I-49 South
Lafayette to New Orleans

Traffic and Revenue Study and
Sketch Level Financial Capacity Analysis

Louisiana Department of Transportation and Development

March 2014

CDM Smith

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Lafayette to New Orleans

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Sketch Level Financial Capacity Analysis

Prepared For:

LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Prepared By:

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gcr

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Disclaimer

CDM Smith used currently accepted professional practices and procedures in the development of these traffic and revenue estimates. However, as with any forecast, it should be understood that differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the Louisiana Department of Transportation and Development (LaDOTD). CDM Smith also relied upon the reasonable assurances of independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including LaDOTD. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Future developments cannot be predicted with certainty, and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections or other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

CDM Smith is not, and has not been, a municipal advisor as defined in federal law (the Dodd Frank Bill) to LaDOTD and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to LaDOTD with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to LaDOTD. LaDOTD should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.

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Section 1
Introduction

This traffic and toll revenue report is a summary of all current efforts requested of CDM Smith by the Louisiana Department of Transportation and Development (LaDOTD) to estimate traffic and toll revenue for the proposed I-49 South corridor improvements between Lafayette and New Orleans.

BACKGROUND AND PREVIOUS ANALYSES

The proposed I-49 South project is an approximately 150-mile corridor between Lafayette and New Orleans. The facility currently operates as US 90, and the ongoing I-49 project seeks to upgrade the corridor to full interstate design standards. Some portions of the corridor already meet interstate highway design standards, as shown in Figure 1-1. The focus of this study is to determine the financial feasibility of using tolls to fund the remaining upgrades necessary in the corridor.

CDM Smith previously studied the feasibility of the I-49 South corridor as a toll facility in 2001, 2005 and 2007. This effort builds upon the previous work to develop a current outlook of I-49 South's traffic and revenue potential and financial feasibility.

The project is being evaluated in three segments, as shown in Figure 1-2.

- **Segment 1**: I-10 (Lafayette) to Wax Lake Outlet
- **Segment 2**: Wax Lake Outlet to LA 308
- **Segment 3**: LA 308 to Ames Boulevard (New Orleans)

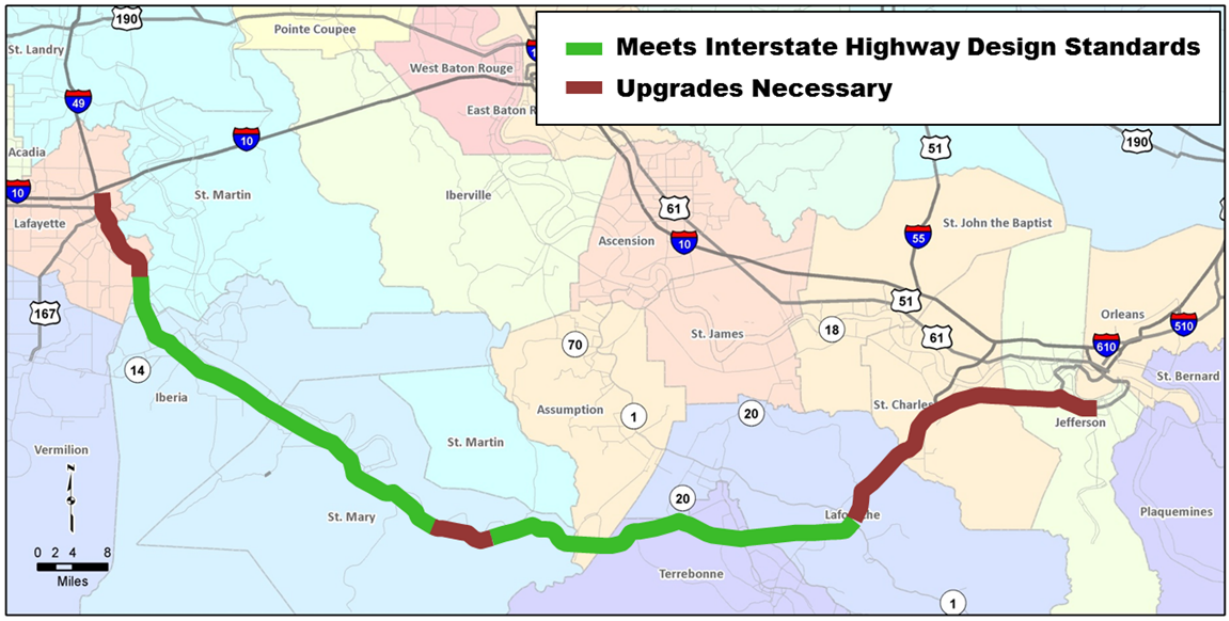

Figure 1-1. I-49 South Corridor

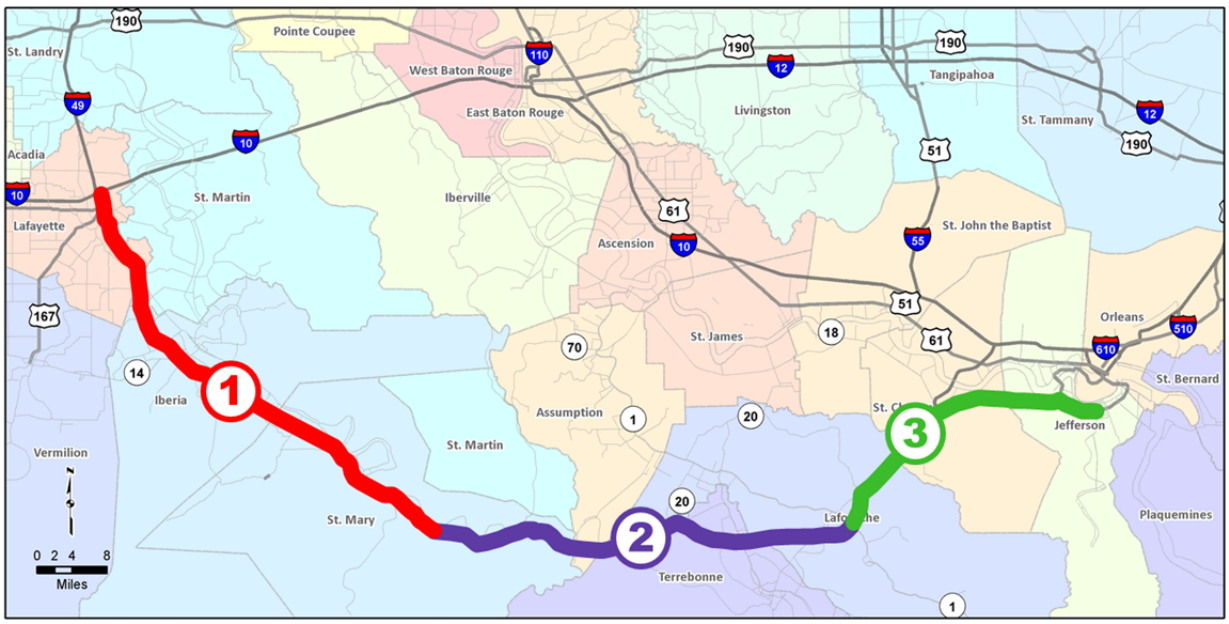

Figure 1-2. I-49 South Analysis Segments

STRUCTURE OF STUDY AND REPORT

The purpose of this study was to develop traffic and toll revenue forecasts for the proposed I-49 South corridor and complete a sketch level financial capacity analysis to estimate the overall feasibility of the corridor as a toll facility. The project was evaluated under four construction and tolling alternatives:

- **Alternative 1**: Segment 1 alone is upgraded to interstate highway standards and tolled
- **Alternative 2**: Segment 2 alone is upgraded to interstate highway standards and tolled
- **Alternative 3**: Segment 3 alone is upgraded to interstate highway standards and tolled
- **Alternative 4**: The entire corridor (Segments 1, 2 and 3) is upgraded to interstate highway standards and tolled

For each of the four alternatives, traffic and revenue forecasts were generated using a version of the Louisiana statewide model that was refined along the project corridor as part of this study. A sketch level financial analysis was also completed for each alternative using the traffic and revenue forecasts as well as capital cost estimates provided by LaDOTD. The following outlines the general structure of the report:

Section 2 – Data Collection

This section describes the various travel demand data sets that were collected as part of this study. The data collected includes traffic counts at specific locations around the corridor and comprehensive travel speed information for I-49 South and its competing routes. This section also includes a summary of the Bluetooth-based origin-destination evaluation used in this analysis.

Section 3 – Demographic Growth

This section provides a description of the historical and expected future demographic growth in the I-49 study area. The demographic datasets, which include the findings of the independent economic reviews along the corridor, were incorporated into the travel demand model used to generate the traffic and revenue estimates.

Section 4 – Travel Demand Model Development

This section describes the databases utilized as part of the analysis and highlights the methodologies implemented to validate the travel demand model. The model is used to estimate future traffic on toll facilities, and it is validated to the current traffic conditions to ensure that future projections are consistent with observed traffic characteristics along the corridor.

Section 5 – Estimated Traffic and Revenue

This section provides the results of the traffic and revenue forecasts. The toll sensitivity analyses performed as part of the study are described in detail in this section, including their use in selecting an optimum toll rate for the corridor. Also presented are the average daily transactions and annual toll revenues anticipated on the I-49 South project and a description of the various assumptions used in the forecasting process.

Section 6 – Financial Capacity Analysis

This section provides the results of the sketch level financial capacity analysis. The traffic and revenue forecasts presented in Section 5 were used in conjunction with capital cost and operational costs to gauge the project's feasibility as a toll corridor. The resulting feasibility scores are presented in this section for each of the four evaluation scenarios.

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Section 2

Data Collection

This section provides background information about the existing traffic conditions for the roadway infrastructure in and around the proposed I-49 South corridor. The information in this section provides a historical overview of traffic in the vicinity of the I-49 South project that was used as input to the traffic and revenue forecasting process. A comprehensive data gathering effort was undertaken for the study area, which included the collection of traffic counts, travel time data analysis, and the evaluation of origin-destination patterns.

TRAFFIC COUNT PROGRAM

CDM Smith conducted a comprehensive traffic count program that included eleven screenlines across the corridor as shown in Figure 2-1. The screenlines were developed to analyze the total corridor traffic trends and were used to ensure that the travel demand model outputs used in the traffic forecasting process reflected current traffic characteristics within the I-49 South corridor. Screenlines 1, 2, 3, 4, 5, 6, 7 and 9 analyzed traffic parallel to the project corridor, and Screenline 8 analyzed traffic crossing the I-49 South corridor near LA 1. Screenlines 10 and 11 analyzed traffic in southern and eastern New Orleans, respectively. CDM Smith engaged Reliable Traffic Data, LLC, to perform a series of 48-hour traffic counts in April 2013. The 48-hour counts were collected only on interior weekdays (Tuesday, Wednesday and Thursday) to avoid the weekend-related traffic fluctuations on Mondays and Fridays and generate data that is most representative of average weekday travel in the corridor.

From the traffic counts, CDM Smith was able to determine average weekday traffic volumes (AWDT) near the proposed I-49 South corridor, as well as the AM peak, PM peak and off-peak period traffic profiles. This information was then used to validate the travel demand model. Figure 2-2 shows the traffic count data obtained on the existing US 90/future I-49 corridor. As shown in the figure, volumes on the existing US 90 are significantly higher in the Lafayette and New Orleans areas than in the central, more rural portion of the corridor. A summary of the total screenline traffic volumes by time period is shown in Table 1. As shown in the table, the AM peak and PM peak periods account for approximately 30 percent of the daily traffic at many of the screenlines.

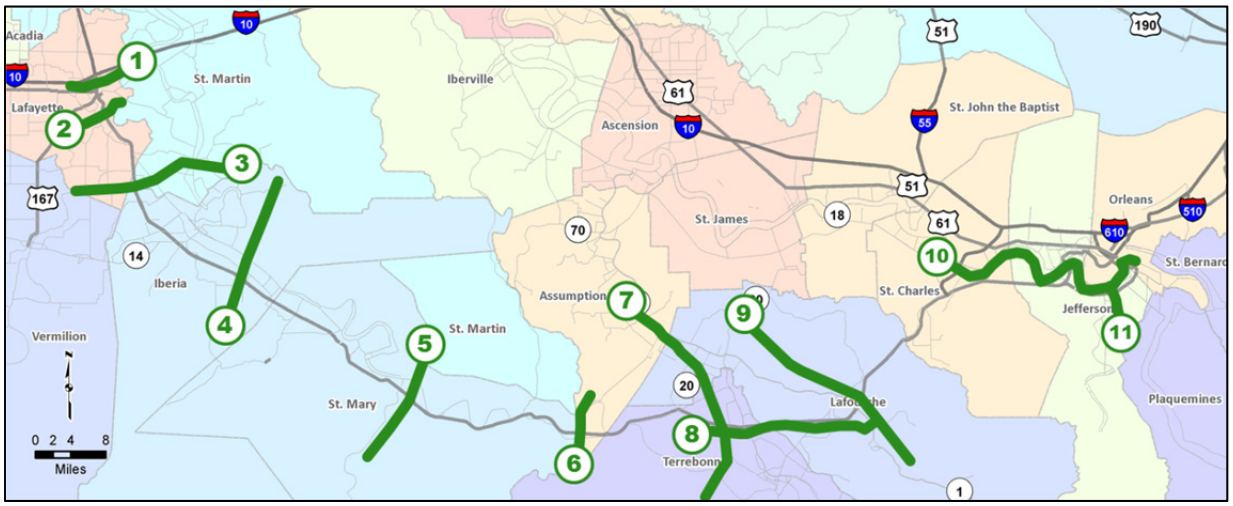

Figure 2-1. Traffic Count Screenlines

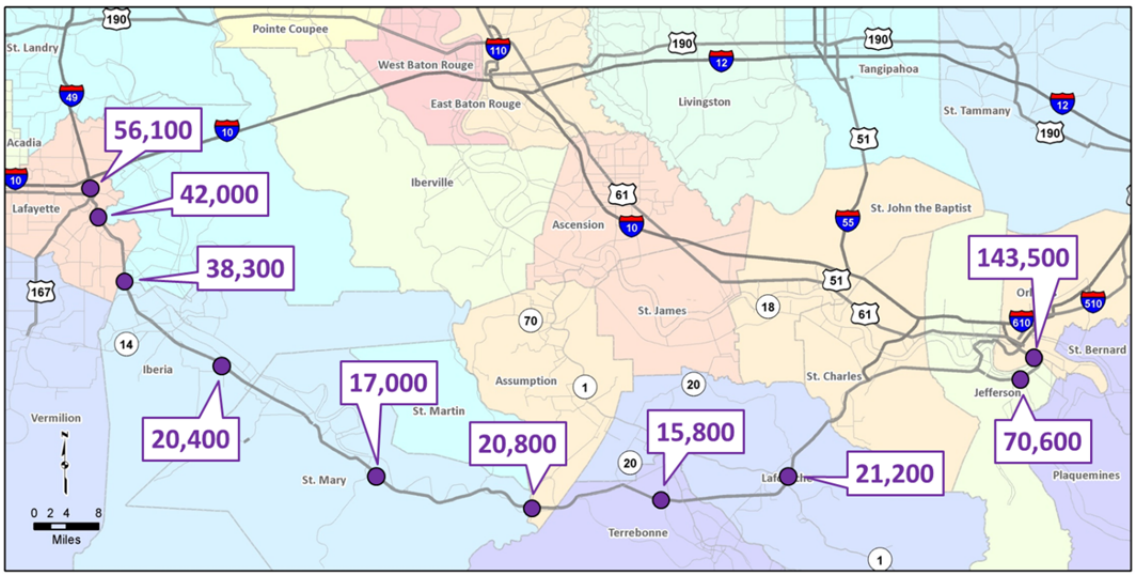

Figure 2-2. Current US 90 Corridor Volumes

Table 2-1. I-49 South – Traffic Count Screenline Totals

Screenline	Daily Total	AM Peak (7:00-9:00 a.m.)	PM Peak (4:00-6:00 p.m.)
Screenline 1	144,300	19,400	21,200
Screenline 2	58,300	7,400	9,400
Screenline 3	66,100	9,200	10,000
Screenline 4	26,100	3,100	3,800
Screenline 5	20,500	2,600	2,700
Screenline 6	27,200	3,100	4,300
Screenline 7	26,300	3,200	4,100
Screenline 8	113,000	14,700	18,500
Screenline 9	25,200	3,100	3,600
Screenline 10	233,000	33,100	35,300
Screenline 11	129,200	18,300	19,300

TRAVEL TIME CHARACTERISTICS

The evaluation of a toll facility's future traffic and revenue requires knowledge of the current travel time characteristics of the major roadways in the project area. For the current study, travel time data was collected by two methods. The primary source was historical travel data obtained from INRIX, Inc., a traffic data company based in Washington State that maintains an archive of travel speed data for thousands of roadways across the United States accumulated from GPS-enabled devices along the highway network. INRIX is a Data as a Service (DaaS) company that monitors traffic flow along approximately 260,000 miles of major freeways, highways, urban and rural arterials, and side streets in the United States. This data provides historical as well as real-time traffic data seven days a week, 24 hours a day in as little as five-minute increments for all metro areas with a population of more than one million. They were engaged to provide a series of travel speed data for several roadways within the study area.

INRIX obtains its data via crowd sourcing and collects travel speed information from various probes, including anonymous cell phones/smartphones and vehicles equipped with global positioning system (GPS) devices (trucks, delivery vans, transit vehicles, etc.). The collected data is then processed in real-time to create traffic speed information along most of the major roadways. The real-time travel speed data is normalized to account for parameters that affect traffic flow conditions, such as weather forecasts, school schedules, special events, accidents, seasonal variation, and road construction. The procedure adopted by INRIX to obtain and distribute the crowd-sourced traffic data is illustrated in Figure 2-3.

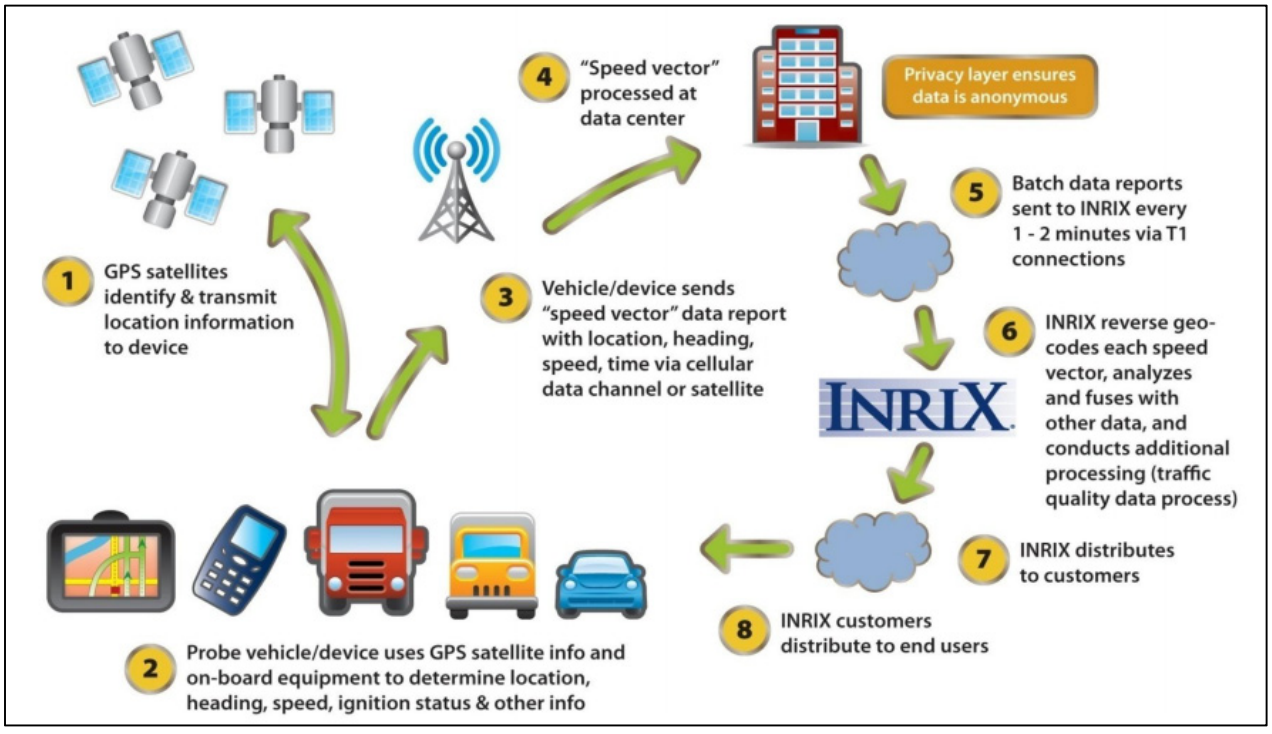

Figure 2-3. INRIX Traffic Data Collection and Distribution Process

Source: INRIX, Inc.

Figures 2-4 through 2-6 show the locations for which travel time data was obtained and the average speeds observed at those locations. Major routes throughout the corridor were selected for analysis to provide a profile of the fluctuation in operating speed throughout the corridor and the relationship between demand and congestion levels. The data illustrated in Figures 2-4 through 2-6 represents the average travel speeds as measured by INRIX in April 2013.

The figures illustrate the typical travel speeds in each direction along major routes for the AM and PM peak periods as well as the midday/off-peak period. As expected, the slowest travel speeds during the peak periods are observed in the central portions of New Orleans and Lafayette. Additionally, the data indicates that the sections of the I-49 corridor that have already been upgraded to full interstate standards generally operate at a higher average travel speed than those that have not.

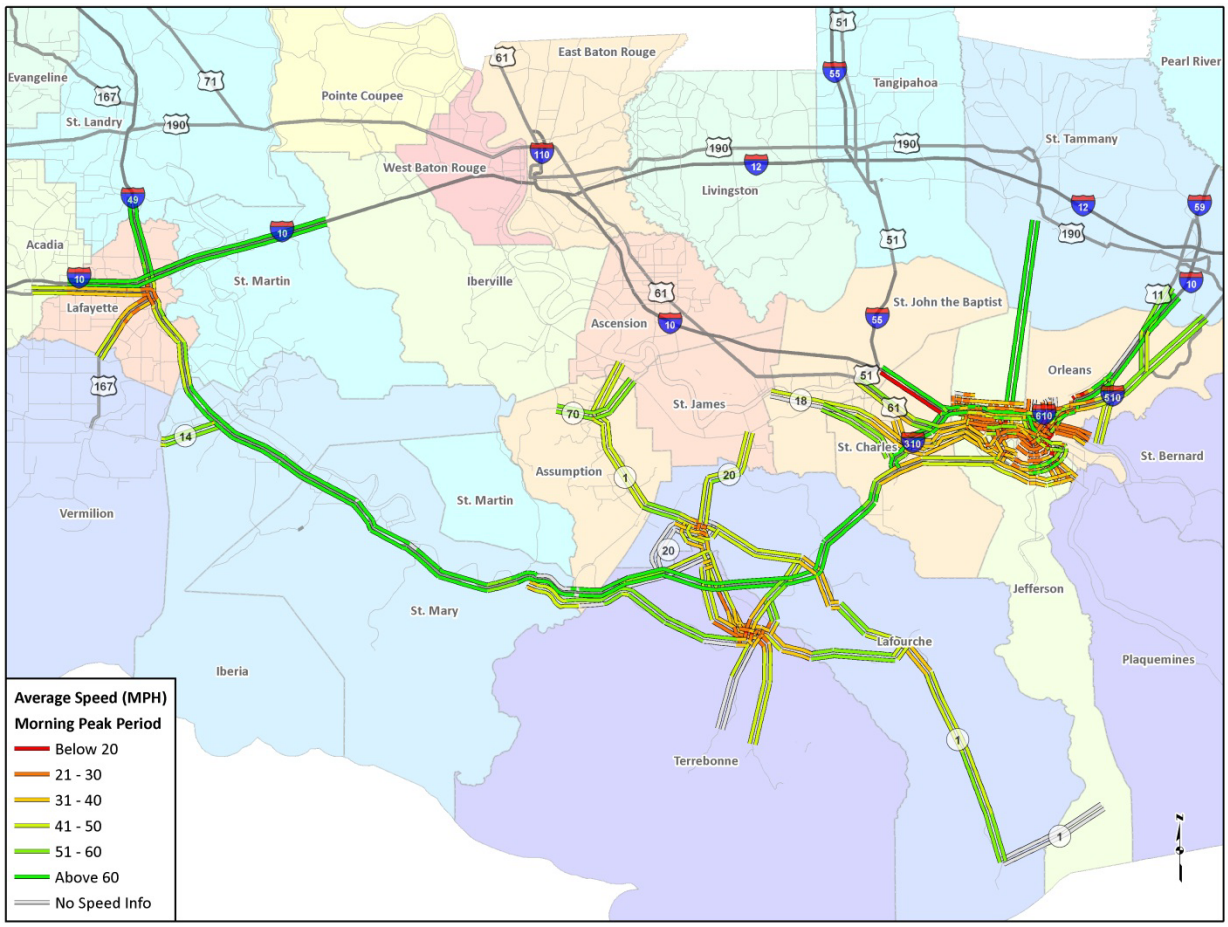

Figure 2-4. Travel Speeds in the I-49 Corridor: AM Peak Period

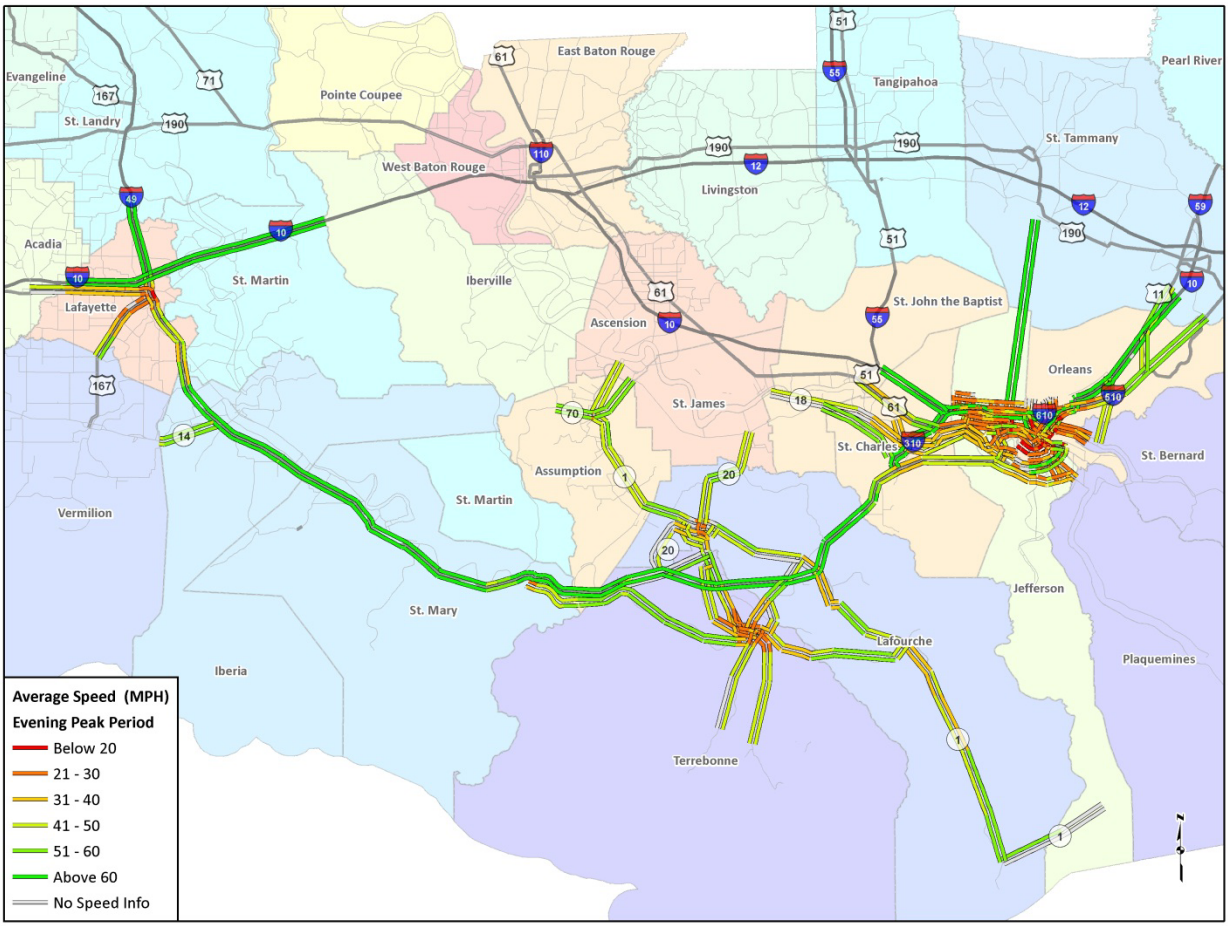

Figure 2-5. Travel Speeds in the I-49 Corridor: PM Peak Period

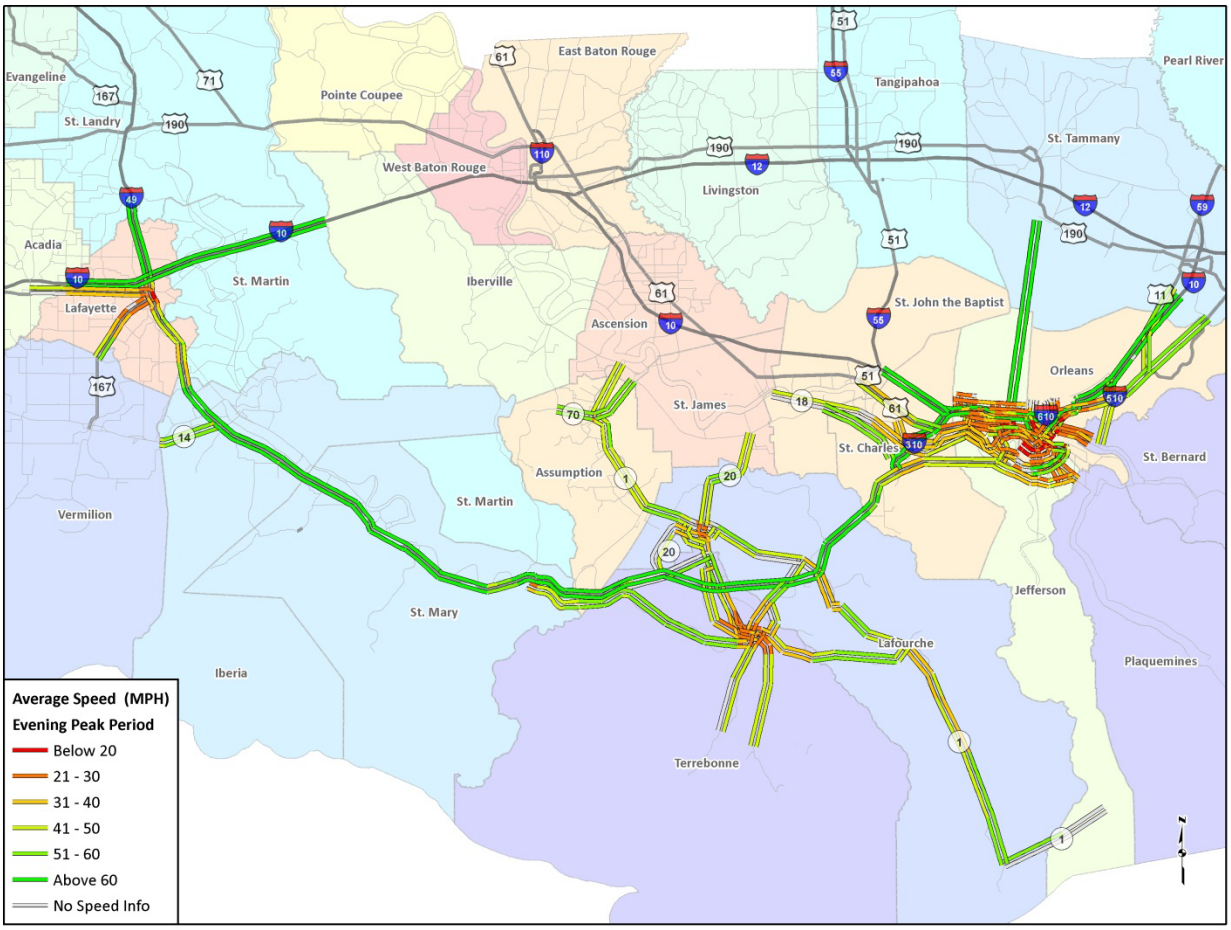

Figure 2-6. Travel Speeds in the I-49 Corridor: Midday Period

ORIGIN-DESTINATION DATA COLLECTION

For the I-49 South corridor, an analysis of the origin-destination (O/D) patterns was undertaken by CDM Smith to investigate the travel patterns of current users of the US 90/I-49 corridor. To determine these patterns, CDM Smith engaged the services of Gulf Industries Material Sales, LLC and ITS Regional, LLC to collect data at multiple locations using Bluetooth® readers. Readers were placed at each of the locations shown in Figure 2-7. Each Bluetooth® reader records the unique Bluetooth® device IDs that pass within the reader's range. The source of the Bluetooth® IDs is primarily smart phones, but other Bluetooth®-enabled devices such as laptops and music players may also be picked up by the reader.

Table 2-2 shows the results of the O/D data collection effort. For each reader location, the table indicates the percent of that reader's identified Bluetooth® IDs were also observed at each of the other reader locations. For example, out of all the Bluetooth® IDs that were recorded just south of I-10 in Lafayette (location 2), 3 percent of those were also recorded at the intersection with LA 1 (location 10).

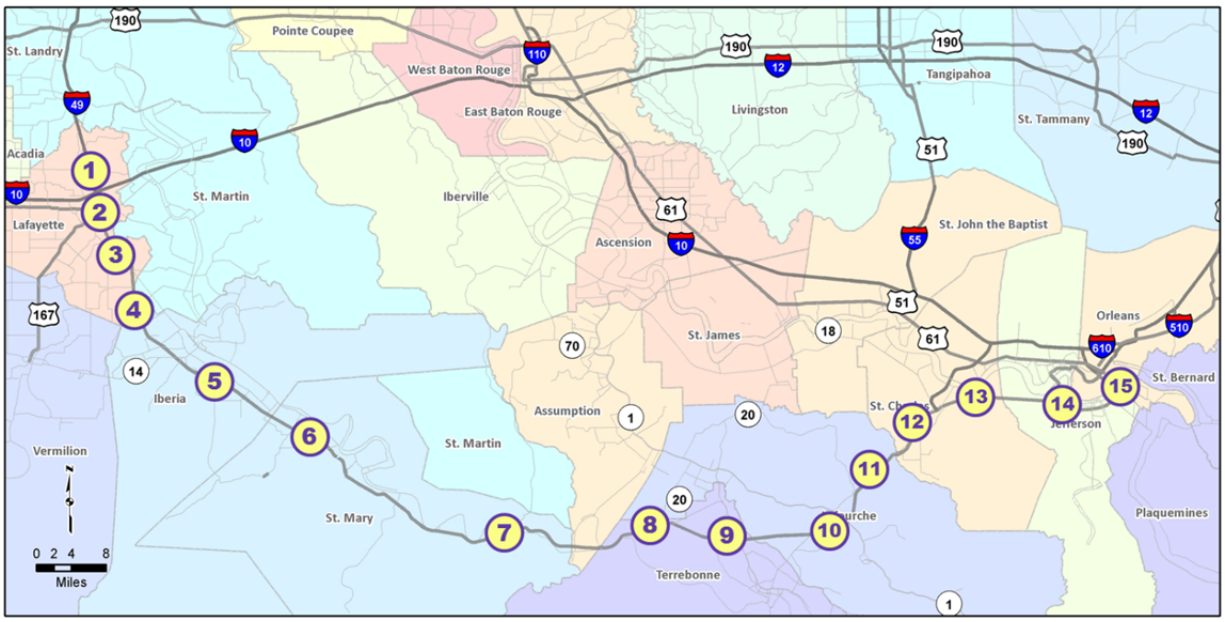

Figure 2-7. I-49 South Origin-Destination Reader Locations

Table 2-2. I-49 South Origin-Destination Data Summary

Location		Destination														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Origin	1	--	15%	9%	2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
	2	23%	--	19%	6%	4%	3%	3%	3%	2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
	3	14%	24%	--	10%	6%	4%	5%	4%	3%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
	4	8%	12%	18%	--	18%	13%	15%	11%	9%	5%	3%	3%	< 2%	< 2%	< 2%
	5	8%	13%	17%	20%	--	27%	29%	20%	17%	11%	6%	6%	3%	< 2%	< 2%
	6	10%	15%	21%	23%	39%	--	29%	21%	17%	10%	6%	7%	3%	< 2%	< 2%
	7	5%	7%	9%	10%	15%	14%	--	17%	13%	8%	5%	6%	2%	< 2%	< 2%
	8	6%	8%	10%	11%	17%	16%	26%	--	33%	18%	11%	13%	5%	2%	< 2%
	9	6%	8%	10%	11%	16%	16%	24%	30%	--	23%	15%	17%	6%	3%	< 2%
	10	3%	3%	4%	5%	8%	8%	11%	13%	14%	--	28%	30%	9%	4%	< 2%
	11	< 2%	< 2%	2%	3%	5%	5%	7%	8%	10%	23%	--	46%	13%	6%	< 2%
	12	< 2%	< 2%	< 2%	< 2%	3%	3%	5%	6%	6%	15%	20%	--	9%	4%	< 2%
	13	< 2%	< 2%	< 2%	< 2%	3%	3%	4%	4%	5%	8%	10%	18%	--	15%	2%
	14	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	3%	6%	--	2%
	15	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	4%	--

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Section 3

Demographic Growth

As part of the I-49 South traffic and revenue study, historical and projected demographic characteristics developed as part of the Louisiana Statewide Travel Demand Forecasting Model (LASTM) were reviewed to develop traffic modeling trip tables. This section describes the major socioeconomic characteristics near the I-49 South corridor including both the Lafayette and New Orleans metropolitan areas.

This section includes a summary of the regional historical and future growth in the I-49 study area and also discusses the independent economic review along the I-49 South corridor conducted by GCR, Inc. The demographic descriptions included in this section range from the macro level (Louisiana) to the I-49 South corridor level (Lafayette, New Orleans, and parishes along the corridor). This information is the foundation to develop the potential demand for the proposed I-49 South toll facility. The demographic information is used by the trip generation model to estimate total trips for the travel demand model.

HISTORICAL AND FUTURE REGIONAL GROWTH

The I-49 South corridor passes through ten parishes in southern Louisiana: Assumption, Iberia, Jefferson, Lafayette, Lafourche, Orleans, St. Charles, St. Martin, St. Mary and Terrebonne. Its western terminus lies within the City of Lafayette, and the eastern terminus lies within the New Orleans metropolitan area. The analysis of historical and future demographic growth from a regional perspective is based on parish-level information pertaining to population, employment, and income.

Historical Regional Population Trends

Table 3-1 shows the historical population trends for Assumption, Iberia, Jefferson, Lafayette, Lafourche, Orleans, St. Charles, St. Martin, St. Mary and Terrebonne Parishes, the Lafayette and New Orleans metropolitan statistical areas (MSA), and the state of Louisiana. The total population in the ten parishes in the I-49 corridor has decreased at an average annual rate of 0.2 percent from 1990 to 2010, equivalent to 66,000 fewer residents. However, several parishes experienced positive growth between 1990 and 2000, and a significant portion of the recent decline can likely be attributed to the impacts of Hurricane Katrina in 2005. The Lafayette MSA, however, experienced an annual average increase in population of 1.4 percent between 1990 and 2010.

Jefferson Parish is the largest parish in the region in terms of population with approximately 432,500 residents in 2010. However, it has not experienced significant population growth in recent years. The largest annual average population increase observed among the ten parishes in the project corridor was Lafayette Parish, which grew at an average annual rate of 1.5 percent from 1990 to 2010.

Future Regional Population Growth

Also included in Table 3-2 are population forecasts obtained from Woods & Poole Economics, Inc. for 2020 and 2030. Based on the forecasts, the total population of the ten parishes in the project corridor is expected to increase from 1.46 million in 2010 to 1.53 million by 2030, corresponding to an average annual growth rate of 0.2 percent. The Lafayette and New Orleans MSAs are expected to grow at average annual rates of 2.1 percent and 0.6 percent, respectively. The New Orleans MSA is expected to

reach a total population of 1.32 million by 2030, which will account for approximately 25 percent of Louisiana's total population.

Table 3-1. Population Trends and Projections

Area	1990	2000	2010	2020	2030	Annual Growth (1990-2010)	Expected Annual Growth (2010-2030)
Assumption Parish	22,753	23,388	23,421	23,506	24,029	0.1%	0.1%
Iberia Parish	68,297	73,266	73,240	82,055	91,720	0.3%	1.1%
Jefferson Parish	448,306	455,466	432,552	431,687	432,733	-0.2%	0.0%
Lafayette Parish	164,762	190,503	221,578	279,340	344,092	1.5%	2.2%
Lafourche Parish	85,860	89,974	96,318	102,222	108,702	0.6%	0.6%
Orleans Parish	496,938	484,674	343,829	337,003	313,037	-1.8%	-0.5%
St. Charles Parish	42,437	48,072	52,780	58,413	65,048	1.1%	1.1%
St. Martin Parish	43,978	48,583	52,160	62,432	73,447	0.9%	1.7%
St. Mary Parish	58,086	53,500	54,650	56,955	59,587	-0.3%	0.4%
Terrebonne Parish	96,982	104,503	111,860	113,960	116,708	0.7%	0.2%
Total - Ten Parishes	**1,528,399**	**1,571,929**	**1,462,388**	**1,547,573**	**1,629,103**	**-0.2%**	**0.5%**
Lafayette MSA	**208,740**	**239,086**	**273,738**	**341,772**	**417,539**	**1.4%**	**2.1%**
New Orleans MSA	**1,264,391**	**1,316,510**	**1,167,764**	**1,250,215**	**1,319,942**	**-0.4%**	**0.6%**
State of Louisiana	**4,219,973**	**4,468,976**	**4,533,372**	**4,932,015**	**5,343,812**	**0.4%**	**0.8%**

Source: US Census, Woods & Poole 2013 Forecast

Historical Regional Employment Trends

Employment statistics are used as relative indicators of trip attractions to an area. The magnitude of employment growth in an area indicates the potential for an increase in the demand for transportation infrastructure. The historical employment trends in the I-49 study corridor are shown in Table 3-2. Between 2005 and 2010, total employment in the ten parishes along the I-49 corridor decreased at an annual rate of 0.9 percent, due in part to significant reductions in employment in the New Orleans area following Hurricane Katrina. Conversely, the Lafayette MSA experienced an annual average increase of 1.4 percent over that same period. The New Orleans MSA is the most prominent employment center in the project area having over a quarter of all jobs in Louisiana in 2010. Among the ten parishes in the project corridor, Jefferson Parish had the largest total employment in 2010, with over 192,000 jobs.

Figure 3-1 shows the historical unemployment rates in the Lafayette and New Orleans MSAs, the State of Louisiana and the United States. Since 2006, unemployment rates in Louisiana have consistently been below the nationwide average. Although unemployment rose from 2008 to 2010 due to the economic recession, it has fallen in recent years. By 2013, unemployment rates had fallen below seven percent in the New Orleans MSA and below five percent in the Lafayette MSA.

Future Regional Employment Growth

Table 3-2 also shows the employment forecasts generated by Woods & Poole Economics, Inc. for 2020 and 2030. The New Orleans MSA will continue to be the major employment center in the region and is expected to add an additional 330,000 jobs by 2030. New Orleans MSA employment is expected to increase from 519,000 in 2010 to 849,000 in 2030 at an annual growth rate of 2.5 percent. The New Orleans MSA is expected to provide 27 percent of the total statewide employment in 2030.

Between 2010 and 2030, 449,000 additional jobs are expected to be added to the ten parishes in the project corridor at an annual average growth rate of 2.6 percent. Employment in the Lafayette MSA is anticipated to grow at an average annual rate of 3.1 percent from 2010 to 2030.

Table 3-2. Employment Trends and Projections

Area	2005	2010	2020	2030	Annual Growth (2005-2010)	Expected Annual Growth (2010-2030)
Assumption Parish	4,440	4,410	7,226	7,860	-0.1%	2.9%
Iberia Parish	31,715	31,324	50,699	61,208	-0.2%	3.4%
Jefferson Parish	198,682	192,851	281,005	292,015	-0.6%	2.1%
Lafayette Parish	123,011	130,889	210,787	246,623	1.2%	3.2%
Lafourche Parish	33,378	36,784	71,596	85,193	2.0%	4.3%
Orleans Parish	212,453	170,343	248,376	251,091	-4.3%	2.0%
St. Charles Parish	22,522	23,100	36,357	44,537	0.5%	3.3%
St. Martin Parish	10,254	11,592	22,390	27,297	2.5%	4.4%
St. Mary Parish	25,395	25,890	36,990	41,848	0.4%	2.4%
Terrebonne Parish	50,568	54,010	67,046	72,337	1.3%	1.5%
Total - Ten Parishes	**712,418**	**681,193**	**1,032,472**	**1,130,009**	**-0.9%**	**2.6%**
Lafayette MSA	**137,800**	**147,600**	**233,177**	**273,920**	**1.4%**	**3.1%**
New Orleans MSA	**555,500**	**519,100**	**778,151**	**849,438**	**-1.3%**	**2.5%**
State of Louisiana	**1,891,800**	**1,884,700**	**2,824,196**	**3,181,440**	**-0.1%**	**2.7%**

Source: US Census, Woods & Poole 2013 Forecast

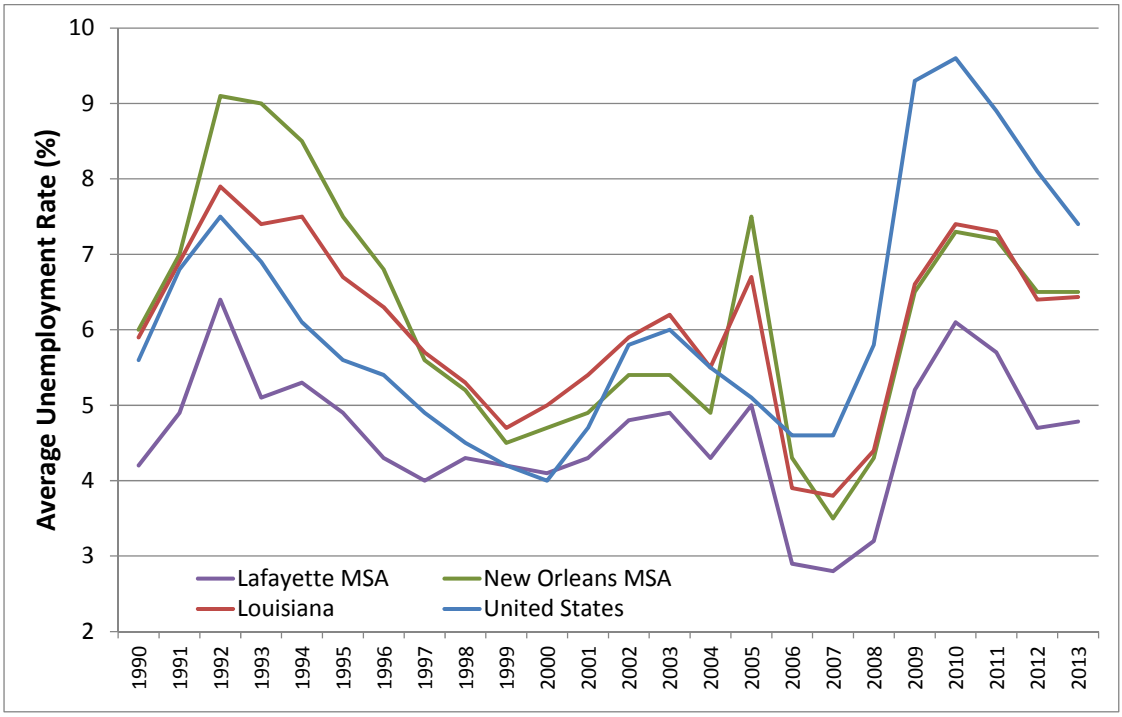

Figure 3-1. Historical Unemployment Rates

Source: US Bureau of Labor Statistics

Regional Median Household Income Trends

Travel demand, and specifically demand for toll roads, is sensitive to the amount of disposable income available within a household. A reliable indicator of a household's propensity for trip-making, and specifically a motorist's willingness to pay a toll, is median household income. Generally, households with higher incomes have an inclination to make more automobile trips than those with lower incomes due to their greater levels of disposable income. Value of time, a key factor in motorists' willingness to pay tolls, also tends to be higher in households with higher incomes.

A comparison of median household income for the I-49 South study area is provided in Table 3-3. The median household income data as estimated by the US Census Bureau for 1999 and 2012 are provided for the ten parishes near the I-49 corridor, the Lafayette and New Orleans metropolitan areas and the state of Louisiana. The median household income data presented in Table 3-3 indicates that income in the region and throughout the state grew between two and three percent annually between 1999 and 2012. This growth rate closely matches historical inflation rates, which indicates that real income in the project area has remained relatively stable over the last decade.

In 2012, median household income ranged from 1.3 times that of the state for St. Charles Parish to 0.8 times that of the entire state for Orleans Parish. However, both the Lafayette and New Orleans metropolitan areas had median incomes above the statewide median in 2012.

Table 3-3. Median Household Income

Area	Median Income		Average Growth
	1999	2012	(1999-2012)
Assumption Parish	$ 31,168	$ 46,410	3.1%
Iberia Parish	$ 31,204	$ 44,611	2.8%
Jefferson Parish	$ 38,435	$ 48,522	1.8%
Lafayette Parish	$ 36,518	$ 49,705	2.4%
Lafourche Parish	$ 34,910	$ 50,574	2.9%
Orleans Parish	$ 27,133	$ 36,681	2.3%
St. Charles Parish	$ 45,139	$ 59,197	2.1%
St. Martin Parish	$ 30,701	$ 41,137	2.3%
St. Mary Parish	$ 28,072	$ 40,738	2.9%
Terrebonne Parish	$ 35,235	$ 49,545	2.7%
Lafayette MSA	---	**$ 48,185**	---
New Orleans MSA	---	**$ 47,429**	---
State of Louisiana	**$ 32,566**	**$ 44,673**	**2.5%**

Source: US Census Bureau

INDEPENDENT ECONOMIC REVIEW

The US-90/I-49 corridor connects two of the largest population and employment centers in Louisiana: New Orleans and Lafayette. Given the significant role that demographics plays in the traffic and revenue forecasting process, an independent economic review was necessary for a more detailed review of the demographics along the I-49 South corridor.

CDM Smith engaged GCR, Inc. in March 2013 to perform an independent economic review and update the demographic forecasts along the I-49 South corridor. The goal of the economic review was to update the original 2040 forecasts in the area (from the LASTM) at a zonal level to create a more refined demographic profile in the areas from which the I-49 South project would draw much of its demand. The findings of the economic review are included in Appendix A.

The updated forecasted demographics reflect changes to the socioeconomic trends that GCR suggests based on their detailed review of development activity along the I-49 South corridor. Figures 3-2 and 3-3 show the updates made by GCR to the 2040 population and employment projections for the zones along the I-49 corridor. The largest reductions in population were made in the central New Orleans and Lafayette areas, while sizable increases were made to the outer portions of the New Orleans and Lafayette areas. Several relatively small increases and reductions were made throughout the more rural portions of the corridor. Similar changes were made to the employment forecasts, with the largest increases occurring in the New Orleans and Lafayette areas.

For additional details regarding the independent economic review performed by GCR and the reasoning behind the population and employment differentials seen below, please refer to Appendix A of this report.

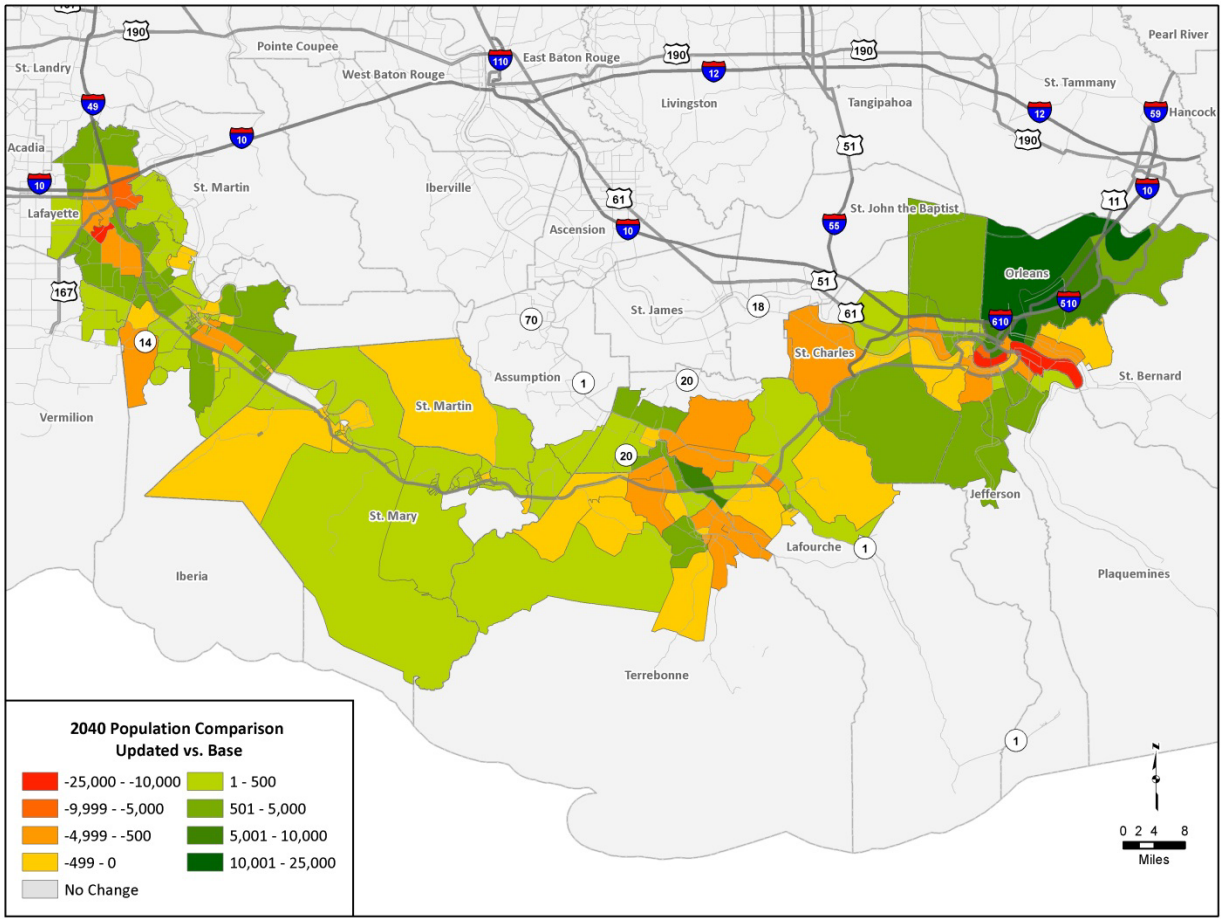

Figure 3-2. Updates to 2040 Population Forecasts

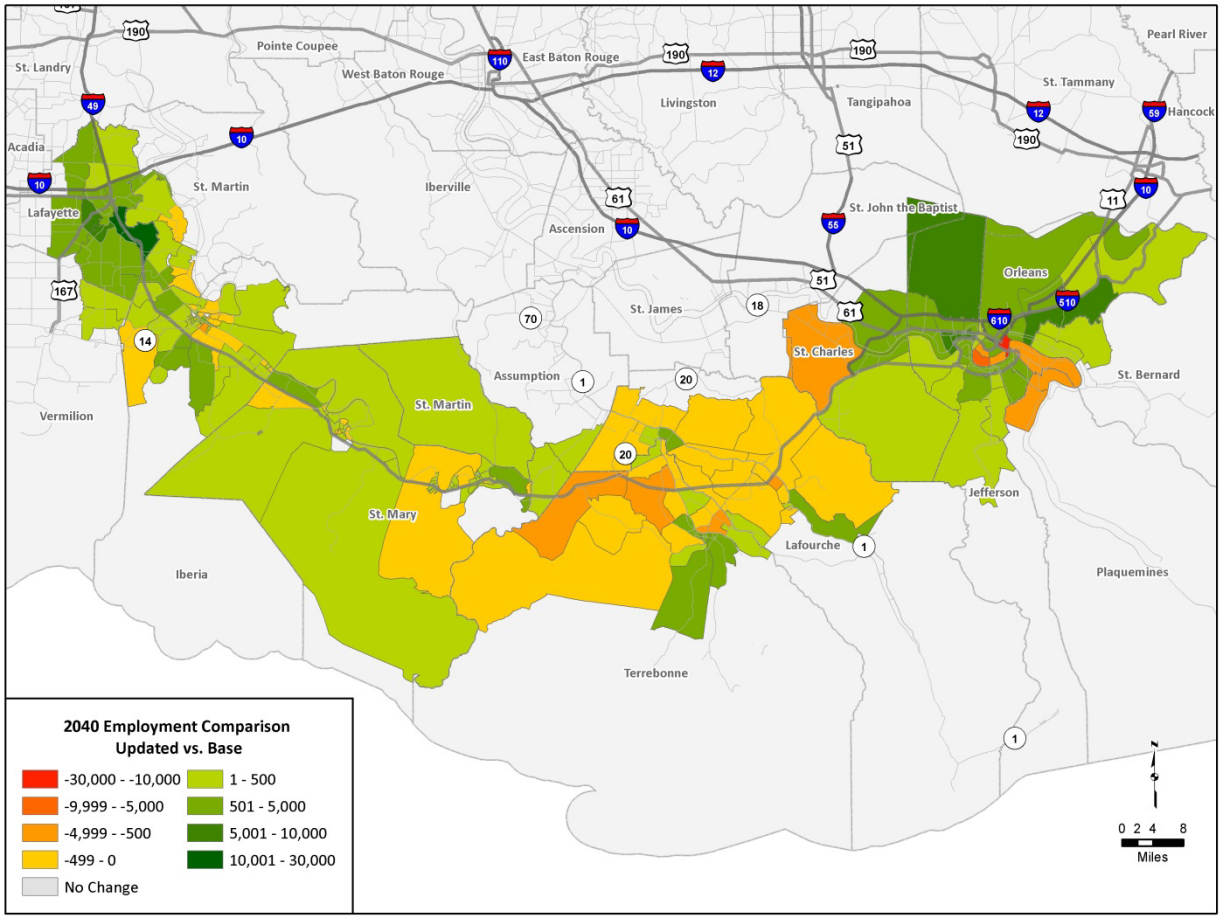

Figure 3-3. Updates to 2040 Employment Forecasts

Section 4

Travel Demand Model Development

This section describes the travel demand model validation process, including database modifications and updates to the TransCAD network and socio-economic characteristics in the I-49 study area. Figure 4-1 illustrates the travel demand process used by CDM Smith for developing the traffic and toll revenue forecasts for the I-49 South project.

HIGHWAY NETWORK UPDATE

The base model used for this analysis was the newly developed Louisiana Statewide Travel Demand Forecasting Model (LASTM). The model was provided in TransCAD format to CDM Smith in September 2013. The 2010 and 2040 networks from the LASTM were reviewed for consistency and validated based on the travel time characteristics and traffic counts collected within the corridor as described in Section 2. The calibrated networks were then used to develop the forecasted I-49 South traffic and toll revenue streams.

The travel time and speed data were used to adjust the free flow speeds along facilities in the I-49 South corridor. These adjustments accounted for geometric and operational characteristics of the major facilities that may not have been captured or reflected as part of the statewide calibration process of travel time attributes. Some typical factors that can influence traffic flow in the corridor are intersection design constraints, traffic signal and stop sign impedances, narrow median design, and multiple entry point characteristics.

MODEL VALIDATION

CDM Smith used traffic counts collected in April 2013 to validate the model and adjust the network characteristics where needed. Eleven screenlines were developed along the corridor to analyze the total corridor traffic trends and to ensure that the base model outputs reflected current traffic characteristics within the I-49 South corridor. Screenlines 1, 2, 3, 4, 5, 6, 7 and 9 analyzed traffic parallel to the project corridor, and Screenline 8 analyzed traffic crossing the I-49 South corridor near LA 1. Screenlines 10 and 11 analyzed traffic in southern and eastern New Orleans, respectively. The locations of the eleven screenlines are shown in Figure 4-2.

The model validation process involved comparing the 2010 traffic assignment output volumes along the I-49 South corridor to the observed traffic count data. Because the traffic counts were collected in 2013, the 2010 model outputs were escalated to 2013 using observed traffic growth rates in the corridor over that same time period. Additionally, output travel times and speeds from the travel demand model were compared to the actual travel speed information collected along the I-49 South. Model volumes were also compared to average daily traffic (ADT) counts available from LaDOTD to test the base year travel demand model from a region-wide traffic forecasting perspective. Finally, the origin-destination patterns from the base year model were analyzed to ensure that they accurately reflected the travel patterns observed from the Bluetooth-based data described in Section 2.

Travel demand modeling practitioners in the United States use "NCHRP 255: Highway Traffic Data for Urbanized Area Project Planning and Design," published by the Transportation Research Board to check the reasonableness of model validation. As shown in Figure 4-3, the percentage difference between the model volumes and traffic is within acceptable ranges for each of the eleven screenlines.

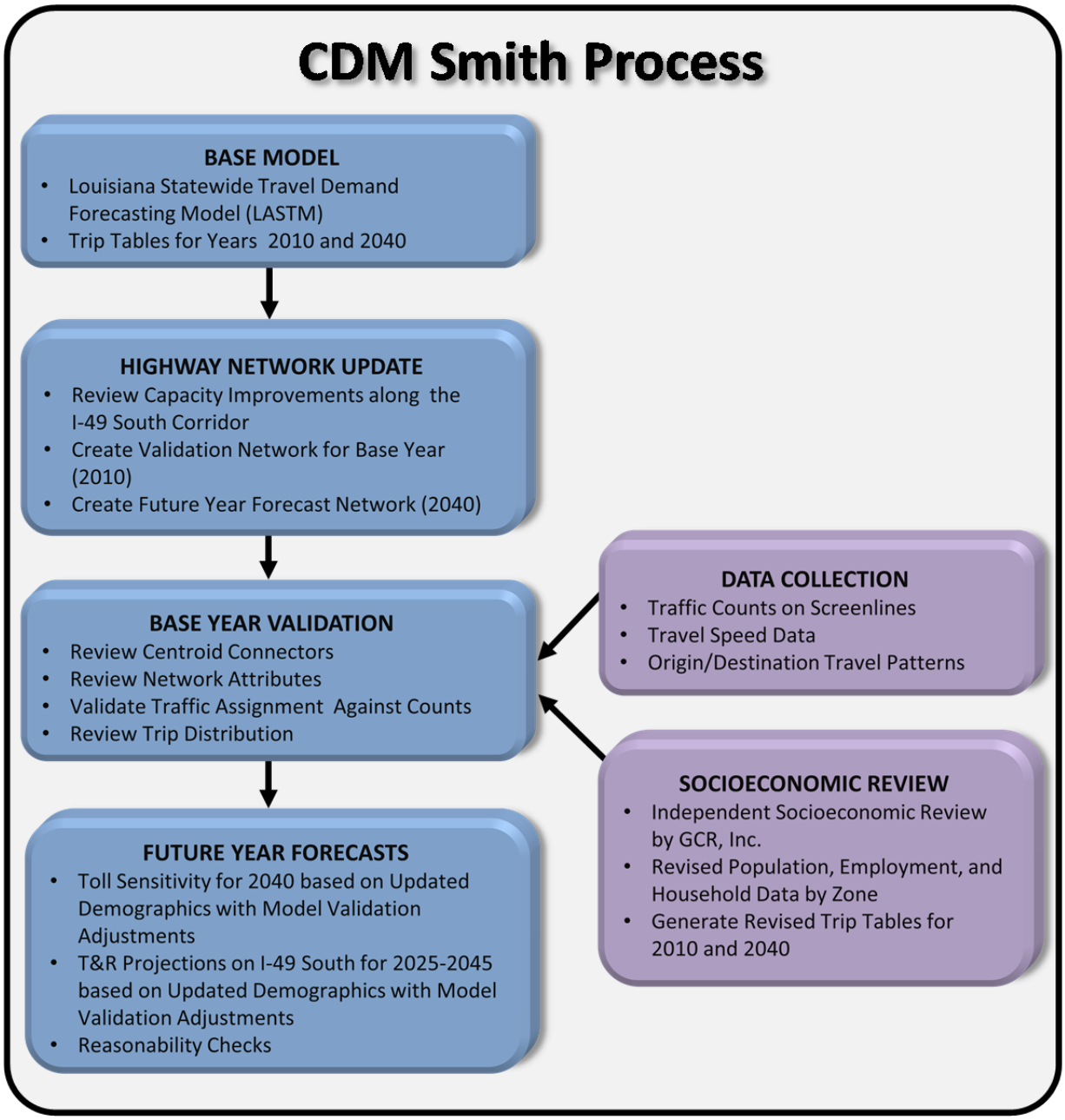

Figure 4-1. I-49 South - Travel Demand Process

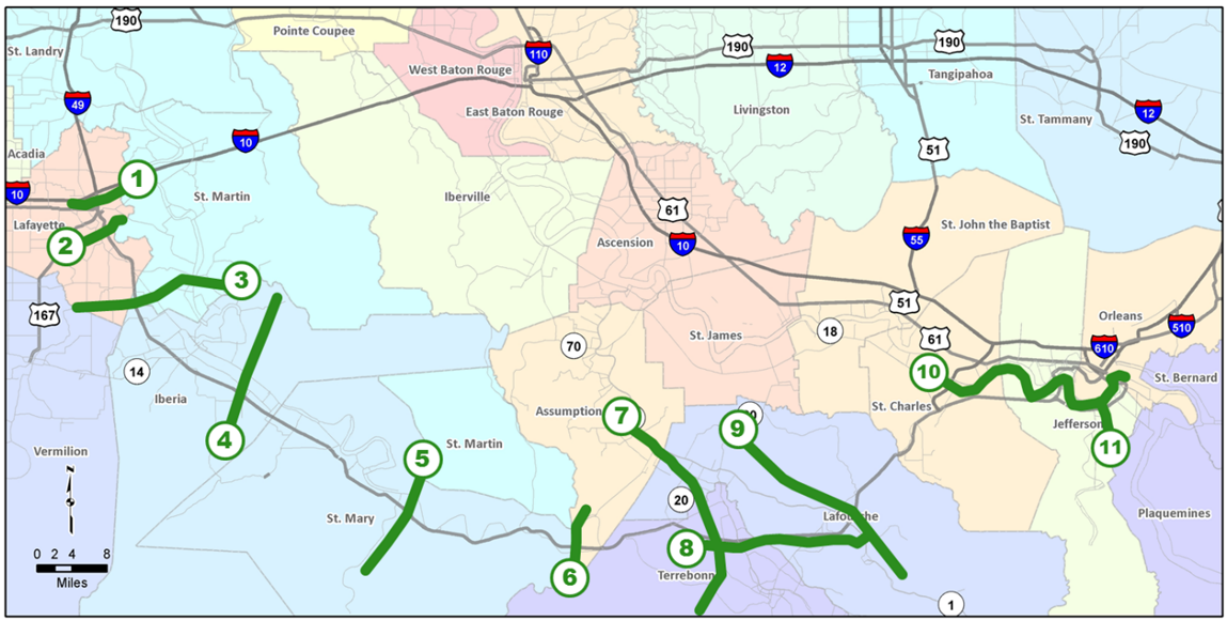

Figure 4-2. Screenline Locations

Table 4-1. Comparison of Traffic Counts and Model Output: Daily Total

Screenline	Screenline Total		
	Traffic Counts	Model Output	Difference (percent)
Screenline 1	144,275	137,391	-4.8
Screenline 2	58,300	59,474	2.0
Screenline 3	66,111	54,931	-16.9
Screenline 4	26,115	19,115	-26.8
Screenline 5	20,470	22,301	8.9
Screenline 6	27,210	37,357	37.3
Screenline 7	26,259	27,972	6.5
Screenline 8	113,004	107,427	-4.9
Screenline 9	25,194	29,442	16.9
Screenline 10	271,846	286,751	5.5
Screenline 11	129,164	138,861	7.5

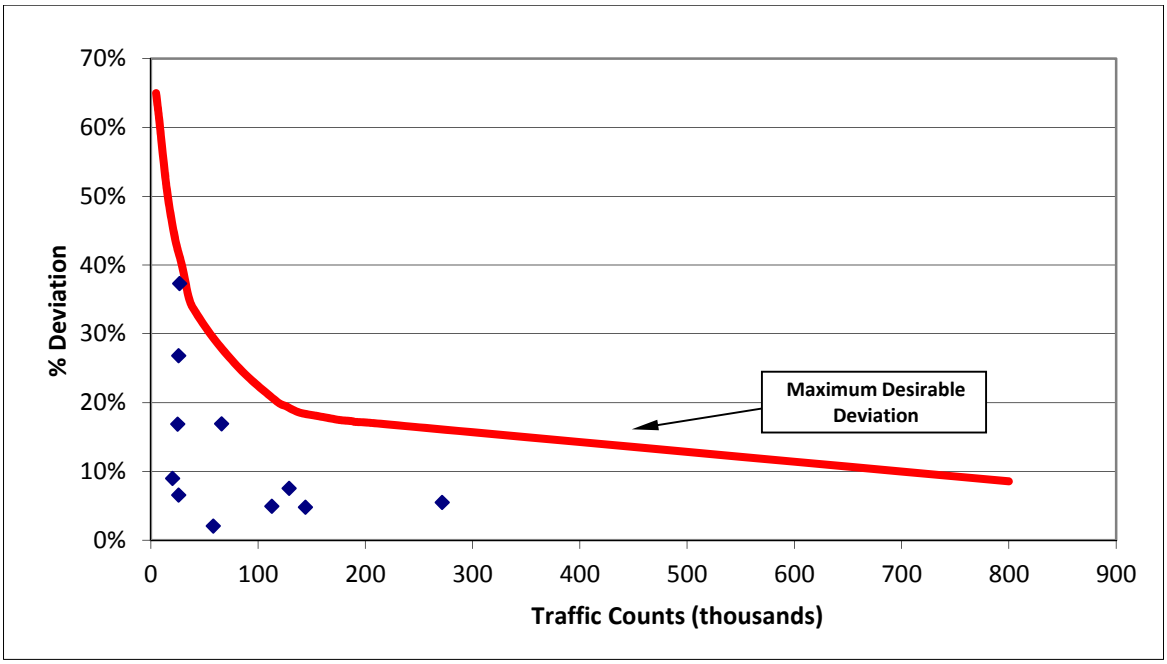

Figure 4-3. I-49 South - Screenline Traffic Validation

MODELING METHODOLOGY

Professional practices and procedures were used in the development of the traffic and revenue forecasts for I-49 South. The CDM Smith market share diversion routines, designed specifically to emulate motorists' willingness to pay tolls at different toll levels and congestion conditions, were used to test the toll sensitivities within the corridor for the both the validation year and 2040 forecast year.

The toll diversion traffic assignments were run using an equilibrium diversion technique to evaluate the toll feasibility of the corridor. In the process, the travel model builds two paths between each pair of zones, one including the project mainlane links, and the other path excluding the project mainlane links. The travel cost associated with using both travel paths is computed, and the amount of trips using the toll facility is then estimated based on travel time savings between the two paths. This technique simulates the driver's decision to use a toll or toll free route, which depends to a large extent on marginal differences in time and cost between the routes.

Time Cost and Vehicle Operating Costs

In addition to tolls, two other end-user costs are considered when calculating the total cost of a trip on I-49 South: time cost and vehicle operating costs. The motorists' time cost is calculated using value of time estimates that are integrated into the modeling process. How travelers value their time helps them determine which route to use for a particular trip. The value of time parameter provides a measure to convert travel time into an equivalent monetary cost for inclusion in the toll diversion process. Vehicle operating costs include a multitude of additional costs to travelers such as wear and tear, maintenance, tires, oil, fuel and other variable costs.

Based on a combination of historical data and the regional income trends summarized in Section 3, an average value of time of $8.64 per hour (in 2010 dollars) was used for the current study. Value of time was assumed to inflate at an average annual rate of 2.3 percent throughout the forecast period.

A vehicle operating cost of $0.21 per mile for passenger vehicles in 2010 was assumed based on estimates published by the American Automobile Association and inflated at the rate of 2.3 percent per year. This includes motor fuel and limited other perceived out-of-pocket costs that are well below the full cost of operation. These are generally not perceived by the drivers as variable costs that affect their route decision choices.

Demographics and Trip Tables

Traffic and revenue estimates along the I-49 South corridor that are presented in Section 5 of this report are based on the base demographics datasets from the LASTM as a starting point. However, the updated demographic datasets developed by GCR Inc., as described in Section 3 were used as an input to generate an alternate set of trip tables and are referred to as the "revised" trip tables. These revised trip tables were used for T&R estimation and toll sensitivity evaluation.

GENERAL ASSUMPTIONS

The forecasted traffic volumes and estimated toll revenues from this study are based on the following general assumptions, which CDM Smith believes are reasonable for the purposes of this study (project specific assumptions can be found in Section 5):

1. I-49 South is expected to open to traffic on January 1, 2025
2. Alignment of I-49 South is to be as described in Section 5 of this report
3. No additional competing limited-access highways will be constructed in the I-49 South corridor at any time during the forecast period.
4. A combination cash/electronic toll collection system will be used, and toll collection policies and rates for the I-49 South will be adopted as shown in Section 6 of this report
5. I-49 South will be well-maintained, efficiently operated, and effectively signed to encourage maximum usage
6. Economic growth in the I-49 South corridor will follow the assumptions described in Section 3
7. Growth in vehicle operating costs (which include fuel, maintenance, and tires) will not significantly deviate from the assumed inflation rate
8. No local, regional, or national emergency will arise which would abnormally restrict the use of motor vehicles

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Section 5

Estimated Traffic and Revenue

This section presents the traffic and annual toll revenue estimates for the proposed I-49 South project. These estimates were based on the configuration described in Section 1 and modeling methodologies defined in Section 4, as well as the results of a toll sensitivity analysis that was performed to estimate the maximum toll rates supported by the I-49 South corridor.

TOLL SENSITIVITY ANALYSIS

The toll sensitivity analysis tests a series of toll rates to aid in the selection of a reasonable toll rate for the study corridor. Toll sensitivity curves are based on changes in traffic characteristics in the corridor including increasing congestion, value of time, competing facilities, and inflationary trends. In general, the toll sensitivity curve suggests that when the toll rate increases, a portion of travelers will leave the toll facility and choose other routes. Therefore, as toll rate increases transactions would decrease. However, as the toll rate increases, the toll revenue increases until it reaches the highest revenue point where an additional toll rate increment would generate a decrease in toll revenue. For the I-49 corridor, a toll sensitivity analysis was conducted to determine the optimum toll rate for the corridor to maximize the revenue earning potential of the facility as a toll road.

Toll sensitivity tests for the I-49 South corridor were completed for the years 2010 and 2040. Toll rates, in actual year dollars, ranging between $0.00 per mile and $0.60 per mile were analyzed for each year. Figure 5-1 illustrates toll sensitivity curves for the years 2010 and 2040. As shown in the figure, the optimum toll rate in 2040 is approximately 25 cents per mile. The toll rate structure used in this analysis assumed annual toll rate increases indexed to inflationary growth, which corresponds to a per mile rate of $0.18 for the opening year 2025.

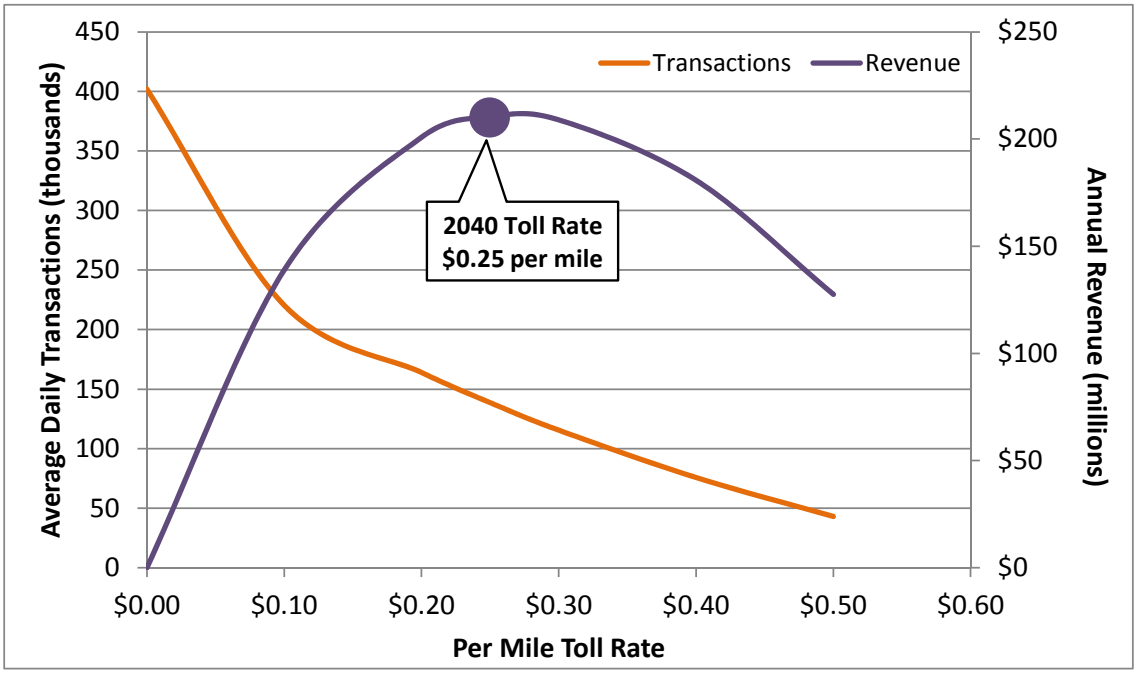

Figure 5-1. 2040 Toll Sensitivity – I-49 South

TOLL COLLECTION SYSTEM AND RATES

For this study, it was assumed that the toll collection system implemented on I-49 South will allow for both electronic toll collection (ETC) payment as well as traditional cash payment. Toll plazas will be strategically located on the main lanes and/or interchange ramps to minimize toll-free movements on the facility. It is possible for a motorist to use only one toll gantry under this system, although the number of toll payments increases as trip movements lengthen. The proposed toll collection configurations for each I-49 South alternative are presented in Figures 5-2 through 5-5.

As shown in Figure 5-4, the implementation of tolling along the entire I-49 south corridor would include seven mainlane toll gantries and 42 pairs of ramp gantries. The mainlane gantries will be located at approximate twenty-mile intervals along the corridor. Figures 5-2 through 5-5 show the toll rates for two-axle vehicles at each toll gantry for the opening year 2025. These toll rates were assumed to be increased on an annual basis based on inflationary growth.

TOLL REVENUE ESTIMATION ASSUMPTIONS

The transaction and toll revenue estimates for I-49 South are based on the following specific assumptions, which are considered reasonable for the purposes of this study:

- Toll collection on I-49 South is assumed to start on January 1, 2025
- An average toll rate of $0.18 per mile is assumed in 2025, with tolls increased at a rate of 2.3 percent annually
- The minimum toll charged is based on a trip length of 1.5 miles
- Toll rates for vehicles with more than two axles are calculated based on “N-1” weighting, i.e., a truck with N axles will be charged (N-1) times the passenger car toll rate
- Trucks are assumed to make up 20 percent of the total traffic on I-49 South
- Ramp-up (dampening applied in early years of project operation to the travel demand model traffic to account for driver unfamiliarity with the project) is assumed to be 80 percent in 2025, 90 percent in 2026, and 100 percent in 2027 and all subsequent years
- Total tolled length for each alternative was assumed as follows:
    - Alternative 1: I-10 (Lafayette) to Wax Lake Outlet
        - 59.2 miles
    - Alternative 2: Wax Lake Outlet to LA 308
        - 50.4 miles
    - Alternative 3: LA 308 to Ames Boulevard (New Orleans)
        - 35.2 miles
    - Alternative 4: I-10 (Lafayette) to Ames Boulevard (New Orleans)
        - 144.8 miles

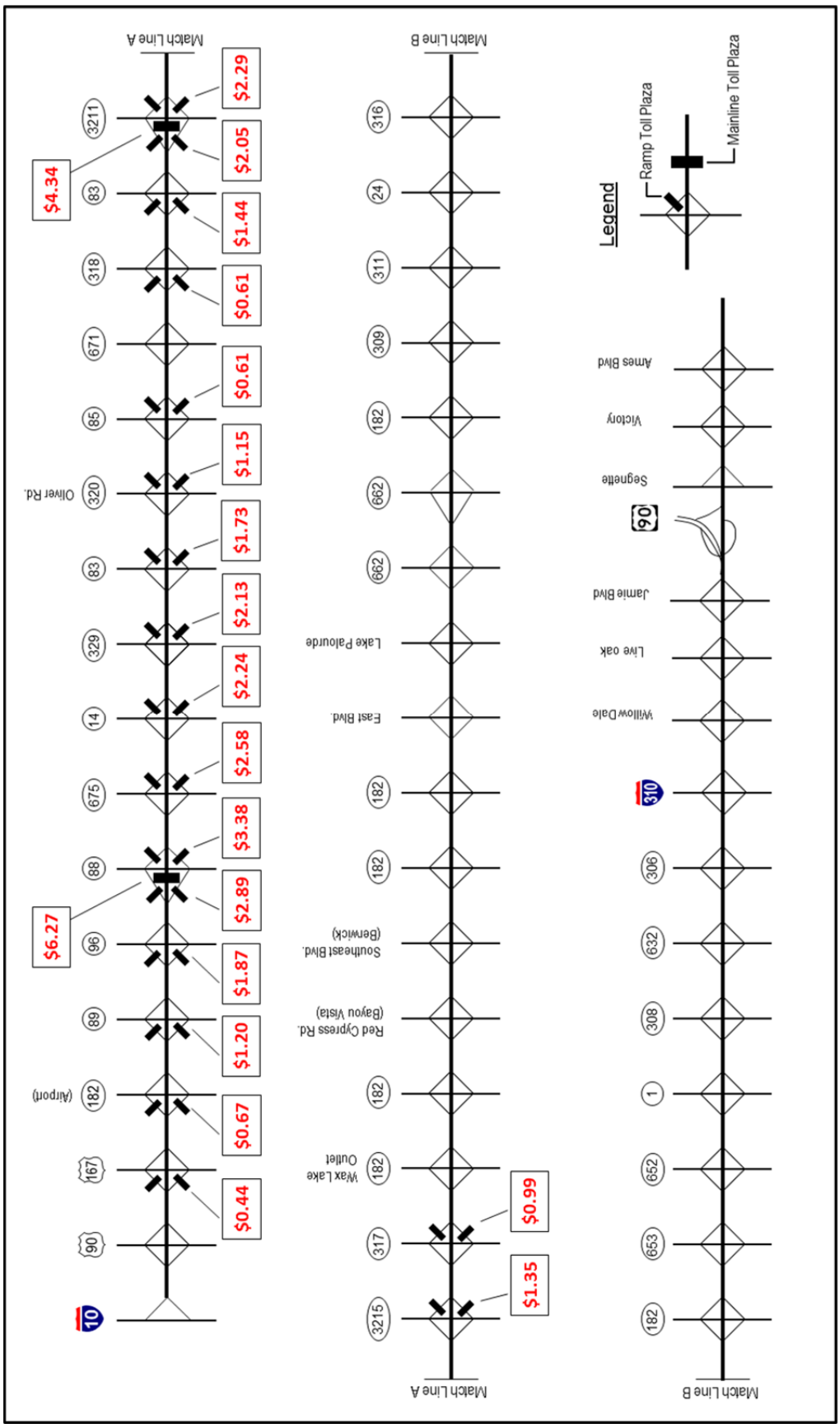

Figure 5-2. 2025 Toll Configuration and Toll Rates: Alternative 1

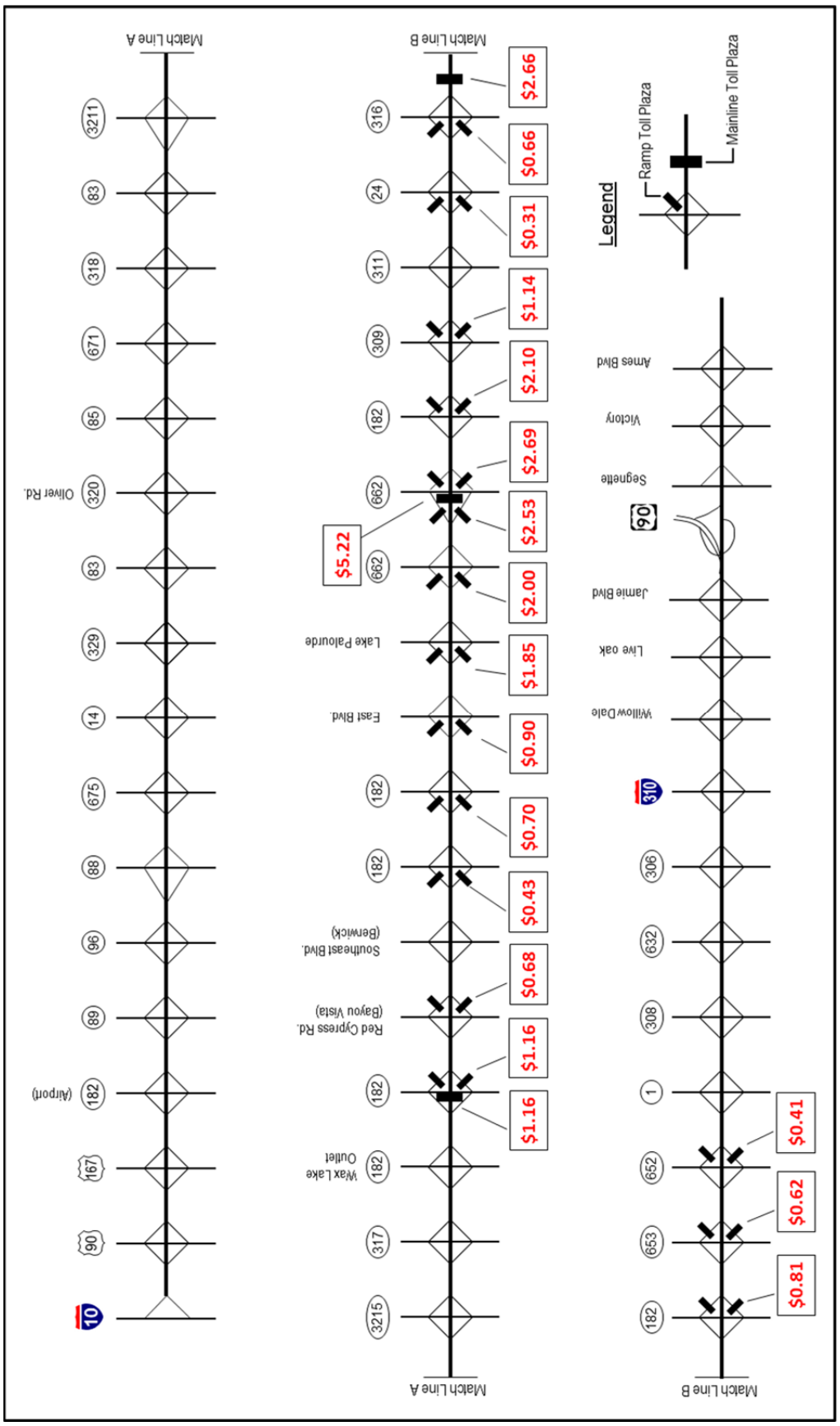

Figure 5-3. 2025 Toll Configuration and Toll Rates: Alternative 2

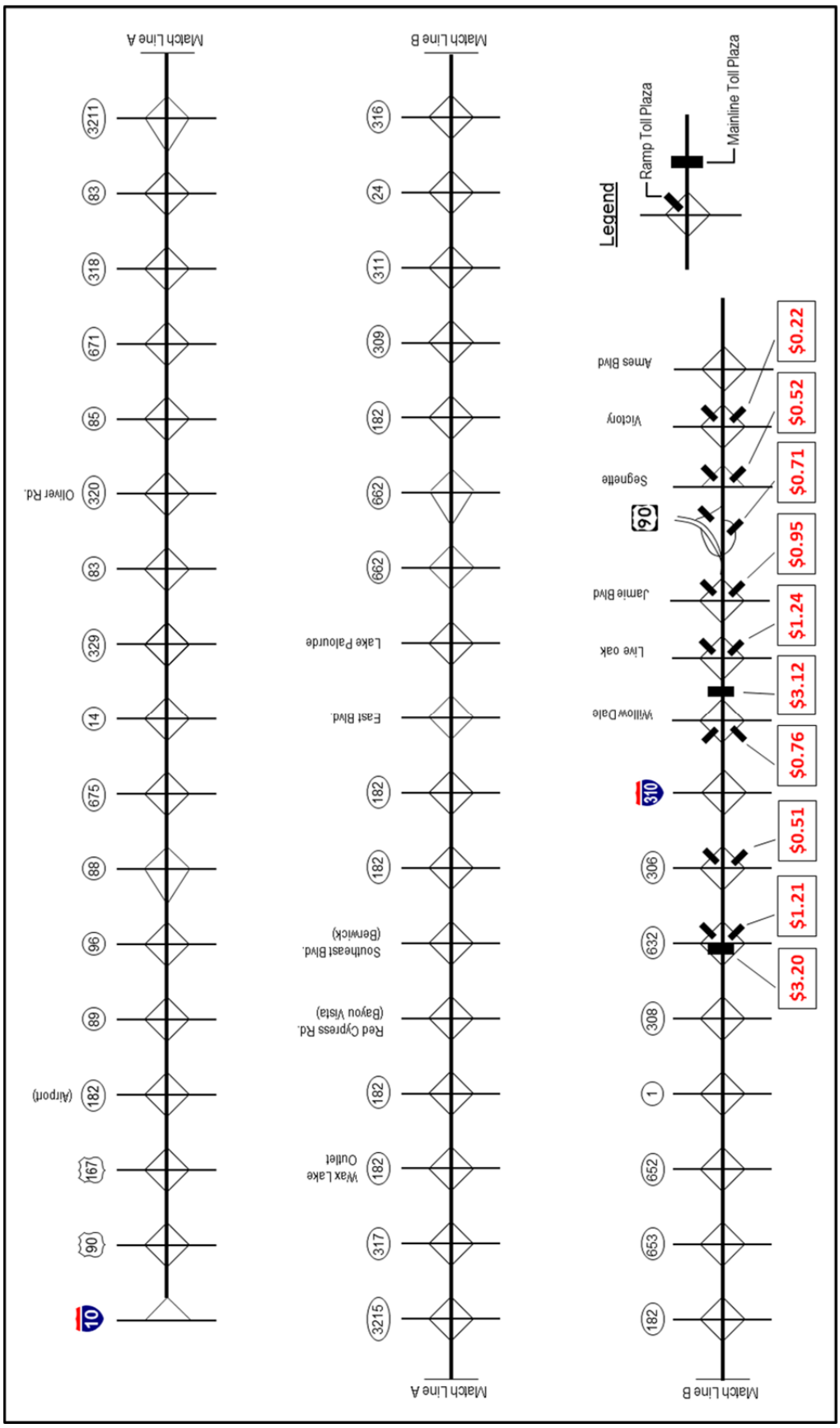

Figure 5-4. 2025 Toll Configuration and Toll Rates: Alternative 3

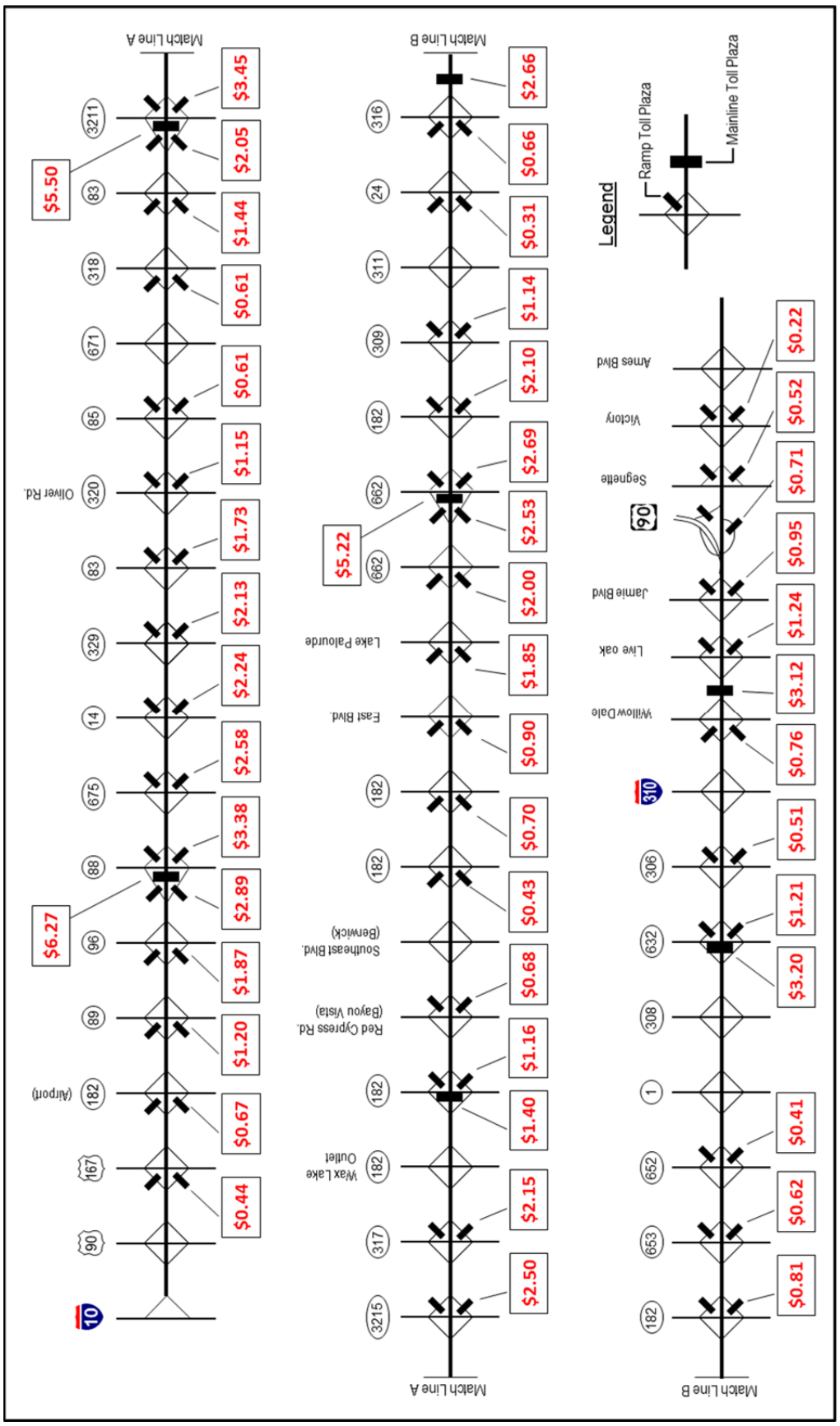

Figure 5-5. 2025 Toll Configuration and Toll Rates: Alternative 4

ESTIMATED ANNUAL TOLL REVENUE

An equilibrium diversion technique was used to carry out daily traffic assignment runs for the base year 2010 and forecast year 2040. The assignment results were also reviewed for reasonableness using both select link and screenline analyses. In the screenline review, special attention was paid to the overall level of traffic growth throughout the projection period, and the relative share of total screenline traffic demand expected to be accommodated within the proposed I-49 South corridor.

Based on the forecasted weekday traffic at each toll gantry for model years 2010 and 2040, annual forecasts for I-49 South were prepared from 2025 through 2065 for each of the four alternatives. Estimates of annual toll revenue for the proposed I-49 South are presented in Tables 5-1 through 5-4 for each of the four alternatives. Annual toll revenue estimates assume that the I-49 South opens to traffic on January 1, 2025. The daily transactions and annual revenue were adjusted to reflect "ramp-up" during the first several years of operation as described above.

Alternative 1 is expected to generate $30.9 million during its first year of operation and increase to over $94.8 million by 2045. Alternative 2, which assumes the construction of only the more rurally located Segment 2, is projected to generate $21.1 million during its first year and increase to $50 million by 2045. Alternatives 1 and 2 are anticipated to generate $4.04 billion and $2.11 billion in toll revenue between 2025 and 2065, respectively.

Alternative 3, which assumes only the construction of Segment 3 at the eastern end of the corridor, is forecasted to produce $22.8 million in 2025 and $51.0 million in 2045. It is anticipated to generate a total of $2.17 billion between 2025 and 2065. Alternative 4, which assumes the construction and tolling of all three segments, is expected to generate $74.2 million in its first year of operation, growing to $195.7 by 2045. Total revenue for Alternative 4 is projected to be $8.32 billion between 2025 and 2065. Figure 5-6 graphically represents the annual revenue for each of the four alternatives.

Table 5-1. Estimated I-49 South Transactions and Toll Revenue: Alternative 1

Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue
2025	34,100	$30,865,000	2039	52,700	$71,811,000	2053	62,100	$125,669,000
2026	38,900	$36,255,000	2040	53,600	$75,179,000	2054	62,700	$130,202,000
2027	43,900	$42,068,000	2041	54,400	$78,722,000	2055	63,200	$134,906,000
2028	44,500	$43,940,000	2042	55,300	$82,448,000	2056	63,500	$138,898,000
2029	45,200	$45,903,000	2043	56,200	$86,369,000	2057	63,800	$143,010,000
2030	45,900	$47,963,000	2044	57,200	$90,496,000	2058	64,000	$147,245,000
2031	46,600	$50,124,000	2045	58,100	$94,840,000	2059	64,300	$151,609,000
2032	47,300	$52,393,000	2046	58,600	$98,216,000	2060	64,600	$156,103,000
2033	48,000	$54,774,000	2047	59,100	$101,719,000	2061	64,900	$160,734,000
2034	48,800	$57,275,000	2048	59,600	$105,353,000	2062	65,100	$165,504,000
2035	49,500	$59,902,000	2049	60,100	$109,122,000	2063	65,400	$170,419,000
2036	50,300	$62,661,000	2050	60,600	$113,033,000	2064	65,700	$175,482,000
2037	51,100	$65,560,000	2051	61,100	$117,090,000	2065	66,000	$180,698,000
2038	51,900	$68,607,000	2052	61,600	$121,300,000	**Total Revenue**		**$4,044,467,000**

Table 5-2. Estimated I-49 South Transactions and Toll Revenue: Alternative 2

Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue
2025	23,300	$21,134,000	2039	33,800	$41,254,000	2053	37,800	$62,275,000
2026	26,500	$24,542,000	2040	34,200	$42,595,000	2054	38,100	$64,010,000
2027	29,700	$28,148,000	2041	34,600	$43,981,000	2055	38,300	$65,793,000
2028	30,000	$29,056,000	2042	35,000	$45,412,000	2056	38,400	$67,466,000
2029	30,300	$29,994,000	2043	35,400	$46,891,000	2057	38,500	$69,181,000
2030	30,700	$30,963,000	2044	35,800	$48,419,000	2058	38,600	$70,940,000
2031	31,000	$31,963,000	2045	36,200	$49,998,000	2059	38,700	$72,744,000
2032	31,300	$32,997,000	2046	36,400	$51,389,000	2060	38,800	$74,593,000
2033	31,700	$34,065,000	2047	36,600	$52,818,000	2061	38,900	$76,490,000
2034	32,000	$35,168,000	2048	36,800	$54,287,000	2062	39,100	$78,436,000
2035	32,400	$36,307,000	2049	37,000	$55,798,000	2063	39,200	$80,430,000
2036	32,700	$37,484,000	2050	37,200	$57,350,000	2064	39,300	$82,476,000
2037	33,100	$38,700,000	2051	37,400	$58,947,000	2065	39,400	$84,574,000
2038	33,400	$39,956,000	2052	37,600	$60,588,000	**Total Revenue**		**$2,109,612,000**

Table 5-3. Estimated I-49 South Transactions and Toll Revenue: Alternative 3

Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue
2025	25,800	$22,814,000	2039	37,100	$42,499,000	2053	42,500	$63,469,000
2026	29,300	$26,384,000	2040	37,500	$43,805,000	2054	42,800	$65,252,000
2027	32,800	$30,139,000	2041	38,000	$45,120,000	2055	43,200	$67,091,000
2028	33,100	$30,989,000	2042	38,500	$46,506,000	2056	43,400	$68,812,000
2029	33,400	$31,868,000	2043	39,000	$47,948,000	2057	43,600	$70,578,000
2030	33,700	$32,775,000	2044	39,500	$49,446,000	2058	43,700	$72,392,000
2031	34,000	$33,713,000	2045	40,000	$51,006,000	2059	43,900	$74,253,000
2032	34,400	$34,683,000	2046	40,300	$52,404,000	2060	44,100	$76,165,000
2033	34,700	$35,686,000	2047	40,600	$53,845,000	2061	44,300	$78,128,000
2034	35,100	$36,724,000	2048	40,900	$55,330,000	2062	44,500	$80,143,000
2035	35,400	$37,798,000	2049	41,200	$56,860,000	2063	44,700	$82,212,000
2036	35,800	$38,911,000	2050	41,500	$58,438,000	2064	44,900	$84,337,000
2037	36,200	$40,064,000	2051	41,800	$60,064,000	2065	45,100	$86,519,000
2038	36,600	$41,259,000	2052	42,200	$61,740,000	**Total Revenue**		**$2,168,169,000**

Table 5-4. Estimated I-49 South Transactions and Toll Revenue: Alternative 4

Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue	Year	Average Daily Txns	Annual Revenue
2025	82,600	$74,182,000	2039	123,100	$155,101,000	2053	142,200	$251,627,000
2026	94,000	$86,479,000	2040	124,900	$161,163,000	2054	143,300	$259,733,000
2027	105,700	$99,586,000	2041	126,600	$167,454,000	2055	144,500	$268,117,000
2028	107,000	$103,228,000	2042	128,300	$174,052,000	2056	145,000	$275,536,000
2029	108,300	$107,022,000	2043	130,200	$180,950,000	2057	145,600	$283,165,000
2030	109,600	$110,974,000	2044	132,000	$188,166,000	2058	146,200	$291,010,000
2031	111,000	$115,092,000	2045	134,000	$195,716,000	2059	146,800	$299,078,000
2032	112,400	$119,385,000	2046	134,900	$201,916,000	2060	147,300	$307,375,000
2033	113,800	$123,861,000	2047	135,900	$208,326,000	2061	147,900	$315,907,000
2034	115,300	$128,529,000	2048	137,000	$214,952,000	2062	148,500	$324,683,000
2035	116,800	$133,398,000	2049	138,000	$221,804,000	2063	149,100	$333,708,000
2036	118,300	$138,479,000	2050	139,000	$228,889,000	2064	149,700	$342,989,000
2037	119,900	$143,782,000	2051	140,100	$236,215,000	2065	150,300	$352,536,000
2038	121,500	$149,319,000	2052	141,200	$243,791,000	**Total Revenue**		**$8,317,275,000**

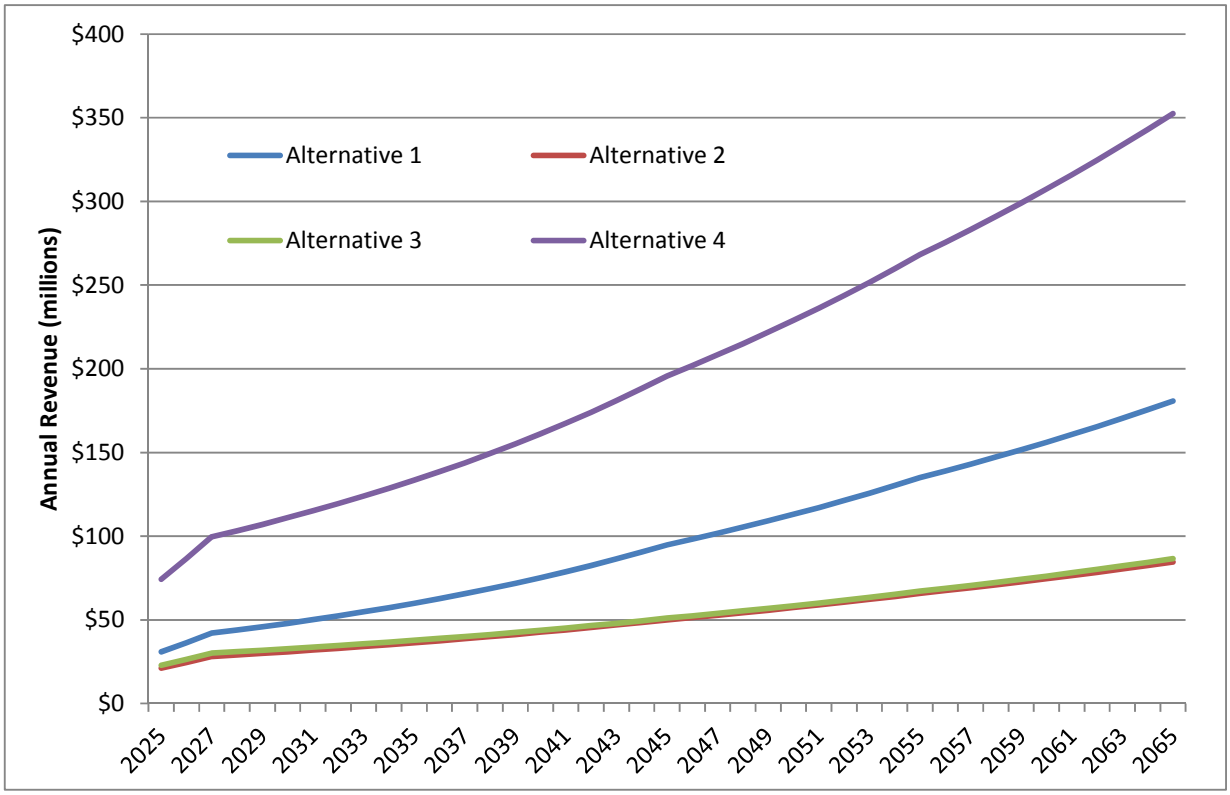

Figure 5-6. I-49 South Revenue Comparison

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Section 6

Financial Capacity Analysis

A sketch level financial capacity analysis was conducted to estimate the bonding capacity of the proposed I-49 South project. The intent of this analysis is to assess the project's potential to be self-funding. The overall feasibility of each alternative was estimated based on an analysis of the total cost of constructing, financing and operating the project compared to the total revenue it is anticipated to generate. The financial capacity analysis relied on three primary inputs:

- **Construction costs** – the total capital costs of constructing the roadway and the tolling equipment and infrastructure needed for toll collection
- **Operation and maintenance costs** – the annual costs incurred to operate the roadway. This includes the maintenance of the roadway and the tolling equipment, as well as the costs of collecting and processing tolls
- **Toll revenues** – the annual revenues generated on the facility through the application and collection of tolls

The sketch level financial capacity analysis included the development of capital costs for the tolling systems and equipment by CDM Smith. Construction costs for the roadway itself were provided by LaDOTD. In addition, CDM Smith estimated the annual operation and maintenance costs for both the roadway surface as well as the tolling equipment and systems. These costs were then used in conjunction with the revenue forecasts developed as part of the traffic and revenue study to estimate the overall feasibility of each of the four toll alternatives.

CONSTRUCTION COSTS

Summaries of the total construction costs (roadway and tolling infrastructure) for each alternative are provided in Tables 6-1 through 6-4. The construction cost estimates for the tolling infrastructure included costs for the proposed toll collection system, comprised of items such as main lane structures and appurtenances, communication equipment, power systems, signage, both manual and electronic toll collection systems, vehicle detection and violation triggers, a violation enforcement system, lane and host processing, security access and control, and project delivery costs. These costs did not include utility infrastructure costs, additional warranties or maintenance, or pavement and pavement marking costs. The toll collection system costs were estimated for a base year of 2014 and inflated in each alternative based on the expected construction start date. The roadway construction cost estimates were provided by LaDOTD.

OPERATION AND MAINTENANCE COSTS

Summaries of the annual operation and maintenance costs for each alternative are provided in Tables 6-5 through 6-8. Administrative costs (including law enforcement patrol, communications and insurance) were estimated as a function of total centerline roadway length. The costs for toll collection were estimated based on the total number of ramp and mainlane plazas needed for each alternative, while the cost of roadway maintenance was driven by the total number of lane miles on the facility. A contingency factor of twelve percent was also applied to the operation and maintenance costs.

Table 6-1. I-49 South Construction Cost Estimate: Alternative 1

Item	Unit Cost	Quantity	Total Cost
Ramp Toll Plaza (2 Plazas per Interchange)	$ 412,300	18	$ 7,421,400
Mainlane Toll Plaza	$ 724,600	2	$ 1,449,200
Customer Service Center	$ 9,145,890	1	$ 9,145,890
Toll Related Construction Subtotal			*$ 18,016,490*
Contingency @ 15 Percent of Construction			$ 2,702,474
Design and Construction Administration @ 12 Percent of Construction and Contingency			$ 2,486,276
Subtotal			*$ 23,205,239*
Roadway Construction Cost Estimate (from LaDOTD)			$ 1,344,000,000
TOTAL CONSTRUCTION COST (in 2014 dollars)			**$ 1,367,205,239**

Table 6-2. I-49 South Construction Cost Estimate: Alternative 2

Item	Unit Cost	Quantity	Total Cost
Ramp Toll Plaza (2 Plazas per Interchange)	$ 412,300	16	$ 6,596,800
Mainlane Toll Plaza	$ 724,600	3	$ 2,173,800
Customer Service Center	$ 9,145,890	1	$ 9,145,890
Toll Related Construction Subtotal			*$ 17,916,490*
Contingency @ 15 Percent of Construction			$ 2,687,474
Design and Construction Administration @ 12 Percent of Construction and Contingency			$ 2,472,476
Subtotal			*$ 23,076,439*
Roadway Construction Cost Estimate (from LaDOTD)			$ 242,000,000
TOTAL CONSTRUCTION COST (in 2014 dollars)			**$ 265,076,439**

Table 6-3. I-49 South Construction Cost Estimate: Alternative 3

Item	Unit Cost	Quantity	Total Cost
Ramp Toll Plaza (2 Plazas per Interchange)	$ 412,300	8	$ 3,298,400
Mainlane Toll Plaza	$ 724,600	2	$ 1,449,200
Customer Service Center	$ 9,145,890	1	$ 9,145,890
Toll Related Construction Subtotal			*$ 13,893,490*
Contingency @ 15 Percent of Construction			$ 2,084,024
Design and Construction Administration @ 12 Percent of Construction and Contingency			$ 1,917,302
Subtotal			*$ 17,894,815*
Roadway Construction Cost Estimate (from LaDOTD)			$ 1,313,000,000
TOTAL CONSTRUCTION COST (in 2014 dollars)			**$ 1,330,894,815**

Table 6-4. I-49 South Construction Cost Estimate: Alternative 4

Item	Unit Cost	Quantity	Total Cost
Ramp Toll Plaza (2 Plazas per Interchange)	$ 412,300	42	$ 17,316,600
Mainlane Toll Plaza	$ 724,600	7	$ 5,072,200
Customer Service Center	$ 9,145,890	1	$ 9,145,890
Toll Related Construction Subtotal			*$ 31,534,690*
Contingency @ 15 Percent of Construction			$ 4,730,204
Design and Construction Administration @ 12 Percent of Construction and Contingency			$ 4,351,787
Subtotal			*$ 40,616,681*
Roadway Construction Cost Estimate (from LaDOTD)			$ 2,899,000,000
TOTAL CONSTRUCTION COST (in 2014 dollars)			**$ 2,939,616,681**

Table 6-5. I-49 South Operations and Maintenance Cost Estimate: Alternative 1

Item	Unit		Quantity	Total Cost
Administration				
Administration	$11,471	per roadway mile	59.2	$ 679,094
Patrol	$16,431	per roadway mile	59.2	$ 972,713
Communications	$2,847	per roadway mile	59.2	$ 168,569
Insurance	$18,491	per roadway mile	59.2	$ 1,094,671
Total Administration	*$49,241*			*$ 2,915,048*
Toll Collection				
Number of Mainline Barrier Plazas	2	2 lanes each direction	8	$ 1,180,800
Number of Interchanges with Ramp Plazas	18	1 lane each direction	36	$ 4,665,600
Customer Service / TMC	$456,000	for toll system		$ 456,000
Total Toll Collection				*$ 6,302,400*
Maintenance				
Maintenance	$1,102	per lane mile	236.8	$ 260,881
Subtotals				
Administration				$ 2,915,048
Toll Collection				$ 6,302,400
Maintenance				$ 260,881
Contingency (12%)				$ 1,137,399
TOTAL ANNUAL O&M COSTS (in 2014 dollars)				**$ 10,615,728**

Table 6-6. I-49 South Operations and Maintenance Cost Estimate: Alternative 2

Item	Unit		Quantity	Total Cost
Administration				
Administration	$11,471	per roadway mile	50.4	$ 578,148
Patrol	$16,431	per roadway mile	50.4	$ 828,120
Communications	$2,847	per roadway mile	50.4	$ 143,512
Insurance	$18,491	per roadway mile	50.4	$ 931,950
Total Administration	*$49,241*			*$ 2,481,730*
Toll Collection				
Number of Mainline Barrier Plazas	3	2 lanes each direction	12	$ 1,771,200
Number of Interchanges with Ramp Plazas	16	1 lane each direction	32	$ 4,147,200
Customer Service / TMC	$456,000	for toll system		$ 456,000
Total Toll Collection				*$ 6,374,400*
Maintenance				
Maintenance	$1,102	per lane mile	201.6	$ 222,102
Subtotals				
Administration				$ 2,481,730
Toll Collection				$ 6,374,400
Maintenance				$ 222,102
Contingency (12%)				$ 1,089,388
TOTAL ANNUAL O&M COSTS (in 2014 dollars)				**$ 10,167,619**

Table 6-7. I-49 South Operations and Maintenance Cost Estimate: Alternative 3

Item	Unit		Quantity	Total Cost
Administration				
Administration	$11,471	per roadway mile	35.2	$ 403,786
Patrol	$16,431	per roadway mile	35.2	$ 578,370
Communications	$2,847	per roadway mile	35.2	$ 100,231
Insurance	$18,491	per roadway mile	35.2	$ 650,886
Total Administration	*$49,241*			*$ 1,733,272*
Toll Collection				
Number of Mainline Barrier Plazas	2	2 lanes each direction	8	$ 1,180,800
Number of Interchanges with Ramp Plazas	8	1 lane each direction	16	$ 2,073,600
Customer Service / TMC	$456,000	for toll system		$ 456,000
Total Toll Collection				*$ 3,710,400*
Maintenance				
Maintenance	$1,102	per lane mile	140.8	$ 155,119
Subtotals				
Administration				$ 1,733,272
Toll Collection				$ 3,710,400
Maintenance				$ 155,119
Contingency (12%)				$ 671,855
TOTAL ANNUAL O&M COSTS (in 2014 dollars)				**$ 6,270,645**

Table 6-8. I-49 South Operations and Maintenance Cost Estimate: Alternative 4

Item	Unit		Quantity	Total Cost
Administration				
Administration	$11,471	per roadway mile	144.8	$ 1,661,028
Patrol	$16,431	per roadway mile	144.8	$ 2,379,202
Communications	$2,847	per roadway mile	144.8	$ 412,312
Insurance	$18,491	per roadway mile	144.8	$ 2,677,507
Total Administration	*$49,241*			*$ 7,130,049*
Toll Collection				
Number of Mainline Barrier Plazas	7	2 lanes each direction	28	$ 4,132,800
Number of Interchanges with Ramp Plazas	42	1 lane each direction	84	$ 10,886,400
Customer Service / TMC	$456,000	for toll system		$ 456,000
Total Toll Collection				*$ 15,475,200*
Maintenance				
Maintenance	$1,102	per lane mile	579.2	$ 638,102
Subtotals				
Administration				$ 7,130,049
Toll Collection				$ 15,475,200
Maintenance				$ 638,102
Contingency (12%)				$ 2,789,202
TOTAL ANNUAL O&M COSTS (in 2014 dollars)				**$ 26,032,553**

FEASIBILITY ASSESSMENT

The financing capacity for each alternative was estimated using a public agency financial model, which assumes that LaDOTD, or its designated public agency, will finance, construct, operate, and maintain the tolled facility for a forty-year analysis period. This model was based on the issuance of non-recourse, tax-exempt toll revenue debt to fund construction. It assumed that no public funding source would be pledged by the public entity other than toll revenues.

Methodology

For each alternative, the total debt that would need to be incurred to raise sufficient capital to fund total project capital costs was calculated. Debt is the principal amount raised through capital market debt or bond offerings, or through commercial bank lending. Total project capital costs are the sum of the roadway construction costs and the toll system construction costs, inflated to year of expenditure plus financing costs. Financing costs are the transaction costs paid to various parties (underwriters, bond counsel, rating agencies, etc.) and interest paid to bondholders during the construction of a project.

The overall feasibility of a project is estimated by observing the total debt incurrence necessary to construct the project and calculating how much of that debt can be serviced by the forecasted net revenues (gross toll revenues less toll operations and maintenance costs) at assumed levels of debt service coverage. Debt service coverage is the ratio of annual net revenues to annual principal and interest payments and is used in determining bond ratings and interest rates.

An overall feasibility above 100 percent indicates a funding excess, while a feasibility of less than 100 percent indicates a funding shortfall. An excess identifies additional bonding capacity, which indicates a potential for the alternative considered to be somewhat flexible in accommodating scope changes or additional costs. Conversely, a shortfall represents insufficient bonding capacity, which means that additional public funding will be required to implement the project.

Assumptions

The following input assumptions were used in the financial feasibility assessment:

- Project capital costs were escalated from a base year of 2014 to the date of construction at an annual rate of 2.5 percent
- Bonds were assumed to have 40-year maturities with typical interest rate ranges and minimal structuring
- Transportation Infrastructure Finance and Innovation Act (TIFIA) funding was not assumed as part of the current analysis
- A forty-year analysis period was used for revenue estimates and operation and maintenance cost estimates

Results

The results of the financing capacity analysis are presented in Table 6-9. Each alternative was evaluated under a range of potential bond interest rates (5 to 7 percent) and coverage ratios (1.25 to 1.75) to reflect the range of market conditions that may exist at the time of bond issuance. This resulted in a range of likely feasibility for each alternative. The results indicate that Alternative 2 has the greatest potential feasibility as a tolled facility, due primarily to its significantly lower construction cost compared to the other alternatives. However, it only appears to eclipse 100 percent feasibility

under very optimistic conditions (bond interest rate of 5% and coverage ratio of 1.25). For each of the other three alternatives, overall feasibility is less than 60 percent even under optimistic conditions. The anticipated toll revenues, under the stated assumptions, are not sufficient to secure the large construction costs of the facility. Table 6-9 also includes the 2025 net present value of both the construction, operation and maintenance costs as well as the total toll revenue. However, it is important to note that financing costs, interest, debt service coverage and other debt service requirements are not included in the net present value calculation. Therefore, the net present value of the total toll revenue is not an accurate indicator of the total amount of capital cost that can be supported by tolling the facility.

The availability of secondary funding sources to pay a portion of the project costs and/or to supplement annual net toll revenues could potentially have significant impacts on the overall feasibility of each alternative. In addition, several other methods of potentially increasing feasibility are available, including the use of TIFIA, a variety of debt instruments, maturities and issuance timing to manage interest rates, issuance costs, capitalized interest and coverage.

Table 6-9. I-49 South Sketch Level Financial Capacity Results

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Total construction cost[1]	$ 1,472,331,000	$ 307,407,000	$ 1,433,228,000	$ 3,165,646,000
Total operation and maintenance costs[2][3]	$ 711,812,000	$ 681,765,000	$ 420,463,000	$ 1,745,549,000
Total toll revenue[2]	$ 4,044,467,000	$ 2,109,612,000	$ 2,168,169,000	$ 8,317,275,000
Total net revenue[2]	$ 3,332,655,000	$ 1,427,847,000	$ 1,747,706,000	$ 6,571,726,000
Overall Feasibility[4]	**27% - 53%**	**54% - 106%**	**17% - 32%**	**26% - 51%**
2025 net present value of construction, operation and maintenance costs[5]	$ 2,224,505,000	$ 760,240,000	$ 2,000,610,000	$ 4,913,010,000
2025 net present value of total toll revenue[5]	$ 2,254,755,000	$ 1,212,635,000	$ 1,250,631,000	$ 4,711,305,000

(1) inflated at 2.5% to first year of construction [2017 (Alts 1, 3 and 4), 2020 (Alt 2)]

(2) for the 2025-2065 forecast period, shown in nominal dollars

(3) operation and maintenance costs were escalated at an annual rate of 1.5 percent during the analysis period

(4) based on assumed financing costs, bond interest rates of 5-7% and debt service coverage ratios of 1.25-1.75

(5) assuming an average annual inflation rate of 2.5%

[note: net present value does not account for financing costs, interest or other debt service requirements]

Disclaimer

The financing capacity analysis presented in this study is intended solely for planning purposes. It is not intended to supplant the analysis that will be required by a registered financial advisor or underwriter as part of the financing process. Changes in underlying assumptions, the financial market conditions and further refinements by a financial advisor could materially alter the results of these analyses.

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Appendix A

Independent Economic Review

This appendix contains the documentation of the independent economic review as provided by the subconsultant, GCR, Inc. This report was provided to CDM Smith in May 2013.

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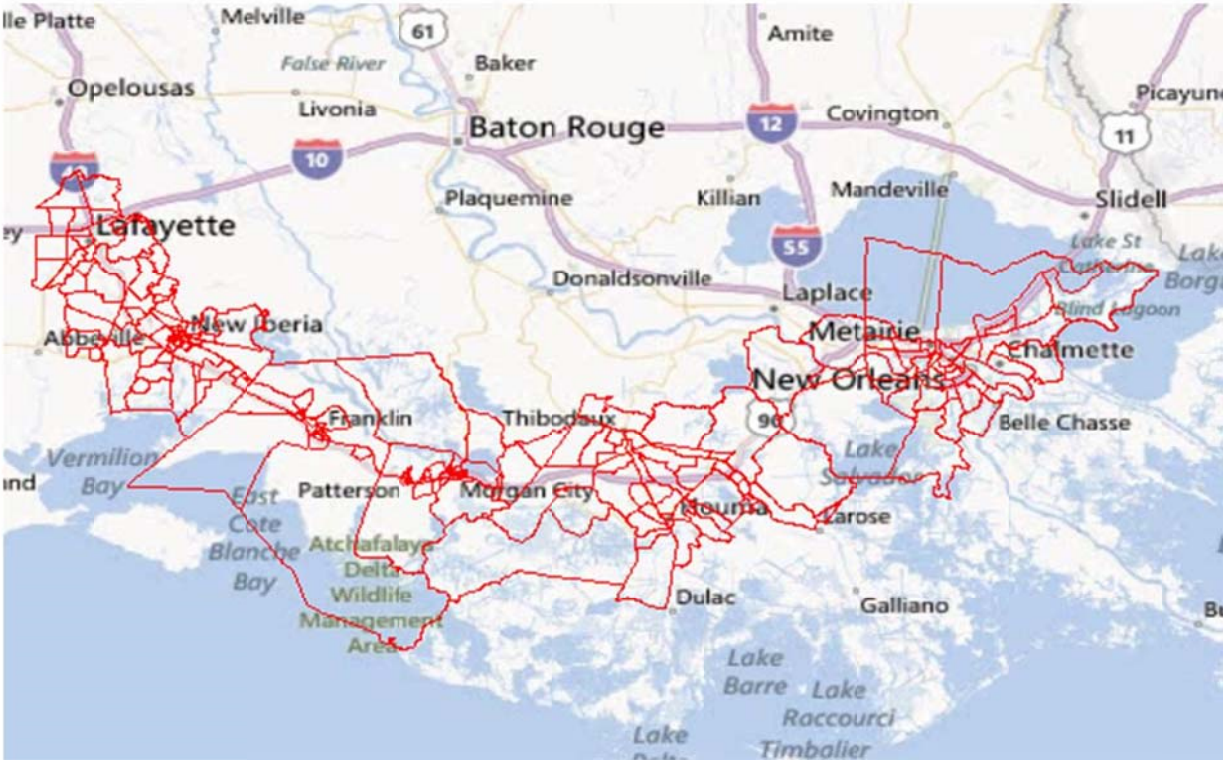
INTRODUCTION AND OVERVIEW

GCR, Inc. (GCR) was retained to review and, where appropriate, revise long-term population and employment forecasts for areas along the proposed extension of Interstate 49 along the current route of U.S. Highway 90 throughout southern Louisiana. The study area consisted of Traffic Analysis Zones (TAZs) within five miles of the proposed route between Lafayette and New Orleans, an area comprised of 229 total TAZs.

Figure 1: Map of Study Area



The projections GCR was tasked with reviewing were those used in the ongoing development of the Statewide Transportation Plan. These forecasts predicted total population and total employment between 2010 and 2043. Our role was to review these forecasts for reasonableness and to gather and analyze more current and detailed information to refine them as practicable.

SUMMARY OF REVISIONS

As of 2010, the study area had a residential population of 1,376,047 and 648,067 total jobs. The original forecasts anticipated a total of 1,640,590 residents and 842,005 jobs by 2043. Based on GCR's review of these forecasts throughout the study area, we have provided revised projections which anticipate a

population of 1,665,823 and 849,962 jobs by 2043. We expect that the study area will gain an additional 289,776 residents and 201,895 jobs between 2010 and 2043, which is 25,233 residents and 7,957 jobs higher than projected by the original forecasts.

Figure 2: Summary of Revisions

	2010	2043 (Original)	2043 (Revised)
Population	1,376,047	1,640,590	1,665,823
Employment	648,067	842,005	849,962

GEOGRAPHIES ANALYZED

In order to analyze TAZ-level forecasts in a meaningful and manageable manner, GCR grouped TAZs into 19 zones. These zones ranged from very small towns to rural portions of parishes to large metropolitan areas, and the zone in which each TAZ was included was determined by the initial TAZ-level file GCR received at the onset of the analysis. Specifically, the field "ZONENAME" within the projections included the following areas, a map of which is included as Appendix A to this report:

- Amelia
- Baldwin
- Bayou Vista
- Berwick
- Charenton
- Franklin
- Houma-Thibodaux MPO
- Jeanerette
- Lafayette MPO
- Lydia
- Morgan City
- New Iberia
- New Orleans MPO
- Patterson
- Rural Assumption Parish
- Rural Iberia Parish
- Rural St. Martin Parish
- Rural St. Mary Parish
- Rural Vermilion Parish

REVIEW OF POPULATION FORECASTS

GCR's approach to the preliminary review of population forecasts within each zone began with a comparison of the changes in population during the twenty-year period between 1990 and 2010 as reported by the Census counts to projections for the twenty-year period between 2010 and 2030. Our reasoning was that, in general, the trends experienced during the 1990-2010 period are the best available predictors of trends throughout the ensuing twenty-year period of 2010-2030. Of course, this is not uniformly true throughout the study area, since some portions of the geography were heavily impacted by the 2005 hurricanes. For most zones, however, the comparison of these two time periods was the most logical and approachable one to be made.

After compiling and studying these data, GCR developed the following criteria for determining whether the population of a zone—and the TAZs situated therein—should be revised:

1. Given their relatively large population levels, we determined that the New Orleans MPO, Houma-Thibodaux MPO, and Lafayette MPO zones would be reviewed regardless of the alignment between the 1990-2010 and 2010-2030 population numbers.
2. In zones for which the change in population in the existing 2010-2030 forecasts was within 30% of the 1990-2010 change in population, no modifications to the existing forecasts were necessary. This threshold was established after reviewing the original forecasts from all zones and determining which percent difference resulted in a material departure from past trends. The zones meeting this criteria were as follows:
    a. Amelia
    b. Franklin
    c. Jeanerette
    d. Rural Assumption Parish
    e. Rural Vermilion Parish
3. For zones in which the discrepancy between the change in in population in the existing 2010-2030 forecasts was greater than 30% of the 1990-2010 change in population, we would review and modify the population forecasts at the TAZ level. The zones meeting this criteria were as follows:
    a. Morgan City
    b. New Iberia
    c. Patterson
    d. Rural Iberia Parish
    e. Rural St. Mary Parish
4. For zones in which the discrepancy described in #3, but where that discrepancy amounted to a minimal number of residents, we would not modify the existing forecasts. The zones meeting this criteria were as follows:
    a. Baldwin
    b. Berwick

c. Bayou Vista
d. Charenton
e. Lydia
f. Rural St. Martin Parish

Within zones for which further review and modification of the existing forecasts was required (i.e. those meeting criteria one and three above), GCR applied the following general process. Please note that a zone-by-zone overview is provided in the following section, and the extent to which this process was executed is described in greater detail.

1. Because most of the zones requiring further analysis were relatively large and populous, we subdivided the zones into sub-areas. This allowed for a more targeted review of population trends and existing forecasts within each zone.
2. We isolated the change in population, expressed as a percentage, between 1990-2000 and between 2000-2010 for each sub-area. If the rates of population change during these periods were similar to one another, we combined these periods and developed a twenty-year annual rate, which was applied to future years through 2043, resulting in a revised area-wide population forecast. If the rates of population change were substantially different from one another, we used the more recent period (2000-2010) to calculate an annual rate which was applied to future years through 2043, resulting in a revised area-wide population forecast.
3. For each TAZ within each sub-area, we calculated the percentage of the sub-area's population residing in the TAZ in 1990, 2000, and 2010, examined the change in that percentage, and forecasted the degree to which the TAZ's share of the sub-area's population would increase or decline between 2010 and 2043. We then applied the projected percentage of the sub-area's population to the overall sub-area population forecast to develop projections for each TAZ.

REVIEW OF POPULATION WITHIN ZONES

Throughout this section, we will examine the process used to analyze each zone and, if necessary, to revise population forecasts. For each zone, we have provided the baseline population information, the original forecasts, an explanation of the calculations used in any necessary revisions.

Amelia

The Amelia zone had a population of 2,447 in 1990 and 2,459 in 2010, an increase of 12 residents. The original forecasts predicted an increase of 13 residents between 2010 and 2030, almost identical to the change in the previous twenty year period. Accordingly, GCR determined that the original forecasts required no revision, applying criteria #1 from above. The resulting population for Amelia is as follows:

Figure 3: Population Forecasts for Amelia Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Amelia	2,459	2,449	2,449

Baldwin

The Baldwin zone had a population of 1,551 in 1990 and 1,397 in 2010, a decrease of 154 residents. The original forecasts predicted a decrease of 411 residents between 2010 and 2030, approximately 167% fewer than the zone experienced during the previous twenty year period. Although the rate of decrease is significantly greater than the 1990-2010 period, the difference in the number of residents is only 257. Accordingly, we applied criteria #4 from above and determined that no revisions were required. The resulting population for Baldwin is as follows:

Figure 4: Population Forecasts for Baldwin Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Baldwin	1,397	770	770

Bayou Vista

The Bayou Vista zone had a population of 4,871 in 1990 and 4,743 in 2010, a decrease of 128 residents. The original forecast predicted an increase of 278 residents between 2010 and 2030, resulting in a population gain 318% greater than had the 1990-2010 trend continued. Although this discrepancy is significant when expressed as a percentage, the difference in the number of residents is only 406. Accordingly, we applied criteria #4 from above and determined that no revisions were required. The resulting population for Bayou Vista is as follows:

Figure 5: Population Forecasts for Bayou Vista Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Bayou Vista	4,743	5,028	5,028

Berwick

The Berwick zone had a population of 4,486 in 1990 and 4,950 in 2010, an increase of 464 residents. The original forecasts predicted an increase of 693 residents between 2010 and 2030, approximately

49% greater than the zone experienced during the previous twenty-year period. Although the rate of increase is significantly greater than the 1990-2010 period, the difference in the number of residents is only 229. Accordingly, we applied criteria #4 from above and determined that no revisions were required. The resulting population for Berwick is as follows:

Figure 6: Population Forecasts for Berwick Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Berwick	4,950	6,100	6,100

Charenton

The Charenton zone had a population of 1,828 in 1990 and 1,824 in 2010, a decrease of 4 residents. The original forecasts predicted a decrease of 208 residents between 2010 and 2030, approximately 5106% fewer than the zone experienced during the previous twenty year period. Although this discrepancy is significant when expressed as a percentage, the difference in the number of residents is only 204. Accordingly, we applied criteria #4 from above and determined that no revisions were required. The resulting population for Charenton is as follows:

Figure 7: Population Forecasts for Charenton Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Charenton	1,824	1,437	1,437

Franklin

The Franklin zone had a population of 10,138 in 1990 and 8,337 in 2010, a decrease of 1,801 residents. The original forecasts predicted a decrease of 1,320 residents between 2010 and 2030, a decrease approximately 27% smaller than the zone experienced during the previous twenty-year period. Using criteria #1 above, GCR determined that no revisions to the original forecasts in this zone were required. The resulting population for Franklin is as follows:

Figure 8: Population Forecasts for Franklin Zone

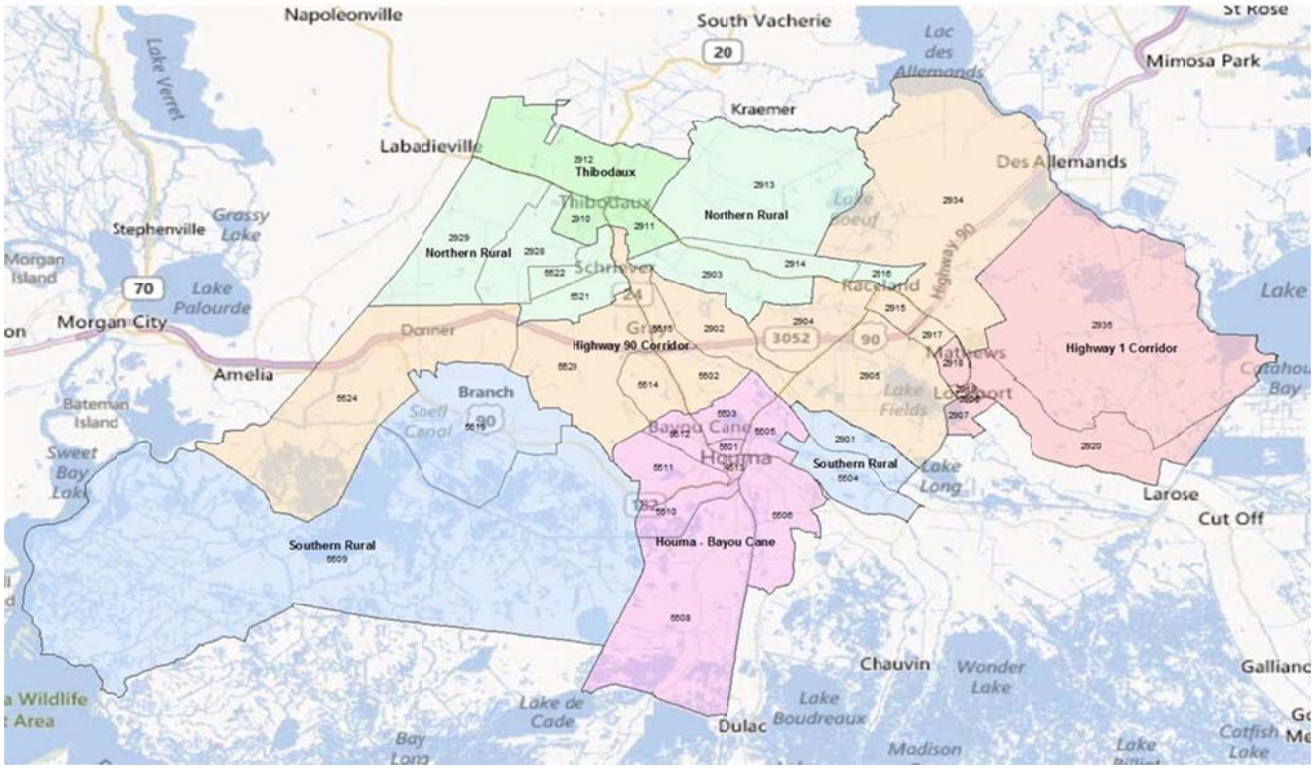
	2010 Population	2043 Population (Original)	2043 Population (Revised)
Franklin	8,337	6,191	6,191

Houma-Thibodaux MPO

The Houma-Thibodaux MPO zone had a population of 129,917 in 1990 and 152,300 in 2010, an increase of 22,383 residents during this twenty-year period. The original forecasts anticipated an addition of 18,926 residents between 2010 and 2030, approximately 15% lower than the zone experienced from 1990-2010.

In reviewing and revising the Houma-Thibodaux population forecasts, GCR divided the zone into six sub-areas: Highway 1 Corridor, Highway 90 Corridor, Houma/Bayou Cane, Northern Rural Area, Southern Rural Area, and Thibodaux. A map the zone showing the TAZs situated within each sub-area is below:

Figure 9: Houma-Thibodaux MPO Sub-Areas



Throughout five of these sub-areas, the original forecasts aligned closely with recent trends reported by Census data. For example, the Highway 1 Corridor sub-area gained 1,070 residents between 1990 and 2010, and the original forecasts anticipated 1,188 additional new residents between 2010 and 2030, a difference of 11%. Additionally, in the Highway 90 Corridor, Houma/Bayou Cane, Northern Rural, and Southern Rural sub-areas, the differences between population gains reported between 1990 and 2010 and forecasted between 2010 and 2030 were within approximately 30% of one another, the threshold established by criteria #3. Accordingly, for these sub-areas, GCR regarded these forecasts as reasonable and recommended no revisions.

The Thibodaux sub-area added 1,951 residents between 1990 and 2010, but the original forecasts predicted a population loss of 52 residents between 2010 and 2030. GCR revised this forecast to more reasonably reflect recent population trends. The sub-area grew by 8% between 1990 and 2010, and GCR calculated an average annual growth rate of 0.4% during this period. We applied this rate to future years through 2043.

GCR assumed that the distribution of the population of the Thibodaux sub-area would continue to change from 2010-2043 in approximately the same manner as it did from 2000-2010. To determine this distribution, we calculated the percentage of the sub-area's population residing within each TAZ in 2000 and 2010. We extrapolated the trends through 2043. For example, TAZ 2910 contained 46% of the sub-area's population in 2000 and 45% in 2010. We assumed that this TAZ would continue to have a relatively smaller share of the sub-area's population: 44% in 2020, 43% in 2030, 42% in 2040, and 41% in 2043. This calculation occurred for each TAZ, and the overall population of the sub-area was distributed throughout the TAZs accordingly.

The resulting forecasts for the Houma-Thibodaux MPO zone are as follows:

Figure 10: Population Forecasts for Houma-Thibodaux MPO Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Houma-Thibodaux MPO	152,300	184,356	188,846
Highway 1 Corridor	8,239	10,124	10,124
Highway 90 Corridor	35,932	53,040	53,040
Houma Bayou Cane	58,915	68,989	68,989
Northern Rural	14,720	17,537	17,537
Southern Rural	9,120	10,053	10,053
Thibodaux	25,374	24,613	29,103

Jeanerette

The Jeanerette zone had a population of 4,368 in 1990 and 3,934 in 2010, a decrease of 433 residents. The original forecasts projected a decrease of 529 residents between 2010 and 2030, approximately 22% fewer than the zone experienced during the previous twenty year period. Using criteria #1 above, GCR determined that no revisions to the original forecasts in this zone were required. The resulting population for Jeanerette is as follows:

Figure 11: Population Forecasts for Jeanerette Zone

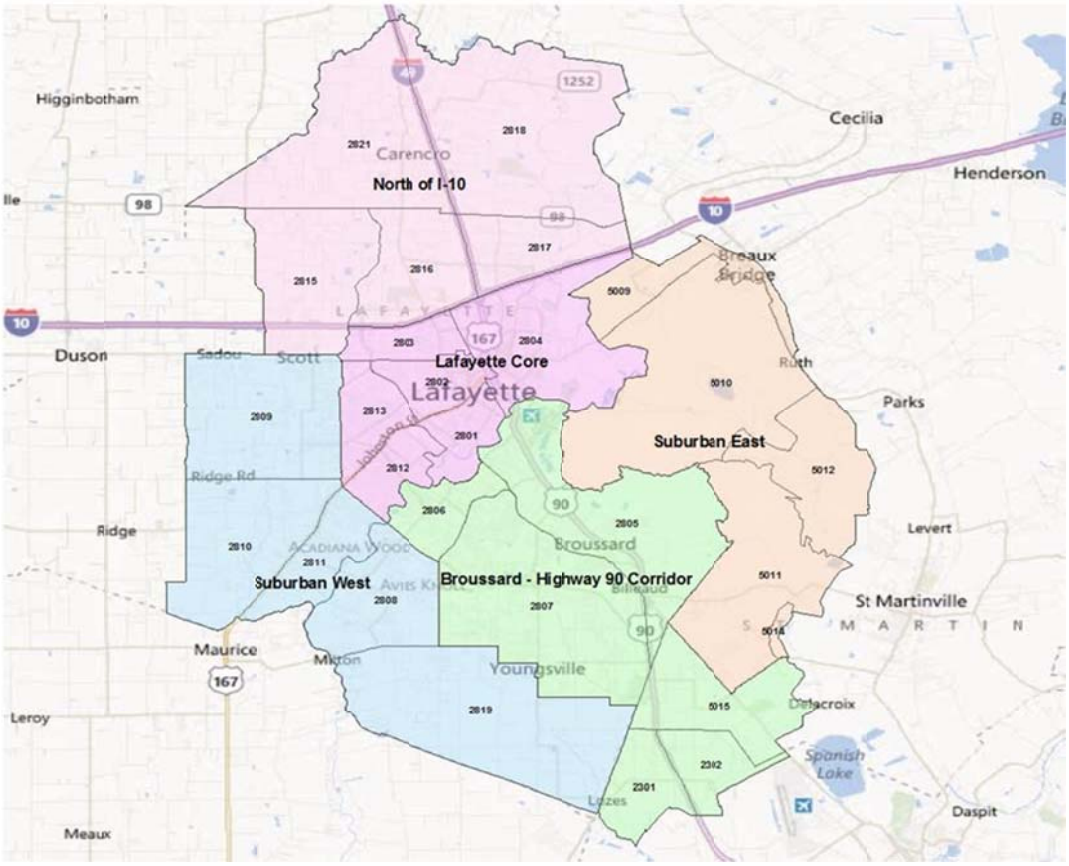
	2010 Population	2043 Population (Original)	2043 Population (Revised)
Jeanerette	3,934	3,066	3,066

Lafayette MPO

The Lafayette MPO zone had a population of 169,381 in 1990 and 225,296 in 2010, an increase of 55,915 residents in that twenty-year period. The original forecasts anticipated an additional 69,426 in population between 2010 and 2030, representing approximately 24% more growth than occurred during the previous twenty years.

In reviewing and revising the Lafayette MPO population forecasts, GCR divided the zone into five sub-areas: Broussard/Highway 90 Corridor, Lafayette Core, Lafayette North of I-10, Suburban Lafayette (East) and Suburban Lafayette (West). . A map of this zone showing the TAZs situated within each sub-area is below:

Figure 12: Lafayette MPO Sub-Areas



The two fastest-growing sub-areas within the Lafayette MPO zone are the Broussard/Highway 90 Corridor and Lafayette Suburban (West). The original forecasts reasonably showed continued aggressive growth in these areas, but also showed higher growth in absolute numbers toward the end of the forecasts. For example, in the Broussard/Highway 90 Corridor sub-area, the original projections forecasted population growth of 15,044 between 2020-2030 and 17,892 between 2030-2040; in these same periods, projected growth within the Lafayette Suburban (West) sub-area was 10,925 and 12,280,

respectively. These levels of growth were both appreciably higher than the area experienced between 1990 and 2000 and between 2000 and 2010. Accordingly, GCR adjusted the forecasted growth such that both of these sub-areas would add the average number of residents from the two previous ten-year periods throughout the future years of the forecast period.

In the Lafayette Core area, GCR annualized the average twenty-year growth rate from the twenty-year period between 1990-2010, during which the sub-area grew approximately 1%. Accordingly, we calculated that for future years, this sub-area would grow 0.05% annually through 2043.

The Lafayette North of I-10 and Suburban Lafayette (East) sub-areas both experienced significantly lower growth rates between 2000 and 2010 compared to their growth between 1990 and 2000. In the Lafayette North of I-10 sub-area, population increased by 23% between 1990 and 2000 and 13% between 2000 and 2010. In the Suburban Lafayette (East) sub-area, population increased by 17% between 1990 and 2000 and by 2% between 2000 and 2010. Given the slowing off of growth in the latter of the two periods, we applied the 2000-2010 growth rates to future years, projecting that the Lafayette North of I-10 sub area would add population at a rate of 1.32% annually through 2043, and that the Suburban Lafayette (East) sub-area would grow 0.23% annually through 2043. Both of these rates are the average annual growth experienced by the sub-areas between 2000 and 2010.

The resulting population for Lafayette is as follows:

Figure 13: Population Forecasts for Lafayette MPO Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Lafayette MPO	225,296	350,770	329,057
Broussard/Highway 90	49,106	101,324	87,543
Core	79,243	97,719	80,621
North of I-10	40,419	58,067	62,318
Suburban East	8,409	8,493	9,059
Suburban West	48,119	85,167	89,516

GCR assumed that the distribution of the sub-area populations would continue to change from 2010-2043 in approximately the same manner as it did from 2000-2010. To determine this distribution, we calculated the percentage of the sub-area's population residing within each TAZ in 2000 and 2010. We extrapolated the trends through 2043. For example, TAZ 2815 in the Lafayette North of I-10 sub-area contained 18% of the sub-area's population in 2000 and 18% in 2010. We assumed that this TAZ would continue to have a relatively larger share of the sub-area's population: 21% in 2020, 23% in 2030, 24% in 2040, and 25% in 2043. This calculation occurred for each TAZ, and the overall population of the sub-area was distributed throughout the TAZs accordingly.

The one exception was the Broussard/Highway 90 Corridor, in which GCR assumed that the distribution of the population would remain as reported in 2010. In other words, if a TAZ had 4% of the sub-area's

population in 2010, it would maintain that same share through 2043. The reason for this assumption can be seen using TAZ 5015 as an example. In 2000, this TAZ had 3% of the sub-area's population, and in 2010 this share was 2%. If one were to take this trend out further—with other TAZs gaining population share at the same rate they had between 2000-2010, and with TAZ 5015 losing its share at this rate, TAZ 5015 would end up with a negative share of the population by 2043. Accordingly, the most approachable assumption was to maintain the distribution of population as reported in the 2010 Census.

Lydia

The Lydia zone had a population of 1,283 in 1990 and 1,157 in 2010, a decrease of 127 residents. The original forecasts predicted a decrease of 175 residents between 2010 and 2030, approximately 38% fewer than the zone experienced during the previous twenty year period. Although this discrepancy is significant when expressed as a percentage, the difference in the number of residents is only 49. Accordingly, we applied criteria #4 from above and determined that no revisions were required. The resulting population for Lydia is as follows:

Figure 14: Population Forecasts for Lydia Zone

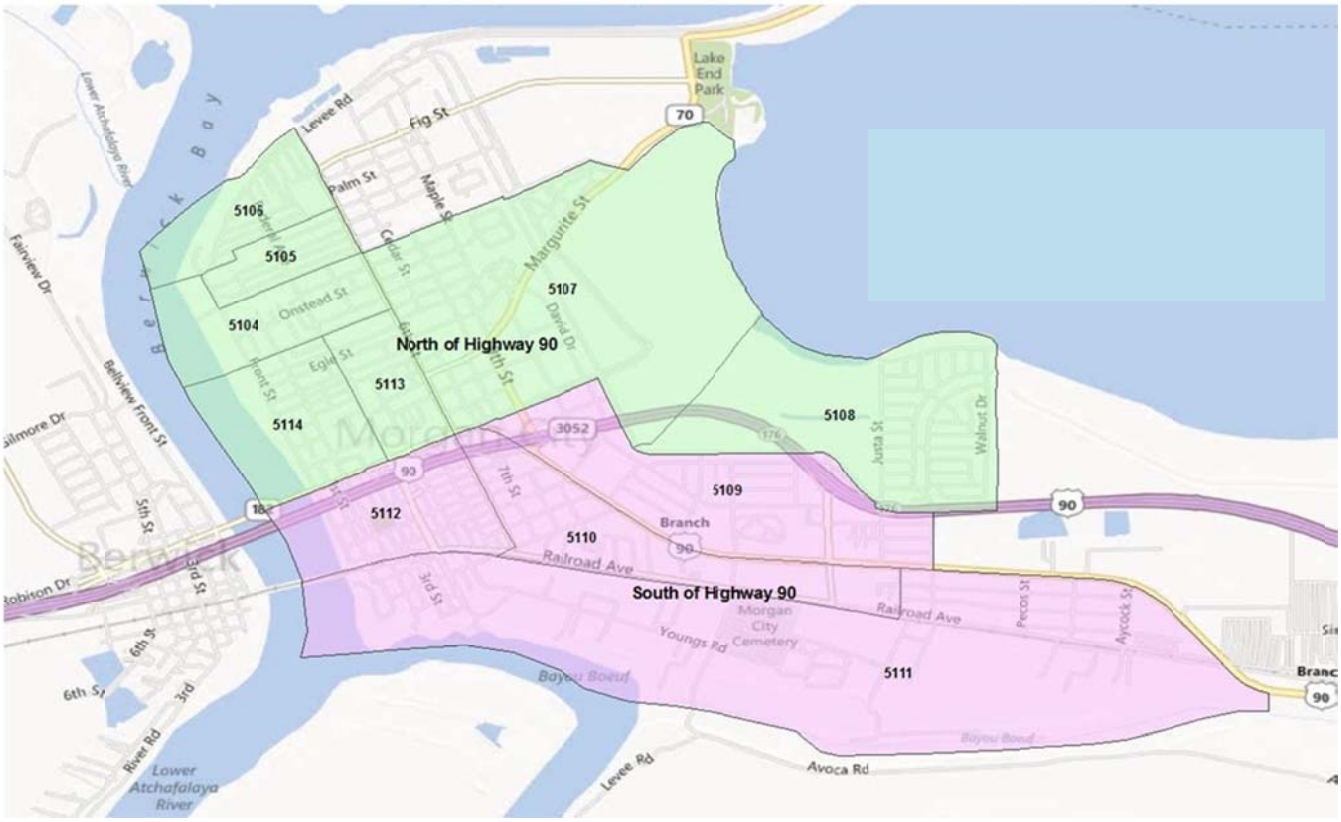
	2010 Population	2043 Population (Original)	2043 Population (Revised)
Lydia	1,157	875	875

Morgan City

The Morgan City zone had a population of 13,236 in 1990 and 11,280 in 2010, a decrease of 1,956 residents. The original forecasts predicted a decrease of 891 residents between 2010 and 2030, a decrease approximately 54% smaller than the zone experienced during the previous twenty-year period. Based on criteria #3, we conducted a TAZ-level analysis of these projections and revised the forecasts.

First, we divided the TAZs within the Morgan City zone into two sub-areas: Morgan City North of Highway 90 and Morgan City South of Highway 90. A map of this area showing the TAZs situated within each sub-area is below:

Figure 15: Morgan City Sub-Areas



Between 1990 and 2000, population in the Morgan City North of Highway 90 sub-area decreased by 14%, and between 2000 and 2010, the population decreased by 4%. Given the large difference between these two rates of population decrease, GCR applied the more recent trend of 4% population decrease to future years, calculating that the population of this sub-area would decrease by 0.4% per year through 2043.

The Morgan City South of Highway 90 sub-area experienced a 10% decrease in population between 1990 and 2000 and a decrease of 0.5% from 2000 to 2010. Given the large difference between these two rates of population decrease, GCR applied the more recent trend of a 0.5% decrease to future years, calculating that the population of this sub-area would decrease by 0.05% per year through 2043.

The resulting population for the Morgan City zone is as follows:

Figure 16: Population Forecasts for Morgan City Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Morgan City	**11,280**	**9,582**	**10,448**
North of Highway 90	6,893	5,651	6,126
South of Highway 90	4,387	3,931	4,322

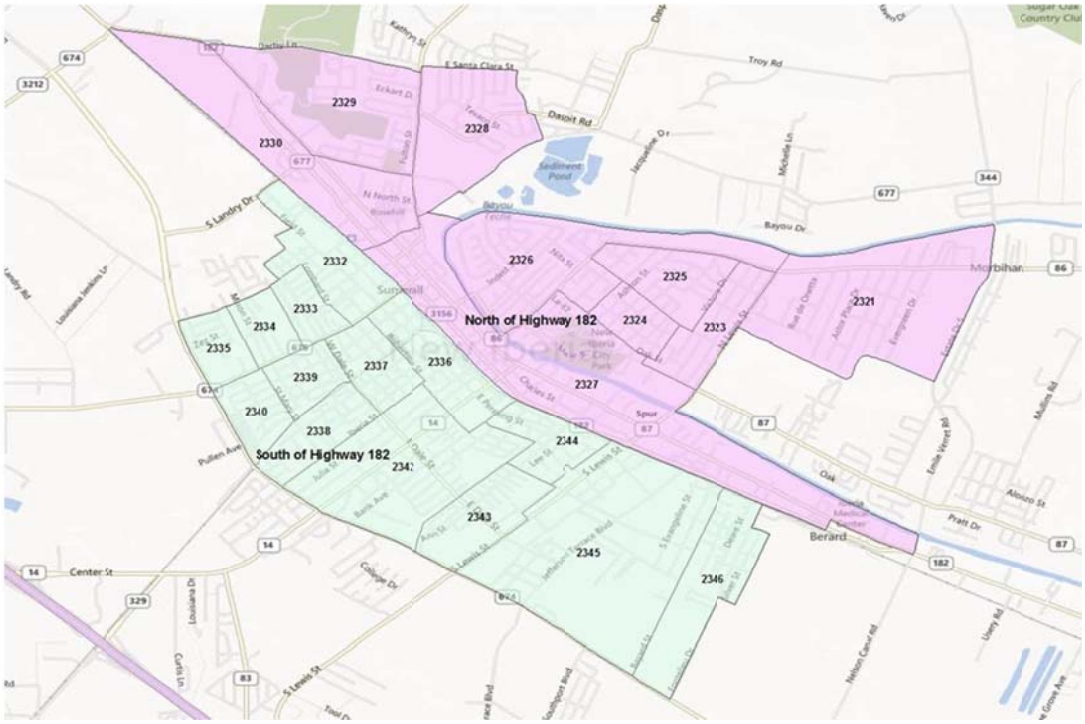
GCR assumed that the distribution of the sub-area populations would continue to change from 2010-2043 in approximately the same manner as it did from 2000-2010. To determine this distribution, we calculated the percentage of the sub-area's population residing within each TAZ in 2000 and 2010. We extrapolated the trends through 2043. For example, TAZ 5109 contained 27% of the Morgan City South Highway 90 sub-area's population in 2000 and 26% in 2010. We assumed that this TAZ would continue to have a relatively smaller share of the sub-area's population: 24% in 2020, 23% in 2030, 21% in 2040, and 20% in 2043. This calculation occurred for each TAZ, and the overall population of the sub-area was distributed throughout the TAZs accordingly.

New Iberia

The New Iberia zone had a population of 27,376 in 1990 and 25,151 in 2010, a decrease of 2,225 residents. The original forecasts predicted a decrease of 3,005 in population between 2010 and 2030, a decrease approximately 35% greater than the zone experienced during the previous twenty-year period. Based on criteria #3, we conducted a TAZ-level analysis of these projections and revised the forecasts.

First, GCR divided the TAZs within New Iberia into two sub-areas: New Iberia North of Highway 182 and New Iberia South of Highway 182. A map of this area showing the TAZs situated within each sub-area is below:

Figure 17: New Iberia Sub-Areas



The New Iberia North of Highway 182 sub-area experienced a 6% decrease in population between 1990 and 2010. GCR calculated that on average, this amounted to an annual decrease of 0.3% in population annually, a rate that was applied to future years through 2043. When this rate was applied to the existing forecasts for TAZs within this area, however, the difference was nominal (a difference of 450 residents). Accordingly, for this sub-area, the population forecasts were left intact as originally reported.

In the New Iberia South of Highway 182 sub-area, population decreased by approximately 10% during this period, or an average annual rate of 0.5%. This rate of population decrease was applied to future years through 2043 in this sub-area and the forecasts were revised. The resulting population for the New Iberia zone is as follows:

Figure 18: Population Forecasts for New Iberia Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
New Iberia	**25,151**	**20,412**	**21,571**
North of Highway 182	10,293	8,913	8,913
South of Highway 182	14,858	11,499	12,658

Throughout the New Iberia South of Highway 182 sub-area, GCR assumed that the distribution of population among TAZs would remain as most recently reported in 2010. In other words, if a TAZ had 4% of the sub-area's population in 2010, it would maintain that same share through 2043. The reason for this assumption can be seen using TAZ 2334 as an example. In 2000, this TAZ had 8% of the sub-area's population, and in 2010 this share was 4%. Clearly, if one were to take this trend out further—with other TAZs gaining population share at the same rate they had between 2000-2010, and with TAZ 2334 losing its share at this rate, TAZ 2334 would end up with a negative share of the population by 2030. Accordingly, the most approachable assumption was to maintain the distribution of population as reported in the 2010 Census.

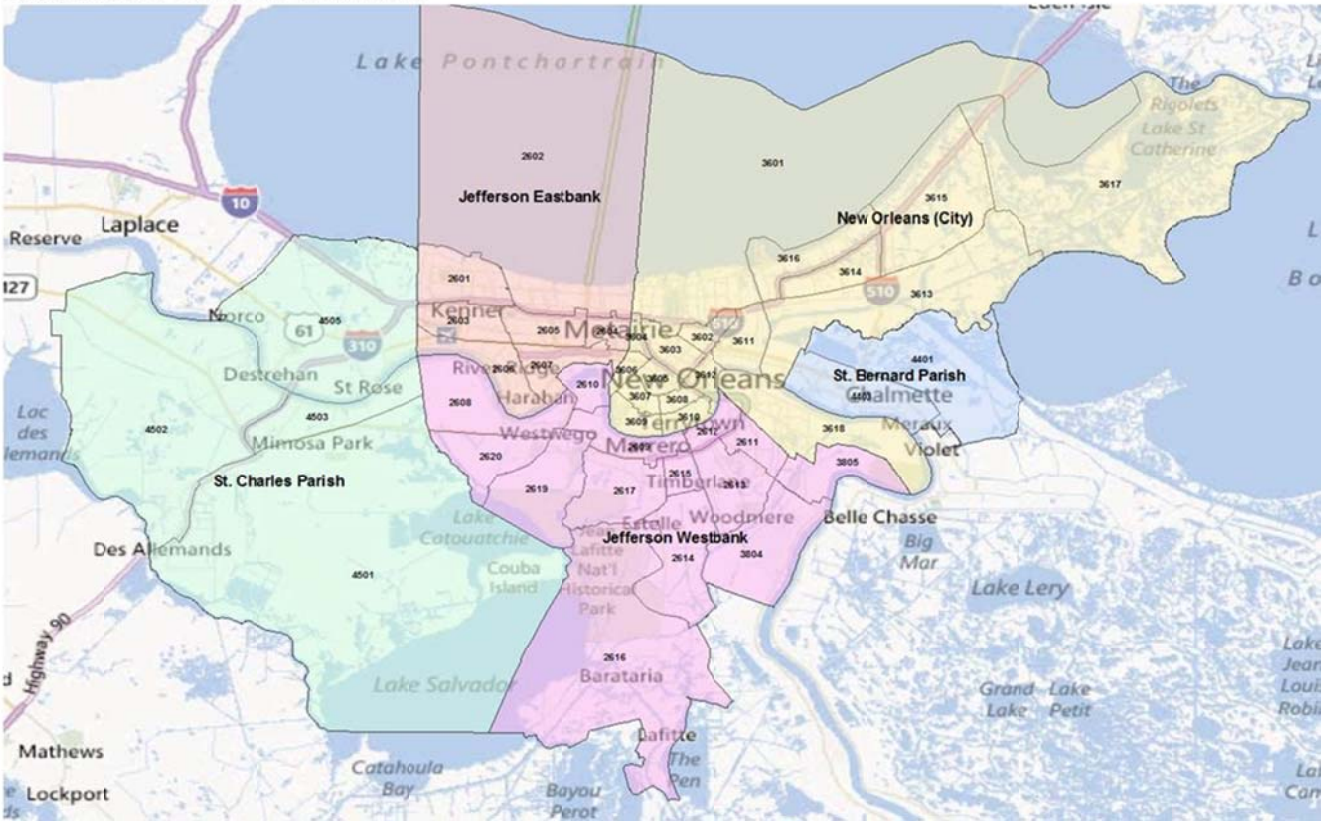
New Orleans MPO

The New Orleans MPO zone is by far the largest within the study area, accounting for 63% of its total population in 2010. The zone had a population of 1,047,609 in 2000. The impact of Hurricane Katrina resulted in a significant loss of population in 2005, such that the total number of residents as of the 2010 Census was 865,701, 178,248 less than ten years before.

In reality, of course, simply examining 2010 figures compared to 2000 numbers belies the fact that the zone's population is, in fact, increasing. For example, based on a study conducted using counts of active utility accounts, GCR estimated that throughout the city of New Orleans, population had increased by nearly 30,000 residents between April 2010 and the fall of 2012.

In reviewing and revising the population forecasts for the New Orleans MPO zone, GCR divided the zone into five sub-areas: the City of New Orleans, Jefferson Parish (Eastbank), Jefferson Parish (Westbank), St. Bernard Parish, and St. Charles Parish. A map of these sub-areas is below:

Figure 19: New Orleans MPO Sub-Areas



For the City of New Orleans, GCR had previously developed a set of small-area, long-term population projections. These projections anticipated that the city, which had a population of 343,829 in 2010, would grow to 444,169 by 2032. (For reference, the city had a population of 484,674 in 2000, so these long-term forecasts predict that by 2032 New Orleans would still have only 92% of its pre-storm population.) The original forecasts prepared for the master plan anticipated that by 2030, the city would have only 414,225 residents. In short, the original forecasts appear to slightly underestimate the pace at which the city is likely to grow. Additionally, they distribute this growth unrealistically throughout the TAZs within the zone, placing too much growth on the Westbank (the area roughly south of the Mississippi River) and too little on the Eastbank (the area roughly north of the river).

As indicated in the preceding paragraph, in reviewing the original projections for the city, we examined the Westbank (comprised of one TAZ) and the Eastbank (comprised of 17 TAZs). The original projections for the Westbank estimated that by 2020 its population would be 71,011—and 92.179 by 2043—despite the fact that it had only 56,782 residents in 2000, had 52,785 in 2010, experienced virtually no flooding

during Katrina, and had very little capacity to accommodate new development. The area has been in a relatively steady population state for decades.

In revising the projections for the Westbank, we consulted our previous study, which forecasted the following projections for the Westbank: 58,958 by 2022 and 60,374 by 2032. We applied these numbers to the years 2020 and 2030, calculated a ten-year growth rate of 2%, and applied an average annual growth rate to the Westbank through 2043, resulting in a forecast population of 62,269.

The city's Eastbank was the area that experienced significant flooding as a result of Katrina, lost nearly all of its population in the storm's immediate aftermath, and still has a population well below its pre-storm level. In 2000, the Eastbank had a population of 427,892, and in 2010, the population was 291,044.

To refine the population forecasts for the Eastbank, GCR took the following steps. First, we applied the forecasts from our previous study for the Eastbank. We anticipate that the 2022 population of the Eastbank will be 373,810 and the 2032 population will be 383,795, and we applied those projections to the years 2020 and 2030, respectively. Next, we calculated a ten-year growth rate of 3% based off those projected numbers, and applied this rate of future growth through 2043, resulting in a 2043 population of 397,204 on the Eastbank. Next, we distributed the population of the Eastbank among TAZs according to their distribution as of the 2010 Census.

The original projections for the St. Charles Parish, Jefferson Parish (Eastbank), and Jefferson Parish (Westbank) were all reasonable in the aggregate. The forecasts predicted modest growth in all three areas, very consistent with the trends experienced in the most recent periods reported by the Census. However, GCR saw the need to align the distribution of the population among TAZs.

GCR assumed that the distribution of the population in these areas would continue to change from 2010-2043 in approximately the same manner as it did from 2000-2010. To determine this distribution, we calculated the percentage of each sub-area's population residing within each TAZ in 2000 and 2010. For example, TAZ 2617 in the Jefferson Parish (Westbank) sub-area contained 16% of the population in 2000 and 14% in 2010. We assumed that this TAZ would continue to have a relatively smaller share of the sub-area's population: 13% in 2020, 111% in 2030, 10% in 2040, and 9% in 2043. This calculation occurred for each TAZ, and the overall population of the sub-area was distributed throughout the TAZs accordingly.

The St. Bernard Parish sub-area consists of the upper portions of St. Bernard Parish, located southeast of the city of New Orleans. The parish overall was decimated by Hurricane Katrina and, as of 2010, had only 53% of its pre-storm population. The area included in this study had 52,120 residents in 2000 and 27,094. The original forecasts predicted that the population of the St. Bernard Parish sub-area would increase to 35,504 by 2020 but would then decline over future years to 32,807 in 2043.

GCR determined that this trend required revision. To conduct this revision, we consulted the U.S. Census Bureau's parish-level forecasts, which anticipated that St. Bernard Parish would grow 6% between 2010 and 2010 and 1% between 2020 and 2030. We converted these rates to annual averages of 0.6% between 2010 and 2020 and 0.1% between 2020 and 2030, using the latter figure for future years between 2030 and 2043.

The two TAZs situated within the St. Bernard Parish have retained a consistent share of their population between 2000 and 2010, with 96% of the population situated within TAZ 4403 and 4% of the population situated in TAZ 4401. We applied these percentages to the overall population calculated from the future growth rates to determine TAZ-level populations.

Accordingly, the final revised projections for the New Orleans MPO zone are as follows:

Figure 20: Population Forecasts for New Orleans MPO Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
New Orleans MPO	865,701	970,726	1,004,071
Jefferson Eastbank	239,480	245,409	245,409
Jefferson Westbank	204,455	216,239	216,239
New Orleans East	69,866	58,551	95,350
Orleans Eastbank	221,178	272,296	301,855
Orleans Westbank	52,785	92,179	62,269
St. Bernard Parish	27,094	32,806	29,703
St. Charles Parish	50,843	53,246	53,246

Patterson

The Patterson zone had a population of 4,552 in 1990 and 5,488 in 2010, an increase of 936 residents. The original forecasts predicted an increase of only 135 residents between 2010 and 2030, an increase approximately 86% fewer than the zone experienced during the previous twenty-year period. Based on criteria #3, we conducted a TAZ-level analysis of these projections and revised the forecasts.

Because the Patterson zone consists only of four TAZs, GCR did not divide it into sub-areas. Taken as a whole, the zone grew by approximately 21% during from 1990 to 2010, or an average annual rate of just over 1%. GCR applied this annual growth rate to future years through 2043. The resulting population for Patterson is as follows:

Figure 21: Population Forecasts for Patterson Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Patterson	5,488	5,343	7,691

GCR assumed that the distribution of Patterson's population would continue to change from 2010-2043 in approximately the same manner as it did from 2000-2010. To determine this distribution, we calculated the percentage of the zone's population residing within each TAZ in 2000 and 2010. We extrapolated the trends through 2043. For example, TAZ 5119 contained 23% of Patterson's population in 2000 and 21% in 2010. We assumed that this TAZ would continue to have a relatively smaller share of the sub-area's population: 19% in 2020, 18% in 2030, 16% in 2040, and 14% in 2043. This calculation occurred for each TAZ, and the overall population of the sub-area was distributed throughout the TAZs accordingly.

Rural Assumption Parish

The Rural Assumption Parish zone had a population of 1,694 in 1990 and 2,163 in 2010, an increase of 469 residents. The original forecasts predicted an increase of 438 residents between 2010 and 2030, approximately 7% fewer than the zone experienced during the previous twenty-year period. Using criteria #1 above, GCR determined that no revisions to the original forecasts in this zone were required. The resulting population for Rural Assumption Parish is as follows:

Figure 22: Population Forecasts for Rural Assumption Parish Zone

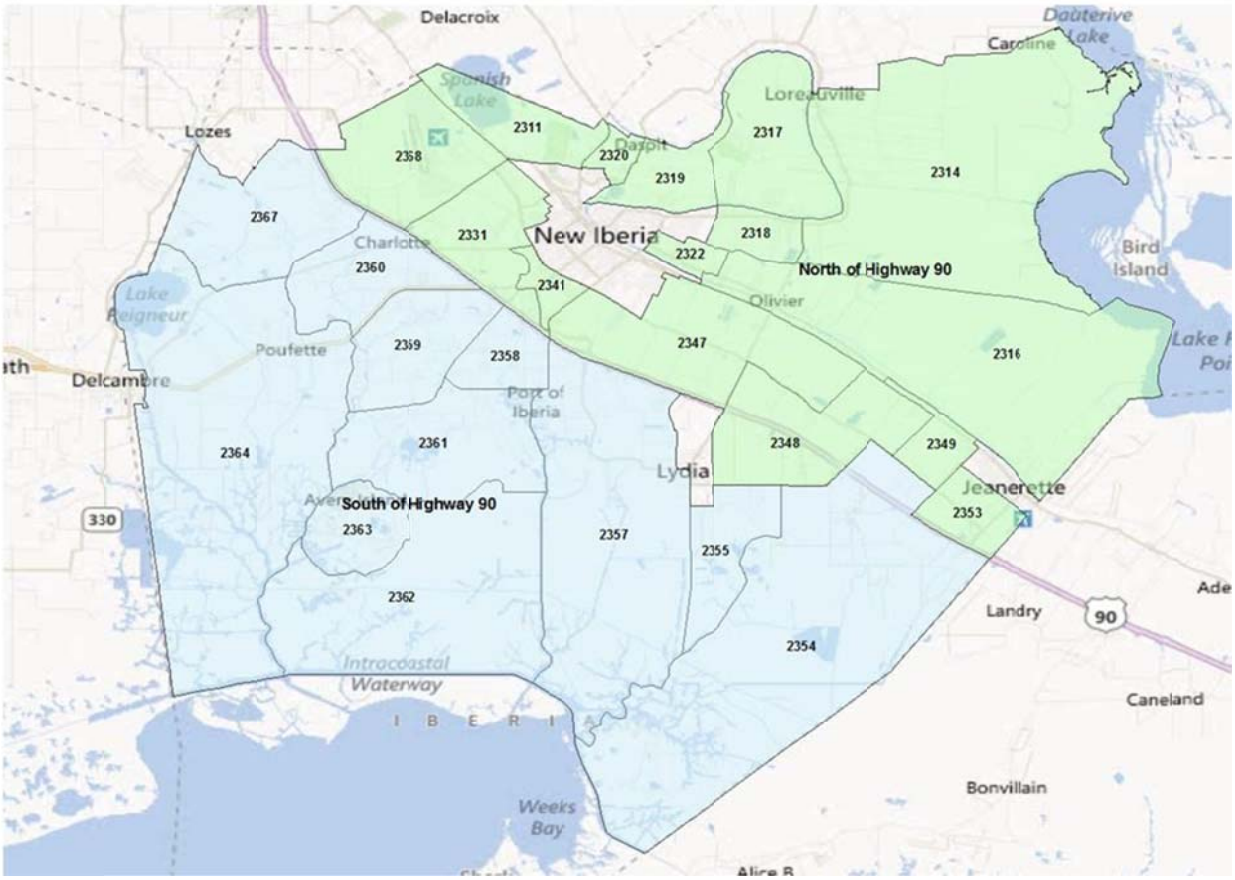
	2010 Population	2043 Population (Original)	2043 Population (Revised)
Rural Assumption Parish	2,163	2,909	2,909

Rural Iberia Parish

The Rural Iberia Parish zone had a population of 29,554 in 1990 and 35,668 in 2010, an increase of 6,113. The original forecasts predicted a population increase of 2,766 between 2010 and 2030, approximately 55% fewer than the zone experienced during the previous twenty-year period. Based on criteria #3, GCR conducted a TAZ-level analysis of these projections and revised the forecasts.

We divided the zone into two sub-areas: Rural Iberia North of Highway 90 and Rural Iberia South of Highway 90. A map of this area showing the TAZs situated within each sub-area is below:

Figure 23: Rural Iberia Parish Sub-Areas



The Rural Iberia North of Highway 90 sub-area experienced a population increase of 10% between 1990 and 2000 and 9% between 2000 and 2010. The Rural Iberia South of Highway 90 experienced a 19% population increase between 1990 and 2000 and 1% between 2000 and 2010. Given the large discrepancy between the numbers South of Highway 90 in these two time periods, GCR applied the rates from the most recent time periods to both sub-area. Accordingly, we projected that the Rural Iberia North of Highway 90 sub-area will grow at rate of 0.9% annually and the Rural Iberia South of Highway 90 will grow at an annual rate of 0.15% between 2010 and 2043. The resulting population for Rural Iberia Parish is as follows:

Figure 24: Population Forecasts for Rural Iberia Parish Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Rural Iberia Parish	**35,668**	**40,091**	**44,829**
North of Highway 90	25,004	29,991	33,643
South of Highway 90	10,664	10,100	11,186

Throughout both sub-areas, GCR assumed that the distribution of population among TAZs would remain as most recently reported in 2010. In other words, if a TAZ had 4% of the sub-area's population in 2010, it would maintain that same share through 2043. The reason for this assumption can be seen using TAZ 2349 in the North of Highway 90 sub-area as an example. In 2000, this TAZ had 4% of the sub-area's population, and in 2010 this share was 3%. Clearly, if one were to take this trend out further—with other TAZs gaining population share at the same rate they had between 2000-2010, and with TAZ 2349 losing its share at this rate, TAZ 2349 would end up with a negative share of the population by 2040. Accordingly, the most approachable assumption was to maintain the distribution of population as reported in the 2010 Census. In the sub-area south of Highway 90, TAZ 2363 would also experience a negative share of the population by 2040 based on its 2000-2010 trend.

Rural St. Martin Parish

The Rural St. Martin Parish zone had a population of 5,333 in 1990 and 4,850 in 2010, a decrease of 483 residents. The original forecasts predicted a decrease of 775 residents between 2010 and 2030, approximately 61% fewer than the zone experienced during the previous twenty-year period. Although this discrepancy is significant when expressed as a percentage, the difference in the number of residents is only 293. Accordingly, we applied criteria #4 from above and determined that no revisions were required. The resulting population for Rural St. Martin Parish is as follows:

Figure 25: Population Forecasts for Rural St. Martin Parish Zone

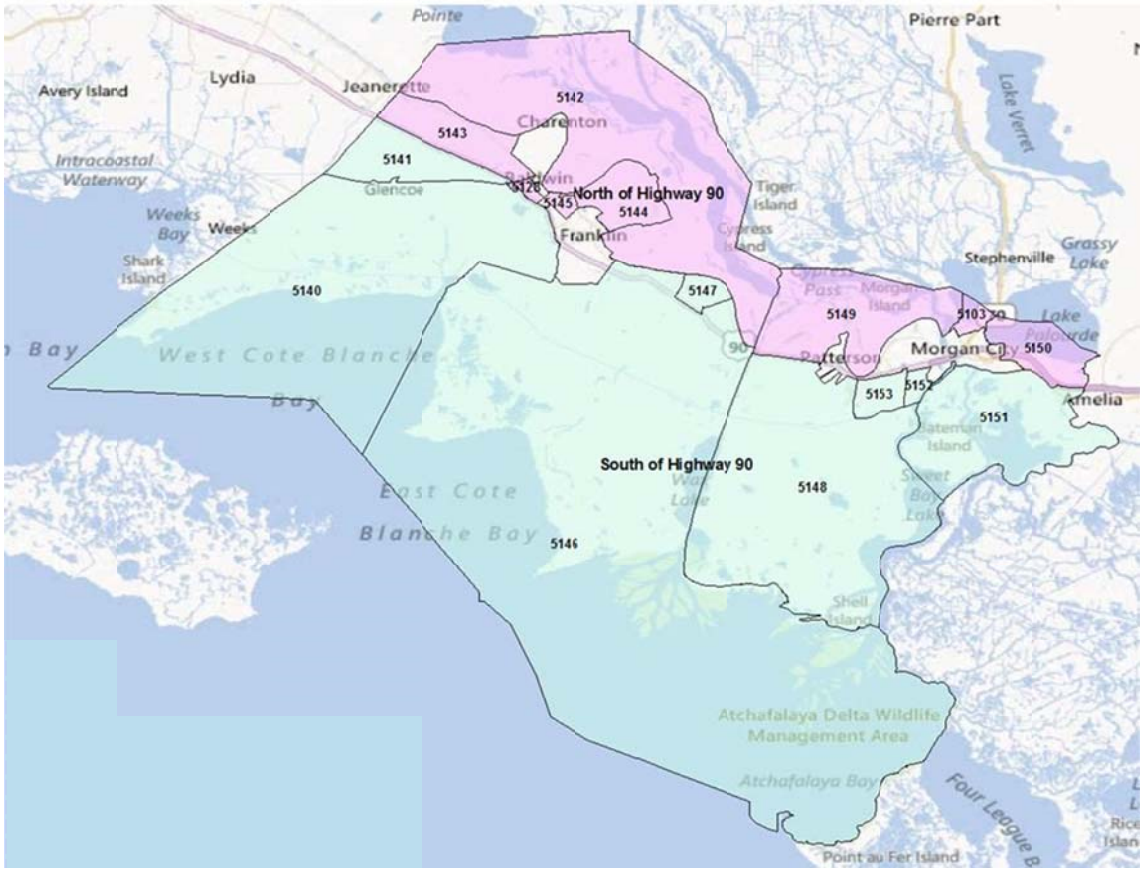
	2010 Population	2043 Population (Original)	2043 Population (Revised)
Rural St. Martin Parish	4,850	3,518	3,518

Rural St. Mary Parish

The Rural St. Mary Parish zone had a population of 14,977 in 1990 and 14,172 in 2010, a loss of 805 residents. The initial forecasts predicted an increase in population of 2,413 between 2010 and 2030. Given the discrepancy between the most recent trends and the initial forecasts, GCR applied criteria #3 and revised the forecasts for this zone.

We divided the zone into two sub-areas: Rural St. Mary North of Highway 90 and Rural St. Mary South of Highway 90. A map of this zone showing the TAZs situated within each sub-area is below:

Figure 26: Rural St. Mary Parish Sub-Areas



The Rural St. Mary North of Highway 90 sub-area lost 6% of its population between 1990 and 2000, and grew by 1% between 2000 and 2010. The South of Highway 90 sub-area experienced a 19% decrease in population between 1990 and 2000 and an increase in population of 16% between 2000 and 2010. Given the large difference between these two rates of population change, GCR applied the most recent period—between 2000 and 2010—to change in future years, calculating an annual average growth of 0.1% in the Rural St. Mary North of Highway 90 sub-area and 1.6% in the Rural St. Mary South of Highway 90 sub-area. These rates were applied to future years through 2043, and the resulting population forecasts were nearly identical to the original forecasts, differing by only 78 residents North of Highway 90 and 315 residents South of Highway 90. Accordingly, GCR determined that the original forecasts were reasonable upon review, and made no changes. The resulting forecasts for Rural St. Mary Parish are as follows:

Figure 27: Population Forecasts for Rural St. Mary Parish Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Rural St. Mary Parish	**14,172**	**18,914**	**18,914**
North of Highway 90	8,235	8,684	8,684
South of Highway 90	5,937	10,230	10,230

Rural Vermilion Parish

The Rural Vermilion Parish zone had a population of 2,896 in 1990 and 5,177 in 2010, an increase of 2,281 residents. The original forecasts predicted an increase of 1,924 residents between 2010 and 2030, approximately 16% fewer than the zone experienced during the previous twenty-year period. Using criteria #1 above, GCR determined that no revisions to the original forecasts in this zone were required. The resulting population for Rural Vermilion Parish is as follows:

Figure 28: Population Forecasts for Rural Vermilion Parish Zone

	2010 Population	2043 Population (Original)	2043 Population (Revised)
Rural Vermilion Parish	5,177	8,053	8,053

REVIEW OF EMPLOYMENT WITHIN ZONES

According to the original projections, the study area had 648,067 total jobs in 2010, a number that declined from 680,116, or 5%, since 2002. Compared to population, which was 9% less in 2010 than in 2000, the number of jobs dropped off less sharply. In the 2000/2002 period, there 0.45 jobs per person in the study area, and in 2010, the ratio was 0.47. The original forecasts anticipated that by 2043, the study area would contain 842,005 jobs, an increase of 193,938, and that there would be 0.51 jobs per person.

GCR reviewed these original forecasts by examining the ratio of jobs to population in each zone for the 2010 period and the 2043 period. To determine whether forecasts for a particular zone required revision, we used the overall ratio as a guidepost. As stated above, the ratio of jobs to population in 2010 was 0.47 (more precisely, 0.471), and was projected to be 0.505 by 2043, a difference of 0.034 jobs per person.

In some zones, the forecasted ratio was within this range. For example, in Baldwin, there were 0.34 jobs per person in 2010, and the forecasts predicted 0.37 jobs per person in 2043. Given the fact that the change in ratios in this zone was smaller than the change in ratios overall, GCR determined that no

revisions to the employment forecasts were required. Put another way, we accepted that the jobs-to-population ratio would remain very similar in 2043 to its 2010 level. The zones meeting this criteria were as follows: Amelia, Baldwin, Jeanerette, Morgan City, New Iberia, Rural Assumption Parish, and Rural Vermilion Parish.

In other zones, the forecasted ratio fluctuated more significantly. For example, in Rural Iberia Parish, there were 0.47 jobs per person in 2010, and the original forecasts predicted that this ratio would drop to 0.37 in 2043. In these instances, GCR assumed that the jobs-to-population ratio would change at the same overall rate forecasted by the initial projections, or 0.034 jobs per person.

The resulting employment forecasts for each zone are as follows:

Figure 29: Total Jobs by Zone

Zone	2009/2010 Jobs	2043 Jobs (Original)	2043 Jobs (Revised)
Amelia	3,614	2,473	3,684
Baldwin	477	284	284
Bayou Vista	1,624	2,104	1,895
Berwick	1,415	1,442	1,954
Charenton	294	266	281
Franklin	6,268	5,084	4,869
Houma-Thibodaux MPO	75,438	86,326	101,651
Jeanerette	521	343	343
Lafayette MPO	135,788	222,769	210,572
Lydia	88	66	66
Morgan City	9,607	9,095	9,094
New Iberia	14,649	12,685	12,685
New Orleans MPO	373,726	474,314	469,265
Patterson	707	719	1,257
Rural Assumption Parish	184	274	274
Rural Iberia Parish	16,894	16,641	22,820
Rural St. Martin Parish	1,535	820	1,235
Rural St. Mary Parish	5,067	5,984	7,416
Rural Vermilion Parish	171	316	317
Total Study Area	**648,067**	**842,005**	**849,962**

To distribute each zone's total jobs among its TAZs, GCR assumed that each TAZ would contain the same percentage of the zone's jobs throughout the 2010 through 2043 period.

GCR conducted additional research to identify large facilities or employment centers throughout the study area which might add to the total number of forecasted jobs. This research took two forms. First, we consulted the 2012-2013 version of the *Louisiana Economic Outlook,* published annually by Louisiana State University, to examine the document's list of major employers in each metropolitan area who are

building new facilities, conducting significant expansions of facilities, and the like. From this document, we identified the following additions to forecasted employment throughout the study area, all of which are reflected in the totals reported in Figure 29:

Figure 30: Generators of New Jobs According to Louisiana Economic Outlook 2012-2013

Zone	Facility Name	TAZ	New Jobs	Completion
New Orleans MPO	Federal City	3618	400	2012
New Orleans MPO	Blade Dynamics	3613	500	2014
New Orleans MPO	Diamond Green Diesel	4505	60	2013
New Orleans MPO	Gameloft	3612	146	2018*
New Orleans MPO	Dow Chemical	4505	60	2018*
New Orleans MPO	Avondale	2606	0	2018*
New Iberia	New Carbo Facility	2368	40	2018*
Lafayette MPO	New Halliburton Facility	2806	65	2018*
Lafayette MPO	Frank's Casing Crew	2805	50	2013
Lafayette MPO	Weatherford	2805	45	2018*
Lafayette MPO	Stuller Settings	2806	50	2015
Lafayette MPO	Maritime International	5015	90	2016
Lafayette MPO	Schumacher Group	2806	600	2018
Lafayette MPO	Doerle Foods	2805	50	2018
Houma-Thibodaux MPO	Edison Chouest Shipyard	2920	500	2013
Houma-Thibodaux MPO	Edison Chouest Repair Yards	2920	250	2018*
Houma-Thibodaux MPO	Bollinger Shipyards	2920	300	2014
Houma-Thibodaux MPO	Gulf Island Fabricators	5506	100	2012

**Louisiana Economic Outlook generally identifies projects which are in process or recently completed. For facilities listed as 2018, there was no specific timetable presented in the document, but since the focus of the report is short-term, it was assumed that these jobs would be on board within five years.*

Finally, we reached out to approximately thirteen planning and economic development agencies throughout the study area to learn about any additional forthcoming projects which might affect employment levels. Of those with whom we were able to speak, we gained the following pieces of information:

- The Jefferson Parish Westbank Planning Office apprised us of projects which had been recently completed in the area. In the future, they knew of plans for the development of approximately 30-50 vacation homes, but because the formal planning process has not begun, we did not include these data in our projections.
- The Lafayette Planning and Development Division informed us that a Holiday Inn is being constructed in TAZ 2817, and we estimate an addition of 90 jobs in this area.

- The Terrebonne Parish Economic Development Corporation relayed plans for a major retail center and theme park at the intersection of Highway 90 and Highway 311 in TAZ 5520. The project is in early phases of planning, and their estimate was that the facility would employ 2,000 people. Because the project remains in preliminary stages, GCR took a cautious approach to projecting the resulting employment, assuming that 25% of the 2,000 jobs would materialize in the TAZ.

APPENDIX A: Map of Study Zones

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APPENDIX B: Population and Employment Forecasts by Zone, 2010 and 2043

Zone	2010 Population	2043 Population (Original)	2043 Population (Revised)	2009/2010 Jobs	2043 Jobs (Original)	2043 Jobs (Revised)
Amelia	2,459	2,449	2,449	3,614	2,473	3,684
Baldwin	1,397	770	770	477	284	284
Bayou Vista	4,743	5,028	5,028	1,624	2,104	1,895
Berwick	4,950	6,100	6,100	1,415	1,442	1,954
Charenton	1,824	1,437	1,437	294	266	281
Franklin	8,337	6,191	6,191	6,268	5,084	4,869
Houma-Thibodaux MPO	152,300	184,356	188,846	75,438	86,326	101,651
Jeanerette	3,934	3,066	3,066	521	343	343
Lafayette MPO	225,296	350,770	329,057	135,788	222,769	210,572
Lydia	1,157	875	875	88	66	66
Morgan City	11,280	9,582	10,448	9,607	9,095	9,094
New Iberia	25,151	20,412	21,571	14,649	12,685	12,685
New Orleans MPO	865,701	970,726	1,004,071	373,726	474,314	469,265
Patterson	5,488	5,343	7,691	707	719	1,257
Rural Assumption Parish	2,163	2,909	2,909	184	274	274
Rural Iberia Parish	35,668	40,091	44,829	16,894	16,641	22,820
Rural St. Martin Parish	4,850	3,518	3,518	1,535	820	1,235
Rural St. Mary Parish	14,172	18,914	18,914	5,067	5,984	7,416
Rural Vermilion Parish	5,177	8,053	8,053	171	316	317
Total	**1,376,047**	**1,640,590**	**1,665,823**	**648,067**	**842,005**	**849,962**

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