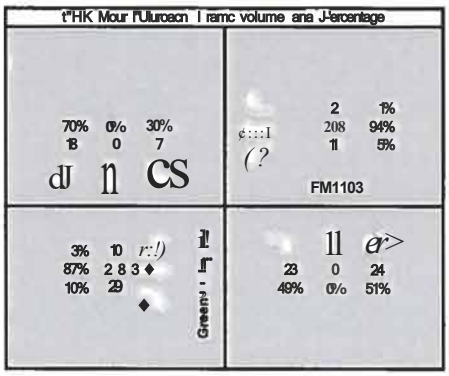
		Northbound						SOuthbOund						Eastbound						W.stbound					
Mowment		left		lhtu				left		lhtu				left		lhtu		right		left					
Vhlcl Type		CC	T	<	T	CI	I	C	T	C	I	C	I	C	T		T	C	T	C	I	C	T	I	T
7:00AM	7:15AM	3	0	0	0	0	0	0	0	0	0	5	0	4	0	53	0	8	0	1	0	51	0	0	0
7:15AM	7:30AM	2	0	0	0	5	0	1	0	0	0	1	0	1	0	83	0	10	0	2	0	56	0	1	0
7:30AM	7:45AM	3	0	0	0	4	0	0	0	0	0	2	0	1	0	80	0	12	0	4	0	58	0	0	0
7:45AM	8:00AM	7	a	0	0	4	0	2	0	0	0	7	0	5	0	66	0	7	0	4	0	50	0	0	0
8:00AM	8:15AM	5	a	0	0	9	0	4	0	a	0	1	0	3	0	57	0	5	0	2	0	45	0	2	0
8:15AM	8:30AM	8	a	a	a	8	0	1	0	0	0	6	a	1	0	80	0	5	0	1	0	55	0	0	0
8:30AM	8:45AM	5	0	0	0	5	0	0	a	0	a	0	0	3	0	58	0	5	0	2	0	57	0	1	0
8:45AM	9:00AM	6	0	0	0	8	a	1	a	0	0	3	0	7	0	47	0	5	0	0	a	46	a	0	0
Total		39	a	0	0	40	0	9	0	0	0	25	0	25	0	482	0	57	0	16	0	418	0	4	0
Peak Total		23	0	0	0	24	0	7	0	0	0	16	0	10	0	263	0	29	0	11	0	208	0	2	0
PHk MovomentTotal		23		0		24		7		0		16		10		283		29		11		208		2	
Pe k,Turn Percent		41%		0%		51%		30%		0%		70%		3%		67%		10%		5%		Wl-		1%	
PHk A,..ch Total		47						23						423						221					

Peak Hour 7:30AM - B30AM

Percent Trucks 0%

Time		U-Turns			
a.n.◆.ch:					
Vehlce /...		C	T	C	T
7:00AM	7:15AM				
7.15AM	7:30AM				
7:30AM	7:45AM				
7.45AM	8.00AM				
8.00AM	8:15AM				
8:15AM	8:30AM				
8:30AM	8:45AM				
8:45AM	900AM				
Total		0	0	D	D
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percen•		0%		0%	

t"HK Mour ΓUlurocn I ramc volume ana J-ercentage



AC Group, LLC

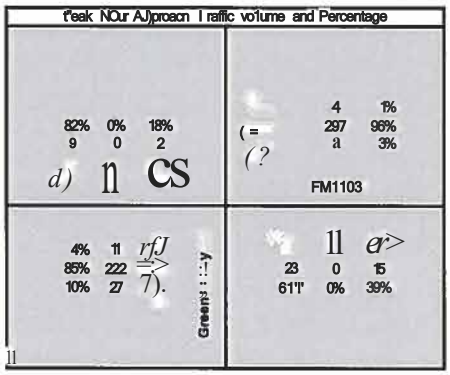
LDcation;	FM 1103 and Green Valley Road
- I t	86-06
North-South	Green Valley Rd
East-W.stslrHt	FM 1103
Time	4 14:00 • 6.00 PM
Data 19C<Hdek	November 13, 2006
Comments:	

AC GROUP LLC
Traffic Data Surveyors

		Northbound						Southbound						Eastbound						Westbound					
Mowment		/ell						/el	thru					/ell		thru				/ell		thru		*night*	
V.hiclelType		C		c	T	C	T	17Ce::		C	T	C	T	C	T	C	T	c	I	C		C	/	C	/
4:00PM	4:15PM	2	0	0	0	6	0	1	0	0	0	1	0	3	0	56	0	4	0	2	0	67	0	1	0
4:15PM	4:30PM	5	0	0	0	2	0	1	0	0	0	6	0	4	0	57	0	e	0	4	0	01	0	1	0
4:30PM	4:45PM	e	0	0	0	5	0	0	0	0	0	1	0	3	0	58	0	0	0	1	0	74	0	1	0
4:45PM	5:00PM	e	0	0	0	2	0	0	0	0	0	1	0	1	0	51	0	7	0	1	0	75	0	1	0
5:00PM	5:15PM	4	0	0	0	4	0	1	0	0	0	2	0	3	0	47	0	2	0	3	0	65	0	2	0
5:15PM	5:30PM	7	0	0	0	3	0	0	0	0	0	1	0	3	0	50	0	1	0	2	0	50	0	0	0
5:30PM	5:45PM	4	0	0	0	4	0	1	0	0	0	4	0	1	0	74	0	2	0	4	0	71	0	0	0
5:45PM	6:00PM	2	0	0	0	4	0	2	0	0	0	2	0	2	0	70	0	3	0	1	0	72	0	0	0
Total		40	0	0	0	30	0	6	0	0	0	16	0	20	0	463	0	35	0	10	0	555	0	6	0
Peak Total		23	0	0	0	15	0	2	0	0	0	9	0	11	0	222	0	27	0	0	0	297	0	4	0
PeklMovementeTotal		23		0		15		2		0		9		11		222		27		8		297		4	
Peak Turn Percent		61%		1l%		39%		18%		0%		82%		4%		85%		10%		3%				1%	
P.Hk"•♦ ch,Total		38						11						11								309			

Peak Hour 4·00 PM - 500 PM
Percent Trucks 0%

Time		*U.Turns*			
•n.ch:					
Vehicle 7		C	T	C	I
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
Total		0	0	O	O
Peak Total		0	0	O	0
Peak Movement Total		0		0	
Peak Turn Percen•		0%		0ll,	



AC Group, LLC

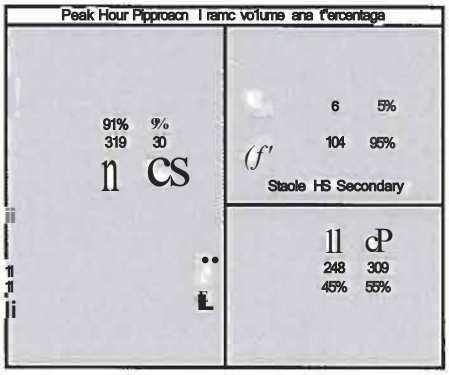
Location:	1 RM 1103 and Steele HS Secondarv Entrance
	86-06
North-South-	RM 1103
& s t - W e s t -	Steele HS Secondarv
Time P9tlod;	1 17;00. 9:00 AM
Date raconled,	November 16, 2006
Commentr.	

Time		Northbound						;oul/Jbound												Westbound					
Movement		/eff		lhru				/eff		lhru				/eff		l/Jru				/eff		lhru			
Vehicle		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
7'00AM	7:15AM	-	-	17	0	15	0	2	0	85	0	-	-	·	·	-	·	·	-	3	0	·	·	0	0
7:15AM	7.30AM	-	-	33	0	18	0	0	0	95	0	-	-	·	·	-	·	·	-	3	0	-	·	1	0
7.'30AM	7.45AM	-	-	55	0	24	0	1	0	133	0	-	-	·	-	-	·	·	-	12	0	-	·	0	0
7:45AM	8.00AM	-	-	68	0	43	0	5	0	79	0	-	-	·	·	-	·	-	-	11	0	-	·	1	0
8:00AM	8.15AM	-	-	66	0	71	0	9	0	85	0	-	-	·	·	-	·	·	-	19	0	-	·	1	0
8.'15AM	8:30AM	-	-	57	0	125	0	11	0	82	0	-	-	·	·	-	·	·	-	45	0	-	·	3	0
8:30AM	8:45AM	-	-	57	0	70	0	5	0	73	0	-	-	·	-	-	·	·	-	29	0	-	·	1	0
B.'45AM	9.00AM	-	-	37	0	6	0	0	0	47	0	-	-	·	-	-	·	·	-	8	0	-	·	0	0
Total		0	0	390	0	372	0	33	0	679	0	0	0	0	0	0	0	0	0	130	0	0	0	7	0
Peak Total		0	0	248	0	309	0	30	0	319	0	0	0	0	0	0	0	0	0	104	0	0	0	6	0
Peak Movement Total		0		248		309		30		319		D		0		0		0		104		0		6	
PeakTurnPercant		0%		45%		55%		9%		91%		0%		0%		0%		0%		95%		0%		5%	
Peak AIXlllach Total				557						349						D						110			

Peak Hour 7.45AM - 8,45 AM
Percent Trucks 0%

Time		II-Turns			
Ap.ch:					
Veh/c/el'TIDI		C	T	C	T
7.00AM	7:15AM				
7,'15AM	7:30AM				
7.30AM	7:45AM				
N5AM	8:00AM				
8.00AM	8.15AM				
8,'15AM	B·30AM				
8.30AM	8.45AM				
8,'45AM	9.00AM				
1otal		u	u	0	u
Peak Total		0	0	D	0
Peak Movement Total		0		0	
Peak Turn Pereen1		0%		0%	

Peak Hour Pipproacn I ramc vo'lume ana f'ercentage



AC Group, LLC

Location:	1 RM 1103 and Steele HS Secondary Entrance
	86-06
Notth-Soulhat/Ht:	RM 1103
East-West-	Staele HS Secondarv
Period:	4 14:00-SOOPM
Date I'ICOlded:	November 16, 2006
Comments:	

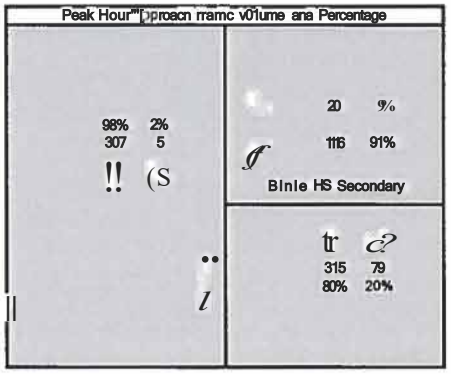
AC GROUP LLC
Traffic Data Surveyors

Time																								
							SOuthbocmcl						Eutbound						Westbound					
Movement		/ell		1hru			/ell		1htu				/ell		1htu				/ell		1htu			
Vehicle		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
4:00PM	4:15PM	-	-	95	0	37	0	1	0	66	0	-	-	-	-	-	-	-	61	0	-	-	6	0
4:15PM	4:30PM	-	.	63	0	22	0	3	0	99	0	.	-	-	-	.	-	-	90	0	-	-	13	0
4:30PM	4:45PM	-	.	79	0	9	0	0	0	67	0	-	-	-	-	.	-	-	37	0	-	-	1	0
4:45PM	5:00PM	-	-	78	0	11	0	1	0	55	0	-	-	-	.	-	-	.	6	0	.	-	0	0
5:00PM	5.15PM	-	.	103	0	10	0	0	0	51	0	-	-	.	-	.	-	-	9	0	.	-	3	0
5:15PM	5.30PM	-	-	78	0	10	0	0	0	73	0	-	-	-	-	-	-	.	11	0	-	-	1	0
5:30PM	5.45PM	-	.	80	0	8	0	1	0	54	0	-	-	-	-	.	-	-	10	0	-	-	1	0
5:45PM	6.00PM	-	.	76	0	8	0	0	0	61	0	-	-	-	-	.	-	-	3	0	-	-	0	0
Iotal		0	0	602	0	115	0	6	0	548	0	0	0	0	0	0	0	0	0	229	0	0	0	25	0
Peak Total		0	0	315	0	79	0	5	0	307	0	0	0	0	0	0	0	0	0	196	0	0	0	20	0
Poek MovementTotal		0		315		79		5		17		0		0		0		0		196		0		20	
Peak Turn Percent		0%		80%		20%		2%		98%		0%		0%		0%		0%		91%		0%		9%	
Peak AnDroach Total				394						312						0				218					

Peak Hour 4'00 RM - 5.00 RM
Percent Trucks 0%

Tne		U.Turns			
Vah/cle T!'I>		C	T	C	T
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
1otal		u	u	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Perceni				0%	

Peak Hour Approacn rramc v01ume ana Percentage



AC Group, LLC

Location:	FM 1103 and Main Street
.....	81>06
North-South IlnNI:	FM 1103
&st-West ,	Main Slreol
TimePdnt	1 17.00 - 9 00 AM
Data recorded:	November 14,2006
Comments;	

AC GROUP LLC
Traffic Data Surveyors

T		Northbound						Southbound						Eastbound						Westbound					
Mowment		lelll		lhlll				Id		lhlll				lel!		lhru				lell		lhlll			
Vehicle		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
7:00AM	7:15AM	1	0	15	0	1	0	18	0	91	0	9	0	3	0	20	0	18	0	2	0	6	0	6	0
7:15AM	7:3)AM	4	0	17	0	8	0	26	0	76	0	9	0	11	0	30	0	8	0	4	0	24	0	13	0
7:3)AM	7:45AM	7	0	29	0	6	0	28	0	59	0	34	0	41	0	32	0	15	0	6	0	29	0	31	0
7:45AM	8:00AM	11	0	39	0	1	0	16	0	64	0	44	0	82	0	11	0	12	0	10	0	17	0	20	0
8:00AM	8:15AM	9	0	37	0	6	0	8	0	56	0	38	0	94	0	13	0	10	0	3	0	22	0	22	0
8:15AM	8:3)AM	4	0	55	0	1	0	4	0	55	0	55	0	159	0	10	0	4	0	1	0	7	0	15	0
8:30AM	8:45AM	6	0	22	0	3	0	12	0	40	0	57	0	62	0	8	0	8	0	1	0	10	0	7	0
8:45AM	9:00AM	7	0	15	0	2	0	10	0	23	0	13	0	11	0	11	0	8	0	5	0	9	0	5	0
Total		49	0	229	0	28	0	122	0	464	u	209	0	463	0	135	0	84	0	32	0	124	0	119	0
Peak Total		31	0	160	0	14	0	56	0	234	0	171	0	376	0	66	0	41	0	20	0	75	0	88	0
P11k Movement Total		31		180		4		58		234		171		376		88		41		10		75		88	
Peak Turn Pen:ent		15%		78%		7%		12%		51%		37%		78%		14%		a%		11%		41%		48%	
P11k'♦ach Tolal				ℓ℃o						461						483								183	

Peak Hour 7;30AM - 6:30AM
Percent Trucks 0%

TIIIIe	LJ..rums			
- ch:				
Vehicle Type	C	T	C	T
7:00AM 7:15AM				
7:15AM 7:3)AM				
7:3)AM 7:45AM				
7"45AM 800AM				
8:00AM 8:15AM				
8:15AM 8.30AM				
8:30AM 8.45AM				
8:45AM 900AM				
total	0	0	u	u
Peak Total	0	0	0	0
Peak Movement Total	0		0	
11-eak Turn Percem	0%			

Peak Hour Approacn Tralic Volume and Percentage

11

37% 51% 12%
171 234 58

88 48%
75 41%
20 11%
Main SlrHI

78% 376 r:!)
14% 88 ♦
8% 41

31 160 14
15% 78% 7%

AC Group, LLC

Location:	FM 1103 and Main Street
- I f	86-06
North-South -	FM 1103
& s t - W e s t =	Main Street
TimePetiod:	4 ¾ 00 • 8:00 FM
Data reconled,	November 14, 2006
Comments:	

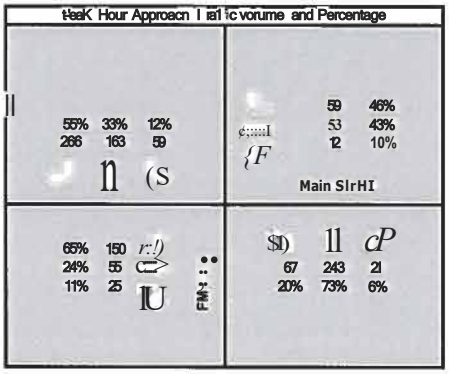
AC GROUP LLC
Traffic Data Surveyors

Mowment		Eastbound						Westbound						Northbound						Southbound					
		/ell		thu				/ell		aru				/ell		hru				/ell		hru			
VehicltlTm		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
4:00PM	4:15PM	10	0	81	0	5	0	29	0	43	0	109	0	45	0	13	0	5	0	6	0	15	0	25	0
4:15PM	4:30PM	12	0	64	0	7	0	13	0	54	0	91	0	«	0	13	0	6	0	3	0	13	0	g	0
4:30PM	4:45PM	13	0	46	0	4	0	8	0	35	0	39	0	29	0	16	0	g	0	0	0	11	0	g	0
4:45PM	5:00PM	32	0	72	0	5	0	9	0	31	0	29	0	32	0	13	0	5	0	3	0	14	0	16	0
5:00PM	5:15PM	21	0	66	0	5	0	8	0	48	0	43	0	35	0	7	0	11	0	4	0	16	0	14	0
5:15PM	5:30PM	15	0	66	0	6	0	10	0	37	0	31	0	26	0	13	0	g	0	5	0	14	0	7	0
5:30PM	5:45PM	12	0	67	0	7	0	20	0	30	0	32	0	36	0	14	0	13	0	3	0	9	0	g	0
5:45PM	6:00PM	9	0	60	0	5	0	16	0	33	0	22	0	42	0	17	0	7	0	5	0	13	0	19	0
Total		124	0	502	0	«	0	111	0	311	0	396	0	289	0	106	0	65	0	29	0	105	0	108	0
Peak Total		67	0	243	0	21	0	59	0	163	0	268	0	150	0	55	0	25	0	12	0	53	0	59	0
P.nk Movement Total		67		243		21		59		183		[illegible]		150		55		2•		12		53		59	
P11k Turn Percent		20%		73%		6%		12%		33%		55%		65%		24%		11%		10%		43%		46%	
Peak Approach Total		331						490						230						124					

Peak Hour 4.00 FM - 500PM
Percent Trucks 0%

Time		U-Turns			
Approach:					
VehicltlTm		C	T	C	T
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percent		0%		0%	

Peak Hour Approach Traffic Volume and Percentage



AC Group, LLC

Location;	FM 1103 and Steele HS Main Entranca
- 1.:	86-06
Notth-Southlllfft:	FM 1103
East-W,ststrHt	Steele HS Main Entrance
Tune Period:	1 17:00 • 9:00 AM
o.terracotded:	November 16, 2006
Commen/3:	

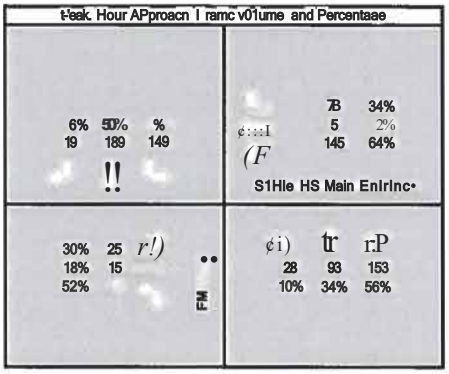
AC GROUP LLC
Traffic Data Surveyors

Movement		/eff		I/JIU				SOulhbound /eff		I/JIU				Eastbound /eff		I/JIU				W,,tbound /eff		I/JIU			
Vehic/e,		C	/	C	T	C	/	C	T	C	I	C	I	C	/	C	T	C	T	C	/	C	T	C	T
7.00AM	7:15AM	2	0	11	0	5	0	3	0	68	0	3	0	13	0	0	0	23	0	2	0	0	0	3	0
7.15AM	7:30AM	3	0	15	0	9	0	9	0	54	0	3	0	8	0	0	0	23	0	7	0	0	0		0
7.30AM	7:45AM	7	0	23	0	20	0	1	0	6	0	11	0	9	0	1	0	29	0	18	0	0	0	8	0
7.45AM	8:00AM	9	0	27	0	25	0	25	0	50	0	3	0	6	0	2	0	16	0	2	0	0	0	13	0
8.00AM	8:15AM	11	0	25	0	311	0	38	0		0	5	0	5	0	2	0	16	0	32	0	0	0	10	0
8.15AM	8:30AM	3	0	23	0	5	0	2	0	3	0	B	0	9	0	5	0		0	1	0	1	0	22	0
8.30AM	8:45AM	5	0	18	0	5	0		0	32	0	3	0	5	0	6	0	6	0	8	0		0	31	0
8.45AM	9:00AM	1	0	32	0	5	0	6	0	31	0	4	0	8	0	1	0	6	0	11	0	2	0	8	0
1otar		41	0	114	0	192	0	161	0	4110	u	40	0	63	0	1,	u	125	0	183	0	7	0	9/	0
Peak Total		28	0	93	0	153	0	149	0	169	0	19	0	25	0	15	0		0	145	0	5	0	76	0
Peak Movennenl Total		28		13		153		149		169		19		25		15				145		5		7e	
Peak Tum Percent		10%		34%		56%		%		50%		6%		30%		18%		52%		6 %		2%		34%	
Peak Total		274												6						226					

Peak Hour 7:45AM - 8.45AM
Percent Trucks 0%

77,ne		U-1ums			
An ct.;					
Vehic/eTyoe		C	T	C	/
7:00AM	7:15AM				
7:15AM	7.30AM				
730AM	7.45AM				
7:45AM	8.00AM				
BOOAM	8.15AM				
8.15AM	8.30AM				
8:30AM	8.45AM				
8:45AM	9:00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movemenl Total		0		0	
Peak Tum Percenl		0%		0%	

t-eak Hour APproacn I ramc v01ume and Percentaae



AC Group, LLC

Location,	1 FM 1103 and s11110 HS Main Entrance
- 1_1 :	I 86-06
Norlh-Soulh-	I FM 1103
East-West-,;	I Staalo HS Main Entrance
Period:	4 14.00 • 6;00 PM
f- f1COl'dede	INovombor 18. 2008
Comments:	

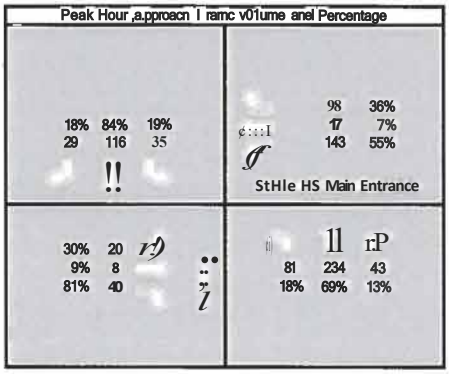
AC GROUP LLC
Traffic Data Surveyors

		Northbound																		Westbound					
		/off		ttru				/off		lhru				/off		lhru		right		/off		lhru		right	
		C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
4:00PM	4:15PM	10	0	58	0	22	0	19	0	23	0	7	0	4	0	5	0	12	0	34	0	6	0	36	0
4:15PM	4:30PM	15	0	87	0	e	0	3	0	35	0	6	0	3	0	1	0	8	0	83	0	8	0	37	0
4:30PM	4:45PM	15	0	48	0	7	0	11	0	33	0	11	0	6	0	0	0	e	0	27	0	2	0	14	0
4:45PM	5:00PM	21	0	61	0	5	0	2	0	25	0	5	0	7	0	0	0	11	0	19	0	1	0	11	0
5:00PM	5:15PM	27	0	53	0	15	0	6	0	22	0	7	0	4	0	0	0	9	0	22	0	0	0	11	0
5:15PM	5:30PM	18	0	63	0	7	0	4	0	33	0	6	0	3	0	0	0	16	0	12	0	3	0	6	0
5:30PM	5:45PM	Q	0	56	0	5	0	3	0	38	0	7	0	5	0	0	0	6	0	12	0	0	0	6	0
5:45 PM	6:00PM	17	0	56	0	4	0	6	0	34	0	8	0	5	0	0	0	18	0	7	0	1	0	4	0
Total		13,	u	46;	u	74	0	54	0	243	0	57	0	37	0	6	0	89	0	1•6	0	21	0	125	0
Peak Total		61	0	234	0	43	0	35	0	116	0	29	0	20	0	6	0	40	0	143	0	17	0	98	0
Peak Movement,Total		81,		234		43		35		118		29		20		6		40		143		17		98	
Peak Turn Porcant		18%		89%		13%		19%		94,.		18%		30%				81%		55%				36%	
PoakADOmach Total•		338						180						88						258					

Peak Hour 4.00 PM - 5,00 PM
Percent Trucks 0%

		U-Turns			
	Veh/c/o	C	T	C	T
1200AM	1200AM				
1200AM	1200AM				
1200AM	1200AM				
1200AM	1200AM				
1200AM	1200AM				
1200AM	1200AM				
12·00AM	1200AM				
1200AM	1200AM				
Total		u	u	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percen1		0%		0%	

Peak Hour ,a.proacn I ramc v01ume anel Percentage



ACGroup,UC

[illegible]	FM 1103 and W&H Road
	86-06
North-South -	FM 1103
& s t - W e s t -	Well Road
Tune Period:	1 17.00 • 9-00 AM
Dlt,, IWCOlied:	November 17, 2008
ComIl-Illlr.	

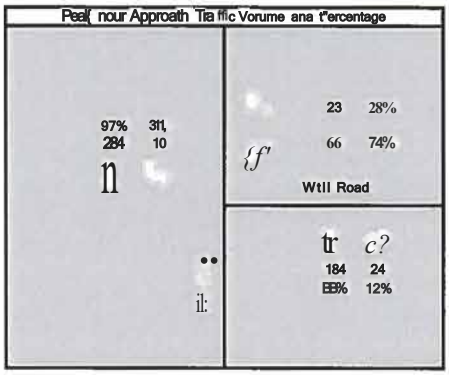
AC GROUP LLC
Traffic Data Surveyors

T,,,,, Mowmnt		Northbound						Southbound						Eastbound						Westbound					
		/ell		[illegible]		f t -		/ell		[illegible]		[illegible]		/ell		mn,		[illegible]		/ell		[illegible]		[illegible]	
[illegible]	Type	C	T	C	T	C	T	[illegible]	T	C	T	C	[illegible]	C	T	C	T	C	T	C	T	C	T	C	T
7:00AM	7:15AM	.	.	19	0	3	0	1	0	57	0	.	.	.	-	-	-	.	-	10	0	-	-	5	0
7:15AM	7:30AM	-	.	28	0	6	0	2	0	52	0	-	.	-	-	-	-	-	-	13	0	-	-	7	0
7:30AM	7:45AM	-	-	38	0	3	0	4	0	72	0	-	-	-	-	-	-	-	-	21	0	-	-	7	0
7:45AM	8:00AM	-	-	44	0	9	0	1	0	63	0	-	-	-	-	-	-	-	-	16	0	-	-	3	0
8:00AM	8:15AM	-	-	55	0	6	0	4	0	66	0	-	.	.	.	-	-	-	-	15	0	.	-	e	0
8:15AM	8:30AM	-	-	49	0	6	0	1	0	83	0	-	-	-	-	-	-	-	-	14	0	-	-	5	0
8:30AM	8:45AM	-	-	52	0	e	0	0	0	63	0	-	-	-	.	-	-	-	-	13	0	-	-	3	0
8:45AM	9:00AM	-	-	28	0	5	0	1	0	20	0	-	-	-	-	-	-	-	-	B	0	-	-	2	0
Total		0	0	311	0	46	0	14	0	476	0	0	0	0	0	0	0	0	0	110	0	0	0	40	0
Peak Total		0	0	184	0	24	0	10	0	284	0	0	0	0	0	0	0	0	0	66	0	0	0	23	0
P H k Mowment Total		0		184		14		10		284		0		0		J		0		66		0		;3	
Peak Tum Percent		0%		[illegible]		12%		3%		97%		0%		0%		0%		0%		74%		0%		26%	
Ptak AllDfD&ch Total		;wB						ZM						0						89					

Peak Hour 7:30AM - 830AM
Percent Trucks 0%

r,,,,,		U.Tums			
Vehi<;/e111Dt		C	T	C	T
1.00AM	71SAM				
7.15AM	7:30AM				
7:30AM	7:45AM				
7.45AM	800AM				
8.00AM	8-1SAM				
8:15AM	8:30AM				
8.30AM	8:45AM				
84SAM	9'00AM				
Total		u	u	u	u
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percen1		0%		0%	

Peal(nour Approath Tia ffic Vorume ana t"ercentage



AC Group, LLC

Location:	FM 1103 and WeR Road
#:	8S-06
Nolrhsouth slrHt	FM 1103
Yeesl/Vest slrHt	Well Road
Time Period;	4 I400-600PM
O.te MCOtat	November 17, 2006
Comments:	

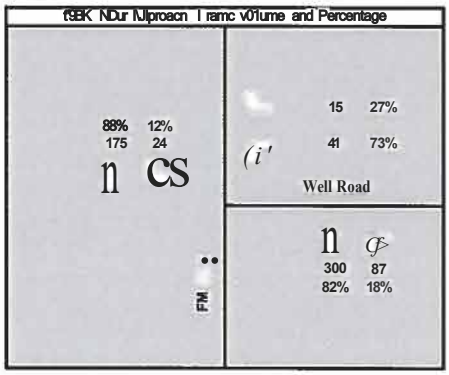
ACli??PLLc

Time		North						xuthbound/						E						We sbound					
Movement		/ell						/ell						/ell						/ell					
Vhtil	Type	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T	C	T
4:00PM	4:15PM	-	-	72	0	17	0	3	0	51	0	-	-	-	-	-	-	-	-	15	0	-	-	4	0
4:15PM	4:30PM	-	-	101	0	18	0	7	0	43	0	-	-	-	-	-	-	-	-	7	0	-	-	4	0
4:30PM	4:45PM	-	-	61	0	17	0	6	0	44	0	-	-	-	-	-	-	-	-	10	0	-	-	1	0
4:45PM	5:00PM	-	-	66	0	15	0	8	0	37	0	-	-	-	-	-	-	-	-	8	0	-	-	6	0
5:00PM	5:15PM	-	-	68	0	15	0	5	0	42	0	-	-	-	-	-	-	-	-	6	0	-	-	2	0
5:15PM	5:30PM	-	-	61	0	11	0	11	0	37	0	-	-	-	-	-	-	-	-	4	0	-	-	0	0
5:30PM	5:45PM	-	-	57	0	17	0	3	0	39	0	-	-	-	-	-	-	-	-	14	0	-	-	7	0
5:45PM	6:00PM	-	-	49	0	10	0	3	0	44	0	-	-	-	-	-	-	-	-	7	0	-	-	1	0
Total		0	0	535	0	120	0	46	0	337	0	0	0	0	0	0	0	0	0	72	0	0	0	25	0
Peak Total		0	0	300	0	67	0	24	0	175	0	0	0	0	0	0	0	0	0	41	0	0	0	15	0
PHk'MovemonhTotal		0		300		67		24		175		0				0		0		41		0		15	
Peak Turn Pon:ent		0%		82%		18%		12%		88%		0%				0%		0%				0%		27%	
Peak*inomach"ftotal				367						199						0						56			

Peak Hour 4:00 PM - 500 PM
Percent Trucks 0%

Time		U-Turns			
Vehicle Tum		C	T	C	T
1200AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
12:00AM	12:00AM				
1200AM	12:00AM				
Total		0	0	0	0
Peak Total		0	0	0	0
Peak Movement Total		0		0	
Peak Turn Percenr		0%		0%	

f.9EK NDur NJproacn I ramc v01ume and Percentage



FM 1103 Existing Traffic and Levels-of-

Section	
1	IH 35 to Chelsea / Old Weiderstein
2	Chelsia / Old Weiderstein to Green Vallev
3	Green Vallev to Brite
4	Brite to Hiah School
5	Hiah School
6	Hiah School to Town Creek
7	Town Creek to FM 78

1 - 2-Lane Analysis conducted using HCM Two-Way, Two

2 - 4 ad 6-Lane Analysis conducted using HCM Mulit-Lam

RM 1103 Traffic Projections and Levels-of-Service

		2001							20H							20.0						
			2-Lano							2-Lano			''-lane		I-Lano			2 J -		4-Lane			&J	
		Tr.&fIIIIIVolume	VIC	LOS	Veh/H	LOS		LOS	Tr1IIIIIIV.....- -	VIC	LOS	Veh/H	LOS	v.Mtr	LOS	Traffll.a.....	VIC	LOS	Veh/Hr	LOS		LOS
1	IH U lo c . . ' Old WelderaWn	******	0.'7	[illegible]	[illegible]	C	[illegible]	[illegible]	24000	111	F	11u	D	7 r	C	27000	1 IW	[illegible]	1327	E	MS	C
2	Cheisla I Old Wetderst.eln to Grnn Vallev_	17000	o.a7	F	[illegible]	C	[illegible]	[illegible]	24000	[illegible]	F	1154	D	[illegible]	C	27000	[illegible]	[illegible]	1327	[illegible]	[illegible]	C
3	G , Vatlev to Brihl	17_000	o.17	F	[illegible]	C	[illegible]	8	24000	11&	F	11'4	D	7 U	C	27000	[illegible]	[illegible]	1327	[illegible]	[illegible]	C
[illegible]	Brita ta Hinh School	17000	G.17	F	[illegible]	C	[illegible]	8	24.000	[illegible]	F	1154	0	719	C	27000	1:.0	[illegible]	1327	[illegible]	115	C
[illegible]	HIDII SchOOl	17'11'D	0.'7	F	[illegible]	C	[illegible]	[illegible]	24.000	111	[illegible]	1154	D	7 U	C	27000	1:0	[illegible]	1327	[illegible]	685	C
6	Hlah School to Town Creek	17,000	D.'7	F	[illegible]	C	[illegible]	B	24000	11a	F	111Y	0	7 M	C	27000	1[illegible]	[illegible]	1327	F	[illegible]	C
7	Town Creek to RM 71	17000	G.17	F	148	C	[illegible]	8	24.000	111	F	115'	0	789	C	27.600	1 . .	F	1327	E	115	C

1 • 2-Une AMJpll rzondvdcd Wlig HCM T-.W1't, T - - ' - - HIgfVIO Segmanl Anllyals (.OS calenWN Uling Vlaffic fr. ca.-cttr" ratio)
2 - 4ad...._MIIIlyla \IM'IgHCM Hlg!NayP!a/ff'41 AnllyIa(LOScab.ilii.dIIIIngwhitlnpw pwlant)

Haeckervlle Road (2025)

		Low Forecast (5% AAGR)							MPO 30 Y r forecast						
			2-Lane		4-Lane		6-Lane			2-une				I-lane	
		Traffic Volume	V/C	LOS	Veh/Hr	LOS	Veh/Hr	LOS	Traffic Volume	VIC	LOS	v -	LOS	VIfIIIHr I	LOS
1	Soufl of RM 71	450	0.22	B	204	A	136	A	9.668	0 . 3 8	C	1 3 8 1 1	A		

RM 1103 Traffic Projections and Levels-of-Service

	S.cllon	Low Forecast							Moderata Forecaal							"Reuonable to AHIIffIII" Forecast						
			Z-lane		4-IIlne		11-une			Z-lane				8-lane			2-lane		4-IIlne		I-lane	
		Traffic Volume	VIC	LOS	v	Los	Voh/11r	LOS	Traffic Volumo	V/C	LOS	v	LOS	Voh/Hr	LOS	Traffic Volume	VIC		VohIHr	LOS	Vel'IIHr	LOS
1	IH 35 to Chelsea/ Old Wolderstoln	12,700	0.47	D	476	a	317	A	45,100	1.67	F	16-1	F	1127	D	66,200	2-4e	F	2812	F	4965	F
2	Cholsla / Old Welderstein lo Groen Vallev	12 .300	0-4e	D	4e1	a	307	A	42,500	1.58	F	[illegible]	F	1062	D	70 .300	281	F	2838	F	1757	F
3	Green Vallev to Brito	10 .500	0.39	C	393	A	262	A	41,300	1.53	F	1395	E	930	C	67400	2.50	F	2527	F	1685	F
4	Brito to Hloh School	10 .500	0.39	C	393	A	262	A	37,200	1.38	F	1395	E	930	C	57 .200	2.12	F	2145	F	1430	E
5	Hloh School	10 .500	0.39	C	393	A	262	A	39,000	1.45	F	14e2	E	975	0	81600	2.29	F	2310	F	1540	F
6	Hlah School to Town Creek	10 .500	0.39	C	393	A	262	A	38,800	1.44	F	1455	E	970	D	81,200	2.27	F	2295	F	1530	F
7	Town Creek to RM 78	12,000	0.45	[illegible]	[illegible]	8	300	A	38,800	1.44	F	1456	E	970	D	61,200	2.27	F	2111	F	1530	F

1 - 2-Lane Analysis t0nducted using HCM Two-way, Two-lane Highway Segment Analysis (LOS calculated 1ring volume D capacity ratio)

2 - 4 ad 6-Lane Analysis conducted using HCM Multi-Lane Highway Planning Analysis (LOS calculated using vehlcln per hour per lane)

Capacity "Breakpoint" for LOS E

2-1.ano (Peak Hour Volumes

A < 500
a <750
C < 1,200
D < 1,900
E < 2,000
F > 2,000

4-Lano (24-Hour ADT;

A < 11,000
B > 11,000
C > 18,000
D > 26,000
e , 34,ooo
F > 40,500

6-Lano (24-Hour ADT;

- - A - - < 16,500
B > 16,500
C > 26,500
D > 38,500
E > 50,500
F > 60,500

Haeckerville Road (2025)

	Section	Low Forecast (5%AAGRI							MPO 30 Year Fo, . ast						
			U.ano		4-IIlne		6-lano			2-Lano		4-IIlne		6-lano	
		Traffic Volumo	V/C	LOS	Ven1Hr	L05	Voh/Hri	LOS	Traffic Volume	V/C	LOS	Veh/Hri	LOS	Veh/Hri	LOS
1	ISouth of RM 78	5,450	0.22	a	204	A	138	A	9,668	0.38	C	382	A	241	A

Tolle Road (2025)

	Section	Low Forecast (5% AAGRI							MPO 30 Year Forecast'						
			2-lano		4-IIlno		B-lano			2-lano		4-IIlne		6-lano	
		Traffic Volume	V/C	LOS	1VehHr1	LO5	1VohHr1	LOS	Traffic Volum•	V/C	LOS	1VohHri	LOS	1VehHr1	LOS
1	ISouth of RM 1103	2,235	0.12	A	84	A	56	A	3,930	0.14	A	147	A	98	A

1 - M G R calcuatted using 2000 Traffic Map and MPO 30 Year Traffic Projedons for HaeckelvlUe Road

APPENDIX C - REFINED COST ESTIMATE FOR EXISTING FM 1103 STUDY RECOMMENDATION

PRELIMINARY ESTIMATE

COUNTY:	Guadalupe
HIGHWAY:	FM 1103
CSJ:	
LENGTH:	30,485' (5.8 miles)
TRAFFIC ADT:	
BEG MI POINT	
END MI POINT	
BEG REF POINT	
END REF POINT	

LOCATION FROM:

TO:

RECONSTRUCT EXISTING	( )	
NEW LOCATION	(X)	
PROPOSED ROW WIDTH	120 & 150	Ft
EXISTING ROW WIDTH	Ft	
ON SYSTEM	(X)	
OFF SYSTEM	( )	

LAYMEN'S DESCRIPTION OF PROPOSED WORK: Reconstruction from FM 78 to IH 35

IMPROVEMENTS: 2 - 6' bike lane; 2&3-12' lanes both directions: median
5' sidewalk and curb
Storm drain

PROJECT COST

REMOVAL				$0.00
GRADING				$9,125,599.65
TCP				$127,765.00
LANDSCAPE & SW3P				$504,793.18
ILLUM, SIGNAL & SIGN				$257,500.00
STRIPING				$166,725.92
SMALL STRUCTURE				$8,963,000.00
LARGE DRAIN STRUCT(SPAN)				$0.00
LARGE DRAIN STRUCT(CULVERT)				$1,401,550.00
GRADE SEPARATIONS(BRIDGES)				$1,029,860.00
PAVSTRUCT				$7,601,479.55
MOBILIZATION	10	%		$2,917,827.33
CONTINGENCY	15	%		$4,814,415.10
			CONSTRUCTION TOTAL =	$36,910,515.73
	11	%	E & C =	$4,060,156.73
	5	%	PREL ENGR =	$1,845,525.79
	10	%	PS&E =	$3,691,051.57
			ROW COST =	$3,840,000.00
			UTILITY RELOCATE =	$1,230,000.00
			GRAND TOTAL =	$51,577,249.82

DATE: 11/20/06 $36,910,515.73 30.485' (5.8 mil1times 5280 = $6,389,754.85

PREPARED BY: RJ RIVERA Associates Inc.

AREA ENGINEER MNGRNO

I:\1014-SA SchemEvgrn\WA-11\Admin\7-E Refnd Cost Est\FM1103existing-est11-21-06

ITEM	DESCRIPTION	QUANTITY	UNIT		COST		AMOUNT
100	PREP ROW	305	STA	X	$2,183.00	=	$665,815.00
110	RDWY EXCAVATION	273059.26	CY	X	$10.82	=	$2,954,501.19
110	CHAN EXCAVATION	4200	CY	X	$9.90	=	$42,000.00
112	SUBGRADE WIDEN		STA	X	$446.29		$0.00
132	EMBANKMENT	27306	CY	X	$7.71	=	$210,528.69
134	BACKFILL PAV EDGE		STA	X	$110.00	=	$0.00
351	FLEX PAV REPAIR		SY	X	$27.76	=	$0.00
354	PLAN AND TEX PAV		SY	X	$7.59	=	$0.00
361	CONC PAV REPAIR		SY	X	$120.00	=	$0.00
403	TEMPORARY SPL SHORING		SF	X	$8.99	=	$0.00
423	RETAINING WALL(MSE)	0	SF	X	$34.00	=	$0.00
423	RETAINING WALL(TEMP)		SF	X	$7.97	=	$0.00
423	RETAINING WALL(SOIL NAIL)		SF	X	$37.27	=	$0.00
423	RETAINING WALL(DRILL SHAFT)		SF	X	$62.85	=	$0.00
432	RIPRAP	3001	CY	X	$375.00	=	$112.500.00
450	BRIDGE RAIL	466	LF	X	$20.00	=	$9,320.00
514	PERM CTB (NORMAL)		LF	X	$33.80	=	$0.00
514	PERM CTB (SPLIT)		LF	X	$250.99	=	$0.00
529	CURB	61000.00	LF	X	$5.55	=	$338,550.00
530	DRIVEWAYS (CONC)	1087.33	SY	X	$53.39	=	$58,052.73
530	DRIVEWAYS (ACP)	2517.78	SY	X	$26.59	=	$66,947-71
531	SIDEWALKS	33888.89	SY	X	$31.50	=	$1,067,500.00
531	WHEEL CHAIR RAMPS	50	EA	X	$1,750.00	=	$87,500.00
533	SHOULDER TEXTURE		LF	X	$0.25	=	$0.00
536	CONC ISLAND/MEDIAN	40556.01	SY	X	$69.76	=	$2,829,187.32
540	MET BM GD FEN	3126	LF		$1		$59,018.88
540	TERM ANCHOR SECT	22	EA	♦		:	$10,527.88
540	MBGF TRI BEAM TRANS	12	EA				$17,080.44
544	GUARDRAIL END TREATMENTS	12	EA				$25,380.00
545	CRASH CUSH ATTENUATORS	18	EA	X	$22,000.00	=	$396,000.00
560	MAILBOX ASSEMBLIES	53	EA	X	$180.94	=	$9,589.82
	PROJ MAINT SWEEPER	24	MO	X	900	=	$21,600.00
	PROJ MAINT MOWING	24	MO	X	$2,600.00	=	$62,400.00
	PROJ MAINT LITTER PICK-UP	24	MO	X	$1,300.00	=	$31,200.00
	PROJ MAINT HERBICIDE	24	MO	X	$2,100.00	=	$50,400.00
			EA	X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0,00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0,00

TOTAL = $9, 125,599_65

GRADING

ITEM	DESCRIPTION	QUANTITY	!Ili.!I		COST		AMOUNT
502	BARRICADES	24	MO	X	$2,000.00	=	$48,000.00
508	CONST DETOURS (CL 1)		STA	X	$12,500.00	=	$0.00
508	CONST DETOURS (CL 2)		EA	X	$40,000.00	=	$0.00
508	CONST DETOURS (CL 3)		SY	X	$30.95	=	$0.00
510	ONE WAY TRAF CONT		HR	X	$40.00	=	$0.00
512	PCTB (STKPL, INSTL & REM)	500	LF	X	$57.13	=	$28,565.00
512	PCTB (MOV & RESET)		LF	X	$6.00	=	$0.00
512	PCTB LP (SKPL, INST & RM)		LF	X	$17.00	=	$0.00
512	PCTB LP (MOV & RESET)		LF	X	$2.25	=	$0.00
545	WRK ZN CRASH CUSH ATIEN	4	EA	X	$12,000.00	=	$48,000.00
545	WRK ZN CRH CUSH ATT(R & R)		EA	X	$2,500.00	=	$0.00
545	WRK ZN CRH CUSH ATT(REMOV)	4	EA	X	$800.00	=	$3,200.00
	VIA BARRELS		EA	X	$350.00	=	$0.00
	VIA BARRELS REMOV/REPLAC		EA	X	$380.00	=	$0.00
	VIA BARRELS REMOVE		EA	X	$200.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)4"(BRK)		LF	X	$0.25	=	$0.00
662	WK ZN PAV MRK NON-REM(W)4"(DOT)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)4"(SLD)		LF	X	$0.50	=	$0.00
662	WK ZN PAV MRK NON-REM(W)8"(LNPD)		LF	X	$1.25	=	$0.00
662	WK ZN PAV MRK NON-REM(W)8"(SLD)		LF	X	$0.50	=	$0.00
662	WK ZN PAV MRK NON-REM(W)24"(SLD)		LF	X	$3.30	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(ARROW)		EA	X	$60.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(ENTR GORE)		EA	X	$550.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(EXIT GORE)		EA	X	$800.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(RR XING)		EA	X	$110.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(WORD)		EA	X	$110.00	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)4"(BRK)		LF	X	$0.30	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)4"(SLD)		LF	X	$0.50	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)24"(SLD)		LF	X	$2.75	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)(ISLAND)		SY	X	$400.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(MED NOSE)		EA	X	$2	=	$0.00
662	WK ZN PAV MRK REM(W)4"(BRK)		LF	X		=	$0.00
662	WK ZN PAV MRK REM(W)4"(DOT)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK REM(W)4"(SLD)		LF	X	$0.90	=	$0.00
662	WK ZN PAV MRK REM(W)8"(LNDP)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK REM(W)8"(SLD)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK REM(W)24"(SLD)		LF	X	$1.1.00	=	$0.00
662	WK ZN PAV MRK REM(W)(ARROW)		EA	X	$210.00	=	$0.00
662	WK ZN PAV MRK REM(W)(ENTR GORE)		EA	X	$670.00	=	$0.00
662	WK ZN PAV MRK REM(W)(EXIT GORE)		EA	X	$850.00	=	$0.00
662	WK ZN PAV MRK REM(W)(RR XING)		EA	X	$380.00	=	$0.00
662	WK ZN PAV MRK REM(W)(WORD)		EA	X	$300.00	=	$0.00
662	WK ZN PAV MRK REM(Y)4"(BRK)		LF	X	$0.60	=	$0.00
662	WK ZN PAV MRK REM(Y)4"(SLD)		LF	X	$1.10	=	$0.00
662	WK ZN PAV MRK REM(Y)24"(SLD)		LF	X	$15.00	=	$0.00
662	WK ZN PAV MRK REM(Y)(ISLAND)		SY	X	$400.00	=	$0.00
662	WK ZN PAV MRK REM(Y)(MED NOSE)		EA	X	$400.00	=	$0.00
662	WK ZN PAV MRK SHT TERM (TAB) TY W		EA	X	$1.20	=	$0.00
662	WK ZN PAV MRK SHT TERM (TAB) TY Y		EA	X	$1.20	=	$0.00
662	WK ZN PAV MRK SHT TERM (TAB) TY Y-2		EA	X	$1.00	=	$0.00
677	ELIM EXT PV MRK & MRKR(4")		LF	X	$0.70	=	$0.00
	CHANGEABLE MESSAGE BOARD		DAY	X	$100.00	=	$0.00
	LANE CLOSURE(DAY)		EA	X	$0.00	=	$0.00
	LANE CLOSURE(NIGHT)		EA	X	$0.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
					TOTAL	=	$127,765.00

TCP

ITEM	DESCRIPTION	QUANTITY	UNIT		COST		AMOUNT
158	FRONT END LOADER		HR	X	$50.00	=	$0.00
161	COMP MANUF TPSL(4")	120493.33	SY	X	$2.06	=	$248,216.27
162	SODDING		SY	X	$2.ao	=	$0.00
164	PERM DRILL SEEDING	120493.33	SY	X	$0.27	=	$32,533.20
164	TEMP SEEDING (COOL)		SY	X	$0.08	=	$0.00
164	TEMP SEEDING (WARM)		SY	X	$0.08	=	$0.00
168	VEGETATIVE WATERING	17362.15	MG	X	$6.70	=	$116,326.42
169	SOIL RETENTION BLANKETS		SY	X	$1.07	=	$0.00
170	IRRIGATION		LS	X		=	$0.00
192	LANDSCAPE PLANTING		LS	X		=	$0.00
193	LANDSCAPE ESTABLISH		MO	X	$667.00	=	$0.00
193	LAND EST WATERING		MGR	X	$22.00	=	$0.00
459	GABI ON MATTRESS		SY	X	$47.61	=	$0.00
459	GABIONS		CY	X	$166.13	=	$0.00
506	SEO CONT FEN	30485.00	LF	X	$2.50	=	$76,212.50
506	ROCK FILTER DAM (TY 2)	200	LF	X	$44.00	=	$8,800.00
506	ROCK FILT DAM (TY 2)(REM)	200	LF	X	$18.16	=	$3,632.00
506	ROCK FILTER DAM (TY 5)		LF	X	$12.47	=	$0.00
506	ROCK FILT DAM (TY 5)(REM)		LF	X	$20.00	=	$0.00
506	CONSTRUCTION EXIT	1080	SY	X	$11.53	=	$12,452.40
506	CONSTR EXIT REMOVE	1080	SY	X	$6.13	=	$6,620.40
528	COLOR TEXTURIZED CONC		SY	X	$57.12	=	$0.00
528	LANDSCAPE PAVERS		SY	X	$44.79	=	$0.00
	LANDSCAPE ROCK		SY	X	$0.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X			$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
					TOTAL	=	$504,793.18

LANDSCAPE & SW3P

ITEM	DESCRIPTION	QUANTITY	UNIT		COST		AMOUNT
416	DRILL SHAFT 30"		LF	X	[illegible]	=	$0.00
432	RIPRAP		CY	X	$375.00	=	$0.00
610	INS RD ILAM (TY SP) 48S-10-10 (.4 KW) S		EA	X	$2,200.00	=	$0.00
610	INS RD IL AM (TY SP) 48S - 10 (.4 KW) S		EA	X	$2,000.00	=	$0.00
610	INS RD IL AM (U / P) (TY IF) (.15KW)		EA	X	$1,600.00	=	$0.00
610	INS RD ILAM (U / P) (TY 1) (.15KW) S		EA	X	$1,600.00	=	$0.00
617	TEMP LIGHTING		LS	X	[illegible]	=	$0.00
618	CONDT (PVC) (SCHD 40) (1 1/2")		LF	X	$4.90	=	$0.00
618	CONDT (PVC) (SCHD 80) (2")		LF	X	$5.40	=	$0.00
618	CONDT (RM) (1")		LF	X			$0.00
620	ELEC CONDR (NO. 8) INSULATED		LF	X	[illegible]		$0.00
624	GROUND BOX TY A (122311)		EA	X	[illegible]	=	$0.00
628	ELEC SERV POLE		EA	X	[illegible]	=	$0.00
	ILLUMINATION CONTINUOUS		MI	X	$130,000.00	=	$0.00
	ILLUMINATION SAFETY		LOG	X	$20,000.00	=	$0.00
644	INST SM RDSD SIGN	550	EA	X	$250.00	=	$137,500.00
647	INST LRG RDSD SIGN		EA	X	$0.00	=	$0.00
650	INST OV HD SIGN SUPP		EA	X	$0.00	=	$0.00
	SIGNING		LS	X	$60,000.00	=	$0.00
680	TRAFFI C SIGNAL	1	EA	X	$100,000.00	=	$100,000.00
680	FLASHING BEACON	1	EA	X	$20,000.00		$20,000.00
681	TEMP TRAFFIC SIGNAL		EA	X	$0.00	=	$0.00
688	VEH LOOP DETECTOR		EA	X	$0.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0,00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0,00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00

UNIT = LOC MEANS PER LOCATION
UNIT = EA ON LOOP DETECTOR IS PER APPROACH ROADWAY

TOTAL = $257,500.00

ILLUM, SIGNAL & SIGN

ITEM	DESCRIPTION	QUANTITY	UNIT		COST		AMOUNT
666	REFL PAV MRK TY I(W)4"(BRK)(100ML)	25799	LF	X	$0.46	=	$11,867.43
666	REFL PAV MRK TY I(W)4"(DOT)(100ML)		LF	X	$1.90	=	$0.00
666	REFL PAV MRK TY I(W)4"(SLD)(100ML)	60670	LF	X	$0.33	=	$20,021.10
666	REFL PAV MRK TY I(W)8"(BRK)(100ML)		LF	X	$0.60	=	$0.00
666	REFL PAV MRK TY I(W)8"(SDL)(100ML)	3000	LF	X	$0.65	=	$1,950.00
666	REFL PAV MRK TY I(W)18"(SLD)(100ML)		LF	X	$4.00	=	$0.00
666	REFL PAV MRK TY I(W)24"(SLD)(100ML)		LF	X	$5.50	=	$0.00
666	REFL PAV MRK TY I(W)(ARROW)(100ML)	40	EA	X	$120.00	=	$4,800.00
666	REFL PAV MRK TY I(W)(BIKE ARW)(100ML)		EA	X	$83.00	=	$0.00
666	REFL PAV MRK TY I(W)(BIKE RR XING)(100ML)		EA	X	$125.00	=	$0.00
666	REFL PAV MRK TY I(W)(BIKE SYML)(100ML)	122	EA	X	$75.00	=	$9,150.00
666	REFL PAV MRK TY I(W)(BIKE WORD)(100ML)	122	EA	X	$220.00	=	$26,840.00
666	REFL PAV MRK TY I(W)(ENTR GORE)(100ML)		EA	X	$760.00	=	$0.00
666	REFL PAV MRK TY I(W)(EXIT GORE)(100ML)		EA	X	$890.00	=	$0.00
666	REFL PAV MRK TY I(W)(RR XING)(100ML)		EA	X	$700.00	=	$0.00
666	REFL PAV MRK TY I(W)(WORD)(100ML)	40	EA	X	$170.00	=	$6,800.00
666	REFL PAV MRK TY I(Y)4"(BRK)(100ML)	2118	LF	X	$0.55	=	$1,164.63
666	REFL PAV MRK TY I(Y)4"(SLD)(100ML)	60670	LF	X	$0.45	=	$27,301.50
666	REFL PAV MRK TY I(Y)8"(SLD)(100ML)		LF	X	$0.53	=	$0.00
666	REFL PAV MRK TY I(Y)24"(SLD)(100ML)		LF	X	$6.70	=	$0.00
666	REFL PAV MRK TY I(Y)(ISLAND)(100ML)		EA	X	$2.70	=	$0.00
666	REFL PAV MRK TY I(Y)(MED NOSE)(100ML)		EA	X	$250.00	=	$0.00
666	PAVEMENT SEALER 4"	149256	LF	X	$0.15	=	$22,388.44
666	PAVEMENT SEALER 8"	3000	LF	X	$0.31	=	$930.00
666	PAVEMENT SEALER 18"		LF	X	$1.74	=	$0.00
666	PAVEMENT SEALER 24"		LF	X	$1.80	=	$0,00
666	REFL PAV MRK TY II (W)(ARROW)	40	EA	X	$39.00	=	$1,560.00
666	REFL PAV MRK TY II (W) (BIKE ARROW)		EA	X	$58.00	=	$0.00
666	REFL PAV MRK TY II (W) (BIKE RR XING)		EA	X	$1.25.00	=	$0.00
666	REFL PAV MRK TY II (W) (BIKE SYML)	122	EA	X	$105.00	=	$12,810.00
666	REFL PAV MRK TY II (W) (BIKE WORD)	122	EA	X	$75.00	=	$9,150.00
666	REFL PAV MRK TY II (W)(ENTR GORE)		EA	X	$330.00	=	$0.00
666	REFL PAV MRK TY II (W)(EXIT GORE)		EA	X	$550.00	=	$0.00
666	REFL PAV MRK TY II (W)(RR XING)		EA	X	$260.00	=	$0.00
666	REFL PAV MRK TY II (W)(WORD)	40	EA	X	$55.00	=	$2,200.00
666	REFL PAV MRK TY II (Y)(ISLAND)		EA	X	$300.00	=	$0.00
666	REFL PAV MRK TY II (Y)(MED NOSE)		EA	X	$211.97	=	$0.00
672	REFL PAV MRKR TY I - A		EA	X	$3.50	=	$0.00
672	REFL PAV MRKR TY 1-C	1081	EA	X	$3.00	=	$3,242.58
672	REFL PAV MRKR TY I - R		EA	X	$5.00	=	$0.00
672	REFL PAV MRKR TY II - A - A	1517	EA	X	$3.00	=	$4,550.25
672	REFL PAV MRKR TY II - C - R		EA	X	$3.00	=	$0.00
672	TRAFFIC BUTTON TY W		EA	X	$2.00	=	$0.00
672	TRAFFIC BUTTON TY Y		EA	X	$2.60	=	$0.00
672	TRAFFIC BUTTON TY Y(6")		EA	X	$30.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0,00
					TOTAL	=	$166,725.92

STRIPING

ITEM	DESCRIPTION		QUANTITY	UNIT		S:.Q§l		AMOUNT
400	CEM STABIL BKFL			CY	X	$74.30	=	$0.00
400	CUT & RESTORING PAV		120	SY	X	$75.00	=	$9,000.00
401	FLOWABLE BACKFILL			CY	X	$81.01	=	$0.00
402	TRENCH EXCAVATION PROTECTION		6400	LF	X	$1.00	=	$64,000.00
460	CMP			LF	X	$36.00	=	$0.00
460	CMP			LF	X	$35.50	=	$0.00
460	CMP			LF	X	$35.00	=	$0.00
460	CMP			LF	X	$70.00	=	$0.00
460	CMP			LF	X		=	$0.00
460	CMP			LF	X		=	$0.00
460	CMPAR			LF	X	$100.00	=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
462	CONC BOX CULV	5'x5'		LF	X	$360.00	=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
462	CONC BOX CULV			LF	X	$350.00	=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
464	RC PIPE(CL III)			LF	X		=	$0.00
464	RC PIPE(CL III)			LF	X		=	$0.00
464	RC PIPE(CL III)	RC PIPE (CL III)(24 IN)	2000	LF	X	$75.00	=	$1,500,000.00
464	RC PIPE(CL III)	RC PIPE (CL III)(30 IN)	1900	LF	X	$100.00	=	$1,900,000.00
464	RC PIPE(CL III)	RC PIPE (CL III)(36 IN)	1300	LF	X	$125.00	=	$1,625,000.00
464	RC PIPE(CL III)	RC PIPE (CL III)(48 IN)	1200	LF	X	$175.00	=	$2,100,000.00
465	INLET (CURB)		250	EA	X	$6,500.00	=	$1,625,000.00
465	INLET (DROP)			EA	X	$6,000.00	=	$0.00
465	INLET (TRAFFIC)			EA	X	$7,869.98	=	$0.00
465	MANHOLE/JCT BOX			EA	X	$5,000.00	=	$0.00
466	WING / HEAD WALL		8	EA	X	$17,500.00	=	$140,000.00
466	WING / HEAD WALL			EA	X	$3,600.00	=	$0.00
466	WING / HEAD WALL			EA	X		=	$0.00
466	WING / HEAD WALL			EA	X		=	$0.00
466	WING/ HEAD WALL			EA	X		=	$0.00
466	WING/ HEAD WALL			EA	X		=	$0.00
466	WING/ HEAD WALL			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
474	SLOTTED DRAIN			LF	X	$100.00	=	$0.00
556	UNDERDRAIN PIPE	AT RETAIN WALL		LF				$0.00
								$0.00
								$0.00
								$0.00
					X			$0.00
					X			$0.00
					X			$0.00
					X		=	$0.00
						TOTAL	=	$8,963,000.00

SML DRAIN STRUCT

LOCATION:	#5	At102+65				
EXIST STRUCT:		14-6X5X50'		EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP STRUCTURE:		15 6X5X115'		SIZE:		
LENGTH		BARRELS		QQS!		AMOUNT
375	LFX	1	X	$350.00	=	$131,250.00

LOCATION:	#8	140+48				
EXIST STRUCT:		12-8X5X34		EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP STRUCTURE:		13 8X5X115'		SIZE:		
LENGTH		BARREL§		COST		AMOUNT
277	LFX	1	X	$400.00	=	$110,800.00

LOCATION:	#13	fa1234±39				
EXIST STRUCT:		18-8X4X44		EXTEND (Y OR N)		
EXTENDTO			CLEAR ROADWAY			
PROP STRUCTURE:		10-8X4X100		SIZE:		
LENGTH		BARRELS		COST		AMOUNT
648	LFX	1	X	$375.00	=	$243,000.00

LOCATION:	#14	At256+16				
EXIST STRUCT:		8-8x4x44		EXTEND (Y OR N)		
EXTENDTO			CLEAR ROADWAY			
PROP STRUCTURE:		10 - 8x4x100		SIZE:		
LENGTH		BARRELS		COST		AMOUNT
648	LFX	1	X	$375.00	=	$243,000.00

LOCATION:	Under FM 78					
EXIST STRUCT:				EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP STRUCTURE:		r5'x5'x100'		SIZE:		
LENGTH		BARRELS		COST		AMOUNT
100	LF X	1	X	$300.00	=	$30,000.00

LOCATION:	Various Other Locations Throughout Project {extend and add one new}					
EXIST STRUCT:				EXTEND (Y OR N)		y
EXTEND TO			CLEAR ROADWAY			
PROP STRUCTURE:				SIZE:	1-6'x3'	
LENGTH		BARRELS		COST		AMOUNT
1950	LFX	1	X	$330.00	=	$643,500.00

LOCATION:						
EXIST STRUCT:				EXTEND (Y OR N)		
EXTENDTO			CLEAR ROADWAY			
PROP STRUCTURE:				SIZE:		
LENGTH		BARRELS		COST		AMOUNT
	LFX		X		=	$0.00

TOTAL = $1,401,550.00

{CULVERT)
LARGE DRAINAGE STRUCTURE

LOCATION:	At IH 35					
EXISTING STRUCTURE:	None			EXTEND (Y OR N)		NO
EXTEND TO			CLEAR ROADWAY			
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
233	LFX	68	LF X	$65.00	=	$1,029,860.00

LOCATION:						
EXISTING STRUCTURE:				EXTEND (Y OR N)		NO
EXTEND TO			CLEAR ROADWAY			
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LF X	-7	LF X	$40.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:				EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP SPAN STRUCT:						
LENGTH		WIDTH				AMOUNT
	LFX		LFX	$55.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:				EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP SPAN STRUCT:						
LENGTH		WIDTH		£.211		AMOUNT
	LFX		LFX	$55.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:				EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LFX		LFX	is55.00	=	$0,00

LOCATION:						
EXISTING STRUCTURE:				EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LFX		LFX	$55.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:				EXTEND (Y OR N)		
EXTEND TO			CLEAR ROADWAY			
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LFX		LFX	$55.00	=	$0.00

TOTAL = $1,029,860.00

(BRIDGES)
GRADE SEPARATIONS

LOCATION #1: IH 35 to Rodeo Dr

		WlQil:i		.l&l'llllll::I		BAll		AMQlJfil	.!Hill
PFC AGGR (@91%	2.0 In		LFX		LFX	0.0950	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 In		LFX		LFX	0.1100	TON/SY	0.00	TON
ACP SURF	2.0 In	84	LFX	20500.00	LFX	0.1100	TON/SY	21046.67	TON
ACP	2.0 In		LFX		LFX	0.1100	TON/SY	0.00	TON
TCST-ASPH	0.6	101	LFX	20500.00	LFX	0.6000	GAUSY	138033.33	GAL
TCST-AGGR	55	101	LF X	20500.00	LF /	55	SY/CY	4182.83	CY
ASB#1	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
ASB#2	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
ASB#3	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
EMUL	0.3	101	LFX	20500.00	LFX	0.3000	GAUSY	69016.67	GAL
FLEX BASE	8.0 In	101	LFX	20500.00	LFX	0.6660	LF	51072.33	CY
MICRO(Surf)			LFX		LFX	0.0125	TON/SY	0.00	TON
MICRO(Scratch)			LFX		LFX	0.0100	TON/SY	0.00	TON
LIME TRT SUBGR(6")			LFX		LFX			0.00	SY
LIME	16%			0.00	SYX	0.0135	TON/SY	0,00	TON
CEMENT TRT SUBGR(8")		103	LFX	20500:00	LFX			23461111	SY
CEMENT	is%			234611.11	SYX	0.0135	TON/SY	3167.25	TON
GEOGRID REINF		103	LFX	20500.00	LFX			234611.11	SY

LOCATION #2: Rodeo Dr to 5. W. of High School

		WlQil:i		I&.t:llll=!.		BAil		AMQlJfil	UN(T
PFC AGGR (@91%	2.0 In		LFX		LFX	0.0950	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 In		LFX		LFX	0.1100	TON/SY	0.00	TON
ACP SURF	2.0 In	72	LFX	1525	LFX	0.1100	TON/SY	1342,00	TON
ACP	2.0 In		LFX		LFX	0.1100	TON/SY	0,00	TON
TCST-ASPH	0.6	91	LFX	1525	LFX	0.6000	GAUSY	9251,67	GAL
TCST-AGGR	55	91	LFX	1525	LF /	55	SY/CY	280.35	CY
ASB#1	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
ASB#2	1.5In		LFX		LFX	0.0825	TON/SY	0,00	TON
ASB#3	2,0 In		LFX		LFX	0.1100	TON/SY	0.00	TON
EMUL	0.3	91	LFX	1525	LFX	0.3000	GAUSY	4625.83	GAL
FLEX BASE	8.0 In	91	LFX	1525	LFX	0.6660	LF	3423.12	CY
MICRO(Surf)			LFX		LFX	0.0125	TON/SY	0.00	TON
MICRO(Scratch)			LFX		LFX	0.0100	TON /SY	0.00	TON
LIME TRT SUBGR(6")			LFX		LFX			0.00	SY
LIME	is%			0.00	SYX	0.0135	TON/SY	0.00	TON
CEMENT TRT SUBGR(8")		92	LF X	1525	LFX			15588.89	SY
CEMENT	is%			15588.89	SYX	0.0135	TON/SY	210.45	TON
GEOGRID REINF		92	LF X	1525.00	LFX			15588.89	SY

n ...NO... TRAN 4Nn INTER:

			AREA		RATE		AMQUNT	UNIT
PFCAGGR (@91%	2.0 In			SYX	0.0950	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 In			SYX	0.1100	TON/SY	0.00	TON
ACP SURF	2.0 In			SYX	0,1100	TON/SY	0.00	TON
ACP	2.0 In			SYX	0.1100	TON/SY	0.00	TON
TCST-ASPH	0.6			SYX	0.6000	GAUSY	0.00	GAL
TCST-AGGR	55			SYX	55	SY/CY	0.00	CY
ASB#1	4,0 In			SYX	0.2200	TON/SY	0.00	TON
ASB#2	1.5 In			SYX	0.0825	TON/SY	0.00	TON
ASB#3	2.0 In			SYX	0.1100	TON/SY	0.00	TON
EMUL	0.3			SYX	0.3000	GAUSY	0.00	GAL
FLEX BASE	16.0 In			SYX	1.3330	LF	0.00	CY
MICRO(Surf)				SYX	0.0125	TON/SY	0.00	TON
MICRO(Scratch)				SYX	0.0100	TON/SY	0.00	TON
LIME TRT SUBGR(6")				SYX			0.00	SY
LIME	13%			SYX	0.0067	TON/SY	0.00	TON
CEMENT TRT SUBGR(6")				SYX			0.00	SY
CEMENT	13%		0.00	SYX	0.0067	TON/SY	0.00	TON
GEOGRID REINF		104	LFX 0.00	LFX			0.00	SY

PAV STRUCT 1

LOCATION #3: S.W. of Hiljh School to Main

	DEPTH				LENGTH					AMOUNT	!!ti!!
PFC AGGR (@91%	50 h	•••		LFX		LFX	0.2375	TON/SY		0.00	TON
PFC ASPH (@ 9%)	20 h	•••		LF X		LFX	0 1100	TON/SY		000	TON
♦CP SURF	20 h	•••	60	LFX	4075	LFX	0 1100	TON/SY		2988.33	TON
IACP	20 h	•••		LFX		LFX	0.0825	TON/SY		0 00	TON
TCST-ASPH	06	•••	87.5	LFX	4075	LFX	0 6000	GAUSY		23770 83	GAL
TCST-AGGR	55	•••	87.5	LFX	4075	LF /	55	SY/CY		720 33	CY
IASB #1	40 h	•		LFX		LFX	0.2200	TON/SY		0 00	TON
IASB #2	15 h	•••		LFX		LFX	0.0825	TON/SY		0.00	TON
IASB #3	15 h	•••		LFX		LFX	0.0825	TON/SY		0.00	TON
EMUL	03	•••	87.5	LFX	4075	LFX	0.3000	GAUSY		11885 42	GAL
FLEX BASE	80 h	•••	87.5	LFX	4075	LFX	0,6660	LF		8795 21	CY
MICRO(Surf)				LFX		LFX	0 0125	TON/SY		0 00	TON
MICRO(Scratch)				LFX		LFX	0 0100	TON/SY		0 00	TON
LIME TRT SUBGR(6")				LFX		LFX				0.00	SY
LIME	16%	•			0.00	SYX	0.0135	TON/SY		0.00	TON
CEMENT TRT SUBGR(8")			89	LFX	4075	LFX				40297.22	SY
CEMENT	16%	•			40297.22	SYX	0.0135	TON/SY		544 01	TON
GEOGRID REINF			89	LFX	4075.00	LFX				40297.22	SY

LOCATION #4 Main to FM 78

			WIDTH		.bst!fil.!:!		RATE			AMOUNT	UNIT
PFC AGGR (@91%	40 h	•••		LFX		LFX	0.1900	TON/SY		0 00	TON
PFC ASPH (@ 9%)	2.0In	•••		LFX		LFX	0.1100	TON/SY		0,00	TON
IACP SURF	20 h	•••	74	LFX	4235	LFX	0 1100	TON/SY		3830.32	TON
iACP	20 h	•••		LFX		LF X	0.1100	TON/SY		0.00	TON
TCST-ASPH	06	•••	77.5	LFX	4235	LFX	0.6000	GAUSY		21880 83	GAL
TCST-AGGR	55	•••	77.5	LFX	4235	LF /	55	SY/CY		663 06	CY
IASB #1	40 h	•••		LFX		LFX	0.2200	TON/SY		0 00	TON
IASB #2	15 h	•••		LFX		LFX	0.0825	TON/SY		0.00	TON
IASB#3	4.0In	•••		LFX		LFX	0.0825	TON/SY		0.00	TON
EMUL	03	•••	77.5	LF X	4235	LFX	0.3000	GAUSY		10940.42	GAL
FLEX BASE	80 h	•••	77.5	LFX	4235	LFX	0.6660	LF		8095 91	CY
MICRO(Surf)				LFX		LF X	0.0125	TON/SY		0 00	TON
MICRO(Scratch)				LFX		LFX	0 0100	TON/SY		0 00	TON
LIME TRT SUBGR(6")				LF X		LF X				0 00	SY
LIME	16%	•			0.00	SYX	0,0135	TON/SY		0 00	TON
CEMENT TRT SUBGR(8"")			79	LFX	4235	LF X				37173.89	SY
CEMENT	16%	•			37173 89	SYX	0 0135	TON/SY		501.85	TON
GEOGRID REINF			79	LF X	4235.00	LFX				37173 89	SY

T||♦NntITS. TRANS AND INTER:

				AREA					AMOUNT	UNIT
PFC AGGR (@91 %	40 h	•••			SYX	0.1900	TON/SY		0.00	TON
PFC ASPH (@ 9%)	20 h	•••			SYX	0.1100	TON/SY		0.00	TON
IACP SURF	20 h	•••			SYX	0.1100	TON/SY		0.00	TON
IACP	20 h	•••			SYX	0.1100	TON/SY		0.00	TON
OCST-ASPH	03	•••			SYX	0.3000	GAUSY		0 00	GAL
OCST-AGGR	110	•••			SYX	110	SY/CY		0 00	CY
f",SB#1	40 h	•			SYX	0.2200	TON/SY		0 00	TON
IASB #2	15 h	•			SYX	0.0825	TON/SY		0 00	TON
IASB#3	1.5In	•••			SYX	0.0825	TON/SY		0 00	TON
EMUL	03	•••			SYX	0.3000	GAUSY		0 00	GAL
FLEX BASE	160 h	•••			SYX	1.3330	LF		0 00	CY
MICRO(Surf)					SYX	0 0125	TON/SY		0.00	TON
MICRO(Scratch)					SYX	0 0100	TON/SY		0.00	TON
LIME TRT SUBGR(6")					SYX				0 00	SY
LIME	13%	•			SYX	0.0067	TON/SY		0 00	TON
CEMENT TRT SUBGR(6")					SYX				0 00	SY
CEMENT	13%	•		0.00	SYX	0 0067	TON/SY		0 00	TON
GEOGRID REINF			104	LFX 0.00	LFX				0 00	SY

PAVSTRUCT2

	QUANTITY	!:lli!!	COST		AMOUNT
PFC AGGR (@96%)	0.00	TONX	$82.19	=	$0.00
PFC ASPH (@ 4%)	0.00	TONX	L.$82.19	=	$0.00
ACPSURF	29207.32	TONX	$83.00	=	$2,424,207.74
ACP	0.00	TONX	$83.00	=	$0.00
TCST-ASPH	192936.67	GALX	$3.37	=	$650,196.57
TCST-AGGR	5846.57	CYX	$63.16	=	$369,269.09
ASB	0.00	TONX	$65.00	=	$0.00
EMUL	96468.33	GALX	$1.60	::	$154,349.33
FLEX BASE	71386.57	CYX	$33.30	=	$2,377,172.67
MICRO(Surf)	0.00	TONX	$0.00	::	$0.00
MICRO(Scratch)	000	TONX	$0.00	::	$0.00
LIME TRT SUBGR(6")	0.00	SYX	$3.14	=	$0.00
LIME	0.00	TONX	$100.00	=	$0.00
CEMENT TRT SUBGR(6")	327671.11	SYX	$1.26	=	$412,865.60
CEMENT	4423.56	TONX	L.$126.16	::	$558,076.33
GEOGRID REINF	327671.11	TONX	$2.00	=	$655,342.22
			TOTAL	=	$7,601,479.55

PAV STRUCT SUMMARY

APPENDIX D - REFINED COST ESTIMATE FOR FM 1103 EXTENSION STUDY RECOMMENDATION

PRELIMINARY ESTIMATE

COUNTY:	Guaaalu♦
HIGHWAY:	ension
CSJ:	
LENGTH:	33258' (6.3 miles)
TRAFFIC ADT:	
BEG MI POINT	
ENDMI POINT	
BEG REF POINT	
END REF POINT	

LOCATION FROM: Existing FM 1103

TO: IH 35

RECONSTRUCT EXISTING	( )	
NEW LOCATION	(X)	
PROPOSED ROW WIDTH	-------'-'15""0_' ___	Ft
EXISTING ROW WIDTH	_ _ _ _ _ _ _ _0_ _ '	Ft
ON SYSTEM	(X >	
OFF SYSTEM	( )	

LAYMEN'S DESCRIPTION OF PROPOSED WORK: New area location from Existing FM 1103 to IH 35

IMPROVEMENTS:
2 - 6' bike lane; 3-12' lanes both directions: raised median
5' sidewalk and curb with storm drain
Retaining walls

PROJECT COST

REMOVAL			$0.00
GRADING			$14,808,510.96
TCP			$127,765.00
LANDSCAPE & SW3P			$626,812.06
ILLUM, SIGNAL & SIGN			$170,000.00
STRIPING			$360,906.00
SMALL STRUCTURE			$4,433,372.00
LARGE DRAIN STRUCT(SPAN)			$3,185,000.00
LARGE DRAIN STRUCT(CULVERT)			$1,465,200.00
GRADE SEPARATIONS(BRIDGES)			$6,948,500.00
PAVSTRUCT			$9,017,965.46
MOBILIZATION	1:0	%	$4,114,403.15
CONTINGENCY	15	%	$6,788,765.20
CONSTRUCTION TOTAL		=	$52,047,199.83
E & C	11	% =	$5,725,191.98
PREL ENGR	5	% :	$2,602,359.99
PS&E	10	% =	$5,204,719.98
ROWCOST			....ral...
UTILITY RELOCATE			
GRAND TOTAL		=	$77,304,663.77
			$8,277,386.00

DATE: 11/8/06 $52,047,199.83 33258' (6.3 mile times 5280 =

PREPARED BY: RJ RIVERA; ♦ociates Inc.

AREA ENGINEER MNGRNO

ITEM	DESCRIPTION	QUANTITY	UNIT				AMOUNT
100	PREP ROW	333	STA	X	$2,183.00	=	$726,939.00
110	RDWY EXCAVATION	258870.37	CY	X	$10.82	=	$2,800,977.41
110	CHAN EXCAVATION	500	CY	X	$8.86	=	$4,430.00
112	SUBGRADE WIDEN		STA	X	$446.29		$0.00
132	EMBANKMENT	325926	CY	X	$7.71	=	$2,512,888.89
134	BACKFILL PAV EDGE		STA	X	$110.00	=	$0.00
351	FLEX PAV REPAIR		SY	X	$27.76	=	$0.00
354	PLAN AND TEX PAV		SY	X	$7.59	=	$0.00
361	CONC PAV REPAIR		SY	X	$120.00	=	$0.00
403	TEMPORARY SPL SHORING		SF	X	$8.99	=	$0.00
423	RETAINING WALL(MSE)	88000	SF	X	$34.00	=	$2,992,000.00
423	RETAINING WALL(TEMP)		SF	X	$7.97	=	$0.00
423	RETAINING WALL(SOIL NAIL)		SF	X	$37.27	=	$0.00
423	RETAINING WALL(DRILL SHAFT)		SF	X	$62.85	=	$0.00
432	RIPRAP	150	CY	X	$375.00	=	$56,250.00
450	BRIDGE RAIL	8000	LF	X	$20.00	=	$160,000.00
514	PERM CTB (NORMAL)	1300	LF	X	[illegible]	=	$43,940.00
514	PERM CTB (SPLIT)		LF	X	$250.90	=	$0.00
529	CURB	63916.00	LF	X	$5.55	=	$354,733.80
530	DRIVEWAYS	300.00	SY	X	$53.39	=	$16,017.00
531	SIDEWALKS	36888.89	SY	X	$31.50	=	$1,162,000.00
531	WHEEL CHAIR RAMPS		EA	X	$1,750.00	◆	$0.00
533	SHOULDER TEXTURE		LF	X	$0.25	=	$0.00
536	CONC ISLAND/MEDIAN	53166.67	SY	X	$69.76	=	$3,708,906.67
540	MET BM GD FEN		LF	X	$18.88	=	$0.00
540	TERM ANCHOR SECT		EA	X	$478.54	=	$0.00
540	MBGF TRI BEAM TRANS		EA	X	$1,423.37	=	$0.00
544	GUARDRAIL END TREATMENTS		EA	X	$2,115.00	=	$0.00
545	CRASH CUSH ATTENUATORS	12	EA	X	$22,000.00	=	$264,000.00
560	MAILBOX ASSEMBLIES	30	EA	X	$180.94	=	$5,428.20
	PROJ MAINT SWEEPER		MO	X	$900.00	=	$0.00
	PROJ MAINT MOWING		MO	X	$2,600.00	=	$0.00
	PROJ MAINT LITTER PICK-UP		MO	X	$1,300.00	=	$0.00
	PROJ MAINT HERBICIDE		MO	X	$2,100.00	=	$0.00
			EA	X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
					TOTAL	=	$14,808,510.96

GRADING

ITEM	DESCRIPTION	QUANTITY			COST		AMOUNT
502	BARRICADES	24	MO	X	$2,000.00	=	$48,000.00
508	CONST DETOURS (CL 1)		STA	X	$12,500.00	=	$0.00
508	CONST DETOURS (CL 2)		EA	X	$40,000.00	=	$0.00
508	CONST DETOURS (CL 3)		SY	X	$30.95	=	$0.00
510	ONE WAY TRAF CONT		HR	X	$40.00	=	$0.00
512	PCTB (STKPL, INSTL & REM)	500	LF	X	$57.13	=	$28,565.00
512	PCTB (MOV & RESET)		LF	X	$6.00	=	$0.00
512	PCTB LP (SKPL, INST & RM)		LF	X	$17.00	=	$0.00
512	PCTB LP (MOV & RESET)		LF	X	$2.25	=	$0.00
545	WRK ZN CRASH CUSH ATTEN	4	EA	X	$12,000.00	=	$48,000.00
545	WRKZN CRH CUSH ATT(R & R)		EA	X	$2,500.00	=	$0.00
545	WRK ZN CRH CUSH ATT(REMOV)	4	EA	X	$800.00	=	$3,200.00
	VIA BARRELS		EA	X	$350.00	=	$0.00
	VIA BARRELS REMOV/REPLAC		EA	X	$380.00	=	$0.00
	VIA BARRELS REMOVE		EA	X	$200.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)4"(BRK)		LF	X	$0.25	=	$0.00
662	WK ZN PAV MRK NON-REM(W)4"(DOT)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)4"(SLD)		LF	X	$0.50	=	$0.00
662	WK ZN PAV MRK NON-REM(W)8"(LNPD)		LF	X	$1.25	=	$0.00
662	WK ZN PAV MRK NON-REM(W)8"(SLD)		LF	X	$0.50	=	$0.00
662	WK ZN PAV MRK NON-REM(W)24"(SLD)		LF	X	$3.30	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(ARROW)		EA	X	$60.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(ENTR GORE)		EA	X	$550.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(EXIT GORE)		EA	X	$800.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(RR XING)		EA	X	$110.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(WORD)		EA	X	$110.00	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)4"(BRK)		LF	X	$0.30	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)4"(SLD)		LF	X	$0.50	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)24"(SLD)		LF	X	$2.75	=	$0.00
662	WK ZN PAV MRK NON-REM(Y)(ISLAND)		SY	X	$400.00	=	$0.00
662	WK ZN PAV MRK NON-REM(W)(MED NOSE)		EA	X	$250.00	=	$0.00
662	WK ZN PAV MRK REM(W)4"(BRK)		LF	X	$0.80	=	$0.00
662	WK ZN PAV MRK REM(W)4"(DOT)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK REM(W)4"(SLD)		LF	X	$0.90	=	$0.00
662	WK ZN PAV MRK REM(W)8"(LNDP)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK REM(W)8"(SLD)		LF	X	$2.00	=	$0.00
662	WK ZN PAV MRK REM(W)24"(SLD)		LF	X	$11.00	=	$0.00
662	WK ZN PAV MRK REM(W)(ARROW)		EA	X	$210.00	=	$0.00
662	WK ZN PAV MRK REM(W)(ENTR GORE)		EA	X	$670.00	=	$0.00
662	WK ZN PAV MRK REM(W)(EXIT GORE)		EA	X	$850.00	=	$0.00
662	WK ZN PAV MRK REM(W)(RR XING)		EA	X		=	$0.00
662	WK ZN PAV MRK REM(W)(WORD)		EA	X		=	$0.00
662	WK ZN PAV MRK REM(Y)4"(BRK)		LF	X	$0.60	=	$0.00
662	WK ZN PAV MRK REM(Y)4"(SLD)		LF	X	$1.10	=	$0.00
662	WK ZN PAV MRK REM(Y)24"(SLD)		LF	X	$15.00	=	$0.00
662	WK ZN PAV MRK REM(Y)(ISLAND)		SY	X	$400.00	=	$0.00
662	WK ZN PAV MRK REM(Y)(MED NOSE)		EA	X	$400.00	=	$0.00
662	WK ZN PAV MRK SHT TERM (TAB) TY W		EA	X	$1.20	=	$0.00
662	WK ZN PAV MRK SHT TERM (TAB) TY Y		EA	X	$1.20	=	$0.00
662	WK ZN PAV MRK SHT TERM (TAB) TY Y-2		EA	X	$1.00	=	$0.00
677	ELIM EXT PV MRK & MRKR(4")		LF	X	$0.10	=	$0.00
	CHANGEABLE MESSAGE BOARD		DAY	X	$100.00	=	$0.00
	LANE CLOSURE(DAY)		EA	X	$0.00	=	$0.00
	LANE CLOSURE(NIGHT)		EA	X	$0.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
					TOTAL	=	$127,765.00

TCP

ITEM	DESCRIPTION	QUANTITY	UNIT		COST		AMOUNT
158	FRONT END LOADER		HR	X	$50.00	=	$0.00
161	COMP MANUF TPSL(4")	152695.56	SY	X	$2.06	=	$314,552.84
162	SODDING		SY	X	$2.80	=	$0.00
164	PERM DRILL SEEDING	152695.56	SY	X	$0.27	=	$41,227.80
164	TEMP SEEDING (COOL)		SY	X	$0.08	=	$0.00
164	TEMP SEEDING (WARM)		SY	X	$0.08	=	$0.00
168	VEGETATIVE WATERING	22002.24	MG	X	$6.70	=	$147,415.02
169	SOIL RETENTION BLANKETS		SY	X	$1.07	=	$0.00
170	IRRIGATION		LS	X		=	$0.00
192	LANDSCAPE PLANTING		LS	X		=	$0.00
193	LANDSCAPE ESTABLISH		MO	X	$667.00	=	$0.00
193	LAND EST WATERING		MGR	X	$22.00	=	$0.00
459	GABI ON MATTRESS		SY	X	$47.61	=	$0.00
459	GABIONS		CY	X	$166.13	=	$0.00
506	SED CONT FEN	33200.00	LF	X	$2.50	=	$83,000.00
506	ROCK FILTER DAM (TY 2)	500	LF	X	$44.00	=	$22,000.00
506	ROCK FILT DAM (TY 2)(REM)	500	LF	X	$18.16	=	$9,080.00
506	ROCK FILTER DAM (TY 5)		LF	X	$12.47	=	$0.00
506	ROCK FILT DAM (TY 5)(REM)		LF	X	$20.00	=	$0.00
506	CONSTRUCTION EXIT	540	SY	X	$11.53	=	$6,226.20
506	CONSTR EXIT REMOVE	540	SY	X	$6.13	=	$3,310.20
528	COLOR TEXTURIZED CONC		SY	X	$57.12	=	$0.00
528	LANDSCAPE PAVERS		SY	X	$44.79	=	$0.00
	LANDSCAPE ROCK		SY	X	$0.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
					TOTAL	=	$626,812.06

LANDSCAPE & SW3P

ITEM	DESCRIPTION	QUANTITY	UNIT				AMOUNT
416	DRILL SHAFT 30"		LF	X	$86.64	=	$0.00
432	RIPRAP		CY	X	$375.00	=	$0.00
610	INS RD IL AM (TY SP) 48S - 10 - 10 (.4 KW) S		EA	X	$2,200.00	=	$0.00
610	INS RD ILAM (TY SP) 48S-10 (.4 KW) S		EA	X	$2,000.00	=	$0.00
610	INS RD ILAM (U / P) (TY IF) (.15KW)		EA	X	$1,600.00	=	$0.00
610	INS RD ILAM (U / P) (TY 1) (.15KW) S		EA	X	$1,600.00	=	$0.00
617	TEMP LIGHTING		LS	X	$100,000.00	=	$0.00
618	CONDT (PVC) (SCHD 40) (1 1/2")		LF	X	$4.90	=	$0.00
618	CONDT (PVC) (SCHD 80) (2")		LF	X	$5.40	=	$0.00
618	CONDT (RM) (1 ")		LF	X		=	$0.00
620	ELEC CONDR (NO. 8) INSULATED		LF	X		=	$0.00
624	GROUND BOX TY A (122311)		EA	X	$500.00	=	$0.00
628	ELEC SERV POLE		EA	X	$4,000.00	=	$0.00
	ILLUMINATION CONTINUOUS		MI	X	$130,000.00	=	$0.00
	ILLUMINATION SAFETY		LOC	X	$20,000.00	=	$0.00
644	INST SM RDSD SIGN	600	EA	X	$250.00	=	$150,000.00
647	INST LRG RDSD SIGN		EA	X	$0.00	=	$0.00
650	INST OV HD SIGN SUPP		EA	X	$0.00	=	$0.00
	SIGNING		LS	X	$60,000.00	=	$0.00
680	TRAFFI C SIGNAL		EA	X	$100,000.00	=	$0.00
680	FLASHING BEACON	1	EA	X	$20,000.00	=	$20,000.00
681	TEMP TRAFFIC SIGNAL		EA	X	$0.00	=	$0.00
688	VEH LOOP DETECTOR		EA	X	$0.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00

UNIT= LOC MEANS PER LOCATION
UNIT= EA ON LOOP DETECTOR IS PER APPROACH ROADWAY

TOTAL = $170,000.00

ILLUM, SIGNAL & SIGN

ITEM	DESCRIPTION	QUANTITY	UNIT		COST		AMO!,!NT
666	REFL PAV MRK TY I(W)4"(BRK)(100ML)	33200.00	LF	X	$0.46	=	$15,272.00
666	REFL PAV MRK TY I(W)4"(DOT)(100ML)		LF	X	$1.901	=	$0.00
666	REFL PAV MRK TY I(W)4"(SLD)(100ML)	88100.00	LF	X	$0.33	=	$29,073.00
666	REFL PAV MRK TY I(W)8"(BRK)(100ML)		LF	X	$0.60'	=	$0.00
666	REFL PAV MRK TY I(W)8"(SDL)(1 00ML)	3000	LF	X	$0.65	=	$1,950.00
666	REFL PAV MRK TY I(W)18"(SLD)(100ML)		LF	X	$4.00'	=	$0.00
666	REFL PAV MRK TY I(W)24"(SLD)(100ML)	160	LF	X	$5.50	=	$880.00
666	REFL PAV MRK TY I(W)(ARROW)(100ML)	40	EA	X	$120.00	=	$4,800.00
666	REFL PAV MRK TY I(W)(BIKE ARW)(100ML)		EA	X	$83.00	=	$0.00
666	REFL PAV MRK TY I(W)(BIKE RR XING)(100ML)		EA	X	$125.00	=	$0.00
666	REFL PAV MRK TY I(W)(BIKE SYML)(100ML)	150	EA	X	$75.00	=	$11,250.00
666	REFL PAV MRK TY I(W)(BIKE WORD)(100ML)	150	EA	X	$220.00	=	$33,000.00
666	REFL PAV MRK TY I(W)(ENTR GORE)(100ML)		EA	X	$760.00	=	$0.00
666	REFL PAV MRK TY I(W)(EXIT GORE)(100ML)		EA	X	$890.00	=	$0.00
666	REFL PAV MRK TY I(W)(RR XING)(1 00ML)		EA	X	$700,00	=	$0.00
666	REFL PAV MRK TY I(W)(WORD)(100ML)	40	EA	X	$170.00	=	$6,800.00
666	REFL PAV MRK TY I(Y)4"(BRK)(1 00ML)		LF	X	$0.55	=	$0.00
666	REFL PAV MRK TY I(Y)4"(SLD)(100ML)	84640.00	LF	X	$0.45	=	$38,088.00
666	REFL PAV MRK TY I(Y)8"(SLD)(1 O0ML)		LF	X	$0.53	=	$0.00
666	REFL PAV MRK TY I(Y)24"(SLD)(100ML)		LF	X	$6.70	=	$0.00
666	REFL PAV MRK TY I(Y)(ISLAND)(100ML)		EA	X	$2.70	=	$0.00
666	REFL PAV MRK TY I(Y)(MED NOSE)(100ML)		EA	X	$250.00,	=	$0.00
666	PAVEMENT SEALER 4"	121300.00	LF	X	$0.15	=	$18,195.00
666	PAVEMENT SEALER 8"	3000	LF	X	$0.31	=	$930.00
666	PAVEMENT SEALER 18"		LF	X	$1.741	=	$0.00
666	PAVEMENT SEALER 24"	88100.00	LF	X	$1.80	=	$158,580.00
666	REFL PAV MRK TY II (W)(ARROW)	40	EA	X	$39.001	=	$1,560.00
666	REFL PAV MRK TY II (W) (BIKE ARROW)		EA	X	$58.00	=	$0.00
666	REFL PAV MRK TY II (W) (BIKE RRXING)		EA	X	$125.00	=	$0.00
666	REFL PAV MRK TY II (W) (BIKE SYML)	150	EA	X	$105.00	=	$15,750.00
666	REFL PAV MRK TY II (W) (BIKE WORD)	150	EA	X	$75.00	=	$11,250.00
666	REFL PAV MRK TY II (W)(ENTR GORE)		EA	X	$330.00	=	$0.00
666	REFL PAV MRK TY II (W)(EXIT GORE)		EA	X	$550.00	=	$0.00
666	REFL PAV MRK TY II (W)(RR XING)		EA	X	$260.00	=	$0.00
666	REFL PAV MRK TY II (W)(WORD)	40	EA	X	$55.00	=	$2,200.00
666	REFL PAV MRK TY II (Y)(ISLAND)		EA	X	$300.00	=	$0.00
666	REFL PAV MRK TY II (Y)(MED NOSE)		EA	X	$211.97	=	$0.00
672	REFL PAV MRKR TY I - A		EA	X	$3.50,	=	$0.00
672	REFL PAV MRKR TY I - C	1660	EA	X	$3.00	=	$4,980.00
672	REFL PAV MRKR TY I - R		EA	X	$5.00	=	$0.00
672	REFL PAV MRKR TY I - A - A	2116	EA	X	$3.00	=	$6,348.00
672	REFL PAV MRKR TY I - C - R		EA	X	$3.00	=	$0.00
672	TRAFFIC BUTTON TY W		EA	X	$2.00	=	$0.00
672	TRAFFIC BUTTON TY Y		EA	X	$2.60	=	$0.00
672	TRAFFIC BUTTON TY Y(6")		EA	X	$30.00	=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
				X		=	$0.00
					TOTAL	=	$360,906.00

STRIPING

ITEM	DESCRIPTION		QUANTITY	UNIT		COST		AMOUNT
400	CEM STABIL BKFL			CY	X	$74.30	=	$0.00
400	CUT & RESTORING PAV			SY	X	$67.94	=	$0.00
401	FLOWABLE BACKFILL			CY	X	$81.01	=	$0.00
402	TRENCH EXCAVATIO N PROTECTION			LF	X	$2.65	=	$0.00
460	CMP			LF	X	$36.00	=	$0.00
460	CMP			LF	X	$35.50	=	$0.00
460	CMP			LF	X	$35.00	=	$0.00
460	CMP			LF	X	$70.00	=	$0.00
460	CMP			LF	X		=	$0.00
460	CMP			LF	X		=	$0.00
460	CMPAR			LF	X	$100.00	=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
460	CMPAR			LF	X		=	$0.00
462	CONC BOX CULV			LF	X	$360.00	=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
462	CONC BOX CULV			LF	X		=	$0.00
464	RC PIPE(CL III)			LF	X		=	$0.00
464	RC-PIPE(CL III)			LF	X	$62.00	=	$0.00
464	RC PIPE(CL III)			LF	X	$110.00	=	$0.00
464	RC PIPE(CL III)			LF	X		=	$0.00
464	RC PIPE(CL III)	RC PIPE (CL 111)(42 IN)	24943.5	LF	X	$112.00	=	$2,793,672.00
464	RC PIPE(CL III)	RC PIPE (CL 111)(18 IN)	8350	LF	X	$52.00	=	$434,200.00
465	INLET (CURB)		167	EA	X	$6,500.00	=	$1,085,500.00
465	INLET (DROP)			EA	X	$6,000.00	=	$0.00
465	INLET (TRAFFIC)			EA	X	$7,869.98	=	$0.00
465	MANHOLE/JCT BOX			EA	X	$5,000.00	=	$0.00
466	WING/ HEAD WALL			EA	X	$8,000.00	=	$0.00
466	WING/ HEAD WALL			EA	X	$3,600.00	=	$0.00
466	WING / HEAD WALL			EA	X		=	$0.00
466	WING/ HEAD WALL			EA	X		=	$0.00
466	WING/ HEAD WALL			EA	X		=	$0.00
466	WING / HEAD WALL			EA	X		=	$0.00
466	WING / HEAD WALL			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
467	SET			EA	X		=	$0.00
474	SLOTTED DRAIN			LF	X	$100.00	=	$0.00
556	UNDERDRAIN PIPE	AT RETAIN WALL	4000	LF	X	$30.00	=	$120,000.00
					X		=	$0.00
					X			$0.00
					X			$0.00
					X			$0.00
					X			$0.00
					X			$0.00
					X		=	$0.00
						TOTAL	=	$4,433,372.00

SML DRAIN STRUCT

LOCATION: Over Town Creek
EXIST STRUCT: EXTEND (Y OR N)
EXTEND TO CLEAR ROADWAY
PROP SPAN STRUCTURE:

LENGTH		WIDTH		COST		AMOUNT
500	LF X	98	LFX	$65.00	=	$3,185,000.00

LOCATION:
EXIST STRUCT: EXTEND (Y OR N)
EXTEND TO CLEAR ROADWAY
PROP SPAN STRUCTURE:

LENGTH		WIDTH		COST		AMOUNT
	LF X		LF X	$65.00	=	$0.00

LOCATION:
EXIST STRUCT: EXTEND (Y OR N)
EXTEND TO CLEAR ROADWAY
PROP SPAN STRUCTURE:

LENGTH		WIDTH		COST		AMOUNT
0	LF X		LFX	$65.00	=	$0.00

LOCATION:
EXIST STRUCT: EXTEND (Y OR N)
EXTEND TO CLEAR ROADWAY
PROP SPAN STRUCTURE:

LENGTH		WIDTH		COST		AMOUNT
	LF X		LFX	$55.00	=	$0.00

LOCATION:
EXIST STRUCT: EXTEND (Y OR N)
EXTEND TO CLEAR ROADWAY
PROP SPAN STRUCTURE:

LENGTH		WIDTH		COST		AMOUNT
	LF X		LFX	$55.00	=	$0,00

LOCATION:
EXIST STRUCT: EXTEND (Y OR N)
EXTEND TO CLEAR ROADWAY
PROP SPAN STRUCTURE:

LENGTH		WIDTH		COST		AMOUNT
	LF X		LFX	$55.00	=	$0.00

LOCATION:
EXIST STRUCT: EXTEND (Y OR N)
EXTEND TO CLEAR ROADWAY
PROP SPAN STRUCTURE:

LENGTH		WIDTH		COST		AMOUNT
	LF X		LFX	$55.00	=	$0.00

TOTAL = $3,185,000.00

(SPAN)

LARGE DRAINAGE STRUCTURE

LOCATION:		.Various Locations Throughout Project				
EXIST STRUCT:			EXTEND (Y OR N)			
EXTENDTO		CLEAR ROADWAY				
PROP STRUCTURE:		MBC	SIZE:	3~6'x3'		
LENGTH		BARRELS		COST		AMOUNT
1440	LFX	3	X	$330.00	=	$1,425,600.00

LOCATION:		Under Extension to Exist FM 78				
EXIST STRUCT:			EXTEND (Y OR N)			
EXTENDTO		CLEAR ROADWAY				
PROP STRUCTURE:		MBC	SIZE:	3~6'x3'		
LENGTH		BARRELS		COST		AMOUNT
40	LF X	3	X	$330.00	=	$39,600.00

LOCATION:						
EXIST STRUCT:			EXTEND (Y OR N)			
EXTEND TO		CLEAR ROADWAY				
PROP STRUCTURE:			SIZE:			
LENGTH		BARRELS		COST		AMOUNT
	LFX		X		=	$0.00

LOCATION:						
EXIST STRUCT:			EXTEND (Y OR N)			
EXTEND TO		CLEAR ROADWAY				
PROP STRUCTURE:			SIZE:			
LENGTH		BARRELS		COST		AMOUNT
	LF X		X		=	$0.00

LOCATION:						
EXIST STRUCT:			EXTEND (Y OR N)			
EXTENDTO		CLEAR ROADWAY				
PROP STRUCTURE:			SIZE:			
LENGTH		BARRELS		COST		AMOUNT
	LFX		X		=	$0.00

LOCATION:						
EXIST STRUCT:			EXTEND (Y OR N)			
EXTENDTO		CLEAR ROADWAY				
PROP STRUCTURE:			SIZE:			
LENGTH		BARRELS		COST		AMOUNT
	LF X		X		=	$0.00

LOCATION:						
EXIST STRUCT:			EXTEND (Y OR N)			
EXTEND TO		CLEAR ROADWAY				
PROP STRUCTURE:			SIZE:			
LENGTH		BARRELS		COST		AMOUNT
	LFX		X		=	$0.00

TOTAL = $1,465,200.00

{CULVERT}
LARGE DRAINAGE STRUCTURE

LOCATION:	At FM 78					
EXISTING STRUCTURE:	None		EXTEND (YORN)		NO	
EXTENDTO		CLEAR ROADWAY				
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
800	LF X	-- 981	LF X	$65.00	=	$5,096,000.00

LOCATION:	At IH 10					
EXISTING STRUCTURE:	None		EXTEND (YORN)		No	
EXTEND TO		CLEAR ROADWAY				
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
250	LF X	114	LF X	$65.00	=	$1,852,500.00

LOCATION:						
EXISTING STRUCTURE:			EXTEND (YORN)			
EXTEND TO		CLEAR ROADWAY				
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LF X		LF X	$65.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:			EXTEND (YORN)			
EXTENDTO		CLEAR ROADWAY				
PROP SPAN STRUCT:						
LENGTH		WIDTH		SQ11		AMOUNT
	LF X		LF X	$55.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:			EXTEND (YORN)			
EXTEND TO		CLEAR ROADWAY				
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LF X		LF X	$55.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:			EXTEND (YORN)			
EXTEND TO		CLEAR ROADWAY				
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LF X		LF X	$55.00	=	$0.00

LOCATION:						
EXISTING STRUCTURE:			EXTEND (YORN)			
EXTEND TO		CLEAR ROADWAY				
PROP SPAN STRUCT:						
LENGTH		WIDTH		COST		AMOUNT
	LF X		LF X	$55.00	=	$0.00

TOTAL = $6,948,500.00

(BRIDGES)
GRADE SEPARATIONS

LOCATION #1: Main Lanes

		rl!QI!:!.				.BAili		AMQ!.lliI	UNIT
PFC AGGR (@91%	2.0 In		LFX		LFX	0.0950	TON/SY	0,00	TON
PFC ASPH (@ 9%)	2.0 In		LFX		LFX	0.1100	TON/SY	0,00	TON
ACP SURF	2.0 In	84	LF X	31958.00	LFX	0.1100	TON/SY	32810.21	TON
ACP	2.0 In		LFX		LFX	0.1100	TON/SY	0,00	TON
TCST-ASPH	0.6	101	LFX	31958.00	LFX	0,6000	GAUSY	215183,87	GAL
TCST-AGGR	55	101	LFX	31958.00	LF /	55	SY/CY	6520.72	CY
ASB#1	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
ASB#2	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
ASB#3	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
EMUL	0.3	101	LFX	31958,00	LFX	0.3000	GAUSY	107591.93	GAL
FLEX BASE	8.0 In	101	LFX	31958.00	LFX	0.6660	LF	79618.03	CY
MICRO(Surf)			LFX		LFX	0 0125	TON/SY	0.00	TON
MICRO(Scratch)			LFX		LFX	0 0100	TON/SY	0,00	TON
LIME TRT SUBGR(6")			LFX		LFX			0,00	SY
LIME	16%			0.00	SYX	0.0135	TON/SY	0.00	TON
CEMENT TRT SUBGR(8")		103	LF X	31958.00	LFX			365741.56	SY
CEMENT	16%			365741.56	SYX	0.0135	TON/SY	4937.51	TON
GEOGRID REINF		103	LFX	31958.00	LFX			365741.56	SY

LOCAIION #2: Connection with existing FM 1103

		rl!QI!:!.				M m		AMQUfil	UNIT
PFC AGGR (@91%	2.0 In		LFX		LFX	0.0950	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 In		LFX		LFX	0.1100	TON/SY	0.00	TON
ACP SURF	2.0 In	32	LFX	2200	LFX	0.1100	TON/SY	860.44	TON
ACP	2.0 In		LFX		LFX	0.1100	TON/SY	0.00	TON
TCST-ASPH	0.6	33	LF X	2200	LFX	0.6000	GAUSY	4840.00	GAL
TCST-AGGR	55	33	LF X	2200	LF /	55	SY/CY	146.67	CY
ASB#1	4.0 In		LFX		LFX	0.2200	TON/SY	0.00	TON
ASB #2	1.5 In		LFX		LFX	0.0825	TON/SY	0.00	TON
ASB #3	2.0 In		LFX		LFX	0.1100	TON/SY	0.00	TON
EMUL	0.3	33	LFX	2201)	LFX	0.3000	GAUSY	2420.00	GAL
FLEX BASE	8.0 In	33	LFX	2200	LFX	0.6660	LF	1790.80	CY
MICRO(Surf)			LFX		LFX	0.0125	TON /SY	0.00	TON
MICRO(Scratch)			LF X		LFX	0.0100	TON/SY	0.00	TON
LIME TRT SUBGR(6")			LFX		LFX			0 00	SY
LIME	16%			0.00	SYX	0.0135	TON/SY	0.00	TON
CEMENT TRT SUBGR(6")		34	LFX	2200	LFX			8311.11	SY
CEMENT	16%			8311.11	SYX	0.0135	TON/SY	112 20	TON
GEOGRID REINF		34	LF X	2200.00	LFX			8311.11	SY

TIIRNOUTS. TR6NI: 6Nn INT R•.

			AREA		RATE		AMQUNT	UNIT
PFC AGGR (@91%	2.0 In			SYX	0.0950	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 In			SYX	0.1100	TON/SY	0.00	TON
ACP SURF	2.0 In			SYX	0.1100	TON/SY	0.00	TON
ACP	2.0 In			SYX	0.1100	TON/SY	0.00	TON
TCST-ASPH	0.6			SYX	0.6000	GAUSY	0 00	GAL
TCST-AGGR	55			SYX	55	SY/CY	0.00	CY
ASB #1	4.0 In			SYX	0.2200	TON/SY	0.00	TON
ASB #2	1.5 In			SYX	0,0825	TON/SY	0.00	TON
ASB#3	2.0 In			SYX	0.1100	TON/SY	0.00	TON
EMUL	0.3			SYX	0.3000	GAUSY	0 00	GAL
FLEX BASE	16.0 In			SYX	1.3330	LF	0.00	CY
MICRO(Surf)				SYX	0 0125	TON/SY	0.00	TON
MICRO(Scratch)				SYX	0 0100	TON/SY	0.00	TON
LIME TRT SUBGR(6")				SYX			0.00	SY
LIME	13%			SYX	0.0067	TON/SY	0.00	TON
CEMENT TRT SUBGR(6")				SYX			0.00	SY
CEMENT	13%		0.00	SYX	0.0067	TON/SY	0 00	TON
GEOGRID REINF			LFX 0.00	LFX			0.00	SY

PAVSTRUCT 1

LOCATION #3: Connector Ramel at FM 78

	DEPTH	WIDTH				BAI5		AMOUNT	UNIT
PFC AGGR (@91%	5.0 h		LFX		LFX	0.2375	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 h		LFX		LFX	0.1100	TON/SY	0.00	TON
IACP SURF	2.0 h	32	LFX	3480	LFX	0.1100	TON/SY	1353.24	TON
ACP	2.0 h		LFX		LFX	0.0825	TON/SY	0.00	TON
TCST-ASPH	0.6	33	LFX	3460	LFX	0.6000	GAUSY	7612.00	GAL
TCST-AGGR	55	33	LFX	3460	LF /	55	SY/CY	230.67	CY
ASB#1	4.0 h		LFX		LFX	0.2200	TON/SY	0.00	TON
ASB#2	1.5 h		LFX		LFX	0.0825	TON/SY	0.00	TON
ASB#3	1.5 h		LF X		LFX	0.0825	TON/SY	0.00	TON
EMUL	0.3	33	LF X	3460	LFX	0.3000	GAUSY	3806.00	GAL
FLEX BASE	8.0 h	33	LFX	3460	LFX	0.6660	LF	2816 44	CY
MICRO(Surf)			LFX		LFX	0 0125	TON/SY	0.00	TON
MICRO(Scratch)			LFX		LFX	0 0100	TON/SY	0.00	TON
LIME TRT SUBGR(6")			LFX		LFX			0.00	SY
LIME	16%			0.00	SYX	0.0135	TON/SY	0.00	TON
CEMENT TRT SUBGR(6")		34	LFX	3460	LFX			13071.11	SY
CEMENT	16%			13071.11	SYX	0.0135	TON/SY	176.46	TON
GEOGRID REINF		34	LF X	3460.00	LFX			13071.11	SY

LOCATION #4:

				LENGTH		RATE		AMOUNT	!lli..!I
PFC AGGR (@91 %	4.0 h		LFX		LFX	0.1900	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 h		LFX		LFX	0.1100	TON/SY	0.00	TON
IACP SURF	2.0 h		LFX		LFX	0.1100	TON/SY	0.00	TON
IACP	2.0 h		LFX		LFX	0.1100	TON/SY	0.00	TON
TCST-ASPH	0.6		LFX		LFX	0.6000	GAUSY	0.00	GAL
TCST-AGGR	55		LF X		LF /	55	SY/CY	0.00	CY
IASB #1	4.0 h		LFX		LFX	0.2200	TON/SY	0.00	TON
IASB#2	1.5 h		LFX		LFX	0.0825	TON/SY	0.00	TON
IASB #3	4.0 h		LFX		LFX	0.0825	TON/SY	0.00	TON
EMUL	0.3		LFX		LFX	0.3000	GAUSY	0.00	GAL
FLEX BASE	8.0 h		LF X		LFX	0.6660	LF	0,00	CY
MICRO(Surf)			LFX		LFX	0 0125	TON/SY	0.00	TON
MICRO(Scratch)			LF X		LFX	0 0100	TON/SY	0.00	TON
LIME TRT SUBGR(6")			LFX		LFX			0.00	SY
LIME	13%			0.00	SYX	0.0067	TON/SY	0.00	TON
CEMENT TRT SUBGR(6")			LF X	0	LFX			0.00	SY
CEMENT	13%			0.00	SYX	0.0067	TON/SY	0 00	TON
GEOGRID REINF			LFX	0.00	LFX			0 00	SY

TLIRNnt ITS, TRANS AND INTER:

				BAI5		AMOUNT	!lli..!I
PFC AGGR (@91 %	4.0 h		SYX	0.1900	TON/SY	0.00	TON
PFC ASPH (@ 9%)	2.0 h		SYX	0.1100	TON/SY	0.00	TON
IACP SURF	2.0 h		SYX	0.1100	TON/SY	000	TON
IACP	2.0 h		SYX	0,1100	TON/SY	0,00	TON
OCST-ASPH	0.3		SYX	0,3000	GAUSY	0.00	GAL
OCST-AGGR	110		SYX	110	SY/CY	0.00	CY
IASB #1	4.0 h		SYX	0.2200	TON/SY	0.00	TON
ASB#2	1.5 h		SYX	0,0825	TON/SY	0.00	TON
ASB#3	1.5 h		SYX	0.0825	TON/SY	0.00	TON
EMUL	0.3		SYX	0.3000	GAUSY	0.00	GAL
FLEX BASE	16.0 h		SYX	1.3330	LF	0.00	CY
MICRO(Surf)			SYX	0.0125	TON/SY	0.00	TON
MICRO(Scratch)			SYX	0.0100	TON /SY	0,00	TON
LIME TRT SUBGR(6")			SYX			0.00	SY
LIME	13%		SYX	0.0067	TON/SY	0.00	TON
CEMENT TRT SUBGR(6")			SYX			0 00	SY
CEMENT	13%	0.00	SYX	0.0067	TON/SY	0 00	TON
GEOGRID REINF		LFX 0.00	LFX			0.00	SY

PAVSTRUCT2

	QUANTITY	!.!!ill	£Q§I		AMOUNT
PFC AGGR (@96%)	0.00	TONX	$82.19	=	$0.00
PFC ASPH (@ 4%)	0.00	TONX	1 $82.19	=	$0.00
ACP SURF	35023.90	TONX	$83.00	=	$2,906,983.88
ACP	0.00	TONX	$83. 00	=	$0.00
TCST-ASPH	227635.87	GALX	$3.37	=	$767,132 87
TCST-AGGR	6898.06	CYX	$63.16	=	$435,681.25
ASB	0.00	TONX	$65.00	=	$0.00
EMUL	113817.93	GALX	$1.60	=	$182,108.69
FLEX BASE	84225 27	CYX	$33.30	=	$2,804,701.51
MICRO(Surf)	0.00	TONX	$0.00	=	$000
MICRO(Scratch)	0.00	TONX	$0.00	=	$0.00
LIME TRT SUBGR(6")	0.00	SYX	$3.14	=	$0.00
LIME	0.00	TONX	$100.00	=	$0.00
CEMENT TRT SUBGR(6")	387123.78	SYX	$1,26	=	$487,775 96
CEMENT	5226.17	TONX	$126.16	=	$659,333.73
GEOGRID REINF	387123.78	TONX	$2.00	=	$774,247.56
			TOTAL	=	$9,017,965.46

PAV STRUCT SUMMARY

APPENDIX E - FM 1103 STUDY PRESENTATION

FM 1103 Route Study

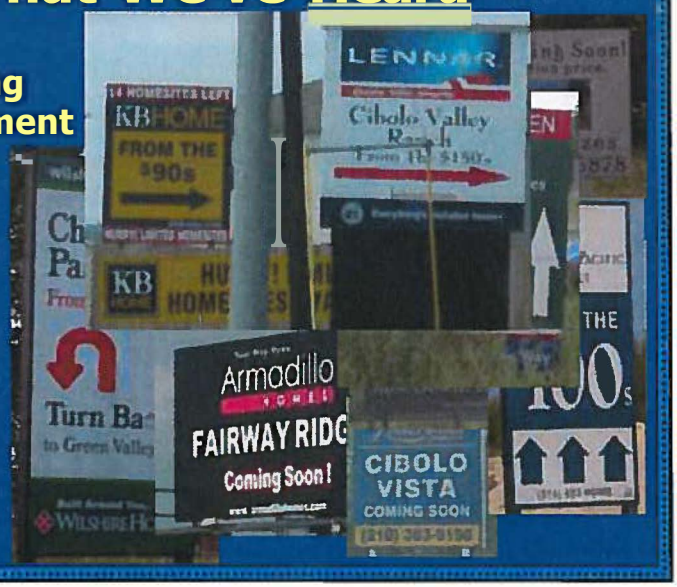
ENCORE

Stakeholder Workshop #1

February 16, 2006

What We've Heard

- Increasing Development Pressure



This presentation was developed as part of a preliminary route study. It contains preliminary and conceptual information and not construction projects.

What You've Seen

- Current Construction Project

Other Things We've Heard

- Concerns about Transportation Planning being Coordinated with Land Use Planning
  - » Anticipated Future Development
- Area Drainage / Flooding
  - » FM 1103, FM 78, Localized Drainage
- Delay at Railroad Crossing at FM 78
- Rural / Natural Character

Meeting Agenda

- Update on Current Construction Progress
- Introduce the FM 1103 Route Study
  - » Purpose of the Route Study
  - » Study Area
  - » TxDOT's Project Development Process
  - » Route Study Approach
- Workshop
  - » Needs Identification
  - » Constraints Identification
  - » Route Location Considerations
- Next Steps in Route Study
- Question & Answer Session

Current Construction Project

- Expected completion Fall 2007
  - » Weil Road to FM 78 by Spring 2006
  - » Green Valley to Weil Road by Winter 2006
  - » IH 35 to Green Valley Road by Fall 2007

Current Construction Project

North-South (IH 35 to "Bend")

Basic:
2-Lanes
+
Shoulders

FM 1103
Under Construction
Two Lanes, Shoulders
with Drainage Ditches

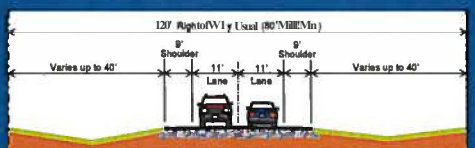
At public roads:
Center
Left Turn Lane
Configuration

Under Construction
Two Lanes, Center Left Turn
Lane with Drainage Ditches

Current Construction Project

East-West ("Bend" to FM 78)

Along
"Bend":
2-Lanes
+
Shoulders



FM 1103
Under Construction Two Lanes, Shoulders
with Drainage Ditches

At the High
School

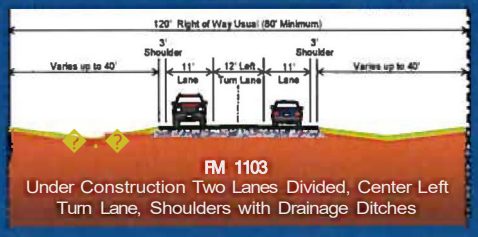
Under Construction Two Lanes Divided,
Center Left Turn Lane,
Right Turn Lane with Drainage Ditches

This presentation was developed as part of a preliminary route study. It contains preliminary and conceptual information and not construction projects.

Current Construction Project

East-West ("Bend" to FM 78)

Center
Left Turn Lane
Configuration



Conceptual Layout

FM 1103 Route Study Purpose

PRELIMINARY STUDY

- **Determine the need and feasibility of improving existing FM 1103 between IH 35 and FM 78 beyond the current construction**

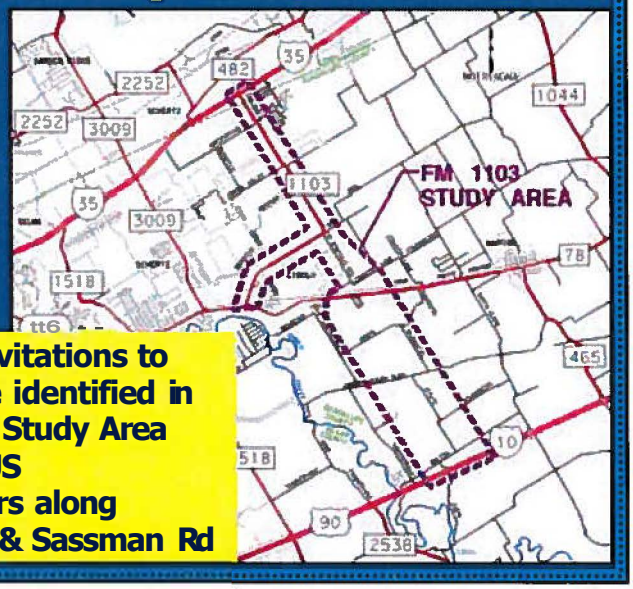
and

- **Determine the need and feasibility of extending FM 1103 to IH 10**

FM 1103 Route Study Goals

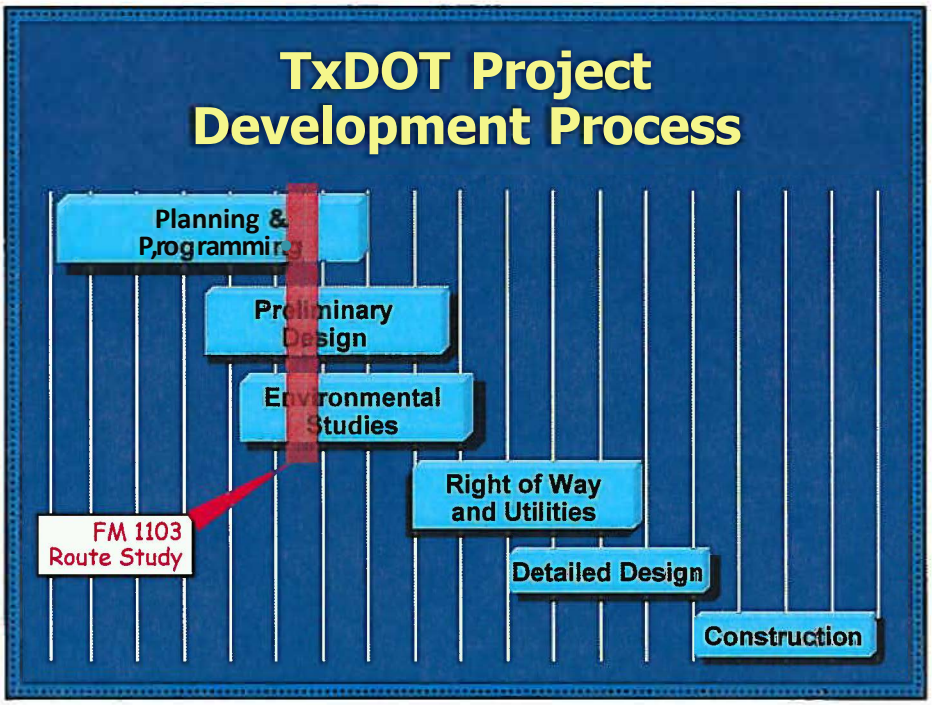
- Plan for long-term transportation needs
- Address safety/mobility issues
- Potential benefits:
  - » If feasible, project(s) moves forward in TxDOT Development Process
  - » Preserves ROW before dense development occurs
  - » Enables local stakeholders, both the public and local cities, counties, and agencies, to plan considering the route location

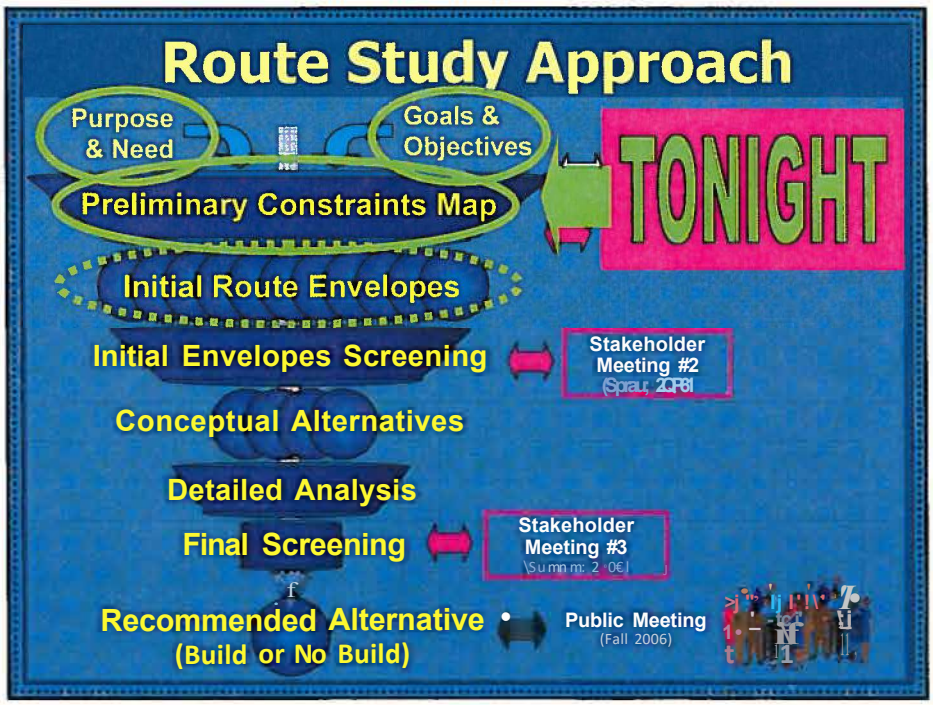
Study Area



We mailed invitations to landowners we identified in this FM 1103 Study Area PLUS landowners along Haeckerville Rd & Sassman Rd

This presentation was developed as part of a preliminary route study. It contains preliminary and conceptual information and not construction projects.





This presentation was developed as part of a preliminary route study. It contains preliminary and conceptual information and not construction projects.

Meeting Agenda

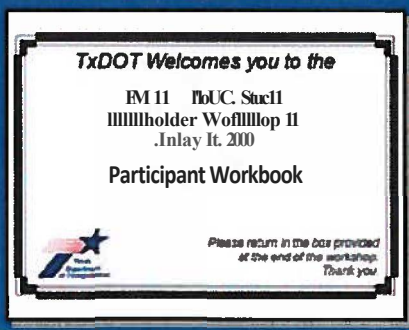
- Update on Current Construction Progress
- Introduce the FM 1103 Route Study
  - » Purpose of the Route Study
  - » Study Area
  - » TxDOT's Project Development Process
  - » Route Study Approach

Questions?

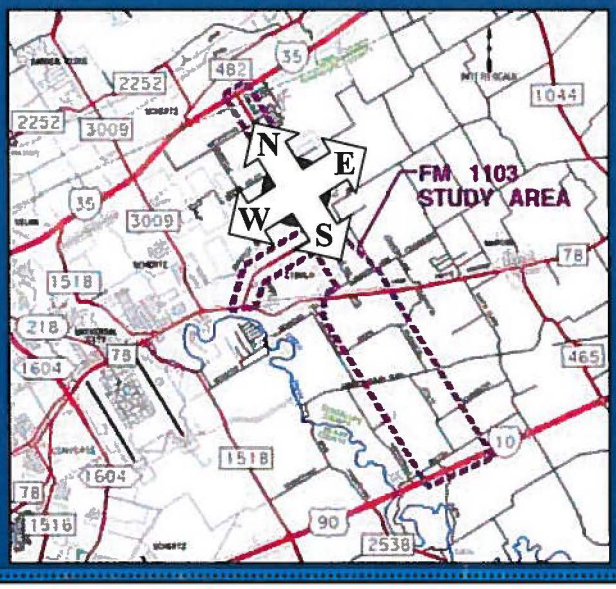
Workshop

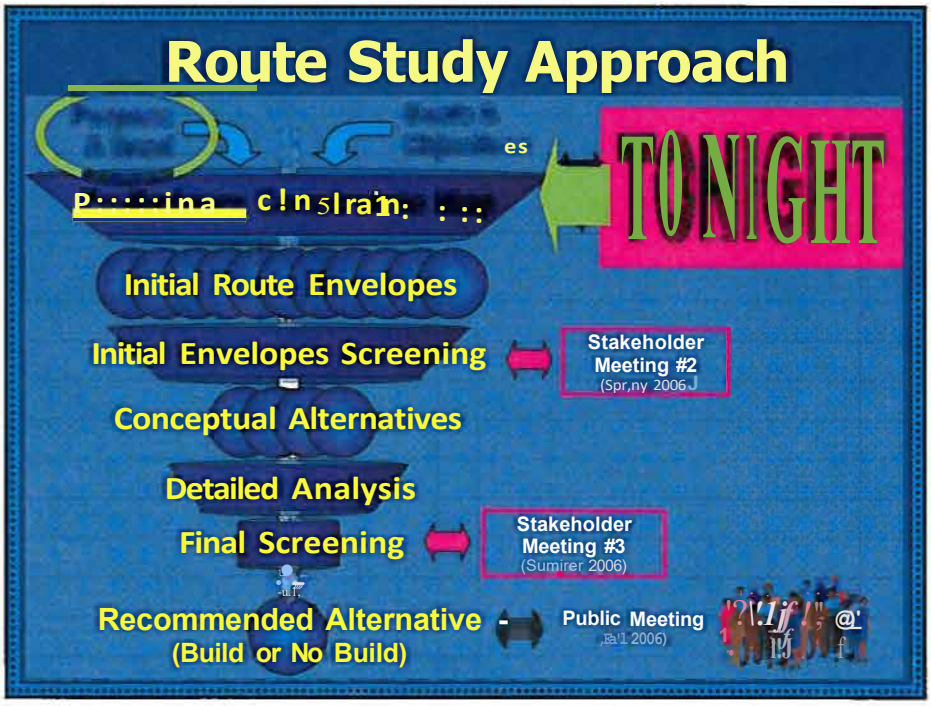
Workshop Format

- Examine Information
- Discuss as a Group
- Comment in Workbook



Directional Orientation





Historic Growth Trend

- Between 1994 and 2004, along existing FM 1103, traffic grew 60%
- Looking to the future, is it reasonable to assume growth will continue at the same rate as it has been previously?
  - » Cibolo, Schertz, and San Antonio are growing
  - » Eight subdivisions actively developing
  - » Several others contemplated

Residential Development

Growth Mode

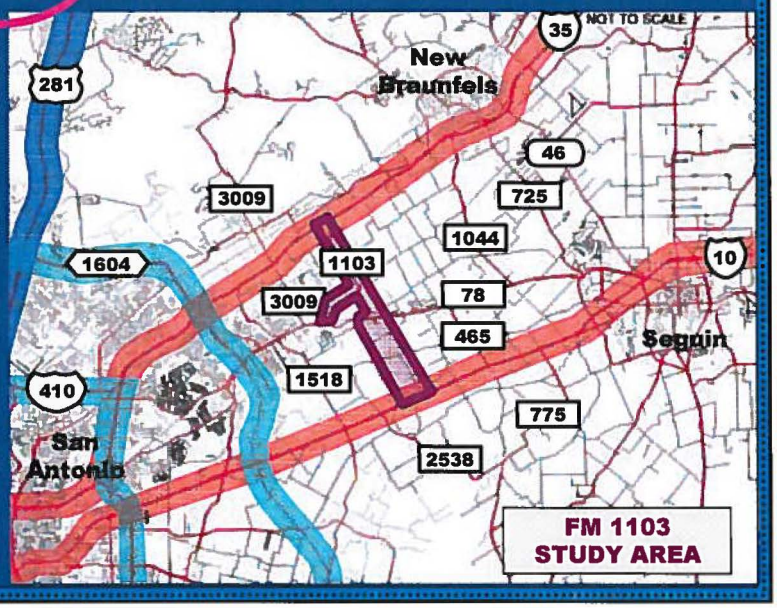
For the City of Cibolo,

- Estimated 2004 population was 7,600
- Forecasted 2015 population is 36,326
- Growth of 4800/o

Types of Trips

- Commuters
  - » San Antonio, New Braunfels, Seguin, Randolph Air Force Base, Schertz
- School Trips
  - » School Buses, Parents, Students, Faculty
- Commercial
  - » Deliveries, Shipping, Courier
- Retail
  - » Groceries, Shopping, Entertainment
- Other

- Capacity, Options, Continuity



"Design Year" 2025 Level of Service

Grade scale:

- **A** — Free-flow to at least stable flow, maneuverable, few traffic interruptions
- **B**
- **C** — Approaching Unstable
- **D**
- **E** — (O)unstable
- **F** — }3reakdown

Other Needs to Consider

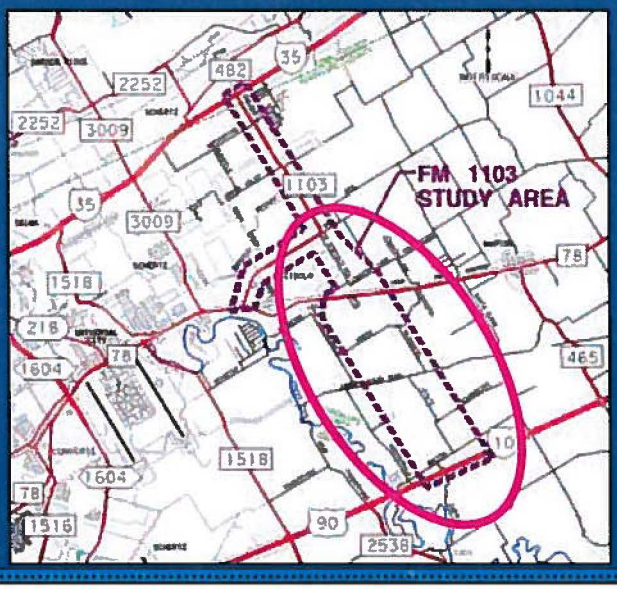
- Operational safety associated with increased traffic
- Bicycle and pedestrian safety
- At-grade railroad crossings at FM 78 (FM 1103, Country Lane)
  - » Hinder Mobility
  - » Hinder Emergency Services Access
- Flood Events
  - » Hinder Access/Egress for Homes, Businesses
  - » Hinder Emergency Services Access

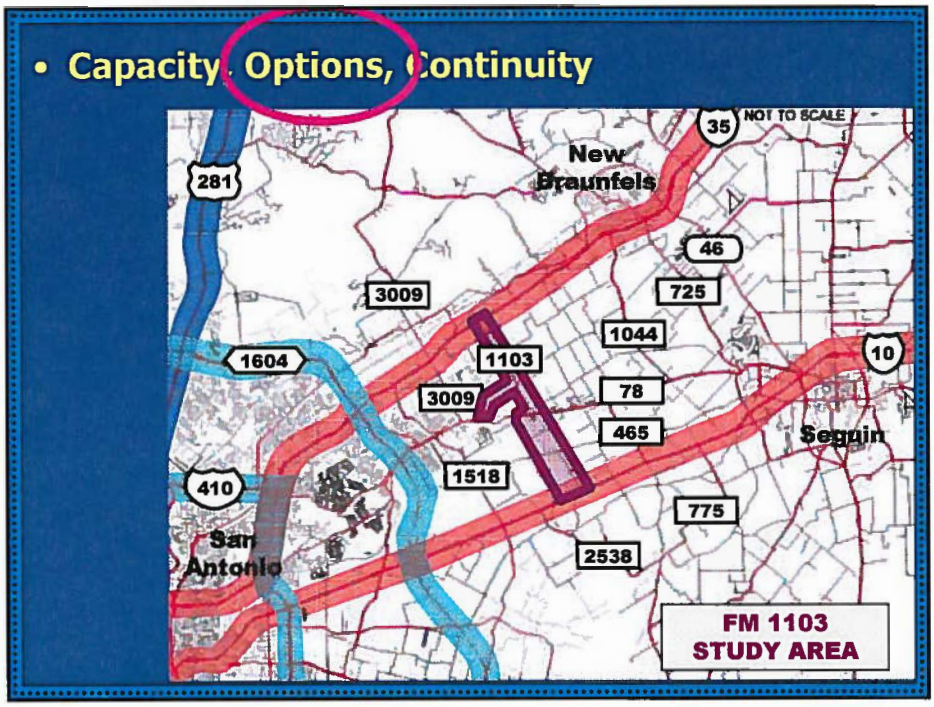
Needs Along Existing FM 1103

- Mobility
- Operational safety
- Bicycles and pedestrians
- Railroad crossing at FM 78
- Flooding and drainage

Workbook

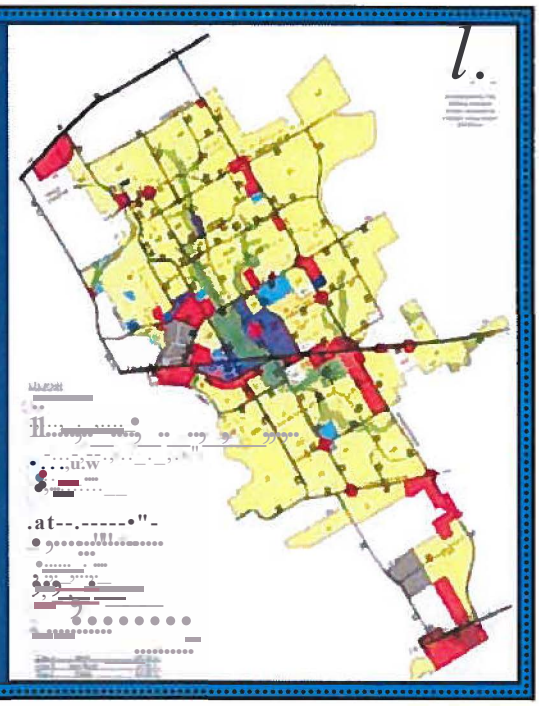
Needs for a Possible Extension



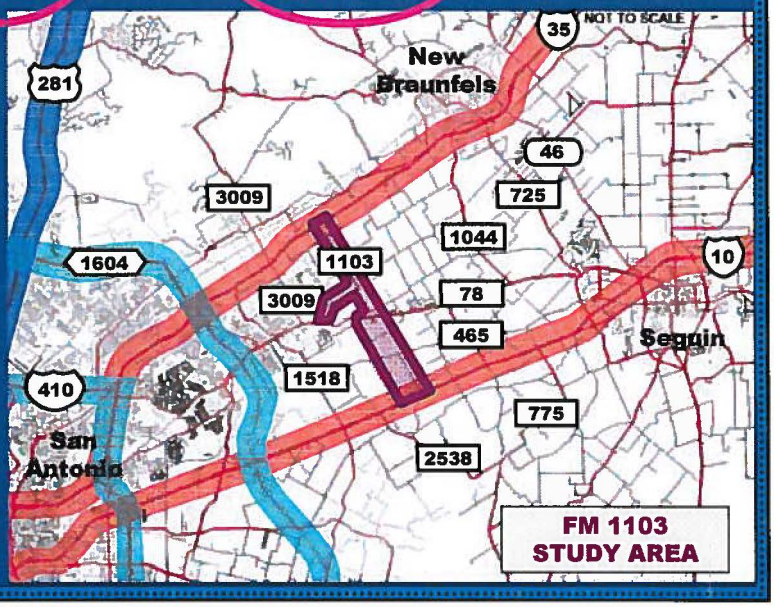

• Capacity, Options, Continuity
NOT TO SCALE
35
New Braunfels
281
46
725
3009
1044
1604
1103
10
3009
78
465
Seguin
1518
410
775
San Antonio
2538
FM 1103
STUDY AREA

Residential Development
LENNAR
KB HOME
FROM THE $90s
Cibolo Valley Ranch
NOW OPEN
Space Coming Soon!
$100s
Armadillo
FAIRWAY RIDGE
Coming Soon!
FOR SALE
BY OWNER
830-393-65
830-438-32
CIBOLO VISTA
COMING SOON
Turn Back
Saddle Creek Ranch

City of Cibolo Land Use Plan



- Capacity, Options, Continuity



Needs for a Possible Extension of FM 1103

Similar needs of existing, in addition:

- **Increased traffic along other existing roads not designed for level or type of traffic**
- **Route options/ choices for longer trips**
- **Continuity between IH 35 and IH 10**

Workbook

Route Study Approach

Purpose & Need

Goals & Objectives

TONIGHT

Preliminary Constraints Map

Initial Route Envelopes

Initial Envelopes Screening — Stakeholder Meeting #2 (Spring 2006)

Conceptual Alternatives

Detailed Analysis

Final Screening — Stakeholder Meeting #3 (Summer 2006)

Recommend-:d Alternative (Build or No Build) — Public Meeting

This presentation was developed as part of a preliminary route study. It contains preliminary and conceptual information and not construction projects.

Goals & Objectives

- **Mobility**
- **Saf::◆,**
- **Minimize Trade-Offs**
  - » Minimize property / right of way needs
  - » Minimize impacts to the community
  - » Minimize impacts to the environment
- **Des19.◆**
  - » Consider constructability
  - » Consider driver expectancy
  - » At a minimum do not worsen drainage, if possible improve
- **Cost Effectiveness**
  - » Consider total cost
  - » Consider options that may cost more, but meet long-term needs

Route Study Approach

Purpose & Need

Goals & Objectives

Preliminary Constraints Map

Initial Route Envelopes

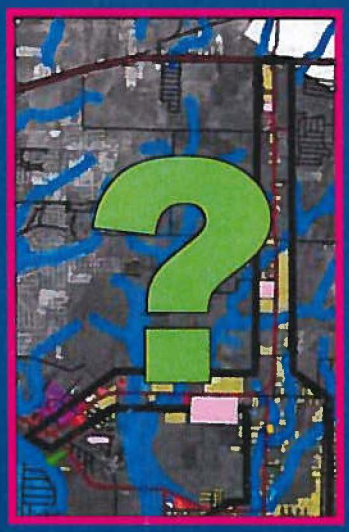
Initial Envelopes Screening

Conceptual Alternatives

Detailed Analysis

Final Screening

Recommended Alternative
(Build or No Build)



Constraints Identification

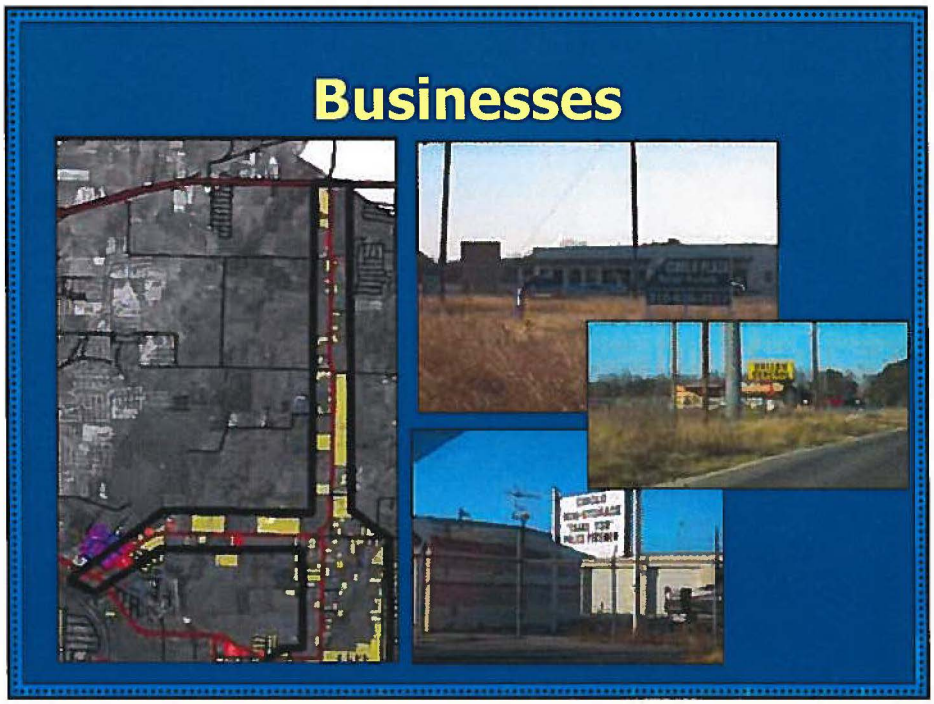
- Constraints Map Overview
- Constraints Trade-Off Exercise

Before you leave tonight:

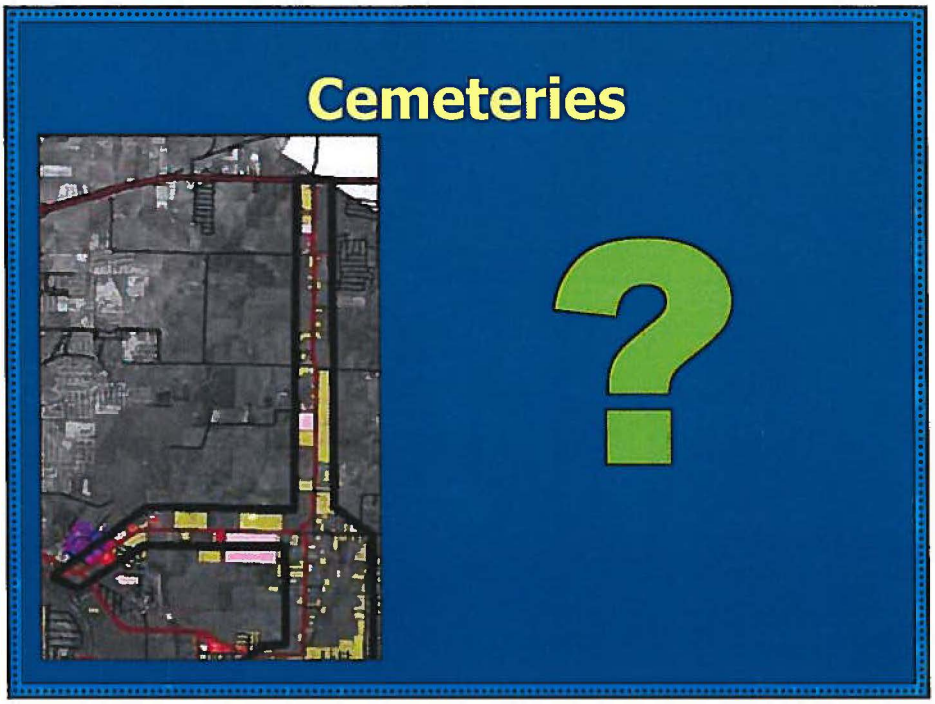
- Please also give us your input by verifying / adding to our current Identified Constraints Map

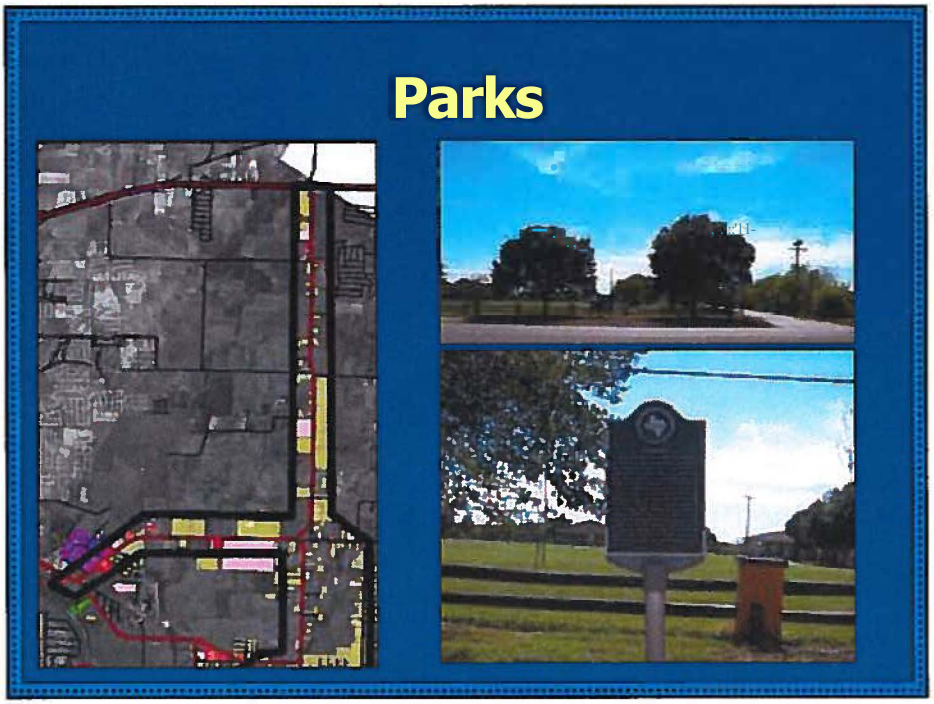
Farms & Ranchland

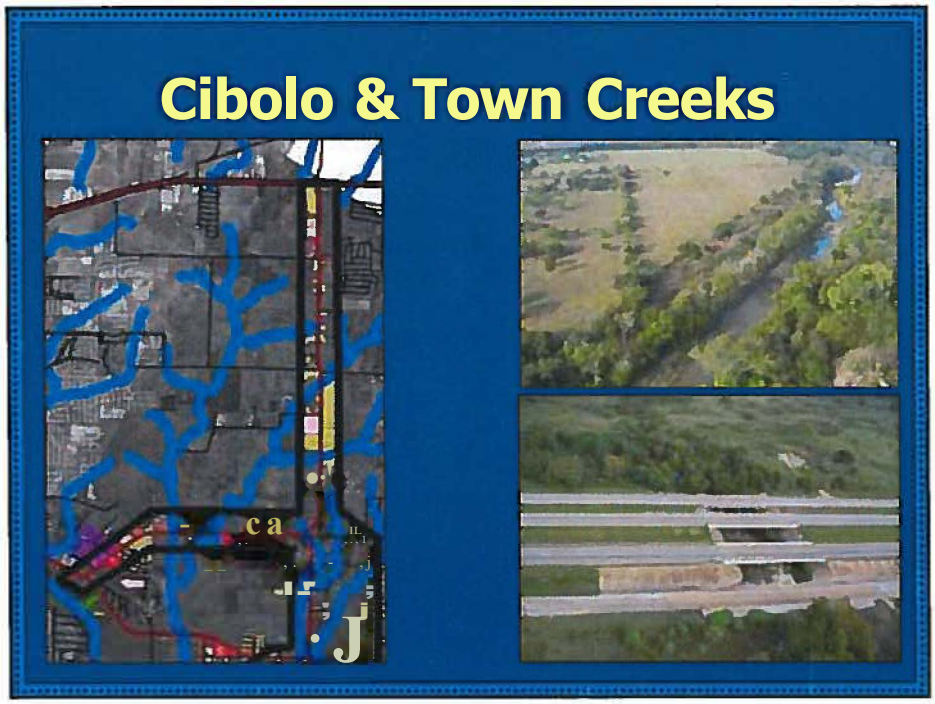
Homes


Businesses

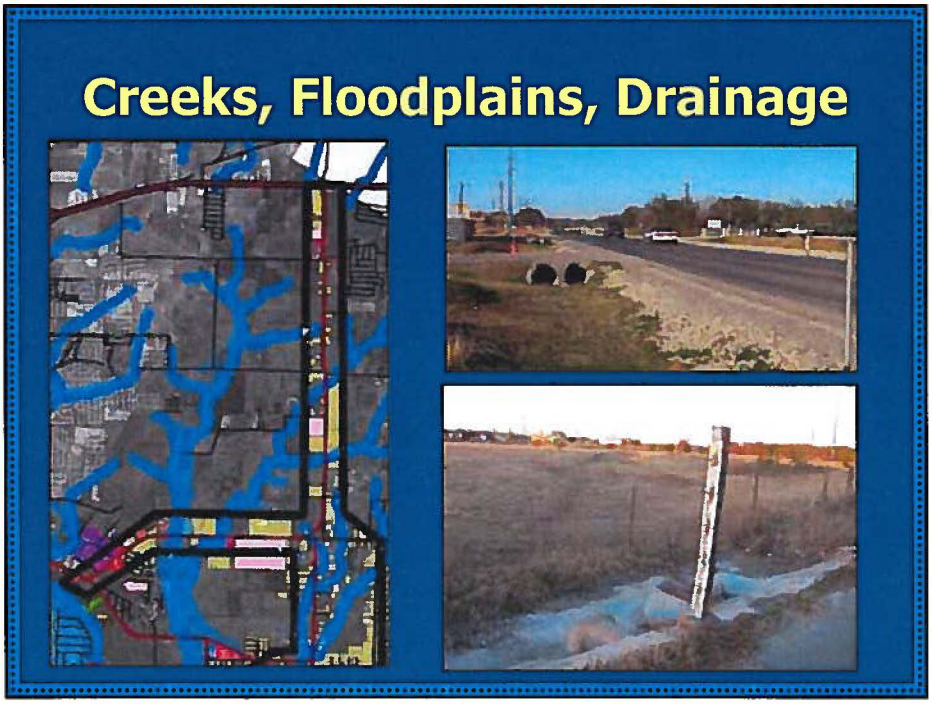
Schools, Civic Organizations,
and Faith-Based Organizations

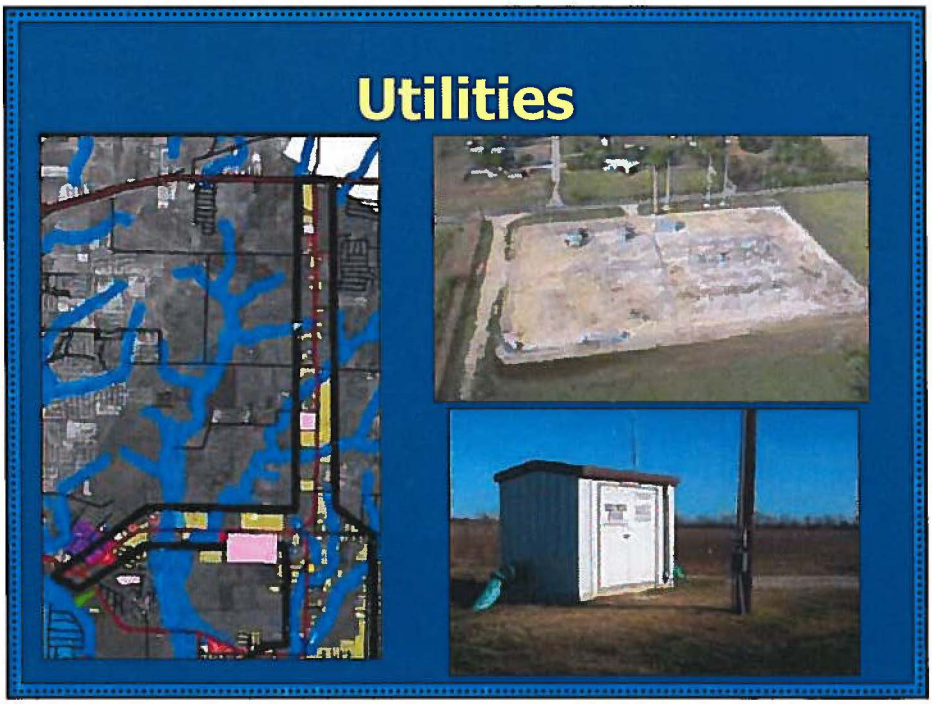

Cemeteries
?





This presentation was developed as part of a preliminary route study. It contains preliminary and conceptual information and not construction projects.

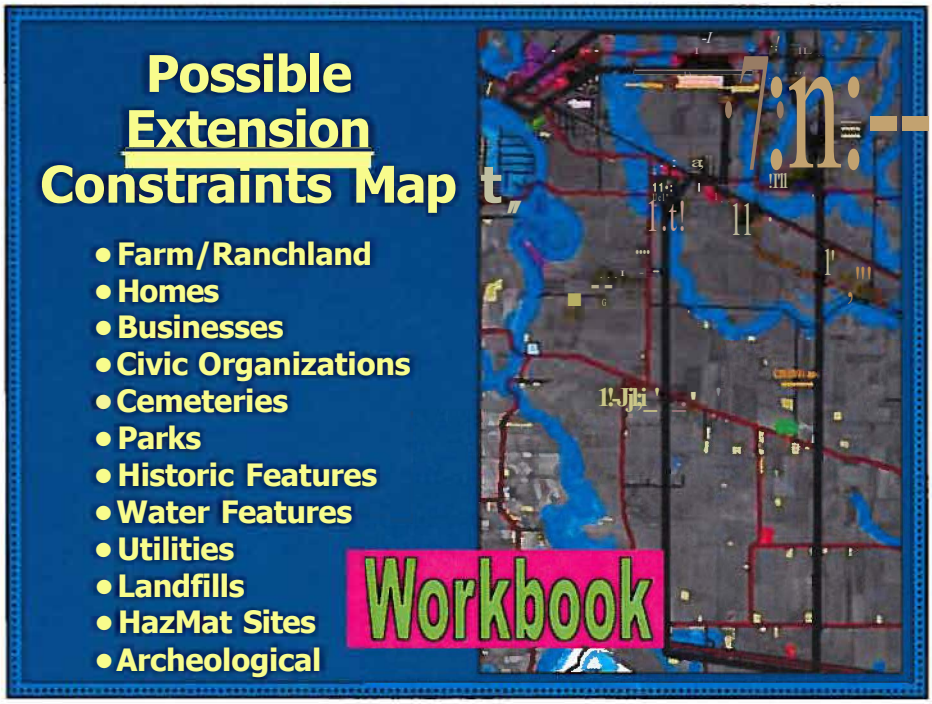

Creeks, Floodplains, Drainage

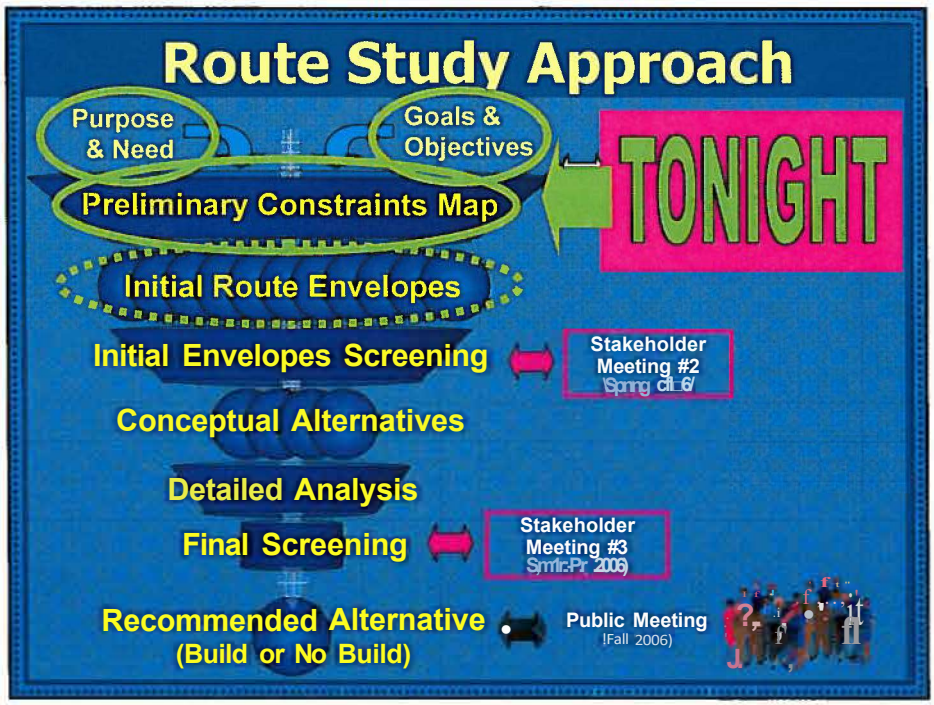

Utilities

Hazardous Materials Sites

Existing FM 1103 Constraints Map

- Farm/Ranchland
- Homes
- Businesses
- Civic Organizations
- Cemeteries
- Parks
- Historic Features
- Water Features
- Utilities
- Landfills
- HazMat Sites
- Archeological


Possible
Extension
Constraints Map
• Farm/Ranchland
• Homes
• Businesses
• Civic Organizations
• Cemeteries
• Parks
• Historic Features
• Water Features
• Utilities
• Landfills
• HazMat Sites
• Archeological
Workbook


Route Study Approach
Purpose & Need
Goals & Objectives
Preliminary Constraints Map
TONIGHT
Initial Route Envelopes
Initial Envelopes Screening
Stakeholder Meeting #2
Conceptual Alternatives
Detailed Analysis
Final Screening
Stakeholder Meeting #3
Recommended Alternative
(Build or No Build)
Public Meeting
(Fall 2006)

Possible Improvement Considerations

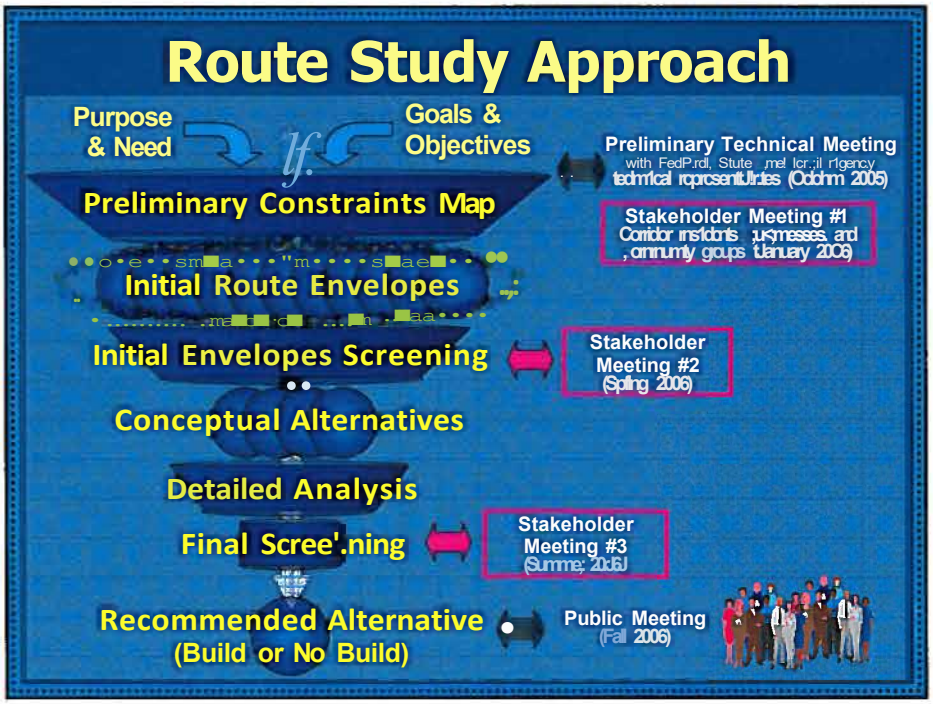
Existing FM 1103

- Needs
- Trade-offs
- Improvement options along existing route

Possible Improvement Considerations

Possible FM 1103 Extension

- Needs
- Trade-offs
- Route location options between existing FM 1103 and IH 10



Route Location Considerations

Initial Route Envelopes

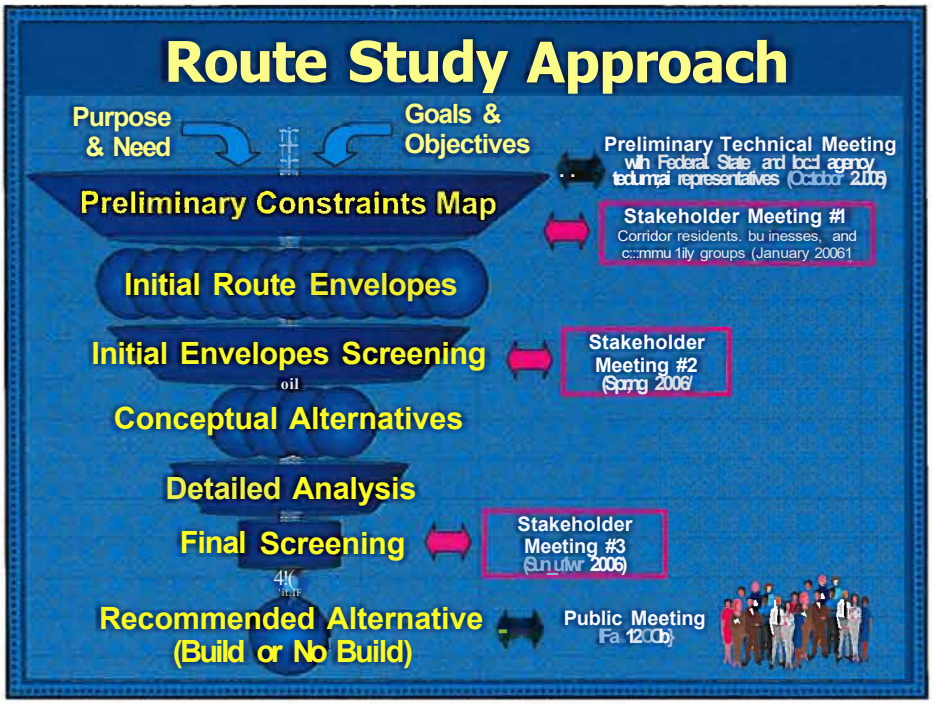
- "Envelope" is 250 feet wide
- Consider multiple options
- Consider options that balance the different goals
  - » Mobility
  - » Safety
  - » Minimize Trade-Offs
  - » Design
  - » Cost Effectiveness

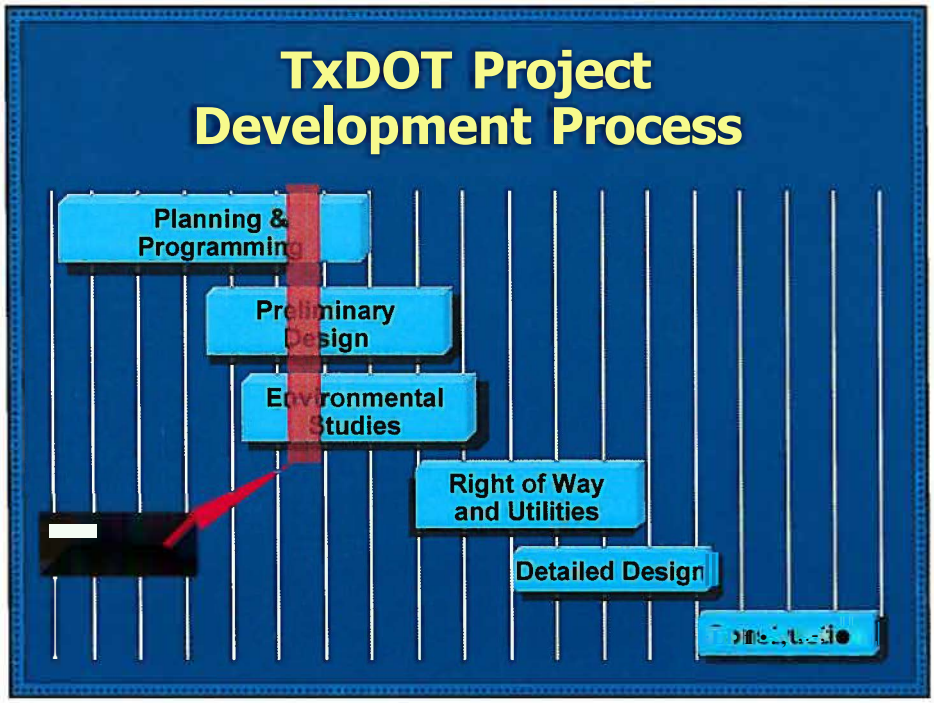
Initial Options

- Early development stage
- Please give us your input and ideas

Meeting Agenda

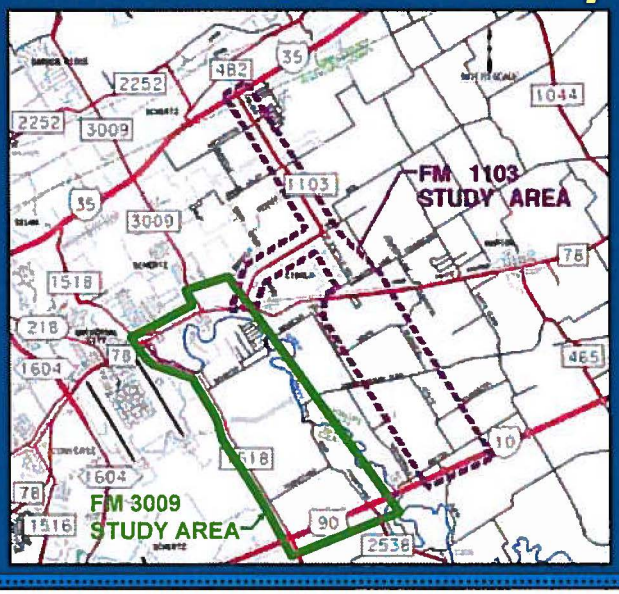
- Update on Current Construction Progress
- Introduce the FM 1103 Route Study
  - » Purpose of the Route Study
  - » Study Area
  - » TxDOT's Project Development Process
  - » Route Study Approach
- Workshop
  - » Needs Identification
  - » Constraints Identification
  - » Route Location Considerations
- Next Steps in Route Study
- Question & Answer Session





This presentation was developed as part of a preliminary route study. It contains preliminary and conceptual information and not construction projects.

FM 3009 E Route Study



Comment Cards

Question & Answer Session

Please Join Us at the Maps

FM 1103 ROUTE STUDY

OPEN HOUSE

Please Join Us for the Presentation
7:00 - 7:15 PM

FM 1103 Route Study

Public Meeting

December 7, 2006

Meeting Agenda

- Open House
- Presentation
  - TxDOT Introduction
  - Route Study Purpose
  - Route Study Approach
  - Route Study Recommendation
  - Next Steps
- Public Comment
- Open House Continues

FM 1103 Route Study Purpose

PRELIMINARY STUDY

- Determine the need and feasibility of improving existing FM 1103 between IH 35 and FM 78 additional to the current construction

and

- Determine the need and feasibility of extending FM 1103 to IH 10

Why Plan so Far Ahead?

- If widening or extension are feasible:
  - Right-of-way may be preserved by local jurisdictions before dense development occurs
  - Enables local stakeholders - citizens and local cities, counties, and agencies - to plan considering the approximate route location
  - Project moves forward in TxDOT Process
- If route is not feasible:
  - Local stakeholders - citizens and local cities, counties, and agencies - can plan knowing route will not be widened or extended

FM 1103 Study Area

For the Local Stakeholder Workshops, we mailed invitations to property owners and residents inside this Study Area

Route Study Approach

Purpose & Need

Goals & Objectives

Prolimiriary Tcchnical Meeting

Preliminary Constraints Map

Stakeholder Workshop #1

Initial Route Envelopes

Initial Envelopes Screening

St.ikcholdcr Workshop #2

Conceptual Alternatives

Detailed Analysis

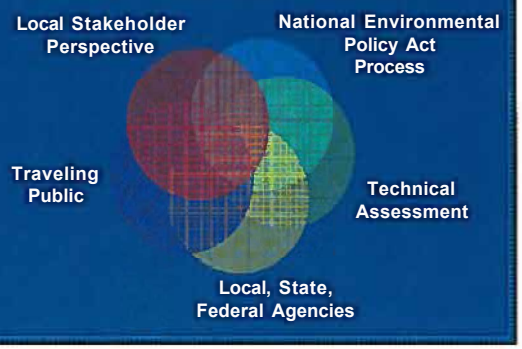
Final Screening

Stakeholder Workshop #3

Recommended Alternative (Build or No Build)

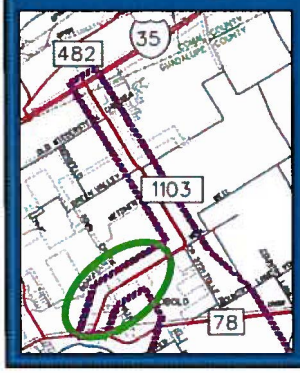
Public Meeting

Study Recommendation



Existing FM 1103

Widening Recommendation

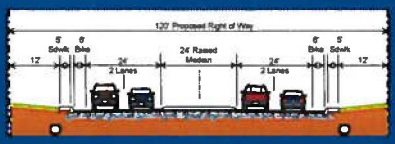


West-East Section

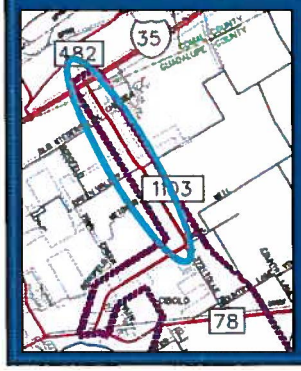
- Mostly 120-feet ROW already available
- Already suburbanized
- 120-foot section proposed
- 4 Lanes

FM 78 to Steele High School: 4 Lanes Recommended

- Four (4) lanes with raised median
- Typical 120 feet of Right of Way
- Wider ROW at intersections



Widening Recommendation

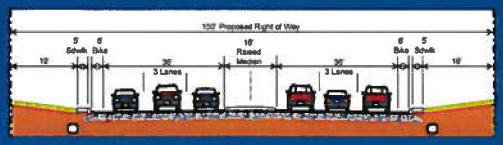


North-South Section

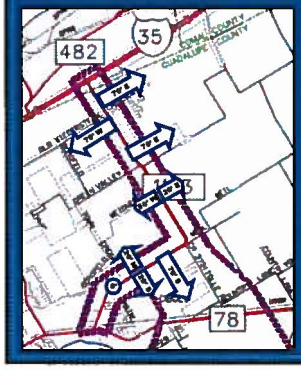
- Higher traffic volumes
- Mostly 80-feet ROW available
- 150-foot section proposed
- 6 Lanes

IH 35 to Steele High School: 6 Lanes Recommended

- Six (6) lanes with raised median
- Typical 150 feet of Right of Way
- Wider ROW at intersections
- Which side will ROW be widened to?



Widening Recommendation



Which Direction?

- Based primarily upon least impacts
- Design considerations (primarily safety)
- Cost Considerations

For more detail, please see large map on the wall

Existing FM 1103: Next Steps

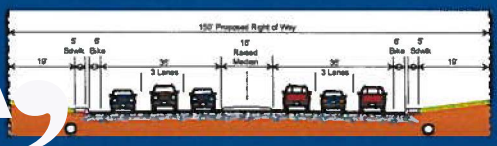
- Your comments
  - Please review the stations before leaving tonight
  - Public Comment
  - Comment Card
- Geometric Schematic
  - More detailed design
- Environmental Assessment
  - More detailed assessment of impacts
- Full Funding not yet Identified

FM 1103 Extension

Study Area: Extension

Possible Extension: No Build or 6 Lanes

- Six (6) lanes with raised median
- Typical 150 feet of Right of Way
- Wider ROW at intersections



Initial Options Considered

- 27 options provided by:
  - Local, State, and Federal Agency Representatives at the Preliminary Design Conference
  - Members of the Public at Stakeholder Workshop #1 and from their Comment Cards
  - Study Team Members

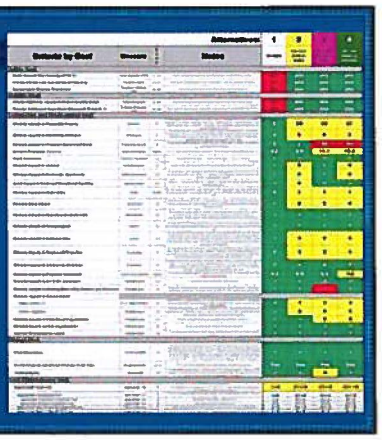
Refined Alternatives

- 4 Options
  - No Build
  - 3 Build Options
- None are "Perfect
- Alternative 2
- Alternative 3

Screening Matrix

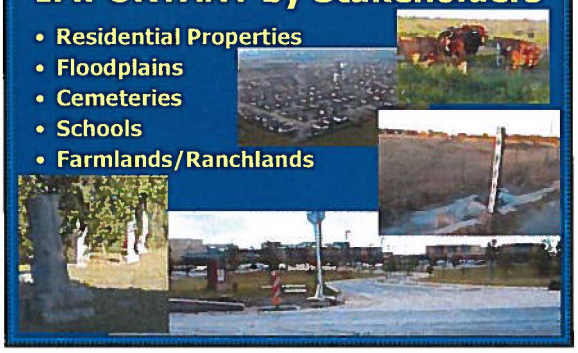
- Criteria
- Measure
- Notes

Please refer to the display at Station 5



Constraints Ranked MOST IMPORTANT by Stakeholders

- Residential Properties
- Floodplains
- Cemeteries
- Schools
- Farmlands/Ranchlands

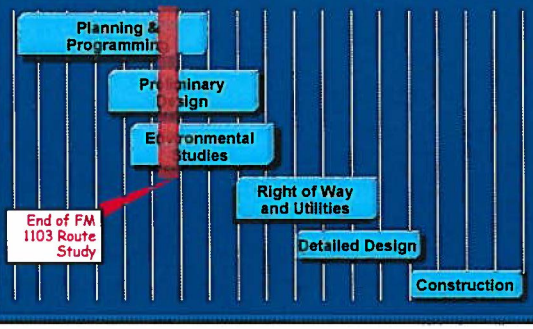


Preliminary Study Recommendation

Alternative 2 (the yellow option):
West of Tolle Road behind school, across FM 78 to follow Stolte and Schmoekel Roads to intersect at IH 10

- Provides a feasible route option for the concept identified previously on local plans
- Meets needs while minimizing impacts to community and environmental features
  - Constraints ranked most important to stakeholders
  - Other assets/ constraints, incl historic
- Least cost alternative

TxDOT Project Development Process



Comment Cards

Public Comment

FM 1103 Route Study

Public Meeting

December 7, 2006