

TEDSI INFRASTRUCTURE GROUP
Consulting Engineers

1201 East Expressway 83
 Mission, Texas 78572
 956-424-7898 (Phone)
 956-424-7022 (Fax)

INVOICE

Commissioner A. C. Cuellar
 Hidalgo County Precinct No. 1
 1902 Joe Stephens Ave.
 Weslaco, Texas 78596

Invoice Date: August 22, 2013
 TEDSI Invoice No.: 20131641
 TEDSI Project No.: 2009-1032-01
 Invoice Period: February 1, 2013 to July 31, 2013

Mile 6W

Contract No. C-08-227-02-09
 Work Authorization No. 1
 PO#: 617534

Original Contract Amount	Adjusted Contract Amount	Adjusted Contract Amount Remaining
\$1,906,248.18	\$ 1,881,748.56	\$1,179,081.03

Task	Fee	% Complete		Amount	
		This Period	To Date	This Period	To Date
Schematic Design (SD)	\$ 256,884.54	0%	100%	\$ -	\$ 256,884.54
Right-of-Way (ROW)	\$ 302,500.00	0%	10%	\$ -	\$ 30,250.00
Design Field Survey (DFS)	\$ 278,200.00	0%	100%	\$ -	\$ 278,200.00
Environmental (ENV)	\$ 115,000.00	0%	100%	\$ -	\$ 115,000.00
Plans, Specs & Est. (PS&E)	\$ 865,355.49	0%	0%	\$ -	\$ -
Supplemental Agreement No. 1	\$ 63,808.53	20%	35%	\$ 12,761.71	\$ 22,332.99
Subtotal	\$ 1,881,748.56	0.68%	37.34%	\$ 12,761.71	\$ 702,667.53



TOTAL FEE EARNED:	\$ 702,667.53
LESS PREVIOUSLY INVOICED:	\$ 689,905.82
TOTAL AMOUNT DUE THIS INVOICE:	\$ 12,761.71

Craig F. Stong, P.E.
 Project Manager

REQ# 149094 P.O.# 617534
 3-1315-431-00-121-039-0-711/731 → \$12,761.71
 TXDOT-MILE 6 WEST(US83-SH107)

**TEDSI****TEDSI INFRASTRUCTURE GROUP****Consulting Engineers**

1201 East Expressway 83 • Mission, Texas 78572

Tel: (956) 424-7898

Fax: (956) 424-7022

Project Status Report

PROJECT: Mile 6 West	TEDSI JOB NO.: 2009-1032-01
--------------------------------	---------------------------------------

CLIENT: Hidalgo County

SUBJECT: Invoice No. 20131641

FROM: Craig Stong, P.E.	DATE: August 22, 2013
-----------------------------------	---------------------------------

DISTRIBUTION:

Mile 6 West Road - Mile 9 North to SH 107
Progress Report
Supplemental Agreement No. 1 to Work Authorization No. 1
July 2013 Invoice

This report summarizes the Mile 6W activities performed through July 31, 2013:

- On-going Project Management (invoicing, emails, telephone calls, progress reports, etc.)
- Environmental Assessment has been restructured to show the environmental resources that have been eliminated from further study by assessing the resource impacts from the proposed project. Also, identified other environmental resources that require further evaluation/assessment. The following resources/issues will require detailed analysis:
 - Farmland
 - Water resources
 - Vegetation
 - Hazardous Materials
 - Noise
 - Cultural resources
- Documented air analysis presented in the applicable TxDOT Standards of Uniformity (SOU).
- Reviewed noise analysis.
- Evaluated and documented socioeconomic data for applicable census boundaries to block and block group level.
- Reviewing existing figures.
- Reviewed and revised existing documentation for several resources.

for rare, threatened, and endangered species. Information files were reviewed for the known locations of species in the *Donna, La Blanca, Edcouch and Mercedes* Texas USGS 7.5 minute topographical quadrangle maps for the project area and surrounding vicinity. No elements of occurrence were identified by the TXNDD within an approximate 1.5-mile radius of the proposed project area (TPWD 2013).

3.2.9.3 Indirect and Cumulative Impacts Analyses

Indirect and cumulative impacts for the proposed project are presented in **Section 4.0**. Since direct and indirect impacts on biological resources from the proposed project are expected to be minimal with appropriate measures, a cumulative impact analysis has not been conducted for biological resources.

3.3 Farmland

3.3.1 Existing Conditions

Prime and unique farmland soils and those of statewide or local importance are subject to protection under the FPPA. There are no designated unique farmland soils in the State of Texas. Prime farmland soils produce high yields with minimal inputs of energy and economic resources because of the quality, growing season, and moisture supply. Farming these soils would result in the least damage to the environment. The purpose of the FPPA is to minimize the extent that federal programs contribute to unnecessary and irreversible conversion of prime farmland (7 USC 4201).

Agricultural lands (primarily row crops) are located adjacent to the proposed project. These crops are typically rotated and may include corn, sorghum, grains, other vegetables; as well as the observed cotton and sugar cane.

3.3.2 No-Build Alternative—Environmental Consequences

If no improvements are made to Mile 6 Road West, the existing conditions for soils and farmland would remain unchanged.

3.3.3 Proposed Project—Environmental Consequences

As reported in NRCS correspondence (**Appendix C**), the proposed project received a farmland conversion impact rating total score of 108. The NRCS correspondence indicated that the project area contains important farmland; however, sites receiving a total score that is less than 160 need not be given further consideration for protection and no additional sites need to be evaluated. The proposed project would affect approximately 16 acres of farmland, which does not contain characteristics consistent with the FPPA.

3.4 Hazardous Materials

3.4.1 Existing Conditions

An Initial Site Assessment (ISA) was conducted to identify potential hazardous materials in the project area. The ISA consisted of the following actions:

- Identification of previous hazardous materials conditions
- Review of preliminary design
- Project visit

Table 1-4: Public Services

Facility	Address
Police	
City of Edcouch Police Department	211 Southern Avenue, Edcouch, Texas 78538
Weslaco Police Department	901 North Airport Drive, Weslaco, Texas 78596
Emergency Medical	
Guardian EMS	610 Ciro Casares, Elsa, Texas 78543
Pulse EMS	219 Broadway Street, Elsa, Texas 78543
Rio Care Ems	914 West Pike Boulevard, Weslaco, Texas 78596
South Star Ambulance Services	312 West Expressway 83, Weslaco, Texas 78596
Fire Emergency	
Elsa City Fire Department	216 E 4th Street, Elsa, Texas 78543
Schools	
Clecker-Heald Elementary School	1601 West Sugar Cane Drive, Weslaco, Texas 78596
Beatriz G Garza Intermediate School	Weslaco, Texas 78596
Places of Worship	
Sacred Heart Church	1100 Broadway Street, Edcouch, Texas 78538
Praise Tabernacle	502 West Sugar Cane Drive, Weslaco, Texas 78596
San Martin De Porres Catholic Church	901 North Texas Boulevard, Weslaco, Texas 78596-4508
Iglesia Bautista Las Palmas	316 W Esplanada Street, Weslaco, Texas 78596

Although the proposed project could introduce traffic delays during construction period (for emergency responders requiring access to properties accessed from Mile 6 Road West, for example), no long-term impacts to public services or facilities are expected. Rather, long-term access to public facilities and services would be enhanced by the implementation of the proposed project.

The proposed project would acquire approximately 0.5 acre of church property, but no public lands. Mario Leal Park is located approximately one mile to the northeast of the northern project terminus. However, no parks or recreational areas would be affected by the proposed project roadway improvements. The proposed project would enhance the safety and mobility for the traveling public using Mile 6 Road West.

1.9.4 Community Impacts

Community cohesion refers to an aggregate quality of life in a residential area. Cohesion is a social attribute that indicates a sense of community, common responsibility, and social interaction within a limited geographical area. It is the degree that residents have a sense of belonging to their neighborhood or community.

Within the project area, community activities appear to be centered on the respective school district activities (i.e. Edcouch-Elsa ISD and Weslaco ISD, including sporting events), other community sports leagues (e.g. Weslaco Softball Baseball and Weslaco Little League) and boy/girl scout activities. Various places of worship are located throughout the communities of Elsa, Edcouch, and Weslaco. These congregations are commonly brought together for different activities.

The City of Weslaco is the closest community to the proposed project that has developed a comprehensive plan. The City is located south of the project at US 83, and has a greater level of retail stores and

restaurants than other nearby communities. It is reasonable to assume that residents of Edcouch and Elsa frequently drive to and from Weslaco for shopping, dining, and other social activities in Weslaco.

Neighbors or communities would not be spilt or isolated because of the proposed project. The proposed project is not expected to impede interaction between residents of Edcouch, Elsa, or Weslaco. Rather, it would improve ease of travel and time between the communities. Except for during construction, travel patterns for private drivers would not be affected.

1.9.5 Local Economy and Employment

A benefit would be realized from the proposed project due to the employment of construction workers and consultants. The proposed project would not adversely impact economic activity, employment, or income within the project area. Land acquired for the proposed project would not be expected to have a substantial impact on the local tax-base.

1.9.6 Housing

As shown in **Table 1-5**, the 2010 U.S. Census reported over 14,000 housing units in the City of Weslaco and almost 2,000 housing units in Elsa City. In the City of Weslaco and Elsa City, 11,212 (78%) and 1,731 (92%) were owner-occupied, respectively. The median value of owner-occupied housing units was greater in Weslaco (\$69,200) than in Elsa (\$57,500) by \$11,700. Median household values vary widely among the project area block groups: from a low in Block Group (BG) 48-215-024402-3 of \$45,100, and a high in BG48-215-024402-4 of \$101,000. Median house values of the project area census tracts (CTs) range from \$52,600 to \$76,900.

Table 1-5: 2010 Housing and Occupancy

Area	Total Housing Units	Owner Occupied Housing Units	Vacant Households	Owner-Occupied Units Median Value
Hidalgo County	248,287	216,471 87.2%	31,816 12.8%	\$75,500
City of Weslaco	14,394	11,212 77.9%	3,182 22.1%	\$69,200
Elsa City	1,880	1,731 92.1	149 7.9%	\$57,500
Census Tracts				
CT 48-215-022201	2,014	1,678 83.3%	336 16.7%	\$54,100
CT 48-215-022401	1,730	1,409 81.4%	321 18.6%	\$52,600
CT 48-215-022402	1,671	1,543 92.3%	128 7.7%	\$76,900
CT 48-215-024402	2,282	2,117 92.8%	165 7.2%	\$72,400
CT 48-215-024403	1,799	1,652 91.8%	147 8.2%	\$57,300

Area	Total Housing Units	Owner Occupied Housing Units	Vacant Households	Owner-Occupied Units Median Value
CT 48-215-024404	1,081	1,013 93.7%	68 6.3%	\$76,900
Block Groups				
BG 48-215-022201-1	604	560 92.7%	44 7.3%	\$92,200
BG 48-215-022401-2	643	618 96.1	25 3.9%	\$79,200
BG 48-215-022402-1	1,161	1,069 92.1%	92 7.9%	\$81,600
BG 48-215-022402-2	510	474 92.9%	36 7.1%	\$73,500
BG 48-215-024402-1	553	513 92.8%	40 7.2%	\$71,700
BG 48-215-024402-2	559	515 92.1%	44 7.9%	\$76,600
BG 48-215-024402-3	740	705 95.3%	35 4.7%	\$45,100
BG 48-215-024402-4	430	384 89.3%	46 10.7%	\$101,000
BG 48-215-024403-1	924	856 92.6%	68 7.4%	\$92,300
BG 48-215-024404-2	640	601 93.9%	39 6.1%	\$82,400

Source: Adapted from Cubit Planning, 2010 Census Summary File 1—Texas[machine-readable data files]/prepared by the U.S. Census Bureau, 2011. Tables H1, H3 and H4. U.S. Census Bureau, 2007-2011 American Community Survey Table B25077. ACS data are estimates; they are not counts.

1.9.7 Pedestrian and Bicycle Considerations

There would be no anticipated impacts on existing or planned pedestrian or bicycle facilities for the proposed project.

1.9.8 Demographic Characteristics

As shown in **Table 1-6**, the City of Weslaco’s population (35,670 people) accounts for less than four percent of the population of Hidalgo County. As reported in 2010 Census, BG 48-215-022402-1 (4,291) and BG 48-215-024402-3 (3,208) are the highest populated block groups in the project area, while block groups BG 48-215-022402-2 BG 48-215-022402-2, and BG 48-215-024402-1 have a population less than 2,000.

Table 1-6: 2010 Population

Census Boundaries	Total Population
Hidalgo County	774,769
City of Weslaco	35,670
City of Elsa	5,660
Census Tracts	

Census Boundaries	Total Population
CT 48-215-022201	6,683
CT 48-215-022401	4,713
CT 48-215-022402	6,084
CT 48-215-024402	8,668
CT 48-215-024403	5,500
CT 48-215-024404	4,044
Block Groups	
BG 48-215-022201-1	2,405
BG 48-215-022401-2	2,247
BG 48-215-022402-1	4,291
BG 48-215-022402-2	1,793
BG 48-215-024402-1	1,909
BG 48-215-024402-2	2,041
BG 48-215-024402-3	3,208
BG 48-215-024402-4	1,510
BG 48-215-024403-1	2,920
BG 48-215-024404-2	2,304

Source: 2010 U.S. Census

The 2010 Census indicates that the Hispanic population was 38% of the total Texas population. In contrast, Hidalgo County's Hispanic population was 702,206 (92%) of its total population. As shown in **Table 1-7**, Hispanics within the City of Weslaco and City of Elsa account for approximately 30,312 (85%) and 5,535 (98%), respectively. The City of Weslaco has approximately 5.5% less minorities than Hidalgo County of the respective total populations; however, Hispanics still account for more than 85% of Weslaco's population. Other minorities in the larger project areas account for less than seven percent of the total populations.

Each of the project area census tracts and block groups consist of Hispanic populations greater than 92%, with the highest Hispanic proportion of total population being 98.4% or 2,874 within BG 48-215-024403-1. At the block level, 45 of the 92 project area blocks have 100% Hispanic populations. As the populations of Hispanics are large in each of the census boundary categories, the White populations are small. The highest white population at the block level is 12 within Block 48-215-022402-2009.

Table 1-7: 2010 Racial and Ethnic Composition

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
Hidalgo County	774,769 100%	60,553 7.8%	2,777 0.4%	524 0.1%	7,122 0.9%	49 0.0%	348 0.0%	1,190 0.2%	702,206 90.6%	714,216 92.2%
City of Weslaco	35,670 100%	4,750 13.3%	84 0.2%	32 0.1%	402 1.1%	1 0.0%	16 0.0%	73 0.2%	30,312 85.1%	30,920 86.7%
Elsa City	5,660 100%	112 2%	7 0.1%	1 0.0%	0 0.0%	0 0.0%	3 0.1%	2 0.0%	5,535 97.8%	5,160 91.2%
Census Tracts										
CT 48-215-022201	6,683 100%	500 7.5%	9 0.1%	3 0.0%	1 0.0%	0 0.0%	0 0.0%	2 0.0%	6,168 92.3%	6,183 92.5%

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
CT 48-215-022401	4,713 100%	294 6.2	14 0.3%	7 0.1%	42 0.9%	0 0.0%	3 0.1%	10 0.2%	4,343 92.1%	4,419 93.8%
CT 48-215-022402	6,084 100%	168 2.8%	4 0.1%	2 0.0%	18 0.3%	2 0.0%	2 0.0%	1 0.0	5,887 96.8%	5,916 97.2%
CT 48-215-024402	8,668 100%	180 2.1%	4 <0.1%	1 0.0%	0 0.0%	0 0.0%	1 0.0%	7 0.1%	8,475 97.8%	8,488 97.9%
CT 48-215-024403	5,500 100%	90 1.6%	9 0.2%	1 0.0%	1 0.0%	0 0.0%	3 0.1%	2 0.0%	5,394 98.1%	5,410 98.4%
CT 48-215-024404	4,044 100%	161 4%	2 <0.1%	2 0.0%	0 0.0%	1 0.0%	0 0.0%	1 0.0%	3,877 95.9%	3,883 96.0%
Block Groups										
BG 48-215-022201-1	2,405 100%	64 2.7%	0	0	0	0	0	0	2,341 97.3%	2,341 97.3%
BG 48-215-022401-2	2,247 100%	87 3.9%	8 0.4%	0	36 1.6%	0	0	3 0.1%	2,113 94.0%	2,160 96.1%
BG 48-215-022402-1	4,291 100%	84 2%	1 <0.1%	2 0.0%	8 0.2%	0	1 0.0%	1 0.0%	4,194 97.7%	4,207 98.0%
BG 48-215-022402-2	1,793 100%	84 4.7%	3 0.2%	0	10 0.6%	2 0.1%	1 0.1%	0	1,693 94.4%	1,709 95.3%
BG 48-215-024402-1	1,909 100%	53 2.8%	0	1 0.1%	0	0	0	0	1,855 97.2%	1,856 97.2%
BG 48-215-024402-2	2,041 100%	42 2.1%	2 0.1%	0	0	0	1 0.0%	0	1,996 97.8%	1,999 97.9%
BG 48-215-024402-3	3,208 100%	57 1.8%	2 0.1%	0	0	0	0	2 0.1%	3,147 98.1%	3,151 98.2%
BG 48-215-024402-4	1,510 100%	28 1.9%	0	0	0	0	0	5 0.3%	1,477 97.8%	1,482 98.1%
BG 48-215-024403-1	2,920 100%	37 1.3%	6 0.2%	1 0.0%	1 0.0%	0	0	1 0.0%	2,874 98.4%	2,883 98.7%
BG 48-215-024404-2	2,304 100%	119 5.2%	1 <0.1%	0	0	0	0	0	2,184 94.8%	2,185 94.8%
Blocks										
48-215-022201-1000	33 100%	1 3%	0	0	0	0	0	0	32 97%	32 97%
48-215-022401-2006	477 100%	12 2.5%	1 0.2%	0	15 3.1%	0	0	0	449 94.1%	465 97.5%
48-215-022401-2007	37 100%	0	0	0	0	0	0	0	37 100%	37 100%

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
48-215-022401-2008	144 100%	2 1.4%	0	0	0	0	0	0	142 98.6%	142 98.6%
48-215-022401-2009	50 100%	0	2 4%	0	0	0	0	0	48 96.0%	50 100%
48-215-022401-2010	42 100%	0	0	0	0	0	0	0	42 100%	42 100%
48-215-022401-2011	57 100%	0	1 1.8%	0	0	0	0	0	56 98.2%	57 100%
48-215-022401-2012	44 100%	2 4.5%	0	0	1 2.3%	0	0	0	41 93.2%	42 94.5%
48-215-022402-1063	10 100%	0	0	0	0	0	0	0	10 100%	10 100%
48-215-022402-1080	79 100%	7 8.9%	0	0	0	0	0	0	72 91.1%	72 91.1%
48-215-022402-1083	70 100%	1 1.4%	0	0	0	0	0	0	69 98.6%	69 98.6%
48-215-022402-1085	93 100%	4 4.3%	0	0	0	0	0	0	89 95.7%	89 95.7%
48-215-022402-1086	123 100%	1 0.8%	0	0	0	0	0	0	122 99.2%	122 99.2%
48-215-022402-1088	39 100%	5 12.8%	0	0	0	0	0	0	34 87.2%	34 87.2%
48-215-022402-1089	11 100%	0	0	0	0	0	0	0	11 100%	11 100%
48-215-022402-1090	54 100%	4 7.4%	0	0	1 1.9%	0	0	0	49 90.7%	50 92.6%
48-215-022402-1091	24 100%	0	0	0	0	0	0	0	24 100%	24 100%
48-215-022402-1092	34 100%	1 2.9%	0	0	0	0	0	0	33 97.1%	33 97.1%
48-215-022402-1029	2 100%	0	0	0	0	0	0	0	2 100%	2 100%
48-215-022402-1030	280 100%	0 0	0 0	0 0	0 0	0 0	1 0.4%	0 0	279 99.6%	280 100%

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
48-215-022402-1032	105 100%	2 1.9%	0	0	0	0	0	0	103 98.1%	103 98.1%
48-215-022402-1033	33 100%	0	0	0	0	0	0	0	33 100%	33 100%
48-215-022402-1034	23 100%	0	0	0	0	0	0	0	23 100%	23 100%
48-215-022402-1035	30 100%	0	0	0	0	0	0	0	30 100%	30 100%
48-215-022402-1036	33 100%	0	0	0	0	0	0	0	33 100%	33 100%
48-215-022402-1037	18 100%	0	0	0	0	0	0	0	18 100%	18 100%
48-215-022402-1039	39 100%	0	0	0	0	0	0	0	39 100%	39 100%
48-215-022402-1060	3 100%	0	0	0	0	0	0	0	3 100%	3 100%
48-215-022402-1073	25 100%	0	0	0	0	0	0	0	25 100%	25 100%
48-215-022402-1074	55 100%	0	0	0	0	0	0	0	55 100%	55 100%
48-215-022402-2001	61 100%	1 1.6%	0	0	0	0	0	0	60 98.4%	60 98.4%
48-215-022402-2005	138 100%	5 3.6%	0	0	7 5.1%	0	0	0	126 91.3%	133 96.4%
48-215-022402-1002	89 100%	2 2.2%	0	0	1 1.1%	0	0	0	86 96.6%	87 97.8%
48-215-022402-1003	2 100%	1 50%	0	0	0	0	0	0	1 50%	1 50%
48-215-022402-1005	1 100%	0	0	0	0	0	0	0	1 100%	1 100%
48-215-022402-1006	4 100%	0	0	0	0	0	0	0	4 100%	4 100%
48-215-022402-1008	0	0	0	0	0	0	0	0	0	0

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
48-215-022402-1009	11 100%	0	0	0	0	0	0	0	11 100%	11 100%
48-215-022402-1011	11 100%	0	0	0	0	0	0	0	11 100%	11 100%
48-215-022402-1014	9 100%	0	0	0	0	0	0	0	9 100%	9 100%
48-215-022402-1015	4 100%	0	0	0	0	0	0	0	4 100%	4 100%
48-215-022402-1054	97 100%	0	0	0	0	0	0	0	97 100%	97 100%
48-215-022402-1055	34 100%	0	0	0	0	0	0	0	34 100%	34 100%
48-215-022402-1057	16 100%	0	0	0	0	0	0	0	16 100%	16 100%
48-215-022402-1069	2 100%	1 50%	0	0	0	0	0	0	1 100%	1 100%
48-215-022402-1028	28 100%	7 25%	0	0	0	0	0	0	21 75%	21 75%
48-215-022402-2003	32 100%	2 6.2%	0	0	0	0	0	0	30 93.8%	30 93.8%
48-215-022402-2004	93 100%	0	0	0	0	0	0	0	93 100%	93 100%
48-215-022402-2009	280 100%	12 4.3%	0	0	0	0	0	0	268 95.7%	268 95.7%
48-215-022402-2010	33 100%	1 3%	0	0	0	0	0	0	32 97.0%	32 97.0%
48-215-022402-2011	14 100%	0	0	0	0	0	0	0	14 100%	14 100%
48-215-022402-2012	25 100%	0	0	0	0	0	0	0	25 100%	25 100%
48-215-022402-2013	12 100%	0	0	0	0	0	0	0	12 100%	12 100%
48-215-022402-2014	35 100%	1 2.9%	0	0	0	0	0	0	34 97.1%	34 97.1%

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
48-215-022402-2015	44 100%	4 9.1%	0	0	0	0	0	0	40 90.9%	40 90.9%
48-215-022402-2016	4 100%	0	0	0	0	0	0	0	4 100%	4 100%
48-215-022402-2017	57 100%	6 10.5%	2 3.5%	0	0	0	0	0	49 86%	51 89.5%
48-215-022402-2018	143 100%	5 3.5%	0	0	0	0	0	0	138 96.5%	138 96.5%
48-215-022402-2019	19 100%	0 0	0 0	0 0	0 0	0 0	1 5.3%	0 0	18 94.7%	19 100%
48-215-022402-2020	34 100%	0	0	0	0	0	0	0	34 100%	34 100%
48-215-022402-2021	45 100%	1 2.2%	0	0	0	0	0	0	44 97.8%	44 97.8%
48-215-024402-3020	431 100%	0	2 0.5%	0	0	0	0	0	429 99.5%	431 100%
48-215-024402-3040	65 100%	0	0	0	0	0	0	0	65 100%	65 100%
48-215-024402-1039	101 100%	4 4%	0	0	0	0	0	0	97 96.0%	97 96.0%
48-215-024402-1040	54 100%	0	0	0	0	0	0	0	54 100%	54 100%
48-215-024402-2008	502 100%	9 1.8%	0	0	0	0	1 0.2%	0	492 98.0%	493 98.2%
48-215-024402-2009	48 100%	1 2.1%	0	0	0	0	0	0	47 97.9%	47 97.9%
48-215-024402-2010	119 100%	1 0.8%	0	0	0	0	0	0	118 99.2%	118 99.2%
48-215-024402-2011	89 100%	0	0	0	0	0	0	0	89 100%	89 100%
48-215-024402-3002	370 100%	9 2.4%	0	0	0	0	0	0	361 97.6%	361 97.6%
48-215-024402-3003	93 100%	1 1.1%	0	0	0	0	0	0	92 98.9%	92 98.9%

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
48-215-024402-3004	7 100%	0	0	0	0	0	0	0	7 100%	7 100%
48-215-024402-3006	74 100%	0	0	0	0	0	0	0	74 100%	74 100%
48-215-024402-3007	85 100%	1 1.2%	0	0	0	0	0	0	84 98.8%	84 98.8%
48-215-024402-3008	25 100%	3 12%	0	0	0	0	0	0	22 88.0%	22 88.0%
48-215-024402-4002	322 100%	1 0.3%	0	0	0	0	0	1 0.3%	320 99.4%	321 99.7%
48-215-024402-4003	18 100%	0	0	0	0	0	0	0	18 100%	18 100%
48-215-024402-4004	39 100%	0	0	0	0	0	0	0	39 100%	39 100%
48-215-024402-4005	68 100%	0	0	0	0	0	0	0	68 100%	68 100%
48-215-024402-4006	354 100%	3 0.8%	0	0	0	0	0	0	351 99.2%	351 99.2%
48-215-024402-4007	29 100%	0	0	0	0	0	0	0	29 100%	29 100%
48-215-024402-1012	134 100%	0	0	0	0	0	0	0	134 100%	134 100%
48-215-024402-1013	57 100%	1 1.8%	0	0	0	0	0	0	56 98.2%	56 98.2%
48-215-024402-1014	53 100%	1 1.9%	0	0	0	0	0	0	52 98.1%	52 98.1%
48-215-024402-1015	52 100%	0	0	0	0	0	0	0	52 100%	52 100%
48-215-024402-1034	187 100%	1 0.5%	0	0	0	0	0	0	186 99.5%	186 99.5%
48-215-024402-1035	137 100%	0	0	0	0	0	0	0	137 100%	137 100%
48-215-024402-1036	70 100%	0	0	0	0	0	0	0	70 100%	70 100%

	Total Population	White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or more Races	Hispanic or Latino of Any Race	Total Minority Population
48-215-024402-2000	21 100%	0	0	0	0	0	0	0	21 100%	21 100%
48-215-024402-2005	23 100%	3 13%	0	0	0	0	0	0	20 87.0%	20 87.0%
48-215-024402-2007	33 100%	0	0	0	0	0	0	0	33 100%	33 100%
48-215-024403-1078	88 100%	0	0	0	0	0	0	0	88 100%	88 100%

Source: 2010 Census Summary File 1—Texas[machine-readable data files]/prepared by the U.S. Census Bureau, 2011. Table P9.
<http://www.census.gov/prod/cen2010/doc/sf1.pdf>. Adapted from Cubit Planning.

1.9.9 Income

As shown in **Table 1-8**, 2010 median household incomes within the project area ranged from \$25,000 to \$36,391. In 2010, the median household income within the City of Weslaco and City of Elsa was \$36,424 and \$19,035, respectively; while in Hidalgo County it was \$32,479.

A low income population is defined as a group of people and/or a community that, as a whole, lives below the national poverty threshold. According to the 2010 Census, 264,791 (35%) of the Hidalgo County population was below poverty level. The two project area municipalities show a 36% difference of percentage of population below the poverty level with 10,392 (10%) and 2,603 (46%) persons with incomes below the poverty in Weslaco and Elsa, respectively.

Table 1-8: 2010 Median Household Income and Poverty Status

	Total Households	Median Household Income	Persons Below Poverty Level		
			Population for Whom Poverty Status is determined	Quantity	Percent
Hidalgo County	209,796	\$32,479	750,873	264,791	35%
Weslaco City	10,865	\$36,424	34,534	10,392	10%
City of Elsa	1,796	\$19,035	5,689	2,603	46%
Tracts					
48-215-022201	1,667	\$35,132	6,545	2,439	37%
48-215-022401	1,358	\$25,000	4,202	1,820	43%
48-215-022402	1,373	\$36,391	5,447	1,648	30%
48-215-024402	2,052	\$25,769	9,074	4,265	47%
48-215-024403	1,630	\$16,563	4,964	2,283	46%
48-215-024404	861	\$34,960	3,389	1,177	35%

	Total Households	Median Household Income	Persons Below Poverty Level		
			Population for Whom Poverty Status is determined	Quantity	Percent
Block Groups					
48-215-022201-1	420	\$38,036	NA	NA	NA
48-215-022401-2	678	\$43,081	NA	NA	NA
48-215-022402-1	1,059	\$36,109	NA	NA	NA
48-215-022402-2	314	\$48,750	NA	NA	NA
48-215-024402-1	529	\$28,147	NA	NA	NA
48-215-024402-2	564	\$24,643	NA	NA	NA
48-215-024402-3	677	\$20,208	NA	NA	NA
48-215-024402-4	282	\$52,647	NA	NA	NA
48-215-024403-1	725	\$17,547	NA	NA	NA
48-215-024404-2	485	\$41,713	NA	NA	NA

Source: U.S. Census Bureau, 2007-2011 American Community Survey, Tables B11001 and B19013. ACS data are estimates; they are not counts. Income data is provided in 2011 inflation adjusted dollars. Adapted from Cubit Planning.

1.9.10 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires each Federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. FHWA has identified three fundamental principles of environmental justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations
2. To ensure the full and fair participation by potentially affected communities in the transportation decision-making process
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

A disproportionately high and adverse effect means the impact is appreciably more severe or greater, in magnitude, on minority or low-income populations than the adverse effect suffered by non-minority or non-low-income populations after considering offset benefits.

Disproportionately high and adverse human health or environmental effects are defined by FHWA as adverse effects that are predominately borne by a minority and/or a low-income population, or would be suffered by the minority population and/or low-income population. They are appreciably more severe or greater in magnitude than adverse effects that would be suffered by the non-minority population and/or non-low-income population.

A minority is a person who is Black (having origins in black racial groups of Africa), Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or Spanish culture or origin, regardless of race), Asian (having origins in the Far East, Southeast Asia, India, or the Pacific Islands) or American Indian and Alaskan Native.

For purposes of this analysis, disproportionate adverse impacts on minority populations are likely to occur when the percentage populations within a given census group being affected is 50% or greater of the total population of study area, or is meaningfully greater (10%) than the population percentage that is minority or low-income within the County.

Table 1-7 shows the 2010 racial and ethnic composition of the study area and comparison areas. The City of Weslaco, City of Elsa and the project area census tracts, block groups and blocks have minority populations greater than 50% of the respective total populations. Therefore, the U.S. recognizes the populations adjacent to the proposed project as minority populations under Executive Order 12898.

Low-income persons are defined as those whose median household income is below the 2013 U.S. Department of Health and Human Services' (DHHS) current poverty guidelines, which is \$23,550 for a family of four (DHHS 2013). These guidelines are the basis of a ratio that appears in the U.S. Census data showing percentage of persons living below the poverty level at the time of the census.

As shown in **Table 1-8**, the percentage of people below poverty level within the City of Elsa is greater than 10% of the percentage of low-income people within Hidalgo County. Therefore, the U.S. recognizes that the City of Elsa as made up of low-income populations under Environmental Justice Executive Order 12898. Weslaco, with a 10% of its population below the poverty level, would not be considered a low-income population. Additionally, CT 48-215-024402 and CT 48-215-024403 would be considered to have low-income populations because the percentage of their populations below the poverty level is at least 10% higher than that of Hidalgo County. When determining whether environmental effects are disproportionately high and adverse, agencies are to consider the following factors to the extent practicable:

1. When health effects are significant (as employed by NEPA), or above generally accepted norms. Adverse health effects may include bodily impairment, infirmity, illness or death.
2. When the risk or rate of hazard exposure by a minority and/or low-income population to an environmental hazard is significant and appreciably exceeds or is likely to exceed the risk or rate to the appropriate comparison group.
3. When health effects occur in a minority or low-income populations affected by cumulative or multiple adverse exposures from environmental hazards.

Potential disproportionately high and adverse human health or environmental effects of the proposed project on minority and low-income populations have been assessed in accordance with Executive Order 12898. The ROW requirements would result in the displacement of a three-unit apartment building, acquisition of one carport, a tire shop with an attached residential structure, and multiple residential fences. However, no disproportionate affect would occur since all of the communities along the proposed project are considered minority populations.

Although a high percentage of project area populations are classified as minority or low-income, there would be no adverse impacts on these communities as a result of the proposed project due to the beneficial

nature of the project. Additionally, there would be no disproportionate adverse impacts on minority or low-income populations as a result of the proposed project.

Minimal and temporary impacts to adjacent properties may occur during construction. Dust and noise are common construction impacts; however, construction activities would occur during the day when most people are at work. Disproportionate effects would not be anticipated due to the high percentage of minority populations within the study area.

Access to adjacent businesses and residential properties would be maintained during construction. Upon completion of construction, access would be fully restored.

Best management practices would be implemented to mitigate temporary construction impacts (**Section 5.4**). Since no disproportionate effects would be anticipated, mitigation for environmental justice is not required. An innovative strategy for effective public participation would use locations and facilities that are local, convenient; and accessible to disabled, low-income, and minority communities.

1.9.11 Limited English Proficiency

Executive Order 13166 "Improving Access to Services for Persons with Limited English Proficiency" requires the recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The United States (U.S.) Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English" (67 FR 41459). Data about LEP populations was gathered in the U.S. Census 2000. For data analysis purposes, the Census divides the states of the U.S. into counties, divides counties into tracts and divides tracts into block groups.

Within project area block groups, census data record the presence of persons who describe their ability to speak English as less than very well. **Table 1-9** shows the number and percentage of adults within each census population who speak English less than very well by language category. The Census recommends a 20% threshold of a given population. For example, if a population has more than 20% adults who speak English less than very well, that population is considered an LEP population.

As shown in **Table 1-9**, Hidalgo County, the City of Weslaco, Elsa City, census tracts and block groups adjacent to the proposed project all have more than 20% of Spanish speakers whom speak English less than very well. Therefore, these Census geographies are considered LEP populations.

Table 1-9: Adults Who Speak English Less Than Very Well*

Census Geographies	Total Adult Population	Speak English Less than Very Well	Percent that Speak English Less than Very Well
Hidalgo County	681,924	381,756	56%
Weslaco City	32,198	11,941	37%
Elsa City	5,085	2,511	49%
Census Tracts			
48-215-022201	6,062	3,681	61%
48-215-022401	3,781	2,069	55%

Census Geographies	Total Adult Population	Speak English Less than Very Well	Percent that Speak English Less than Very Well
48-215-022402	4,985	2,620	52%
48-215-024402	8,229	5,058	61%
48-215-024403	4,456	2,260	51%
48-215-024404	3,128	1,411	45%
Block Groups			
48-215-022201-1	1,727	872	50%
48-215-022401-2	1,720	689	40%
48-215-022402-1	3,801	1,988	52%
48-215-022402-2	1,184	632	53%
48-215-024402-1	1,813	921	51%
48-215-024402-2	2,337	1,469	63%
48-215-024402-3	3,033	2,219	73%
48-215-024402-4	1,046	449	43%
48-215-024403-1	1,697	863	51%
48-215-024404-2	1,576	815	52%

Source: U.S. Census Bureau, 2007-2011 American Community Survey Table B16004. ACS data are estimates; they are not counts. Adapted from Cubit Planning.

During an onsite field reconnaissance, several indicators of LEP population (e.g. signage in languages other than English) were observed. Reasonable steps would be taken to ensure that LEP populations have meaningful access to the programs, services and information that TxDOT provides. Public notices in reference to the project to be provided to the television, radio and newspaper media would also be translated into and provided in Spanish. The notice would include names with addresses and telephone numbers of persons who can be contacted by those hearing impaired or non-English speaking individuals wishing to arrange for a sign language or foreign language interpreter to be present at future public meetings or hearings. The notice would identify documents that have been prepared for the project and that would be available for the public to be reviewed and/or copied. Therefore, the project is compliant with Executive Order 13166.

1.9.12 Right-of-Way Acquisition and Displacements

According to the proposed design, 44 to 50 feet of additional ROW would be acquired along each side of the existing roadway to accommodate the proposed 104 foot width of the roadway. A 110 foot maximum width would be required at intersections. The proposed project minimizes adverse impacts on existing developments. It is anticipated that approximately 35 acres of ROW would be required for the proposed project from 213 parcels. The ROW requirements would result in the displacement of a three-unit apartment building, acquisition of one carport, a tire shop with an attached residential structure, and multiple residential fences.

Acquisition of ROW would be conducted in accordance with Public Law 96-146, which is the Federal Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, (the Uniform Act), as amended and TxDOT's 2004 Real Estate Acquisition Guide for Local Public Agencies. The Hidalgo County

Relocation Assistance Program complies with the Uniform Act and would be available to those displaced as a result of the proposed project. Relocation resources would be made available without discrimination; consistent with the requirements of the Civil Rights Act of 1964 and 1968 and the Housing and Urban Development Amendment Act of 1974. Special relocation considerations would accommodate residents in need of additional assistance. Last resort housing would be made available in the event of a housing shortage or for residents who cannot find comparable affordable housing.

Similar provisions of the Uniform Act apply to businesses, farms, and non-profit organizations displaced by the proposed project. Hidalgo County would provide assistance to displaced businesses and nonprofit organizations to aid satisfactory relocation with a minimum of delay and loss of earnings.

The structures used for relocation would also be open to persons regardless of race, color, religion, or nationality, and be within the financial means of those individuals affected. No construction would occur in areas adjacent to affected properties until comparable replacement housing has been made available to displaced persons.

The proposed project would not require acquisition of school properties; therefore, no adverse impacts on school district facilities are expected. Access to schools, recreational areas, residences, and businesses in the project vicinity would continue during construction of the proposed project.

1.9.13 Visual Amenity

The proposed project location can be characterized as primarily rural with residential and agricultural land uses. The landscape is intersected by multiple paved roadways including Mile 9 Road, Mile 10 Road, Mile 11 Road, Mile 12 Road, Mile 15 Road, SH 107 and others. Multiple unpaved perimeter access roads are used by local farmers for agriculture-related activities. No unique landscape features occur near the project area. Several drainage and irrigation canals also bisect the proposed project.

Aesthetic values would be emphasized in the design of the proposed project and the overall character of the study area would be preserved. Landscape design and regular maintenance practices would assist in blending the proposed facility with existing land uses and the environmental setting. Therefore, visual impacts would not be expected from the proposed project.

1.9.14 Section 4(f) Resources

Sections 4(f) of the U.S. Department of Transportation Act of 1966, as amended, provides that projects requiring the use of land from publicly-owned parks, recreational areas, wildlife refuges or historic sites may not be approved unless there are no feasible and prudent alternative. The proposed project would not require the use of publicly owned land from a Section 4(f) property, as defined by the Act. Mario Leal Park is located approximately one mile northeast of the northern project terminus; while the nearest refuge (Lower Rio Grande Valley National Wildlife Refuge) is located approximately 5.8 miles south of the proposed project.

Results of the historic structures survey indicated that the proposed project would have no adverse effect on historic properties and does not require a taking or use of public recreational facilities. Additionally, publicly owned parklands, recreational areas, or wildlife and waterfowl management areas would not be affected as a result of the proposed project. Therefore, Section 4(f) lands would not be affected by the proposed project.

historic properties and does not require a taking or use of public recreational facilities, no Section 4(f) analysis of the project would be required

3.5.2 Archaeological Resources

3.5.2.1 Existing Conditions

The APE for archaeological resources is the existing and proposed ROW. Prior to initiating survey fieldwork, archival research was conducted at the THC's online Texas Historic Sites Atlas, the National Park Service's online National Register Information System, the Texas Archaeological Research Laboratory, the General Land Office, and the Texas State Historical Association's Handbook of Texas Online. A formal archaeological survey was completed by Southern Archaeological Consultants in May 2004. A survey report is on file at the TxDOT Environmental Affairs Division.

3.5.2.2 No-Build Alternative—Environmental Consequences

Under the No-Build Alternative for Mile 6 Road West, no change in the existing archaeological resources would be expected.

3.5.2.3 Proposed Project—Environmental Consequences

According to the report, no cultural resources were recorded and there are no previously recorded archaeological sites, prehistoric or historic, present within the survey area. A TxDOT archeologist has evaluated the potential for the proposed undertaking to affect archaeological historic properties or SAL in the APE. Section 106 review and consultation proceeded in accordance with the Programmatic Agreement among TxDOT, the THC, FHWA, the ACHP, as well as the MOU between THC and TxDOT.

A formal archaeological survey was completed. A survey report is on file at the TxDOT Environmental Affairs Division. In accordance with the Programmatic Agreement, a TxDOT archeologist evaluated the potential for the proposed undertaking to affect archaeological historic properties or SAL in the APE. Section 106 review and consultation would proceed in accordance with the Programmatic Agreement among TxDOT, the SHPO, FHWA, the ACHP, as well as the MOU between THC and TxDOT. According to the report no cultural resources were recorded and there are no previously recorded archaeological sites, prehistoric or historic, present within the survey area.

3.6 Noise

3.6.1 Existing Conditions

This analysis was accomplished in accordance with the FHWA-approved *Guidelines for Analysis and Abatement of Highway Traffic Noise* (TxDOT 2011). A total of 16 noise receivers were identified and analyzed (**Figure 3-3**). The results of this analysis, including any mitigation options that were considered, are presented in **Section 3.6.3**.

3.6.2 No-Build Alternative—Environmental Consequences

Under the No-Build Alternative for Mile 6 Road West, no change in the existing traffic noise would be expected.

3.6.3 Proposed Project—Environmental Consequences

This analysis was accomplished in accordance with the FHWA-approved *Guidelines for Analysis and Abatement of Highway Traffic Noise* (TxDOT 2011). Sound from roadway traffic is generated primarily from a vehicle’s tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB."

Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as A-weighted decibels (dBA). Since traffic sound levels are never constant due to the changing number, type, and speed of vehicles, a single value is used to represent the average or equivalent sound level and is expressed as Leq (average or equivalent sound level). The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of possible noise impacts.
- Consideration and evaluation of measures to reduce noise impacts.

The FHWA has established the following Noise Abatement Criteria (NAC) for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur. **Table 3-4** summarizes FHWA’s noise abatement criteria.

Table 3-4: FHWA Noise Abatement Criteria

Activity Category	Leq(h)	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	67 (exterior)	Residential
C	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing
G	-	Undeveloped lands that are not permitted

Generally, primary consideration is given to *exterior* areas (i.e. Categories A, B or C) where frequent human activity occurs. However, *interior* areas (Category E) are used if exterior areas are physically shielded from the roadway, or if there is little or no human activity in exterior areas adjacent to the roadway. A noise impact occurs when either the absolute or relative criterion is met:

- **Absolute criterion:** the predicted noise level at a receiver approaches, equals or exceeds the NAC. "Approach" is defined as one dBA below the NAC. For example: a noise impact would occur at a Category B residence if the noise level is predicted to be 66 dBA or above.
- **Relative criterion:** the predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. "Substantially exceeds" is defined as more than 10 dBA. For example: a noise impact would occur at a Category B residence if the existing level is 54 dBA and the predicted level is 65 dBA (11 dBA increase).

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area. The FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type, and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be affected by associated traffic noise.

Existing and predicted traffic noise levels were modeled at receiver locations (**Figure 3-3**) that represent the land use activity areas adjacent to the proposed project that might be affected by traffic noise and potentially benefit from feasible and reasonable noise abatement and are shown below in **Table 3-5**.

Table 3-5: Traffic Noise Levels

Representative Receiver	NAC Category	NAC Level	Existing 2018	Predicted 2038	Change (+/-)	Noise Impact
R1	Residence	67	66	68	+2.0	Yes
R2	Residence	67	67	68	+1.0	Yes
R3	Residence	67	66	67	+1.0	Yes
R4	Residence	67	64	65	+1.0	No
R5	Residence	67	64	65	+1.0	No
R6	Residence	67	65	67	+2.0	Yes
R7	Residence	67	65	66	+1.0	No
R8	Residence	67	61	63	+2.0	No
R9	Residence	67	64	65	+1.0	No
R10	Residence	67	64	66	+2.0	No
R11	Residence	67	67	68	+1.0	Yes
R12	Residence	67	64	65	+1.0	No
R13	Business	72	65	67	+2.0	No

NAC = Noise Abatement Criteria

As indicated in **Table 3-5**, the proposed project would result in traffic noise impacts and the following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone, and the construction of noise barriers. These considerations are described below:

Traffic management: control devices could be used to reduce the speed of the traffic; however, the minor benefit of one (1) dBA per five mph reduction in speed does not outweigh the associated increase in congestion and air pollution. Other measures such as time or use restrictions for certain vehicles are prohibited on state highways.

Alteration of horizontal and/or vertical alignments: alteration of the existing alignment would displace existing businesses and residences, require additional ROW and not be cost effective/reasonable.

Buffer zone: acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and therefore, is not feasible.

Noise barriers: this is the most commonly used noise abatement measure; however, for the proposed project, a noise barrier would severely restrict access to adjacent residences and businesses. Numerous gaps in the noise barrier would satisfy access requirements but would render the barrier ineffective (unfeasible). Further, noise barriers could have a detrimental impact on adjacent and nearby businesses by restricting views and access by potential customers. Finally, a noise barrier would not be cost effective for an individual receiver.

Before any abatement measure can be proposed for incorporation into the project, it must be both feasible and reasonable. In order to be "feasible," the abatement measure must be able to reduce the noise level at an impacted receiver by at least five dBA; and to be "reasonable," it must not exceed the cost-effectiveness criterion of \$25,000 for each receiver that would benefit by a reduction of at least five dBA.

Receivers: R1, R2, R3, and R6 represent four separate rows of houses located on the east and west sides of Mile 6 Road West. These residences currently face Mile 6 Road West with primary driveways and porches directly adjacent to the roadway. A continuous noise barrier would be sufficient to restrict future noise levels at the four residential receiver locations; however a continuous noise barrier would restrict access to these residences. Gaps in a noise barrier would satisfy access requirements, but resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dBA.

Receiver R11 represents one row of houses located on the east side of Mile 6 Road West. These residences currently face away from Mile 6 Road West with primary driveways in front of the houses, in no danger of restricting access. Backyards and porches of these residences are however directly adjacent to the roadway. Standard seven-foot wooden fences are currently in place around the perimeter of each backyard, which satisfy current noise conditions but are not suitable for the predicted future noise levels. A continuous noise barrier would be sufficient to restrict future noise levels at this residential receiver location. A noise barrier that would achieve the minimum feasible reduction of 5 dBA at this location would exceed the reasonable, cost-effectiveness criterion of \$25,000.

None of the above noise abatement measures would be both feasible and reasonable and therefore, no abatement measures are proposed for this project.

Land use activity areas in the vicinity of the proposed project consist primarily of mixed residential, commercial, agricultural, and undeveloped lands. Based on currently available information, no new residential development is currently planned, designed, or programmed in any remaining undeveloped areas directly adjacent to the project. There is no NAC for undeveloped land; however, to avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs should ensure, to the maximum extent possible, that no new activities are planned or constructed along or within the predicted (2030) noise impact contours shown in the **Table 3-6**.

Table 3-6: Year 2030 Predicted Noise Impact Contours

Undeveloped Area	Land Use	Impact Contour	Distance From ROW
Mile 6 Road West	Residential	66 dBA	40 feet

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers is expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected.

A copy of this traffic noise analysis would be available to local officials. On the date of approval of this document (date of public knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new developments adjacent to the project.

3.7 Construction Impacts

3.7.1 No-Build Alternative—Construction Impacts

There would be no construction impacts associated with the No-Build Alternative.

3.7.2 Proposed Project—Construction Impacts

3.7.2.1 Traffic

Construction of the proposed project would require traffic control. A traffic control plan would be developed and implemented to assure uninterrupted traffic flow during construction activities. Signs would be strategically placed as a method of controlling traffic during the construction activities. Ingress and egress to private, government, commercial or retail establishments would be maintained throughout the construction period.

3.7.2.2 Noise

Noise associated with project construction is difficult to predict. Heavy machinery, the major source of construction noise, constantly moves in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. Additionally, the receivers would not be exposed to construction noise for long durations; therefore, extended disruptions of normal

Database	Description	Result
TCEQ Solid Waste Facilities Registration and Permit Database	The database lists permits and registration for landfills, transfer stations, sludge application sites, illegal dumpsites, recycling facilities, medical generators and transporters. The standard search radius for solid waste or landfill facilities is a half-mile.	No solid waste or landfill facility listings were reported within the search area.

Source: Banks Environmental Database 2013

Based on the results of the site inspection and the environmental database search, no known or potential releases of hazardous materials into soils and/or shallow groundwater that may affect the proposed construction were identified.

Within the project limits, there are three registered/ abandoned petroleum storage tanks (RPST) facilities. None of the PST facilities are listed as LPST sites. None of the RPST sites would be acquired as part of the ROW requirements of the project. District ROW would be notified of the PST regulatory status and exact location. If hazardous waste/substances are discovered during construction activities, appropriate measures for the management of the contamination would be initiated in accordance with all appropriate federal, state and local regulations. A review of the TCEQ's on-line database for LPSTs indicated that no LPST sites are located adjacent to the proposed project.

Within the 0.25 miles of the project area, 18 oil and gas wells were identified. One of these wells is plugged. It is located adjacent to the ROW and owned by Dewbre Petroleum Corporation.

During the preliminary investigations, two pipelines were found to bisect the proposed project. The natural gas transmission and collection line are owned by Texas Eastern and Faraday. Negotiations would be conducted with the pipeline owners to properly relocate or deepen the affected pipelines.

3.4.2 No-Build Alternative—Environmental Consequences

If no improvements are made to Mile 6 Road West, sites potentially contaminated with hazardous waste would not be disturbed and existing USTs would not be relocated.

3.4.3 Proposed Project—Environmental Consequences

The proposed project would not affect the area around the removed underground storage tanks that were located at Melin's Drive Inn at 2720 North Westgate Drive (Mile 6 Road West).

3.5 Cultural Resources

Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries, and objects. Both federal and state laws require consideration of cultural resources during project planning. At the federal level, NEPA and the National Historic Preservation Act of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to these projects. Compliance with these laws often requires consultation with the THC/Texas SHPO and/or federally-recognized tribes to determine the project's effects on cultural resources. Review and coordination of this project followed approved

procedures for compliance with federal and state laws. For the sake of this document, cultural resources are categorized as either archeological resources or historical resources.

3.5.1 Historic Resources

3.5.1.1 Existing Conditions

The National Historic Preservation Act requires that FHWA/TxDOT show that project planners and engineers have “taken into account” the effects the project may have on National Register of Historic Places (NRHP) properties and that a reasonable effort has been made to preserve the resource through avoidance or other means to minimize adverse impacts to the property and/or the historic resource. The criteria for assessing effect are prescribed in 36 CFR 800.9. The law states: “An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.”

A formal historic survey was completed and the survey report is on file at the TxDOT Environmental Affairs Division. In accordance with the Programmatic Agreement, a TxDOT archeologist evaluated the potential for the proposed undertaking to affect archaeological historic properties or SAL in the area of potential effect (APE). Section 106 review and consultation would proceed in accordance with the Programmatic Agreement among TxDOT, the SHPO, FHWA, the Advisory Council on Historic Preservation (ACHP), as well as the MOU between THC and TxDOT.

3.5.1.2 No-Build Alternative—Environmental Consequences

Under the No-Build Alternative for Mile 6 Road West, no change in the existing historic resources would be expected.

3.5.1.3 Proposed Project—Environmental Consequences

It has been determined through consultation with the SHPO that the historic structures APE for the proposed project extends 150 feet beyond the ROW. A review of the NRHP and the list of Recorded Texas Historic Landmarks (RTHL) indicate that there are no historically significant resources within 1,300 feet of the project area. A site visit identified 33 sites containing historic-age resources. None of the sites are listed in or recommended as eligible for listing in the NRHP. There is no basis for designation of a historic district or historic rural landscape within the project area. Furthermore, there are no Official Texas Historical Markers within the APE. Further, there is no basis for designation of a historic district or historic rural landscape within the project area. Furthermore, there are no Official Texas Historical Markers within the APE.

Pursuant to the MOU and Stipulation V (*Undertakings with No Potential to Affect Historic Resources*) of the First Amended Programmatic Agreement Regarding the Implementation of Transportation Undertakings (PA-TU) between the FHWA, the SHPO, the ACHP, TxDOT historians determined that the proposed action has no potential to affect historic properties and that individual project coordination with SHPO is not required.

A letter was sent to the local County Historical Commission. Consultation with the Hidalgo County Historical Commission revealed no significance with respect to the historic properties. A copy of the letter, dated September 10, 2001 is included in **Appendix C**. As the proposed action would have no adverse effect on

historic properties and does not require a taking or use of public recreational facilities, no Section 4(f) analysis of the project would be required

3.5.2 Archaeological Resources

3.5.2.1 Existing Conditions

The APE for archaeological resources is the existing and proposed ROW. Prior to initiating survey fieldwork, archival research was conducted at the THC's online Texas Historic Sites Atlas, the National Park Service's online National Register Information System, the Texas Archaeological Research Laboratory, the General Land Office, and the Texas State Historical Association's Handbook of Texas Online. A formal archaeological survey was completed by Southern Archaeological Consultants in May 2004. A survey report is on file at the TxDOT Environmental Affairs Division.

3.5.2.2 No-Build Alternative—Environmental Consequences

Under the No-Build Alternative for Mile 6 Road West, no change in the existing archaeological resources would be expected.

3.5.2.3 Proposed Project—Environmental Consequences

According to the report, no cultural resources were recorded and there are no previously recorded archaeological sites, prehistoric or historic, present within the survey area. A TxDOT archeologist has evaluated the potential for the proposed undertaking to affect archaeological historic properties or SAL in the APE. Section 106 review and consultation proceeded in accordance with the Programmatic Agreement among TxDOT, the THC, FHWA, the ACHP, as well as the MOU between THC and TxDOT.

A formal archaeological survey was completed. A survey report is on file at the TxDOT Environmental Affairs Division. In accordance with the Programmatic Agreement, a TxDOT archeologist evaluated the potential for the proposed undertaking to affect archaeological historic properties or SAL in the APE. Section 106 review and consultation would proceed in accordance with the Programmatic Agreement among TxDOT, the SHPO, FHWA, the ACHP, as well as the MOU between THC and TxDOT. According to the report no cultural resources were recorded and there are no previously recorded archaeological sites, prehistoric or historic, present within the survey area.

3.6 Noise

3.6.1 Existing Conditions

This analysis was accomplished in accordance with the FHWA-approved *Guidelines for Analysis and Abatement of Highway Traffic Noise* (TxDOT 2011). A total of 16 noise receivers were identified and analyzed (**Figure 3-3**). The results of this analysis, including any mitigation options that were considered, are presented in **Section 3.6.3**.

3.6.2 No-Build Alternative—Environmental Consequences

Under the No-Build Alternative for Mile 6 Road West, no change in the existing traffic noise would be expected.

1.9.15 Air Quality

1.9.15.1 Project Consistency with Transportation Plans and Funding

Refer to **Section 1.5.4** for a discussion of project consistency with transportation plans.

1.9.15.2 National Ambient Air Quality Standard—Transportation Conformity

The proposed project is located in Hidalgo County, which is in an area in attainment or unclassifiable for the NAAQS; therefore, the transportation conformity rules do not apply.

1.9.15.3 Carbon Monoxide Traffic Air Quality Analysis

Traffic data for the design year (2030) is 16,700 vehicles per day. A prior TxDOT modeling study and previous analyses of similar projects demonstrated that it is unlikely that a carbon monoxide standard would ever be exceeded as a result of a project with an average annual daily traffic (AADT) below 140,000. The AADT projections for the project do not exceed 140,000 vehicles per day; therefore a Traffic Air Quality Analysis was not required.

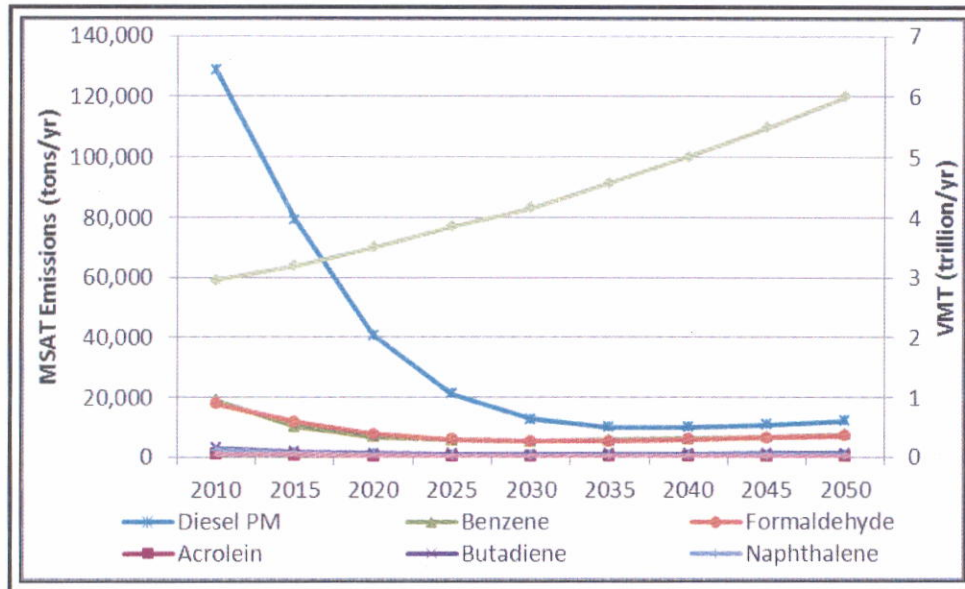
1.9.15.4 Mobile Source Air Toxics

Background

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (<http://www.epa.gov/iris/>). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (<http://www.epa.gov/ttn/atw/nata1999/>). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel particulate matter), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA Mobile Source Air Toxics (MSAT) rule mentioned above requires controls that would dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. Based on an FHWA analysis using EPA's MOVES2010b model, as shown in **Figure 1-7** and **Table 1-10**, even if vehicle-miles travelled (VMT) increases by 102% as assumed from 2010 to 2050, a combined reduction of 83% in the total annual emissions for the priority MSAT is projected for the same time period.

Figure 1-7: Projected National MSAT Emission Trends 2010 to 2050 for Vehicles Operating on Roadways Using EPA’s MOVES2010b Model



Source: Table 1-9 below. Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

Table 1-10: Projected National MSAT Emission Trends 2010–2050 for Vehicles Operating on Roadways Using EPA’s MOVES2010b Model

Pollutant/VMT	Pollutant Emissions (tons) and Vehicle-Miles Traveled (VMT) by Calendar Year									Change 2010 to 2050
	2010	2015	2020	2025	2030	2035	2040	2045	2050	
Acrolein	1,244	805	476	318	258	247	264	292	322	-74%
Benzene	18,995	10,195	6,765	5,669	5,386	5,696	6,216	6,840	7,525	-60%
Butadiene	3,157	1,783	1,163	951	890	934	1,017	1,119	1,231	-61%
Diesel PM	128,847	79,158	40,694	21,155	12,667	10,027	9,978	10,942	11,992	-91%
Formaldehyde	17,848	11,943	7,778	5,938	5,329	5,407	5,847	6,463	7,141	-60%
Naphthalene	2,366	1,502	939	693	607	611	659	727	802	-66%
Polycyclics	1,102	705	414	274	218	207	219	240	262	-76%
Trillions VMT	2.96	3.19	3.5	3.85	4.16	4.58	5.01	5.49	6	102%

Source: EPA MOVES2010b model runs conducted during May–June 2012 by FHWA.

PM = Particulate Matter

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA. The FHWA, EPA, the Health Effects Institute (HEI), and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA would continue to monitor the developing research in this emerging field.

Project-Specific MSAT Information

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at:

http://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatemissions.pdf

For each alternative in this document, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of the build alternatives is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES2010b model, emissions of the priority MSATs decrease as speed increases.

Because the estimated VMT under each of the Alternatives are nearly the same, varying by less than one percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the project alternatives would have the effect of moving some traffic closer to nearby homes, schools, and businesses; therefore, under each alternative there may be localized areas where ambient concentrations of MSAT could be higher under certain build alternatives than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built along Mile 6 Road West from Mile 9 Road North to Mile 16½ Road North under the preferred alternative (Alternative D).

However, the magnitude and the duration of these potential increases compared to the No-Build alternative cannot be reliably quantified due to incomplete or unavailable information in forecasting project-specific MSAT health impacts. In sum, when a highway is widened, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSAT would be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, would over time cause substantial reductions that, in almost all cases, would cause region-wide MSAT levels to be significantly lower than today.

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than a genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from a known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the IRIS, which is a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects (EPA, <http://www.epa.gov/iris/>). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the HEI. Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on MSAT Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are; cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, <http://pubs.healtheffects.org/view.php?id=282>) or in the future as vehicle emissions substantially decrease (HEI, <http://pubs.healtheffects.org/view.php?id=306>).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (<http://pubs.healtheffects.org/view.php?id=282>). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel particulate matter. The EPA (<http://www.epa.gov/risk/basicinformation.htm#g>) and the HEI (<http://pubs.healtheffects.org/getfile.php?u=395>) have not established a basis for quantitative risk assessment of diesel particulate matter in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an acceptable level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, which is to maximize the number of people with risks less than one in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework.

Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable. Because of the limitations in the methodologies for forecasting health impacts described, a predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Conclusion

In this document, a qualitative MSAT assessment has been provided relative to the various alternatives of MSAT emissions and has acknowledged that all of the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

1.9.15.5 Congestion Management Process/System

The congestion management process (CMP) is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. The project was developed from the HCMPO's operational CMP, which meets the requirements of 23 CFR 500.109. The CMP was adopted by the HCMPO in the fall of 2010.

The region commits to operational improvements and travel demand reduction strategies at two levels of implementation: program level and project level. Program level commitments are inventoried in the regional CMP, which was adopted by the HCMPO; they are included in the financially constrained MTP, and future resources are reserved for their implementation.

The CMP element of the plan carries an inventory of all project commitments (including those resulting from major investment studies) that details type of strategy, implementing responsibilities, schedules, and expected costs. At the project's programming stage, travel demand reduction strategies and commitments would be added to the regional TIP or included in the construction plans. The regional TIP provides for

programming of these projects at the appropriate time with respect to the single occupancy vehicle (SOV) facility implementation and project-specific elements.

Committed congestion reduction strategies and operational improvements within the study boundary would consist of signalization and intersection improvements. Individual projects are listed in Table AA.

In an effort to reduce congestion and the need for SOV lanes in the region, TxDOT and the HCMPO would continue to promote appropriate congestion reduction strategies through the CMAQ program, the CMP, and the MTP. The congestion reduction strategies considered for this project would help alleviate congestion in the SOV study boundary, but would not eliminate it. Therefore, the proposed project is justified. The CMP analysis for added SOV capacity projects in the TMA is on file and available for review at the HCMPO.

1.9.15.6 Indirect and Cumulative Impacts Analysis for Air Quality

The proposed project would not result in a meaningful change in traffic volumes, vehicle mix, location of existing roadways, or other factors that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, the project would not result in actions that could possibly impact air quality. As such, TxDOT has determined that this project would generate minimal indirect and cumulative impacts on air quality. Consequently, an Indirect and Cumulative Impacts analysis for air quality was not required for this project.

1.9.15.7 Construction Emissions

During the construction phase of this project, temporary increases in air pollutant emissions may occur from construction activities. The primary construction-related emissions are particulate matter (fugitive dust) from site preparation. These emissions are temporary in nature (only occurring during actual construction); it is not possible to reasonably estimate impacts from these emissions due to limitations of existing models. However, the potential impacts of particulate matter emissions would be minimized by using fugitive dust control measures such as, covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. The construction activity phase of this project may generate a temporary increase in MSAT emissions from construction activities, equipment and related vehicles. The primary MSAT construction related emissions are particulate matter from site preparation and diesel particulate matter from diesel powered construction equipment and vehicles. However, considering the temporary and transient nature of construction-related emissions, as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of the proposed project would have a significant impact on air quality in the area.