APPENDIX B
TRAFFIC ANALYSIS
H.015428

LSB / LIT Road Network and Resilience: H.015428

Traffic Impact Analysis
Port of New Orleans
St. Bernard Parish, LA

USI Project # 23-040
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Prepared by

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In Association with

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Prepared For

RPC REGIONAL PLANNING COMMISSION FOR THE PARISHES OF LOUISIANA
PLAQUEMINES · ST. BERNARD · ORLEANS · JEFFERSON · TANGIPAHOA · ST. TAMMANY · ST. JOHN THE BAPTIST · ST. CHARLES

LSB / LIT Road Network and Resilience
Stage 0 Feasibility Study
Traffic Impact Analysis

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Chapter 1. DATA COLLECTION

1.1 Introduction

This chapter details the data collection for the traffic study associated with the Lower St Bernard / Louisiana International Terminal Stage 0 Feasibility Study in St Bernard Parish, LA. The objective of the data collection was to obtain the traffic data needed to perform capacity analysis to identify alternatives to mitigate negative impacts of the increased road and rail traffic due to the construction of the Louisiana International Terminal. The project area included:

- E Judge Perez Dr (LA 39) between Norfolk Southern Railroad Crossing and Bayou Rd
- Paris Rd (LA 47) between Forty Arpent Canal Rd and the Ferry Landing
- E St Bernard Hwy (LA 46) between Norfolk Southern Railroad Crossing and LA 39
- I-510 between I-10 and Bayou Bienvenue
- I-510 NB/SB at Lake Forest Blvd Interchange Ramps
- I-510 NB/SB at Chef Menteur Highway (US 90) Interchange Ramps
- I-510 NB/SB at I-10 Interchange Ramps

The project boundaries are presented in **Figure 1-1**. The main study area buffer is highlighted in yellow.

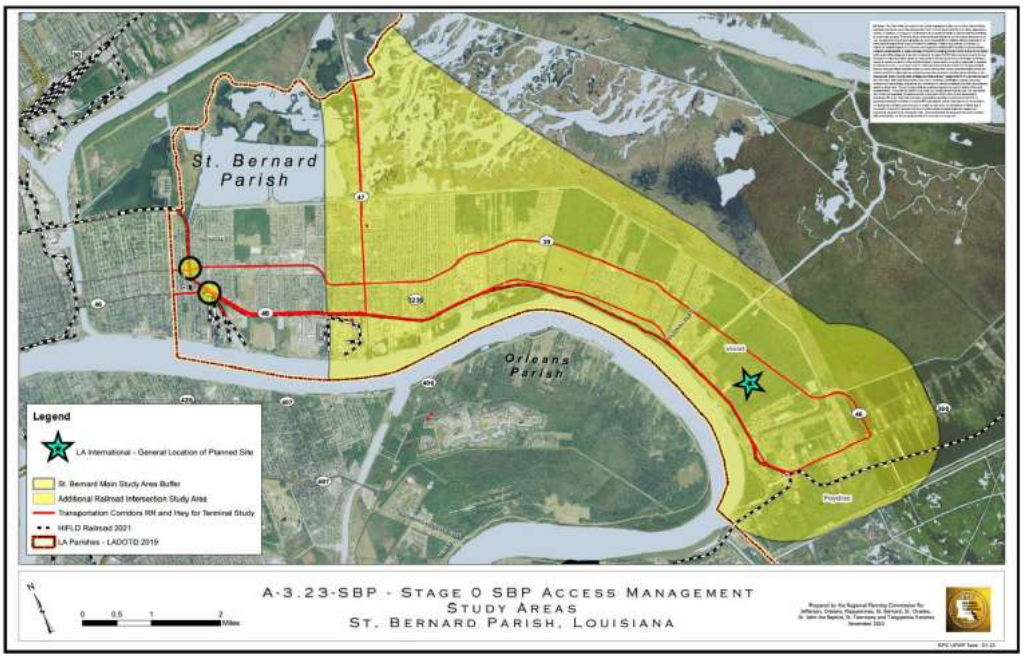

Figure 1-1
Project Boundaries Including Main Study Area Buffer

Table 1-1 summarizes the number of lanes, functional classification, and posted speed limit of each study area roadway as it relates to the traffic study.

Table 1-1
Roadway Designations

Roadway	Number of Lanes (Bi-directional)	Functional Classification	Posted Speed Limit(s) (mph)
E Judge Perez Dr (LA 39)	4	Urban, Principal Arterial	35, 45
Paris Rd (LA 47)	4	Urban, Principal Arterial	40
E St Bernard Hwy (LA 46)	2	Urban, Minor Arterial	45
I-510	4	Urban, Interstate	60

Figure 1-2 illustrates the LADOTD Functional Classification Map of the roadways in the vicinity of the study area.

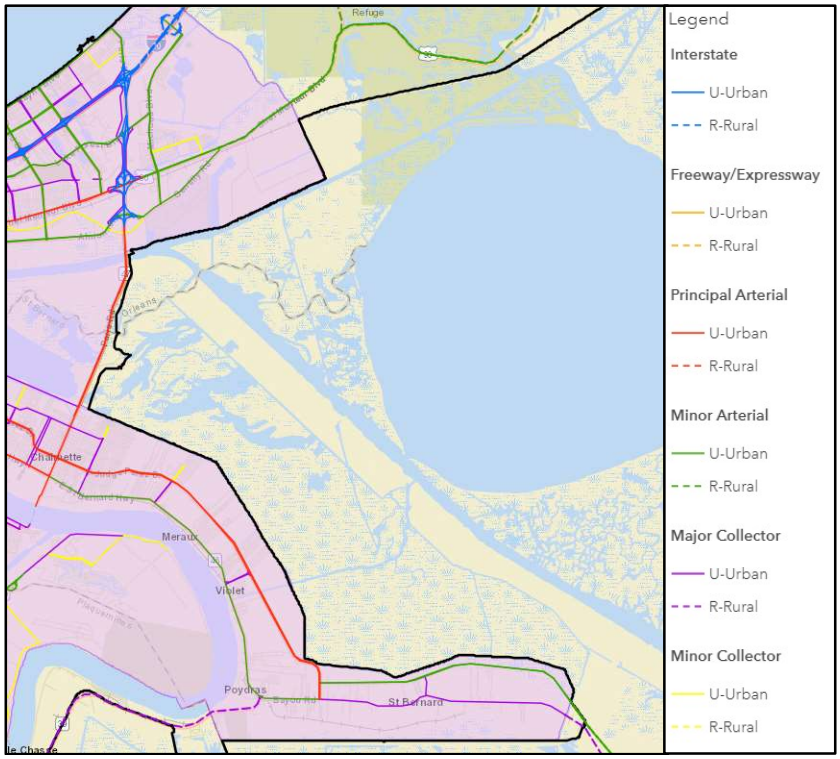

Figure 1-2
LADOTD Functional Classification Map

1.2 Background Study

Port NOLA Louisiana International Terminal

The Port of New Orleans (Port NOLA) conducted a traffic impact analysis for a proposed container terminal, Louisiana International Terminal (LIT) (herein referred to as 'Port'), in St Bernard Parish, Louisiana. Port NOLA has agreed to share data collected as part of their study, as well as trip generation information, as needed.

St Bernard Parish Bikeway & Pedestrian Plan Update

The St Bernard Parish *Bikeway & Pedestrian Plan Update* (Soll Planning & Alta Planning + Design, June 2017) was reviewed to identify background information that may be relevant to the study area.

The purpose of the St Bernard Parish planning efforts was to identify improvements to the bicycle and pedestrian networks to make it easier, safer, and more comfortable for people to bicycle and walk, to estimate the cost of projects, and to make implementation recommendations so that a coherent network comes together, over time, through long range planning while providing flexibility for the Parish to make improvements as opportunities arise.

The following are key findings and recommendations of this study that may be applicable to the study area:

- A review of pedestrian and bike crash history from 2012-2014 revealed that these types of crashes were concentrated along the major corridors of Paris Rd (LA 47), Judge Perez Dr (LA 39), and St Bernard Hwy (LA 46) and improvements along these corridors should be a high priority.
- The public input process revealed a significant need for bikeway and pedestrian improvements that involve crossing and travel along the three main state highways in the urbanized area – LA 47, LA 39, and LA 46. These roadways can function as barriers to non-motorized travel and discourage trips that involve them.
- A buffered bicycle lane (conventional bicycle lane paired with a designated buffer space via pavement markings to separate the bicyclists from motor vehicles) is recommended on LA 47 between 40 Arpent Trail and LA 46.
- A separated bicycle lane (protected bicycle lane, includes a vertical element to separate the bicyclists from motor vehicles) is recommended on LA 39 between LA 47 and Jacob Dr (between Campagna Dr and Archbishop Hannan Blvd).
- A shoulder bikeway is recommended on LA 39 between Jacob Dr and Bayou Rd (south of the proposed Port).
- A bicycle lane is recommended on LA 46 between LA 47 and Palmisano Blvd and between Trailhead @ Violet Canal and St Bernard Pkwy.
- A shoulder bikeway is recommended on LA 47 between Palmisano Blvd and Trailhead @ Violet Canal.

- Several bicycle lanes that will connect with LA 46, LA 47, and LA 39 are recommended on local roadways.
- New sidewalks are recommended along LA 47 from Forty Arpent Canal to E St Bernard Hwy, along LA 39 from Paris Rd to Violet Canal, and along LA 46 from Paris Rd to Poydras junction.
- A bicycle / pedestrian bridge over Paris Rd (LA 47) is recommended at 40 Arpent Canal.

Multiple at-grade pedestrian crossing opportunities are recommended at LA 46, LA 47, and LA 39, including the installation of pedestrian signals, ADA curb ramps, high-visibility crosswalks, and tighter corner radii. The recommended pedestrian and bicycle improvements, including maps, are presented as an excerpt from the original report in **Appendix A.1**.

1.3 Data Collection

All counts were collected with schools in session, not on holidays and not on days with anticipated severe weather. Any abnormal conditions, unexpected construction or inclement weather was noted.

Traffic Volume Data

Seven (7) day twenty-four (24)-hour counts with classification were collected using video cameras in October and November 2023 on roadway segments on Paris Rd, East Judge Perez Dr, East St Bernard Hwy, and on I-510 (including Lake Forest Blvd, US 90, and I-10 interchanges). Due to hardware availability, video footage was collected across several dates. A detailed list of locations is found in **Appendix A.2**. Count location maps in Google Earth format and raw count data are presented in **Appendix A.3.**

As a part of this Feasibility Study, traffic volume data was collected and utilized by AECOM in compilation with a previous rail study conducted by the Port of New Orleans, to identify possible rail improvements that should be considered in the next environmental phase of this project.

Peak Period Determination

Volumes collected on Thursday were determined to be the best representation of typical traffic patterns. The peak periods of 6:45 AM-8:45 AM and 3:30 PM-5:45 PM were selected based on these volumes. The peak period determination is summarized in **Appendix A.4**.

Turning Movement Count Data

Twenty-four (24)-hour turning movement counts (TMCs) with classification were collected using video cameras in October 2023 on E Judge Perez Dr (LA 39) at the intersections of E St Bernard Hwy (LA 46) and at Bayou Rd. Turning movement counts for the remaining fifteen (15) intersections were acquired from the Port NOLA, previously collected in March and April 2023 as part of the port traffic study. A detailed list of locations is found in **Appendix B.1**. Count location maps in Google Earth format and raw count data are presented in **Appendix B.2.**

Vulnerable Road User Count Data

Peak period pedestrian and bicyclist counts at the signalized study area intersections were collected at the signalized study area intersections using video cameras in March, April, and October 2023, with schools in session, not on holidays and not on days with anticipated severe weather. The raw count data is presented in **Appendix B.2**.

1.4 Roadway and Rail Observations

Peak Period Roadway Observations

Observations were conducted at the study's signalized intersections on November 14-16, 2023 and November 21, 2023 during the selected peak periods with schools in session, not on holidays and not on days with anticipated severe weather. A railroad crossing location map in Google Earth format and field observation notes are presented in **Appendix B.3.** The observed timing and phasing matched the Traffic Signal Inventories (TSIs) provided by LADOTD for the signalized intersections. The TSIs are presented in **Appendix B.4**.

Railroad Crossing Observations

Seven (7) day twenty-four (24)-hour video footage, collected in October 2023, were observed at the following railroad crossings:

- LA 39 at Norfolk Southern Railroad Crossing
- LA 47 at Ferry Landing Crossing
- LA 46 at Norfolk Southern Railroad Crossing

1.5 Existing Conditions Volumes

The TMC data was reviewed, and the peak hours were selected to be 7:00 – 8:00 AM and 4:30 – 5:30 PM**. Table B2** in **Appendix B.5** presents the peak hour selection. Unmet demand was not identified for the selected peak hours. A figure of the existing traffic counts during the selected design hours (based on the TMC data collected in March, April, and October 2023) is presented in **Figures B-1** and **B-2** in **Appendix B.5**.

1.6 Speed Study

Speed studies were conducted on March 6, 2024, on LA 47, LA 39 and LA 460 in accordance with EDSM VI.1.1.1. Speed data was collected from 10:00 AM – 2:30 PM during dry, sunny conditions. A detailed methodology of the speed study and the speed study results are presented in **Appendix B.6**.

A review of the speed study findings indicated that the 85th percentile speeds on LA 47 and LA 39 were observed to be generally near the posted speed limits, which suggests that the posted speed limits are appropriate per the EDSM. On LA 46, the 85th percentile speeds were observed to be 5-10 MPH higher which is likely a result of the count location being within a less urbanized portion of the LA 46 corridor.

1.7 2030 and 2050 No Build Conditions without Port

Background growth rates were selected for 2030 and 2050 No Build conditions without Port using output from the original RPC regional travel demand model (TransCAD model), which does not include the economic impacts of the proposed Port. The detailed background growth rate calculations are presented in **Appendix B.7**.

A comparison of daily volumes in the 2015 Base and 2030 No Build TransCAD models indicated an average growth rate of 0.37% annually. The average annual growth rate was applied to the existing conditions volumes (Figures B-1 and B-2) to estimate 2030 No Build condition volumes without Port, presented in **Figures B-3** and **B-4** in **Appendix B.7**. For the intersections of Palmisano Blvd at E Judge Perez Dr and at E St Bernard Hwy, the side street approach volumes or mainline turning volumes are assumed to be mainly traffic entering and exiting Chalmette High School; no growth rate was applied to these volumes since it is not anticipated that the existing school will be expanded in the future.

A comparison of 2030 and 2050 No Build TransCAD models indicated an average growth rate of 0.60% annually. The average annual growth rate for each corridor was applied to the 2030 No Build condition volumes without Port (Figures B-3 and B-4) to estimate 2050 No Build condition volumes without Port, presented in **Figures B-5** and **B-6** in **Appendix B.7**.

1.8 2030 and 2050 No Build Conditions with Port

Port Trip Generation

The trips that will be generated by the proposed Port development were estimated by the Port NOLA consultant team based on their projected growth plan and understanding of terminal operations. **Table 1-2** presents a summary of the projected Port trips for AM and PM peak hours in 2030 and 2050.

Table 1-2
Port Trip Generation Estimates

Year	Vehicle Type	AM Peak		PM Peak	
		Entering	Exiting	Entering	Exiting
2030	Truck	101	101	20	20
	Auto (shift workers)	13	7	0	141
2050	Truck	220	220	113	113
	Auto (shift workers)	31	15	195	309

Growth Rates

The original RPC TransCAD model was updated with modified socioeconomic (SE) data that incorporates the economic impacts of the proposed Port development, as well as future developments that may result from the Port construction and operations in 2030 and 2050. The updated 2030 and 2050 No Build TransCAD Models included auto (shift workers) trips destined to and from the Port (see Table 1-7) but did not include the Port truck trips. Growth rates were calculated based on the updated SE data. The methodologies used to update the SE data and TransCAD modelare presented in **Appendix B.8**. The detailed growth rate calculations are presented in **Appendix B.9**.

A comparison of daily volumes in the 2015 Base and the updated 2030 No Build TransCAD models (i.e, updated with new SE data to account for the proposed Port development) indicated an average growth rate of 0.62% annually with the Port constructed. A comparison of the updated 2030 and 2050 No Build TransCAD models indicated an average growth rate of 1.15% annually with the Port constructed.

Port Truck Trips

The trip distribution of trucks destined to and from the proposed Port development was estimated by Port NOLA staff based on anticipated client locations and truck routes. The 2030 and 2050 Port truck trips for the AM and PM peak hours are presented in **Figures B-7** through **B-10** in **Appendix B.9**.

School rerouting

As part of Port NOLA's planned development, the existing W Smith Junior Elementary School is proposed to be moved from E St Bernard Hwy to one of two sites near the intersection of Colonial Blvd and E Judge Perez Dr on land currently owned by Port NOLA. To estimate school trips, the location was assumed to be Site A on the northwest corner, with the school entrance on Colonial

Blvd as illustrated in **Figure 1-3**. Furthermore, the existing number of faculty, staff, and students are assumed to remain.

Figure 1-3
Proposed W. Smith Junior Elementary School Relocation Sites A and B
Source: 2024 Google Maps

Figure B-11 in **Appendix B.9** illustrates the existing school trips. The existing school trips were redistributed to and from the proposed school relocation based on home-based – school origin-destination data from the original TransCAD model. **Figures B-12** and **B-13** in **Appendix B.9** illustrate the rerouting of the school trips from the existing school to the proposed new school.

The average annual growth rate for each corridor with Port was applied to the existing conditions volumes (Figures B-1 and B-2), along with the Port truck trips and school rerouting, to estimate 2030 and 2050 No Build condition volumes with Port, presented in **Figures B-14** through **B-17** in **Appendix B.9**.

Chapter 2. EXISTING & NO BUILD ANALYSIS

2.1 Introduction

The objective of this chapter was to summarize key tasks of this traffic evaluation. The tasks are analysis of study area crashes over the most recent 5-year period data was available, and the analysis of the 2023 existing conditions, as well as 2030 and 2050 No Build operations of intersections with and without Port NOLA's proposed Louisiana International Terminal (LIT). For the purpose of this study, the term 'No Build' refers to the transportation infrastructure such that the No Build operations evaluation reviews what congestion would look like without any change or upgrade to the existing infrastructure in 2030 and 2050.

2.2 Existing Safety Analysis

A safety analysis was prepared for the study area using crash data provided through the LADOTD Center for Analytics & Research in Transportation (CARTS) website. Crash data from 2017 – 2021 were provided by the New Orleans Regional Planning Commission (RPC). The objective of the in-depth crash data analysis was to identify where crashes were occurring within the study area, determine the locations of the most serious or repetitive crashes, understand the collision types occurring (manner of collision) for all roadway users including vulnerable modes (people walking or bicycling). The Level of Service of Safety (LOSS) of the study area intersections was also reviewed. According to the FHWA, Design engineers at CDOT pioneered development of the LOSS concept to quantify the magnitude of the safety problem.

- LOSS-I - Indicates low potential for crash reduction.
- LOSS-II - Indicates low to moderate potential for crash reduction.
- LOSS-III - Indicates moderate to high potential for crash reduction.
- LOSS-IV - Indicates high potential for crash reduction.

Important results of the existing safety analysis are listed below:

- Ten (10) intersections were identified in the Stage 0 project area that represent thirty percent (30%) of the total crashes.
- Seven (7) of the ten (10) intersections are in the St. Bernard Main Study Area Buffer. Each of the seven (7) intersections operated at LOSS 2 or greater.
- The intersection with the most crashes (185 crashes) was Judge Perez Dr (LA 39) at Paris Rd (LA 47).
- Seven of 18 fatalities between 2017 and 2021 were pedestrian fatalities. Three occurred on LA 39 between Voilet and LA 47 in block groups with percent zero car households, low income, and high minority populations.

- These safety deficiencies should be considered during the alternative vetting/selection process.

The complete safety analysis, including the detailed methodology and results, are presented in **Appendix C**.

2.3 Existing and No Build Capacity Analysis without Port

Methodology

Intersection and roadway capacity analyses were performed to assess operational conditions in the 2023 existing conditions, as well as 2030 and 2050 No Build operations AM and PM peak hours without the construction of the proposed LIT. This type of analysis is the industry standard for traffic studies and the methods are the widely accepted practice of evaluating impacts on traffic operations. The capacity analysis was performed using Highway Capacity Software 2023 (HCS) which includes procedures developed by the Transportation Research Board contained in the Highway Capacity Manual (HCM).

The Measures of Effectiveness (MOE) reported by HCS for the study intersections were approach delay (sec), 95th percentile queue length (ft/ln), and volume-to-capacity ratio (v/c), where applicable. According to the HCM, delays exceeding 80 seconds for signalized intersections and 50 seconds for unsignalized intersections, as well as v/c ratios at or above 1.0 for both, correspond to failing operations.

HCS Analysis Inputs

Existing lane configurations, traffic volumes, and intersection control were input into HCS 2023 to generate measures of effectiveness (MOE) for the study intersections. The traffic signal inventories are presented in **Appendix B.4.** The 2023 Existing Traffic Volumes used in these analyses are presented in **Appendix B.5**, **Figures B-1** and **B-2.**

Volumes for the 2030 and 2050 No Build without Port were input into HCS using the existing lane configurations and intersection control. The 2030 No Build Traffic Volumes without Port used in these analyses are presented in **Appendix B.7**, **Figure B-3 and B-4**. The 2050 No Build Traffic Volumes without Port used in these analyses are presented in **Appendix B.7**, **Figure B-5 and B-6**.

Existing and No Build HCS Analysis Results without Port

Analysis results for the 2030 and 2050 No Build without Port conditions were compared to the 2023 Existing conditions for the AM and PM peak hours to estimate operations in the future without the proposed LIT project (i.e., without Port). The comparisons for the AM and PM peak hours are presented in **Appendix D.1**, **Tables D-1** and **D-2**, respectively. Additionally, the corresponding analysis outputs for the 2023 Existing, and 2030 and 2050 No Build AM and PM peak hours without Port are presented in **Appendix D.2** to **D.4**, respectively**.**

A review of **Table D-1** indicated that the study intersections operate with acceptable capacity (v/c <1.00) and delays below HCM thresholds during the AM peak hour under existing (2023) and future (2030 and 2050) conditions without Port with the exception of the unsignalized intersection of E St Bernard Hwy and Palmisano Blvd. Delays on the STOP-controlled Palmisano Blvd southbound approach correspond to failing operations in 2023 (delay > 80 seconds) and are projected to continue to fail in 2030 and 2050. The Palmisano Blvd southbound approach at E St Bernard Blvd is expected to exceed capacity (v/c > 1.00) in 2050. The E St Bernard Hwy eastbound approach at Paris Rd is expected to reach capacity (v/c = 1.00) in 2050.

A review of **Table D-2** indicated that during the PM peak hour, in 2050, the Paris Rd southbound approach at E Judge Perez Dr is expected to exceed capacity (v/c > 1.00). Also, delays on the STOP-controlled Palmisano Blvd southbound approach correspond to failing operations in 2050 (delay > 50 seconds).

2.4 Existing and No Build Capacity Analysis with Port

Analysis Inputs

Volumes for the 2030 and 2050 No Build with Port were input into HCS using the existing lane configurations and intersection control. The 2030 No Build Traffic Volumes with Port used in these analyses are presented in **Appendix B.9**, **Figure B-14 and B-15**. The 2050 No Build Traffic Volumes with Port used in these analyses are presented in **Appendix B.9**, **Figure B-16 and B-17**.

2030 No Build Analysis Results with Port

Analysis results for the 2030 No Build with Port conditions were compared to the 2023 Existing and 2030 No Build without Port conditions for the AM and PM peak hours to estimate operations in the future with the proposed LIT project (i.e., with Port). The comparisons for the AM and PM peak hours are presented in **Appendix D.1**, **Tables D-3** and **D-4**, respectively. Additionally, the corresponding analysis outputs for the 2030 No Build AM and PM peak hours with Port are presented in **Appendix D.5**.

A review of **Tables D-3** and **D-4** indicated that no additional operational constraints are expected in 2030 as a result of the construction of the port. As previously discussed, delays on the STOP-controlled Palmisano Blvd southbound approach are anticipated to continue to correspond to failing operations (delay > 50 seconds) in 2030, both with and without the port construction.

2050 No Build Analysis Results with Port

Analysis results for the 2050 No Build with Port conditions were compared to the 2023 Existing and 2050 No Build without Port conditions for the AM and PM peak hours to estimate operations in the future with the proposed LIT project (i.e., with Port). The comparisons for the AM and PM peak hours are presented in **Appendix D.1**, **Tables D-5** and **D-6**, respectively. Additionally, the corresponding analysis outputs for the 2050 No Build AM and PM peak hours with Port are presented in **Appendix D.6**.

A review of **Table D-5** indicated that with the proposed LIT project in 2050, during the AM peak hour, the E Judge Perez Dr westbound approach at Palmisano Blvd is expected to exceed capacity (v/c > 1.00). At the intersection of Paris Rd at E Judge Perez Dr, the westbound and southbound approaches are expected to exceed capacity (v/c > 1.00). No additional constraints are expected at the remaining intersections are expected in 2050 during the AM peak hour as a result of the construction of the port.

A review of **Table D-6** indicated that with the proposed LIT project in 2050, during the PM peak hour, the E St Bernard Hwy eastbound approach at Paris Rd is expected to exceed capacity (v/c > 1.00). At the intersection of Paris Rd at E Judge Perez Dr, the eastbound, westbound, and northbound approaches are expected to exceed capacity (v/c > 1.00). Delays on the STOP-controlled Colonial Blvd westbound approach at E St Bernard Hwy correspond to failing operations in 2050 (delay > 50 seconds) with the proposed LIT project. No additional constraints are expected at the remaining intersections are expected in 2050 during the PM peak hour as a result of the construction of the port.

Chapter 3. ALTERNATIVES ANALYSIS OF EXISTING STREET NETWORK

3.1 Introduction

The objective of this chapter was to summarize the results of the Tier 1 and Tier 2 alternative analysis of the study area intersections that were identified to have operational constraints (see Chapter 2).

Tier 1 Analysis Methodology

As part of the Tier 1 evaluation of the existing street network, a high-level analysis was performed to identify potential modifications to mitigate the additional delay resulting from Port construction. The following intersections were evaluated:

- Paris Rd at E Judge Perez Dr
- E St Bernard Hwy at Palmisano Blvd
- E Judge Perez Dr at Palmisano Blvd
- E St Bernard Hwy at Paris Rd
- E St Bernard Hwy at Colonial Blvd

The Intersection descriptions are presented in **Appendix D.1**.

Alternatives (specific infrastructure solutions) for each of the five intersections (signalization, U turns, roundabout, et al) were identified to potentially meet acceptable thresholds of intersection performance if implemented by 2050.

As discussed in Chapter 2, in 2030, the majority of the study area intersections are expected to operate with acceptable capacity (v/c < 1.00) and with delays below HCM thresholds (delay < 80 seconds or < 50 seconds for signalized and unsignalized intersections, respectively). The exception is the unsignalized intersection of E St Bernard Hwy and Palmisano Blvd, where delays are expected to correspond to failing conditions in 2030 with or without the construction of the Port and are projected to continue to fail in 2050.

It is acknowledged that operational constraints for the remaining four (4) identified study area intersections are expected to begin between the 2030 and 2050 study horizon years. Therefore, it is understood that improvements implemented in earlier years would mitigate congestion as traffic volumes increase annually.

Tier 2 Analysis Methodology

A Tier 2 Analysis was performed using Highway Capacity Software 2023 (HCS) to quantitatively analyze the alternatives chosen in Tier 1 for the 2050 No Build conditions with Port for the above noted intersections, with the exception of the intersection of Paris Rd at E Judge Perez Dr (requires microsimulation).

The Measures of Effectiveness (MOE) reported by HCS for the study intersections were approach delay (sec), 95th percentile queue length (ft/ln), and volume-to-capacity ratio (v/c), where applicable. According to the HCM, delays exceeding 80 seconds for signalized intersections and 50 seconds for unsignalized intersections, as well as v/c ratios at or above 1.0 for both, correspond to failing operations.

3.2 Tier 1 Analysis Results

The alternatives were evaluated for traffic operational impacts (using Cap-X software), safety, right-of-way (ROW), adjacent property impacts, and side street impacts. The categories for ranking this high-level evaluation were “low to high”. The goal was to compare the alternatives to each other and decide which should move forward to the Tier 2 evaluation and to document why alternatives were eliminated from further study. The detailed methodology and results of the Tier 1 analysis are presented in **Appendix E.1**.

The chosen alternatives from the Tier 1 analysis are as follows:

- Paris Rd at E Judge Perez Dr
    a) Full Displaced Left
- E St Bernard Hwy at Palmisano Blvd
    a) Signalization
    b) Roundabout
- E Judge Perez Dr at Palmisano Blvd
    a) Two-Phased signals: prohibit eastbound and westbound lefts, as well as northbound and southbound through movements; convert the existing signal to two-phased (PH1: WB/EB, PH2: NBL/SBL); permit the northbound and southbound rights to make free-flow right turns by constructing a new auxiliary lane, protected by a barrier; convert westbound right turn lane to a westbound thru lane for drivers to access driveways behind the new median; construct a new westbound right turn lane to the north; convert eastbound right turn lane to an eastbound thru-right turn lane for drivers to be able to access side streets and driveways behind the new median; construct two unsignalized U-turns on either side of the signal.

- E St Bernard Hwy at Paris Rd
    a) Signal timing adjustments in the PM to optimize intersection operations within the existing cycle length.
- E St Bernard Hwy at Colonial Blvd
    a) Signalization
    b) Roundabout

3.3 Tier 2 Analysis

Paris Rd at E Judge Perez Dr

Based on the results of the Cap-X analysis, converting the intersection to a full displaced left (continuous-flow) intersection is expected to improve operations. To quantitatively analyze this alternative, it is recommended that a microsimulation analysis be conducted through the use of software such as PTV Vissim. As noted in Appendix E, the right-of-way impacts for this intersection type are expected to be substantial.

E St Bernard Hwy at Palmisano Blvd

The analysis results for the 2050 No Build with Port conditions for the existing geometry (two-way stop controlled) was compared with the results of the analysis if the intersection was signalized or converted to a roundabout. The comparisons for the AM and PM peak hours are presented in **Tables 3-1** and **3-2**, respectively. Additionally, the corresponding analysis outputs for the signalization and roundabout alternatives are presented in **Appendix E.2.**

A review of **Tables 3-1** and **3-2** indicated that the signalization of the intersection is not expected to result in acceptable capacity (v/c <1.00) and delays below HCM thresholds (80 seconds) in the westbound direction in the AM. The installation of a roundabout is expected to improve operations during the AM and PM peak hours in 2050 No Build with the construction of the Port.

Table 3-1
AM E St Bernard Hwy at Palmisano Blvd Alternative Capacity Analysis Intersection Results Comparison for 2050 with Port

Intersection	Approach	Existing Geometry: Unsignalized			Alternative 1: Signalized			Alternative 2: Roundabout		
		Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio
E St Bernard Hwy at Palmisano Blvd	Overall	-	-	-	**91.6**	-	-	**11.7**	**314**	**0.80**
	E St Bernard Hwy EB	18.6	25	0.25	7.6	124	0.54	0.2	63	0.30
	E St Bernard Hwy WB	0.0	0	0.00	127.4	2539	1.25	16.4	314	0.80
	Palmisano Blvd SB	326.5	245	1.43	54.6	143	0.79	10.3	46	0.34

- HCS does not report result for overall intersection

Delay and volume have exceeded capacity (delay > 50 seconds for unsignalized and > 80 seconds for signalized, v/c > 1.00)

Table 3-2
PM E St Bernard Hwy at Palmisano Blvd Alternative Capacity Analysis Intersection Results Comparison for 2050 with Port

Intersection	Approach	Existing Geometry: Unsignalized			Alternative 1: Signalized			Alternative 2: Roundabout		
		Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio
E St Bernard Hwy at Palmisano Blvd	Overall	-	-	-	**14.5**	-	-	**1.4**	**195**	**0.62**
	E St Bernard Hwy EB	10.3	10	0.11	14.1	554	0.88	1.4	195	0.62
	E St Bernard Hwy WB	0.0	0	0.00	11.6	399	0.65	1.0	75	0.40
	Palmisano Blvd SB	114.5	125	0.84	50.7	87	0.52	4.7	16	0.14

- HCS does not report result for overall intersection

Delay has exceeded capacity (> 50 seconds)

E Judge Perez Dr at Palmisano Blvd

The analysis results for the 2050 No Build with Port conditions for the existing geometry (fully signalized intersection) was compared with the results of the analysis of a two-phased signal with new two unsignalized U-turns on both sides of the signal. The comparisons for the AM and PM peak hours are presented in **Tables 3-3** and **3-4**, respectively. Additionally, the volume rerouting methodology and corresponding analysis outputs for the alternative during the AM and PM peak hours is presented in **Appendix E.3.**

A review of **Tables 3-3** and **3-4** indicated that the study intersections operate with acceptable capacity (v/c <1.00) and delays below HCM thresholds during the AM and PM peak hours when the intersection is converted to a two-phased signal.

E St Bernard Hwy at Paris Rd

The analysis results for the 2050 No Build with Port conditions for the existing signal timings (see the TSI in Appendix B.4) was compared to analysis results with the signal timing adjusted in the PM to optimized intersection operations within the existing cycle length. The comparison for the PM peak hour is presented in **Table 3-5**. Additionally, the corresponding analysis outputs for the alternative is presented in **Appendix E.4**.

A review of **Table 3-5** indicated that the study intersection operates with acceptable capacity (v/c <1.00) and delays below HCM thresholds (< 80 seconds) during the PM peak hour when the signal timing is optimized.

Table 3-3
AM E Judge Perez Dr at Palmisano Blvd Alternative Capacity Analysis Intersection Results Comparison for 2050 with Port

Intersection	Approach	Existing Geometry: Full Signal			Alternative 1: Two-Phased Signal with Signalized U-turns		
		Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio
E Judge Perez Dr at Palmisano Blvd	**Overall**	**82.2**	-	-			
	Judge Perez Dr EB	23.5	474	0.79			
	Judge Perez Dr WB	128.0	1,759	1.23			
	Palmisano Blvd NB	47.1	157	0.79			
	Palmisano Blvd SB	52.2	164	0.79			
E Judge Perez Dr WB at Palmisano Blvd SB	**Overall**				**9.6**	-	-
	E Judge Perez Dr WB				8.7	393	0.82
	Palmisano Blvd SB				19.4	106	0.54
E Judge Perez Dr EB at Palmisano Blvd NB	**Overall**				**8.9**	-	-
	E Judge Perez Dr EB				4.4	171	0.50
	Palmisano Blvd NB				33.8	189	0.78
E Judge Perez Dr EB at West-East U-turn	**Overall**				**6.2**	-	-
	E Judge Perez Dr EB				2.5	73	0.44
	Palmisano Blvd SB				48.7	131	0.79
E Judge Perez Dr WB at East-West U-turn	**Overall**				**7.5**	-	-
	E Judge Perez Dr WB				5.5	263	0.76
	Palmisano Blvd NB				48.6	129	0.78

- HCS does not report result for overall intersection
Does not exist for this scenario
Delay and volume have exceeded capacity (delay > 80 seconds, v/c > 1.00)

Table 3-4
PM E Judge Perez Dr at Palmisano Blvd Alternative Capacity Analysis Intersection Results Comparison for 2050 with Port

Intersection	Approach	Existing Geometry: Full Signal			Alternative 1: Two-Phased Signal with Signalized U-turns		
		Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio
E Judge Perez Dr at Palmisano Blvd	**Overall**	**23.2**	-	-			
	Judge Perez Dr EB	22.3	830	0.85			
	Judge Perez Dr WB	15.4	508	0.65			
	Palmisano Blvd NB	65.8	181	0.81			
	Palmisano Blvd SB	67.6	134	0.75			
E Judge Perez Dr WB at Palmisano Blvd SB	**Overall**				**6.7**	-	-
	E Judge Perez Dr WB				5.3	231	0.64
	Palmisano Blvd SB				21.6	98	0.51
E Judge Perez Dr EB at Palmisano Blvd NB	**Overall**				**8.2**	-	-
	E Judge Perez Dr EB				7.7	356	0.77
	Palmisano Blvd NB				14.3	65	0.36
E Judge Perez Dr EB at West-East U-turn	**Overall**				**4.2**	-	-
	E Judge Perez Dr EB				3.2	72	0.69
	Palmisano Blvd SB				49.7	57	0.61
E Judge Perez Dr WB at East-West U-turn	**Overall**				**6.1**	-	-
	E Judge Perez Dr WB				3.6	147	0.59
	Palmisano Blvd NB				49.1	119	0.78

- HCS does not report result for overall intersection
Does not exist for this scenario

Table 3-5
PM E St Bernard Hwy at Paris Rd Alternative Capacity Analysis Intersection Results Comparison for 2050 with Port

Intersection	Approach	Existing Signal Timing			Alternative 1: Optimized		
		Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio
St Bernard Hwy at Paris Rd	**Overall**	**56.0**	-	-	**37.9**		
	E St Bernard Hwy EB	80.0	580	1.28	36.7	486	0.87
	E St Bernard Hwy WB	30.8	400	0.55	37.0	438	0.63
	Paris Rd NB	63.0	126	0.79	63.1	126	0.79
	Paris Rd SB	33.9	499	0.93	34.0	499	0.93

- HCS does not report result for overall intersection
Volume has exceeded capacity (> 1.00)

Table 3-6
AM E St Bernard Hwy at Colonial Blvd Alternative Capacity Analysis Intersection Results Comparison for 2050 with Port

Intersection	Approach	2050 Background (With Port)			2050 Signalized			2050 Roundabout		
		Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio
E St Bernard Hwy at Colonial Blvd	Overall	-	-	-	**14.9**	-	-	**1.8**	**172**	**0.63**
	Colonial Blvd WB	36	70	0.53	53.7	163	0.78	4.9	54	0.33
	E St Bernard Hwy NB	N/A	N/A	N/A	8.4	258	0.46	1.1	172	0.63
	E St Bernard Hwy SB	9.6	8	0.09	3.2	40	0.17	1.0	58	0.31

\- HCS does not report result for overall intersection
N/A Unopposed movement

Table 3-7
PM E St Bernard Hwy at Colonial Blvd Alternative Capacity Analysis Intersection Results Comparison for 2050 with Port

Intersection	Approach	2050 Background (With Port)			2050 Signalized			2050 Roundabout		
		Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile (ft/ln)	V/C Ratio
E St Bernard Hwy at Colonial Blvd	Overall	-	-	-	**13.6**	-	-	**1.8**	**145**	**0.59**
	Colonial Blvd WB	70.3	133	0.78	53.2	195	0.81	3.3	47	0.29
	E St Bernard Hwy NB	N/A	N/A	N/A	7.8	188	0.33	1.2	105	0.48
	E St Bernard Hwy SB	8.9	10	0.11	4.0	109	0.34	1.7	145	0.59

\- HCS does not report result for overall intersection
N/A Unopposed movement
Delay has exceeded capacity (> 50 seconds)

3.4 Additional Alternative: Elevated Highway

An additional alternative for consideration is a new elevated highway that would connect lower St Bernard Parish to the interstate System, to alleviate future port-related and overall congestion in Chalmette, and to provide additional infrastructure for evacuation and emergency response purposes.

Three (3) rounds of an extensive screening analysis were conducted to select three (3) options as potential alternatives to meet the purpose and need of the study. The following three (3) options were selected to mitigate negative community impacts and provide efficient access and egress, due to anticipated traffic growth and projected land use changes including the Louisiana International Terminal (LIT) intermodal facility (the 'Port'):

Elevated Highway Alternative 12 (C-H-I-P)

Alternative 12 is an approximately 8.9-mile elevated roadway planned to have two 12-foot lanes and two 8-foot shoulders that originates at Paris Road (LA 47) north of Eddie Pinto's Marina. From there, the alignment crosses Bayou Bienvenue (requiring a mid-level bridge) before extending southeast over the marsh toward Meraux. The alignment then parallels the Forty Arpent Canal and crosses the Violet Canal (requiring a second mid-level bridge) before making a southwest turn, ultimately terminating directly at the Port of New Orleans Louisiana International Terminal site on Judge Perez Highway (LA 39) near Violet.

Elevated Highway Alternative 22 (G-E-H-I-P)

Alternative 22 is an approximately 8.1-mile elevated roadway planned to have two 12-foot travel lanes and two 8-foot shoulders that originates on Paris Rd (LA47) near its intersection with Forty Arpent Canal Rd. The alignment parallels Forty Arpent through the marsh where it crosses over Violet Canal (requiring a mid-level bridge) before making a southwest turn, ultimately terminating directly at the Port of New Orleans Louisiana International Terminal site on Judge Perez Highway (LA39) near Violet.

Elevated Highway Alternative 25 (G-E-S)

Alternative 25 is an approximately 4.7-mile roadway that originates on Paris Rd. (LA47) near its intersection with Forty Arpent Canal Rd. The alignment parallels Forty Arpent elevated through the marsh with a planned elevated section consisting of two 12-foot travel lanes and two 8-foot shoulders. The roadway then turns southwest and transitions to an at-grade section through the Meraux tract, ultimately tying into Judge Perez Highway (LA39) between Maureen Lane and St. Marie Dr.

An aerial of each elevated highway alternative location is presented in **Appendix E-6**.

Trip Redistribution Methodology

The updated TransCAD models were provided by CDM Smith that forecast the estimated rerouting of traffic volumes from the existing road network to each of the three (3) elevated highway options. The TransCAD outputs without and with the elevated highway were compared to estimate the percentage of background traffic that currently travel on Paris Rd, between each proposed location of the elevated highway entrance and E Judge Perez Dr, who would instead use the elevated highway. A summary of the estimated percentage of rerouted traffic (not including Port truck traffic) for each alternative is presented in **Table 3-8**. Based on discussions with Port NOLA, it is assumed that 100% of the truck traffic destined to/from I-510 via Paris Rd would instead use the elevated highway.

Table 3-8
Rerouted Paris Rd Traffic

Alternative	Percentage of Rerouted Paris Rd Traffic*	
	Southbound	Northbound
12	25%	22%
22	15%	16%
25	22%	22%

**Does not include truck traffic destined to and from the proposed Port facilities, where 100% of these truck trips are expected to be rerouted to the elevated highway.*

The redistributed elevated highway traffic was removed from the southbound left turn and westbound right turn movements at the intersection of Paris Rd at E Judge Perez Dr as well as the eastbound and westbound through volumes on E Judge Perez Dr at Palmisano Blvd. The resulting volumes are presented in **Appendix E-6**. It is assumed that the traffic volumes at the remaining three (3) intersections identified in Section 3-1 will not change as a result of either of the three (3) elevated highway alternatives.

The analysis results for the 2050 No Build with Port conditions intersection volumes without the construction of an elevated highway were compared to the analysis results for the intersection volumes for each of the three elevated highway alternatives.

The comparisons for the AM and PM peak hours are presented in **Tables 3-9** and **3-10**, respectively. Additionally, the corresponding analysis outputs for the alternative is presented in **Appendix E.6**.

Table 3-9
AM Alternative Capacity Analysis Intersection Results Comparison with Elevated Highway

Intersection	Approach	No Elevated Highway			Alternative 12			Alternative 22			Alternative 25		
		Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio
Paris Rd at Judge Perez Dr	**Overall**	**87.1**	-	-	**59.3**	-	-	**59.3**	-	-	**59.3**	-	-
	Judge Perez Dr EB	52.3	457	0.85	52.3	457	0.85	52.3	457	0.85	52.3	457	0.85
	Judge Perez Dr WB	95.9	1478	1.27	61.0	875	0.98	60.8	875	0.98	61.0	875	0.98
	Paris Rd NB	57.1	339	0.83	57.1	339	0.83	57.1	339	0.83	57.1	339	0.83
	Paris Rd SB	110.8	835	1.26	63.9	713	1.01	63.7	713	1.01	63.8	713	1.01
E Judge Perez Dr at Palmisano Blvd	**Overall**	**82.2**	-	-	**32.0**	-	-	**33.3**	-	-	**31.9**	-	-
	Judge Perez Dr EB	23.5	474	0.79	19.4	262	0.79	19.5	276	0.79	19.4	266	0.79
	Judge Perez Dr WB	128.0	1759	1.23	35.1	733	0.95	37.8	770	0.97	35.1	733	0.95
	Palmisano Blvd NB	47.1	157	0.79	47.1	157	0.79	47.1	157	0.79	47.1	157	0.79
	Palmisano Blvd SB	52.2	164	0.79	52.2	164	0.79	52.2	164	0.79	52.2	164	0.79

- HCS does not report result for overall intersection
Delay and/or volume have exceeded capacity (delay > 80 seconds, v/c > 1.00)

Table 3-10
PM Alternative Capacity Analysis Intersection Results Comparison with Elevated Highway

Intersection	Approach	No Elevated Highway			Alternative 12			Alternative 22			Alternative 25		
		Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio
Paris Rd at Judge Perez Dr	**Overall**	**109.9**	-	-	**77.1**	-	-	**79.7**	-	-	**78.3**	-	-
	Judge Perez Dr EB	79.6	1023	1.03	79.6	1025	1.03	79.6	1023	1.03	79.6	1025	1.03
	Judge Perez Dr WB	89.8	840	1.21	58.1	527	1.20	57.8	527	1.20	58.1	527	1.20
	Paris Rd NB	104.9	706	1.10	97.6	682	1.07	104.9	706	1.10	103.7	702	1.09
	Paris Rd SB	173.7	984	1.54	77.0	700	1.05	83.2	700	1.05	77.4	700	1.05
E Judge Perez Dr at Palmisano Blvd	**Overall**	**23.2**	-	-	**20.0**	-	-	**20.4**	-	-	**20.1**	-	-
	Judge Perez Dr EB	22.3	830	0.85	17.1	588	0.77	17.7	623	0.77	17.2	598	0.77
	Judge Perez Dr WB	15.4	508	0.65	12.9	374	0.52	13.1	387	0.54	12.9	374	0.52
	Palmisano Blvd NB	65.8	181	0.81	65.8	181	0.81	65.8	181	0.81	65.8	181	0.81
	Palmisano Blvd SB	67.6	134	0.75	67.6	134	0.75	67.6	134	0.75	67.6	134	0.75

- HCS does not report result for overall intersection
Delay and/or volume have exceeded capacity (delay > 80 seconds, v/c > 1.00)

A review of Tables 3-9 and 3-10 indicated that the intersection of E Judge Perez Dr at Palmisano Blvd operates with acceptable capacity (v/c <1.00) and delays below HCM thresholds during the AM and PM peak hours when traffic is diverted to the elevated highway alternatives.

The intersection of E Judge Perez Dr at Paris Rd is expected to continue to operate with unacceptable capacity (v/c > 1.00) and delays above HCM thresholds when traffic is diverted to the elevated highway alternatives.

The addition of an exclusive eastbound right turn lane and a westbound left turn lane (i.e., from single to dual westbound left turn lanes) is expected to improve operations, as presented in **Tables 3-11** and **3-12**. Additionally, the corresponding analysis outputs for the alternative is presented in **Appendix E.6**.

3.5 Freight Rail Crossings

As discussed in Chapter 1.2, AECOM is working in compilation with a previous rail study conducted by the Port of New Orleans to identify possible rail improvements that should be considered in the next environmental phase of this project.

Table 3-11
AM Alternative Capacity Analysis Intersection Results Comparison with Elevated Highway – Paris Rd at Judge Perez Dr Improvements

Improvements	Approach	Alternative 12			Alternative 22			Alternative 25		
		Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio
No Improvements	**Overall**	**59.3**	-	-	**59.3**	-	-	**59.3**	-	-
	Judge Perez Dr EB	52.3	457	0.85	52.3	457	0.85	52.3	457	0.85
	Judge Perez Dr WB	61.0	875	0.98	60.8	875	0.98	61.0	875	0.98
	Paris Rd NB	57.1	339	0.83	57.1	339	0.83	57.1	339	0.83
	Paris Rd SB	63.9	713	1.01	63.7	713	1.01	63.8	713	1.01
With Improvements (Exclusive EBR lane, dual WBL lanes)	**Overall**	**48.3**	-	-	**48.3**	-	-	**48.3**	-	-
	Judge Perez Dr EB	41.3	337	0.85	41.3	337	0.85	41.3	337	0.85
	Judge Perez Dr WB	46.4	787	0.91	46.2	787	0.91	46.4	787	0.91
	Paris Rd NB	58.6	343	0.84	58.6	343	0.84	58.6	343	0.84
	Paris Rd SB	51.3	527	0.79	51.8	527	0.79	51.5	527	0.79

- HCS does not report result for overall intersection
Volume has exceeded capacity (> 1.00)

Table 3-12
PM Alternative Capacity Analysis Intersection Results Comparison with Elevated Highway – Paris Rd at Judge Perez Dr Improvements

Improvements	Approach	Alternative 12			Alternative 22			Alternative 25		
		Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio	Delay (sec/veh)	95th%ile Queue (ft/ln)	V/C Ratio
No Improvements	**Overall**	**77.1**	-	-	**79.7**	-	-	**78.3**	-	-
	Judge Perez Dr EB	79.6	1025	1.03	79.6	1023	1.03	79.6	1025	1.03
	Judge Perez Dr WB	58.1	527	1.20	57.8	527	1.20	58.1	527	1.20
	Paris Rd NB	97.6	682	1.07	104.9	706	1.10	103.7	702	1.09
	Paris Rd SB	77.0	700	1.05	83.2	700	1.05	77.4	700	1.05
With Improvements (Exclusive EBR lane, dual WBL lanes)	**Overall**	**58.6**	-	-	**60.7**	-	-	**59.2**	-	-
	Judge Perez Dr EB	59.5	816	0.99	63.3	856	0.99	61.2	835	0.99
	Judge Perez Dr WB	43.3	542	0.82	45.5	561	0.86	44.6	552	0.84
	Paris Rd NB	76.5	614	0.99	76.0	614	0.99	76.2	614	0.99
	Paris Rd SB	59.0	410	0.97	60.6	410	0.98	57.6	410	0.95

- HCS does not report result for overall intersection
Delay and/or volume have exceeded capacity (delay > 80 seconds, v/c > 1.00)

3.6 Summary of Proposed Improvements of Existing Street Network

Without Elevated Highway:

- Paris Rd at E Judge Perez Dr
    a) Full Displaced Left. If this alternative is to move forward, microsimulation should be conducted as part of Stage 1 of the NEPA process, per DOTD requirements.
- E St Bernard Hwy at Palmisano Blvd
    a) Roundabout
- E Judge Perez Dr at Palmisano Blvd
    a) Two-Phased signals: prohibit eastbound and westbound lefts, as well as northbound and southbound through movements; convert the existing signal to two-phased (PH1: WB/EB, PH2: NBL/SBL); permit the northbound and southbound rights to make free-flow right turns by constructing a new auxiliary lane, protected by a barrier; convert westbound right turn lane to a westbound thru lane for drivers to access driveways behind the new median; construct a new westbound right turn lane to the north; convert eastbound right turn lane to an eastbound thru-right turn lane for drivers to be able to access side streets and driveways behind the new median; construct two unsignalized U-turns on either side of the signal.
- E St Bernard Hwy at Paris Rd
    a) Signal timing adjustments in the PM to optimize intersection operations within the existing cycle length.
- E St Bernard Hwy at Colonial Blvd
    a) Signalization

With Elevated Highway (For all 3 Elevated Highway Alternatives):

- Paris Rd at E Judge Perez Dr
    a) Exclusive eastbound right turn lane
    b) Additional westbound left turn lane (i.e., from single to dual westbound left turns)
- E St Bernard Hwy at Palmisano Blvd
    a) Roundabout
- E Judge Perez Dr at Palmisano Blvd
    a) No improvements required
- E St Bernard Hwy at Paris Rd
    a) Signal timing adjustments in the PM to optimize intersection operations within the existing cycle length.
- E St Bernard Hwy at Colonial Blvd
    a) Signalization

- Operational analysis should be conducted at the tie-in locations for all three (3) elevated highway alternatives as part of later stages of the NEPA process during the alternative selection process.

The conceptual layouts of the proposed improvements are provided in **Appendix E-7**.

LSB / LIT Road Network and Resilience
Stage 0 Feasibility Study
H.015428

Appendix A
Initial Data Collection

URBAN SYSTEMS inc.

LSB / LIT Road Network and Resilience
Stage 0 Feasibility Study
H.015428

Appendix A
Initial Data Collection

Appendix A.1 SBP Bikeway & Ped Plan Update

URBAN SYSTEMS inc.

Excerpts of findings from:

St Bernard Parish *Bikeway and Pedestrian Plan Update* (Soll Planning & Alta Planning + Design, June 2017)

St. Bernard Parish

Bikeway & Pedestrian Plan Update

JUNE 2017

PREPARED FOR

St. Bernard Parish Government and the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John, St. Tammany and Tangipahoa Parishes

PREPARED BY

Soll Planning & Alta Planning + Design

RPC TASK A2.17; FY UPWP

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Legal Disclaimer

23 U.S.C. 409 Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

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INTRODUCTION

Plan Overview

The St. Bernard Parish Bikeway and Pedestrian Plan is a framework for the development of a more walkable, more bikeable St. Bernard Parish. This plan is based upon a presumption that walking and bicycling should be safe, convenient and healthy options for residents and visitors alike, whether biking or walking to reach schools, work, shopping and other destinations, or for recreational purposes.

The planning process builds upon the Complete Streets and other planning efforts already underway in St. Bernard Parish and throughout the metro New Orleans region, to ensure that roads are safe for everyone regardless of who they are or how they travel.

The purpose of this bicycle and pedestrian planning effort is to identify improvements to the bicycle and pedestrian networks in order to make it easier, safer and more comfortable for people bicycling and walking; to estimate the cost of projects and to make implementation recommendations so that a coherent network comes together, over time, through long range planning while providing flexibility for the Parish to make improvements as opportunities arise.

Planning Process

The St. Bernard Bikeway and Pedestrian Plan Update was a nine month planning effort which included review of existing plans, meetings with a Technical Advisory Committee (TAC), field survey of existing sidewalks and roadway conditions, technical analyses and public engagement.

Table 1 (next page) includes a list of the existing plan documents provided to the project team for their review and use throughout the planning process. Appendix A includes a technical memorandum with additional information on the existing documents reviewed and data sources provided to the project team for their use.

The TAC was comprised of representatives from St. Bernard Parish Government; staff and commission members from the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. John, St. Tammany and Tangipahoa Parishes; a representative from Bike St. Bernard; a representative from the St. Bernard Americans with Disabilities Act (ADA) Committee; and a member of the St. Bernard Parish Council. TAC members were briefed throughout the planning process and met with on an as needed basis.

Table 1. Documents Reviewed

	Name	Type of Document	Year
1	Transportation Alternatives Program Application – Mississippi River Trail Phase IV Valero Refinery to Paris Road	Funding Application	2016
2	LA 46: Orleans PL - Paris Rd. LA DOTD Plan Sheets, St. Bernard Parish SPN H.010406	Construction Plans	2016
3	St. Bernard Parish Complete Streets Policy and supporting materials	Resolution & Ordinances	2016
4	Memorandum from D. Fagan to D. Bourgeois re: adding 9.6 miles of bikeways along submerged roads routes	Memorandum	2014
5	St Bernard Parish Comprehensive Plan	Planning Document	2014
6	Mississippi River Levee Shared-Use Path (Phase I and Phase II) Plan Sheets	Construction Plans	2014
7	Transportation and Land Use Access Improvement Feasibility Study	Study	2014
8	Transportation Alternatives Program Application – Mississippi River Trail Phase III (Violet to Braithwaite)	Funding Application	2014
9	Transportation Enhancement Study: St. Bernard Parish	Study	2013
10	Land Use and Transportation Plan: St. Bernard Parish	Planning Document	2008
11	Transportation Enhancement: St. Bernard Bicycle Path Plan	Study	2001

Soll Planning, 2017

Complete Streets Policy

'Complete Streets' is a transportation policy concept that requires streets to be planned, designed and operated for safe access for all users, including pedestrians, bicyclists, motorists and transit users of all ages and abilities. Complete Streets policies have been adopted by over 1,000 states, counties, local governments, and regional agencies across the United States. St. Bernard Parish is one of Louisiana's leaders in this area, having adopted a Complete Streets Policy in April 2016.

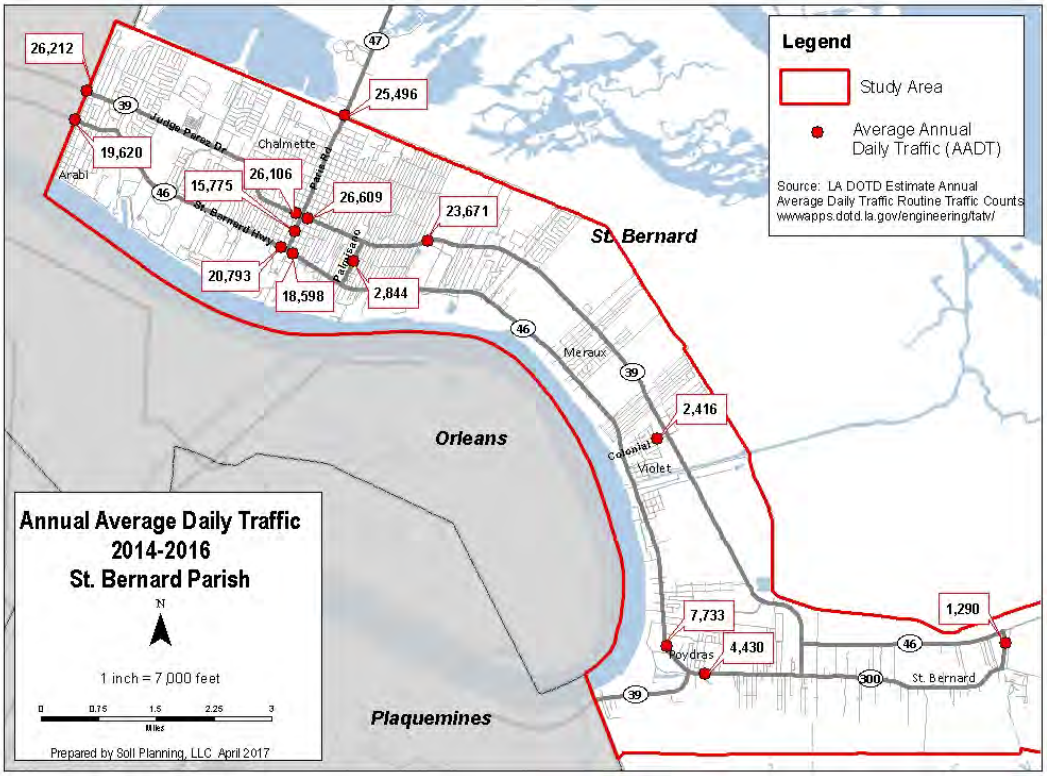
The Complete Streets Policy and this Bikeway and Pedestrian Plan Update will work hand-in-hand to create a more bikeable, more walkable community. The plan identifies specific infrastructure improvements, while the Policy steers decision-making, through internal and regulatory mechanisms, towards concepts that are supportive of the infrastructure improvements.

The St. Bernard Parish Policy Resolution, the Complete Streets Ordinances, and a series of recommendations made by the project team to continue to strengthen and implement the policy are included in Appendix B.

Existing Conditions

St. Bernard Parish's linear geography is both an advantage and a detriment in terms of its transportation network, particularly for people navigating on foot, by bicycle and by transit. On the one hand, the majority of residents are within a mile of the two major arterials, St. Bernard Hwy. (LA 46), and Judge Perez Dr. (LA 39). Additionally, Paris Rd. (LA 47) provides interstate access for St. Bernard's vibrant industrial sector. As a result, these roadways contain high volumes of traffic, much of which consists of heavy truck traffic. Figure 1, below, shows the Annual Average Daily Traffic (AADT) for the state highway network.

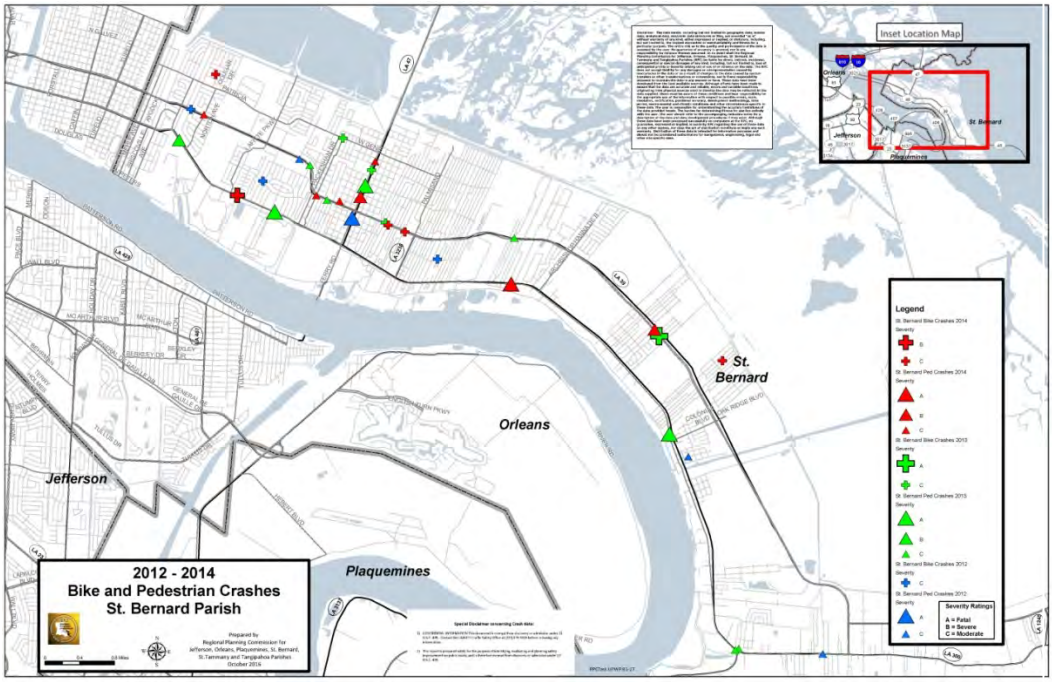
Figure 1. Annual Average Daily Traffic (2014-2016), St. Bernard Parish



Source: Louisiana DOTD Estimated Annual Average Daily Traffic Routine Traffic Counts

Given the mix of traffic, and the characteristics of these roadways, it is unsurprising to find that the majority of reported pedestrian and bicycle crashes over a three-year reporting period (2012-2014) have occurred on these same roadways. Figure 2, next page, shows Bicycle and Pedestrian Crashes from 2012-2014 in St. Bernard Parish.

Figure 2. Bicycle and Pedestrian Crashes (2012-2014), St. Bernard Parish



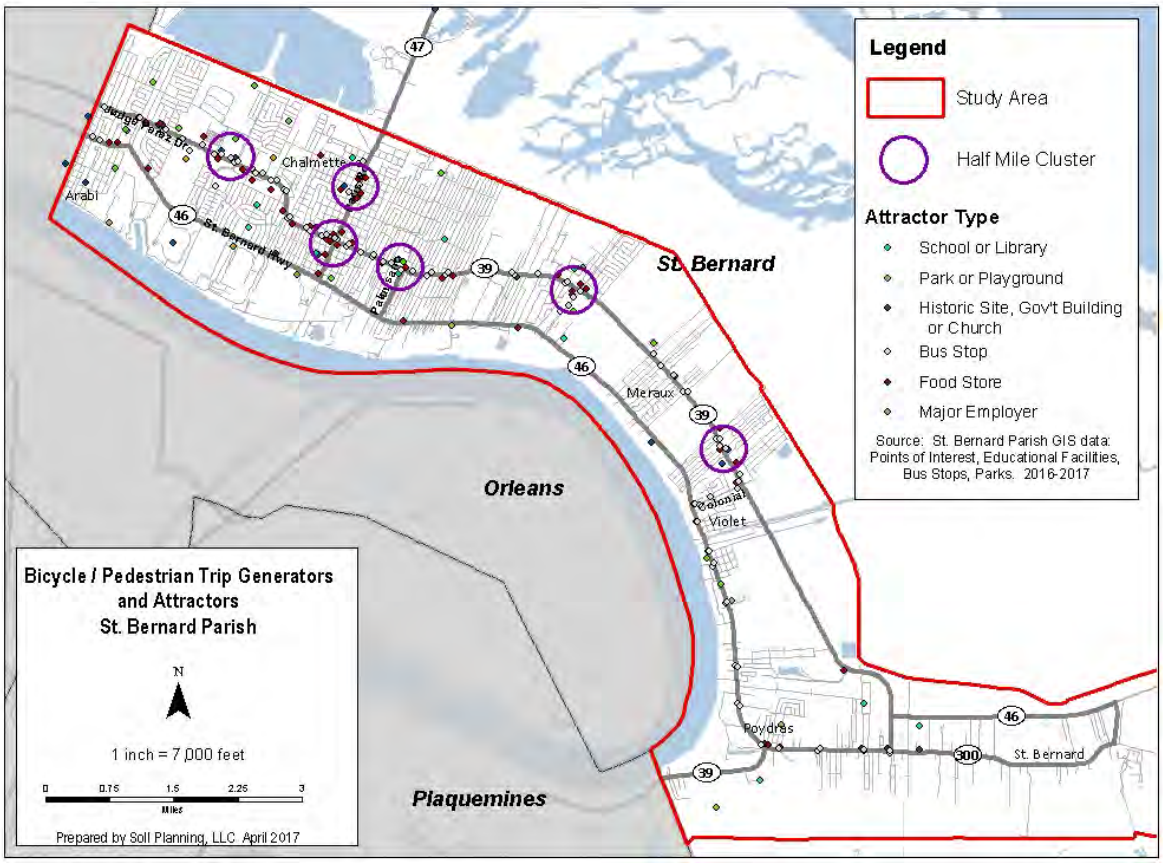
Source: New Orleans Regional Planning Commission

Nearly every existing or future use of land has the potential to generate bicycle and pedestrian trips, though certain types may generate more of these trip types than others, and as such merit special consideration. These include:

- Major employers
- Food stores
- Bus Stops
- Schools and libraries
- Certain government facilities, such as the Parish Government Complex
- Parks and playgrounds
- Historic sites that serve as tourist attractions, some churches

Figure 3, next page, shows some of the major known bicycle and pedestrian trip generators and attractors. Clustered groups of 10 or more attractors within a half mile are circled in purple.

Figure 3. Bicycle and Pedestrian Trip Generators and Attractors, St. Bernard Parish



Source: Soll Planning LLC with St. Bernard Parish GIS

Current conditions in St. Bernard Parish reveal a need to better address non-motorized transportation alternatives. There are many benefits to walking and bicycling, and to creating a community that is supportive of these transportation choices. Some potential benefits from non-motorized transportation projects include:

- In 2013, St. Bernard Parish had a 35.5% obesity rate, according to the Center for Disease Control.[i] Louisiana currently (2016) has the highest adult obesity rate in the nation, at 36.2%[ii]. Obesity related health conditions include diabetes, hypertension and heart disease. Providing opportunities for physical activity through walking and bicycling has been shown to be an effective strategy for combating chronic conditions related to inactivity. One study found that people living within 0.6 miles of a protected bikeway got 45 more minutes of exercise biking and walking than people living 2.5 miles away.[iii]
- As noted in the *New Orleans Regional Pedestrian and Bicycle Crash Report (2009-2010)*, Louisiana and the metro New Orleans area are above national averages for bicycle and pedestrian crashes. However, planning and designing sidewalks, bicycle lanes, and even shoulders are proven methods of reducing injury and crash rates for various users. Of note:

    - Roadways with sidewalks on both sides are half as likely to have pedestrian crashes than roadways without sidewalks [iv]
    - Pedestrian traffic injuries dropped by 12% on roadways in New York City after protected bicycle lanes were installed.[v]
    - Paved shoulders have been found to reduce crashes across the board for pedestrians, bicyclists, and motorists.[vi]
- St. Bernard Parish's median income was $44,706 in 2015, and 71.6% of households in St. Bernard have two or more vehicles,[vii] According to AAA, the average cost to own and operate a vehicle was $8,698 annually in 2015.[viii] The average cost to own two vehicles, at $17,396 is a significant portion of the household budget for many families in St. Bernard Parish.

Public Engagement

The Bikeway and Pedestrian Plan Update process included two public meetings. The first public meeting occurred in December 2016. The purpose of the meeting was to inform citizens of the planning effort, gather public input on their concerns about walking and bicycling, and identify locations where they would like to be able to walk or bicycle more comfortably. Members of the public who attended the meeting watched a brief presentation, filled out surveys and comment forms, and participated in an interactive map exercise.

Some of the key themes that emerged are identified on the following page.

- Major thoroughfares (Judge Perez and Paris Road) are difficult to cross.
- Strong support and interest in a trail network including both the Mississippi River Trail (MRT) and 40 Arpent Trail.
- Desire for walking and bicycle only bridges across canals to connect neighborhoods.
- Consideration for future trail to transit connections.
- A need for better on-street pedestrian-scale lighting.

A second public meeting occurred in May 2017 to gather public feedback on the recommendations of the draft plan prior to its anticipated adoption by the Parish Planning Commission and Parish Council.

Appendix C contains the public participation file.

Bicyclist Types

Bicyclists were historically classified according to their skill level, as that has some influence on their speed and behavior, as well as their preference for various facility types. Typologies from the 1990's and 2000's were focused on design needs of current cyclists, whereas the current planning practice uses a scale that includes the full population in order to examine the potential to change behavior and perceptions based on the development of facilities and education. These categories of bicyclists are:

- **Strong and Fearless** (<1%): This group is often comprised of club riders and other cyclists that are extremely comfortable riding regardless of roadway conditions, traffic or weather. They are faster than other cyclists and tend to prefer roadways over shared use facilities.
- **Enthused and Confident** (5-10%): This group is generally comfortable using on-street bicycle facilities and knows the rules of the road. They typically choose direct routes, though they may choose lower volume streets and shared use trails as well.
- **Interested but Concerned** (60%): This group of riders typically prefers shared use paths, neighborhood greenways, and bicycle lanes along lower volume, low speed streets. They may be uncomfortable riding with traffic and be unaware of rules as they pertain to bicyclists. They tend to cycle shorter distances and during favorable weather conditions; however they may choose a less direct route in order to avoid arterials.
- **No Way, No How** (30%) People in this group are unlikely to ride a bicycle regardless of circumstances or facility type. They perceive significant safety issues with riding a bicycle, or may have a physical disability that prevents them from riding or may have never learned.

Understanding the attitudes of people towards bicycling is useful to consider throughout the decision making and planning process in order to accommodate the widest cross section of potential users as possible.

Source: Portland Office of Transportation, *Four Types of Cyclists.* 2006.

RECOMMENDATIONS

Bicycle Facilities and Designations

Overview

Louisiana law states that bicycles may be operated on all roadways, while the St. Bernard Parish Code of Ordinances notes that persons riding bicycles have all of the rights and duties applicable to drivers of motor vehicles. Riding on the sidewalk is not expressly prohibited in St. Bernard, unless it is signed as such, though a person riding a bicycle on the sidewalk must yield the right of way to pedestrians.[ix]

Most of the time, bicyclists and motor vehicles share the same travel lanes. Roadways with low vehicular speeds and light traffic volumes are often suitable in their current condition for serving bicyclist and motor vehicles without additional signage, pavement marking, or other infrastructure improvements. However, as speeds and volumes increase, bicyclists comfort and perception of safety will generally decline, unless additional provisions are included to address their specific needs.

The level of infrastructure necessary varies based on the context of the roadway. What is needed in a highly urbanized area is often quite different than rural areas. Likewise, roadway characteristics are an important factor for consideration. As speeds and volumes go up, the level of separation needed to ensure safety and comfort for the various groups of bicyclists will also go up.

The following pages provide summary information about each of the bicycle facility types and designations recommended in the St. Bernard Bikeway and Pedestrian Plan Update. All facility types may not be included at this time; however their need may be identified as future growth occurs. Summaries do not cover the full range of design considerations, pavement marking details, or signage for each facility type. Summary information is based on the following resources, which should be referred to for additional detailed information at the time of design:

- American Association of State Highway and Transportation Officials (AASHTO). *Guide for the Development of Bicycle Facilities, 4th Edition*. 2012.
- National Association of City Transportation Officials (NACTO). *Urban Bikeway Design Guide, 2nd Edition*. 2014.
- Federal Highway Administration (FHWA). *Separated Bike Lane Planning and Design Guide. 2015.*
- Federal Highway Administration (FHWA). *Manual on Uniform Traffic Control Devices. 2009.*
- Federal Highway Administration (FHWA). *Small Towns and Rural Multimodal Networks. 2016.*

BICYCLE ROUTE

Bicycle routes have been selected as preferred roadways for bicyclists to access destinations or trail connections. They are roadways with favorable conditions for bicycling, such as lower traffic volumes and lower speeds.

Bicycle routes are a designation, rather than a facility type for the purpose of providing navigational instructions to users. Bicycle routes do not necessarily reduce bicycle crashes as they do not alter the geometric design, traffic volume or speed of the roadway. For this reason, it may be desirable to add other roadway improvements, including traffic calming, along bicycle routes at a later point in time if the need arises.

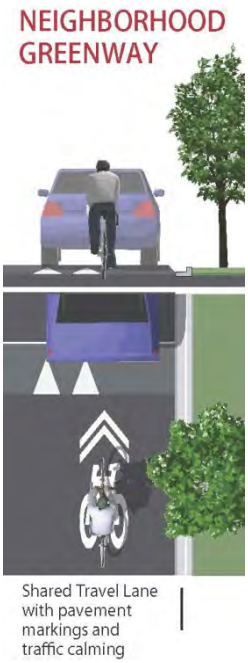
MARKED SHARED LANE

A marked shared lane alerts motorists that bicyclists may be encountered and shows bicyclist where to position themselves for greatest visibility. They are useful to provide additional guidance to motorists and bicyclists on roadways with low to moderate speeds and traffic volumes.

The marked shared lane pavement symbol (also called a shared lane marking or sharrow) is typically placed in the center of the outside travel lane but may be placed in other locations depending on context. Aligning the pavement marking between the path of vehicle tire tracks will extend the life of the pavement marking symbols.

Pavement symbols should be placed immediately after every intersection and at intervals not greater than 250ft.

NEIGHBORHOOD GREENWAY



A neighborhood greenway is a residential low volume, low speed street where bicyclists and pedestrians are given priority. Neighborhood greenways are also known as bicycle boulevards. They are a key component of a low-stress bicycle network that appeals to a wide spectrum of the population. Many residential streets within St. Bernard Parish meet the speed and volume criteria for neighborhood greenways. Identifying and marking them is critical to make them clearly visible to potential users and alert motor vehicle traffic to expect to encounter people walking and bicycling, and so people biking can navigate to the destinations by using a combination of facilities. Neighborhood greenways often use a combination of signage, traffic calming and pavement markings to create a comfortable environment for people walking and biking. The traffic calming benefits are appealing to property owners and residents concerned about motor vehicle speeds and cut through traffic.

BICYCLE LANE

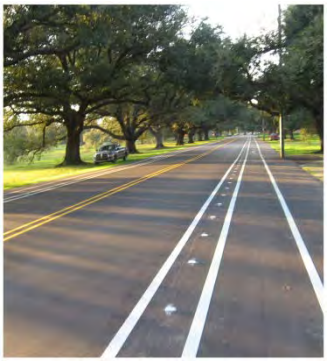
A bicycle lane is a portion of the road designated by striping and pavement marking for the exclusive or preferential use of bicycles. Bicycle lanes facilitate predictable behavior and movements from bicyclists and motorists. They enable bicyclists to ride at a comfortable speed without interfering with prevailing motor vehicle traffic speeds. Bicycle lanes are typically placed adjacent to the curb when on-street parking is not a factor, or to the left of on-street parking when present.

Bicycle lanes are most beneficial on streets with moderate traffic and moderate speeds.

BUFFERED BICYCLE LANE

A buffered bicycle lane is a conventional bicycle lane paired with a designated buffer space, creating additional separation between bicyclists and motor vehicles. Buffered bicycle lanes are placed on street, to the right of motor vehicle travel lanes, and to the left of on-street parking, where present.

Buffered bicycle lanes are appropriate on roadways with moderate to high volumes of traffic, moderate to high travel speeds, or where a high portion of the motor vehicle traffic includes trucks and oversized vehicles.



Narrow buffers (1.5 ft. – 4 ft.) are bound by two solid lines, whereas a wider buffer (4ft. or greater) is marked with diagonal hatching.

SEPARATED BICYCLE LANE

A separated bicycle lane, sometimes called a protected bicycle lane or a cycle track, includes a vertical element separating the bicycles from motor vehicles. They can be designed for single or bi-directional travel. Separated bicycle lanes are located in the roadway or immediately adjacent to the roadway. One defining feature of a separated bicycle lane (as compared to a path or trail) is that they are exclusively for the use of bicycles.

Separated bikeways are an appropriate design choice on higher speed, higher volume roadways where designated space for bicycles and motor vehicles is desired to reduce the possibility that motorists will stray into the bicyclist path.

SHOULDER BIKEWAY

In rural areas, paved shoulders can be enhanced to provide accommodation for people bicycling and walking, and benefit motorists at the same time.

Bicycle lanes and shoulder bikeways differ in that bicycle lanes are travel lanes, whereas shoulders are not. However, when shoulders are used by bicyclists, there are additional considerations, including using a bicycle friendly rumble strip design, careful placement of reflectors, and maintenance of the shoulder to ensure a smooth clear path. The Louisiana Department of Transportation and Development (DOTD) has a sample plan for a bicycle friendly rumble strip that can be used on state and local roadways.

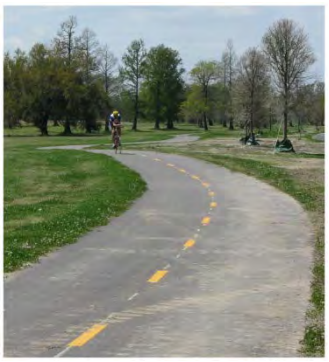
Photo Citation: https://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/pptchapt4.cfm

SHARED USE TRAIL

A shared use trail (or path) is an off-street facility shared with other non-motorized users, including pedestrians, skaters, joggers, etc. For our purposes, trails are paved and bi-directional facilities, with a minimum width of 10 ft.

Shared use trails perform a transportation function for commuting to school, work or other trip purposes as well as providing opportunities to improve health and fitness Trails sometimes align with natural features, such as waterways, or reuse historic transportation facilities that are no longer in use, such as abandoned rail corridors.

When shared use trails are placed adjacent to a roadway to accommodate non-motorized users, great care should be taken during design to mitigate the variety of potential conflicts that may occur.



Supportive Facilities

Bicycle Parking

Bicycle Parking may need to be expanded in the future to accommodate user demand and ensure that bicyclists have safe and convenient bicycle parking options at their destinations. Though it is legal to attach bicycles to public posts in St. Bernard Parish; it can result in impeding pedestrian traffic, theft and other undesirable consequences. Currently, the Parish participates in the Young Leadership Council's "Where Ya Rack" program. The "Where Ya Rack?" program uses volunteer labor to install privately sponsored racks on private or public property.

In addition to the sponsored racks provided through that mechanism, bicycle racks should be installed at public parks, schools, libraries and government buildings as facilities come on line. Transit stops that serve as hubs are a good location for public bicycle parking. Trailhead design should consider bicycle parking, particularly at larger and more centralized locations.

Adequate bicycle parking is required on all new commercial construction projects and major renovation projects through the Complete Streets ordinance. The volume of required parking shall scale with the scope of the commercial development and is subject to the final discretionary determination of the Director of Community Development.

Bicycles on Buses

Based on discussions the Parish was holding regarding developing a Complete Streets Policy in 2015, the St. Bernard Parish Transit Department began a review of operations, equipment and facilities. The Parish made a commitment at that time to begin adding bicycle racks to all new buses. By 2016, all St. Bernard Parish Transit buses had been equipped with bicycle racks. Any riders may place their bicycle on the rack for the duration of their trip. There is no additional fee, training or licensing requirement for their use.

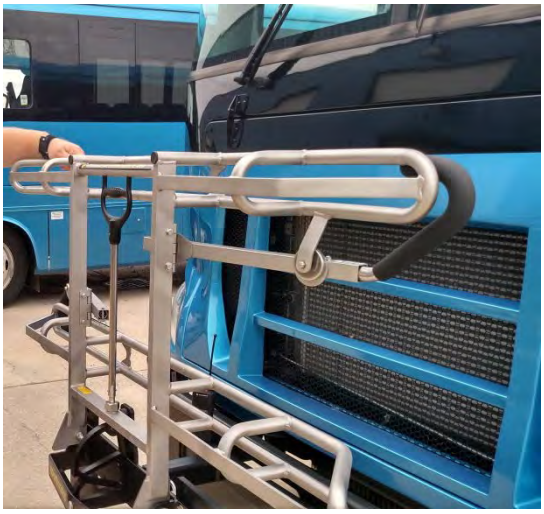


Photo Citation:
http://www.fox8live.com/story/30561000/st-bernard-transit-unveils-new-bus-bike-racks

Future Programming

Staffing

To reduce fatalities and serious injuries, coordinate implementation and advocate for pedestrian and bicycle continuity across future administrations, the St. Bernard Bikeway and Pedestrian Plan Update recommends an ongoing Parish investment in a Bicycle and Pedestrian Coordinator position. Currently this position is filled part-time through a consultant contract.

A part-time or full-time Bicycle and Pedestrian Coordinator typically has bicycle and pedestrian planning and/or engineering expertise and adds intimate knowledge of design, policy and funding. Importantly, this job would coordinate across Parish departments such as the St. Bernard Health, Public Works, and Community Development Departments and work with schools to ensure the incorporation of best practices and the implementation of the bicycle and pedestrian element of the comprehensive plan.

Education

An important recommendation is provision of ongoing education and training of people driving, people walking and people riding bicycles about state and local laws. To keep everyone safe training is also necessary to provide information to law enforcement officers and judges who enforce bicycle and pedestrian laws. Numerous Parish employees drive parish vehicles and this group would benefit from explicit driver training. The Parish can leverage existing training opportunities in Facility Design, Pedestrian Accessibility, and Law Enforcement offered by others or through national webinars or videos. The Parish could also identify internal gaps in training and work to create new safety programs that best fit St. Bernard. For example, local school children represent a cohort that would benefit from early childhood education in pedestrian and bicycle safety training.

Local Bicycle Network

A high-quality bicycle network depends on a set of well-designed corridors and segments that are sensitive to the context of travel activity and land use. The network, shown in Figures 8, 9, 10, and 11 aims to accomplish the following goals:

- Take people from where they are to where they want to go, and serve key destinations and transit lines.
- Meet the needs of a diverse range of users. Consider variations in physical abilities, perceptions of safety, trip types, and trip purposes of different users.
- Include a hierarchy of facility types serving different functions and users. For example, children riding to school require a higher comfort level than adults who ride recreationally or commute every day.
- Balance existing and future demand. Create improvements on the routes that are already popular for cyclists, but also create new bikeways where it may be uncomfortable to ride currently.
- Minimize out-of-direction travel.
- Prioritize safety.
- Provide a grid of bikeways roughly every half mile in more populated areas, to the extent possible.

Network by Facility Type (On-street)

One of the primary purposes of this planning effort is to identify bicycle facility improvements that will improve the safety and comfort of bicycling throughout St. Bernard. The planned on-street network includes 79.2 centerline miles of bikeways, of which 39.1 miles are located on the local street network and 40.1 miles are on the state highway network. Figures 5, 6, 7, and 8 at the end of this section show the recommended network of on-street facilities and trails. A discussion of the recommendations of the state highway network follows the overview of the local street network, below. All facility recommendations will be subject to engineering evaluation at the time of design/implementation. See Appendix F for new suggested cross sections (lane retrofits) of selected existing streets.

Bicycle Routes are recommended on 19.5 miles of the local street network. Bicycle Route designations are used in locations where navigational information is the primary need for bicyclist to access a trailhead or important connection, and where additional on-street facilities are not warranted due to very low traffic volumes and low speeds. Bicycle routes do not typically improve safety conditions for bicyclists, so additional improvements may be identified in the future on these roadways. A Bicycle Map and Guide to Safe Cycling should be created to provide bicyclists with a reference for locating streets that are recommended routes.

Table 2. Bicycle Routes Planned on the Local Street Network

Name	From	To	Posted Speed	Approx Width	Length (Miles)
Bartolo St.	E Genie St.	40 Arpent Trail	20	22'	0.31
Benjamin St.	Alexander Ave.	Cougar Dr.	20	24'	0.66
Benjamin St.	Wetlands Observatory	Kings Dr.	20	25'	0.48
Campagna Dr.	Florida Ave.	Ohio St.	20	25'	1.35
Center St.	Patricia St.	St. Claude Ave.	20	24'	0.65
Claiborne Ave.	Maureen Ln.	Meraux Ln.	20	20'	0.52
Cougar Dr.	Benjamin St.	Patricia St.	20	26'	0.43
Courthouse Sq.	Pakenham Dr.	Jackson Blvd.	20	30'	0.05
Debouchel Blvd.	Florida Ave.	Judge Perez Dr.	20	17' per side	0.69
Delille St.	W. Genie St.	St. Bernard Hwy.	20	20'	1.13
Despaux Dr.	St. Bernard Hwy.	Ohio St.	20	24'	0.29
E Genie St.	Munster Blvd.	Bartolo St.	20	24'	0.08
E Solidelle St.	Paris Rd.	Laplace St.	20	24'	0.13
E St. Avide St.	Paris Rd.	Golden Dr.	20	25'	0.34
Fable Dr.	Legend St.	Legend Dr.	20	34'	0.01
Farmsite Rd.	St. Bernard Hwy.	Torres Dr.	20	20'	1.26
Fazzio Rd.	Tyler St.	W. Moreau St.	20	25'	0.18
General Pershing	St. Bernard Hwy.	Violet Canal Trail	20	20	0.40
Guerra Dr.	Florida Ave.	St. Bernard Hwy.	20	25'	1.12
Jacob Dr.	Florida Ave.	E. Genie St.	20	24'	0.36
Keane Dr.	St. Bernard Hwy.	Livingston Ave.	20	20'	0.20

Kings Dr.	Benjamin St.	Patricia St.	20	25'	0.42
Lafontaine St.	W Genie St.	W Virtue St.	20	20'	0.21
Laplace St.	E Solidelle St.	E St. Avide St.	20	25'	0.15
Le Blanc Rd.	St. Bernard Hwy.	River Levee	20	24'	0.09
Legend St.	St. Bernard Hwy.	Story Park Blvd.	20	24’	1.05
Lloyds Ave.	Trist Pl.	Tyler St.	20	24'	0.01
Lyndel Ct.	Plaza Dr.	Marietta St.	20	24'	0.11
Magistrate St.	Plaza Dr.	Val Riess Park	20	22'	0.04
Marietta St.	Riess Pl.	St. Bernard Hwy.	20	25'	0.32
Missouri St.	Chalona Dr.	Campagna Dr.	20	24'	0.23
Montesquieu St.	W Solidelle	W. Prosper St.	20	18'	0.07
Munster Blvd.	E Genie St.	St. Bernard Hwy.	20	26'	1.13
Ohio St.	Palmisano Blvd.	Despaux Dr.	20	24-28'	0.53
Packenham Ave.	Judge Perez Dr.	St. Bernard Hwy.	20	20'	0.71
Pakenham Dr.	Judge Perez Dr.	St. Bernard Hwy.	20	24'	0.71
Plaza Dr.	Florida Ave.	St. Bernard Hwy.	20	20-26'	1.52
Riess Pl	Paris Rd.	Marietta St.	20	26'	0.36
Rodriguez Ln.	St. Bernard Hwy.	River Levee	20	16'	0.10
Story Park Blvd.	Florida Ave.	Legend Dr.	20	22' per side	0.20
Sylvia Blvd.	LA Hwy 46	Bayou Rd.	20	22' per side	0.64
Sylvia Dr.	Sylvia Blvd.	Bayou Rd.	20	28'	0.16
Torres Dr.	Farmsite Rd.	Judge Perez Dr.	20	20'	0.28
Trist Pl.	Lloyds Ave.	Paris Rd.	20	22-34'	0.28
Tyler St.	Jackson Ave.	Lloyds Ave.	20	18’	0.16
W Josephine St.	Pakenham Dr.	Delille St.	20	25'	0.29
W Moreau St.	Fazzio Rd.	Jackson Blvd.	20	25'	0.03
W Virtue St.	Lafontaine St.	Paris Rd.	20	25'	0.27
Water Pump St.	Judge Perez Dr.	40 Arpent Flood Wall	20	20’	0.07

Marked Shared Lane facilities are recommended for 10.2 miles of the existing local street network. This facility type is recommended on many of Arabi and Chalmette's "collector" streets that provide access into neighborhoods. These roadways are not wide enough for a bicycle lane to fit within the existing pavement section, and in most cases, motor vehicle speeds and traffic volumes do not appear to warrant bicycle lanes based on observed conditions.

Table 3. Marked Shared Lanes Planned on the Local Street Network

Name	From	To	Posted Speed	Approx Width	Length (Miles)
Chalm. Nat. Pk. Scenic Rd.	St. Bernard Hwy.	Chalmette National Cemetery	<20	12-24'	1.61
Chalm. Natl. Cemetery Rd.	St. Bernard Hwy.	terminus	<20	20'	0.60
Ferry Landing Rd.	Paris Rd.	Lower Algiers / Chalmette Ferry Rd		28'	0.05

Friscoville Ave.	St. Bernard Hwy.	N. Peters St.	20	26'	0.69
Friscoville Ave.	Center St.	St. Bernard Hwy.	20	26'	0.42
Livingston Ave.	Jean Lafitte Blvd.	Pakenham Dr.	20	28'	1.04
Lower Algiers/Chalmette Ferry	Ferry Landing Road	Ferry Dock		26'	0.21
Mehle Ave.	Patricia St.	N. Peters St.	20	18 to 30'	1.37
N Peters St.	Mehle Ave.	Friscoville Ave.	20	24'	0.19
Oak Tree Ln.	De La Ronde Dr.	Palm Ave.	20	24'	0.18
Palm Ave.	Plantation Dr.	Oak Tree Ln.	20	24'	0.10
Palmisano Blvd.	Val Riess Park	Judge Perez Dr.	20	18' per side	1.05
Plantation Dr.	Oak Tree Ln.	Palm Ave.	20	25'	0.20
Rowley Blvd.	Patricia St.	St. Bernard Hwy.	20	25'	0.86
W Genie St.	Guichard Canal	Paris Rd.	20	25'	0.51
W Solidelle St.	Montesquieu	Paris Rd.	20	24'	0.07

Neighborhood Greenways are recommended on 6.2 miles of the local street network. These roadways are not wide enough for a bicycle lane, but have the potential to become part of a low-stress bicycle network with the addition of improvements that prioritize walking and bicycling and minimize cut-through traffic, such as marked shared lanes, curb extensions, speed tables or raised crosswalks and route signage.

Table 4. Neighborhood Greenways planned on the Local Street Network

Name	From	To	Posted Speed	Approx Width	Length (Miles)
Alexander Ave.	Benjamin St.	Patricia St.	20	24'	0.31
Chalona Dr.	Missouri St.	Florida Blvd.	20	20'	0.81
E St. Avide St.	Golden Dr.	Palmisano Blvd.	20	25'	0.41
Florida Ave.	Val Riess Park	Jacob Dr.	20	26'	0.43
Magistrate St.	Palmisano Blvd.	Volpe Dr.	20	22'	0.12
Missouri St.	Palmisano Blvd.	Chalona Dr.	20	24'	0.18
Volpe Dr.	Florida Ave.	Magistrate St.	20	25'	0.17
E Genie St.	Paris Rd.	Palmisano Blvd.	20	24'	0.77
E Genie St.	Palmisano Blvd.	Jacob Dr.	20	23'	0.59
Patricia St.	Mehle Ave.	Guichard Canal	20	22 to 28'	2.23

Bicycle Lanes are recommended on 2.0 miles of the local street network to provide dedicated space for people biking and enable them to travel at their own speed without interfering with prevailing motor vehicle traffic. This includes several projects that were complete or nearing completion at the time of this study, as indicated below.

Table 5. Bicycle Lanes Planned on the Local Street Network

Name	From	To	Posted Speed	Approx. Width	Length (Miles)
Archbishop Hannan Blvd.*	Judge Perez Dr.	St. Bernard Hwy.	30	24' per side	0.60
Colonial Blvd.*	Judge Perez Dr.	St. Bernard Hwy.	30	24' per side	0.56
Jackson Blvd.	Judge Perez Dr.	St Bernard Hwy.	20	20'	0.42
Pakenham Dr.	Judge Perez Dr.	St Bernard Hwy.	20	24'	0.42

*Archbishop Hannan Blvd. and Colonial Blvd. were complete or nearing completion at the time of the study.

Buffered Bicycle Lanes are recommended on 1.3 miles of the local street network, where additional space is available that can be used to increase the comfort for less confident bicyclists in locations where traffic is currently high or fast moving, or is anticipated to increase in the future.

Table 6. Buffered Bicycle Lanes planned on the Local Street Network

Name	From	To	Posted Speed	Approx. Width	Length (Miles)
De La Ronde Dr.	Patricia St.	Judge Perez Dr.	20	42'	0.48
Jean Lafitte Pkwy.*	Judge Perez Dr.	St. Bernard Hwy.	20	18'per side	0.80

*Further evaluation at the time of design will determine feasibility of buffered bicycle lane implementation

Future Considerations for State Highways in St. Bernard Parish

The development of a vision for the future bikeway network in St. Bernard Parish recognizes that St. Bernard Parish is not the owner of all roadways within St. Bernard's geographic area. The public input process revealed a significant need for bikeway and pedestrian improvements that involve crossing and travel along the three main state highways in the urbanized area – St. Bernard Hwy. (LA 46), Judge Perez Dr. (LA 39) and Paris Rd. (LA 47). These roadways can function as barriers to non-motorized travel and discourage trips that involve them.

This plan includes several spot improvements for crossing these main roadways, which can be implemented in the near term and will help remove some barriers for people walking and biking in St. Bernard. Additional major improvements, including but not limited to on-street bicycle facilities on these highways will be done working with our partners at the Louisiana Department of Transportation and Development (DOTD) when major improvements are scheduled for these routes.

However, it should be clearly understood that we would expect every accommodation to be made for bicyclists and pedestrians should major improvements such as widening or resurfacing be undertaken to these roadways by the State of Louisiana in the future. This action would be

quality of these shoulders and preserve their usability for the purpose of bicycling. These improvements may include:

- Bicycle compatible rumble strips where they are not present.
- A regular maintenance plan, including sweeping and debris clearing
- Signage alerting motorists to the presence of people bicycling.

Table 7. Facilities Recommended for the State Highway Network

Name	From	To	Posted Speed	Approx Width	Length	Facility Type
Paris Rd. (LA 47)	40 Arpent Trail	St. Bernard Hwy.	40	90-100'	1.41	Buffered Bicycle Lane
Paris Rd. (LA 47)	St. Bernard Hwy.	Ferry Landing		30-34'	0.70	Shared Lane Marking
Paris Rd. (LA 47)	Orleans Parish Line	40 Arpent Trail	40	90-100'	1.93	Shoulder Bikeway
W. Judge Perez Dr. (LA 39)	Parish Line	Paris Rd.	35	120 to 160'	2.84	Separated Bicycle Lane
E. Judge Perez Dr. (LA 39)	Paris Rd.	Jacob Dr.	35	36' per side	1.45	Separated Bicycle Lane
E. Judge Perez Dr. (LA 39)	Jacob Dr.	Bayou Rd.	45	36' per side	7.16	Shoulder Bikeway
St. Claude Ave. (LA 46)*	Government St.	Lebeau St.	30	90-130'	0.32	Bicycle Lane
W. St. Bernard Hwy. (LA 46)*	St. Claude Ave.	Paris Rd.	40	90-130'	2.62	Bicycle Lane
E. St. Bernard Hwy. (LA 46)	Paris Rd.	Palmisano Blvd.	35-45	46-52'	0.76	Bicycle Lane
E. St. Bernard Hwy. (LA 46)	Palmisano Blvd.	Trailhead @ Violet Canal	45	44-52'	4.44	Shoulder Bikeway
E. St. Bernard Hwy. (LA 46)	Trailhead @ Violet Canal	St. Bernard Pkwy.	35-45	48'	2.20	Bicycle Lane
LA Hwy 46	Judge Perez Dr.	40 Arpent Flood Wall	55	300	5.81	Shoulder Bikeway
Bayou Rd. (LA 39)	St. Bernard Pkwy.	Judge Perez Dr.	40	36'	1.32	Shoulder Bikeway
Bayou Rd. (LA 300)	Judge Perez Dr.	40 Arpent Trail	25-40	24'	5.48	Shoulder Bikeway
St Bernard Pkwy. (LA 39)	Bayou Rd.	Parish Line	40	80'	0.77	Shoulder Bikeway
Access Rd (LA 1245)	LA Hwy 46	Bayou Rd.	55	48'	0.43	Shoulder Bikeway

*Bicycle Lanes on St. Claude Ave. and W. St. Bernard Hwy. nearing completion at the time of the writing of this report.

Trailheads

Trailheads have been identified for 16 sites (shown on Figures 8, 9, 10 and 11). Trailheads along the MRT are envisioned at all access ramps. Similarly, trailheads are envisioned at all bridge access locations along the 40 Arpent Trail. Trailheads will include at a minimum, informational signage and trash/recycling receptacles. More robust infrastructure is recommended for locations where volumes of users are anticipated to be higher, at sites where vehicle parking is provided and transit is more readily accessible. In addition to informational signage and trash/recycling receptacles, these locations could include the following:

- Bicycle Parking
- Vehicle Parking
- Water
- Lighting
- Benches
- Restrooms

Figure 6. 40 Arpent Trail Bicycle and Pedestrian Bridge over Paris Rd. Photo Rendering, Facing South

Prepared by Alta Planning + Design, 2017

Figure 7. 40 Arpent Trail Access Bridge at Val Riess Park Photo Rendering, near Volpe St. Facing West

Prepared by Alta Planning + Design, 2017

Table 8. Shared Use Trail Facility Recommendations

Name	Segment (if applicable)	Scale	Miles	Status
40 Arpent Trail	Alexander Ave. to Paris Rd.	Regional	2.79	Planned
40 Arpent Trail	Bridge to Val Riess Park	Regional	0.54	Planned
40 Arpent Trail	Val Riess Park to Violet Canal	Regional	5.35	Planned
40 Arpent Trail	Violet Canal to LA Hwy 46	Regional	8.18	Planned
40 Arpent Trail	Mississippi River to LA Hwy 46	Regional	8.69	Planned
40 Arpent Trail	Trail Access near Paris Rd.	Regional	0.45	Planned
Chalmette Battlefield	Segment along Mississippi River	Regional	0.41	Planned
Chalmette Battlefield Trail	Battlefield to Wetlands Observatory	Regional	2.53	Planned
Chalmette Battlefield Trail Spur	River Rd. to Chalmette Battlefield Rd.	Regional	0.08	Planned
Mississippi River Trail Ph. I and II	Valero to Violet Canal	Regional	3.21	Programmed
Mississippi River Trail Ph. III	Violet Canal to Plaquemines Parish line	Regional	3.51	Programmed
Mississippi River Trail Ph. IV	Valero to Paris Rd.	Regional	2.17	Planned
Mississippi River Trail Ph. V	Commercial St. to Paris	Regional	2.42	Planned
Jean Lafitte Trail	40 Arpent Canal to Judge Perez Dr.	Regional	0.87	Programmed
Palmisano Trail	Judge Perez Dr. to St. Bernard Hwy.	Regional	0.54	Programmed

St Bernard State Park Access	riverside of St. Bernard Parkway near park entrance	Regional	0.35	Planned
Val Riess Trail	located within park	Local	0.95	Complete
Violet Canal (East) Trail	downriver side of canal	Regional	1.35	Planned
Violet Canal (West) Trail	upriver side of canal	Regional	0.97	Planned
Alexander Bridge	Alexander at 40 Arpent Trail	Regional	0.05	Planned
Val Reiss Bridge	Volpe at 40 Arpent Trail	Regional	0.05	Planned
Jacob Dr. Bridge	Jacob at 40 Arpent Trail	Regional	0.04	Planned
Wetlands Observatory Bridge	near Norwood and Benjamin St.	Regional	0.04	Complete
Wetlands Observatory Loop Trail	near Wetlands Observatory	Local	0.41	Planned
40 Arpent Trail Bridge	Bridge over Paris Road	Regional	0.64	Planned
Kings Dr. Bridge	Kings Dr./Hamlet at 40 Arpent Trail	Local	0.40	Planned
Debouchel Bridge	Debouchel at 40 Arpent Trail	Local	0.40	Planned
Trailhead 1	40 Arpent @ Alexander Ave.	Regional	N/A	Planned
Trailhead 2	40 Arpent @ Wetlands Obs.	Regional	N/A	Complete
Trailhead 3	40 Arpent @ Paris Rd.	Regional	N/A	Planned
Trailhead 4	40 Arpent @ Val Riess Park	Regional	N/A	Planned
Trailhead 5	40 Arpent @ Bartolo Ave.	Regional	N/A	Planned
Trailhead 6	40 Arpent @ Guerra Dr.	Regional	N/A	Planned
Trailhead 7	40 Arpent @ Water Pump Rd.	Regional	N/A	Planned
Trailhead 8	40 Arpent @ Bayou Rd.	Regional	N/A	Planned
Trailhead 9	Aycock Barn	Local	N/A	Planned
Trailhead 10	MRT @ Paris Rd.	Regional	N/A	Planned
Trailhead 11	MRT @ Munster Blvd.	Regional	N/A	Planned
Trailhead 12	MRT @ Violet Canal	Regional	N/A	Planned
Trailhead 13	MRT @ Goodwill Ln.	Regional	N/A	Planned
Trailhead 14	MRT @ Massicot Rd.	Regional	N/A	Planned
Trailhead 15	MRT @ St. Bernard State Park	Regional	N/A	Planned
Trailhead 16	MRT @ Plaquemines PL / Ansardi Ln	Regional	N/A	Planned
Trailhead 17	40 Arpent @ Debouchel Blvd.	Local	N/A	Planned

Figures 8 and 9 show the bicycle network according to “regional” and “local” designated bikeways. The “regional network” for this plan’s purpose is similar to a County Highway system for bicycles and pedestrians. It transports people longer distances and overcomes barriers crossing major state highways. The “local network” gets residents to that regional network and provides access to local destinations. Figures 10 and 11 break out the bicycle network according to the planned facility type.

St. Bernard Parish

Figure 8. Bikeway Plan showing Regional and Local Trail Network

MAP 1 OF 2

N

1 inch = 3,200 feet

0 0.25 0.5 1 1.5 2

Miles

Bicycle / Pedestrian Bridge over Paris Road

40 Arpent Canal

Mississippi River

LEGEND

Trailheads

- Existing
- Planned

Shared Use Trails

- Local
- Regional

On Street Bicycle Network

- Local On-street Bikeway
- Regional On-street Bikeway

Existing Facilities

- Completed Projects are Highlighted with Neon Green

Source (Citation)

This imagery was provided by the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) and the United States Department of Agriculture (USDA).
The RPC and the USDA are not responsible for any errors arising from any use of alterations made to the data.

Imagery Information:

This digital imagery serves as a base for Farm Service Center GIS applications and is used to administer USDA commodity support programs and conservation planning. The U.S. Department of Agriculture, Service Center Agencies should be acknowledged as the data source in products derived from these data.
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This color infrared geotiff imagery was captured in 2015 and projected to UTM; the unit of measure is meters. The compressed mrsid imagery was produced from the geotiff data as true color parish mosaics. Specific dates are included in imagery metadata at the file level.
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St. Bernard Parish

Figure 9. Bikeway Plan Showing Regional and Local Trail Network

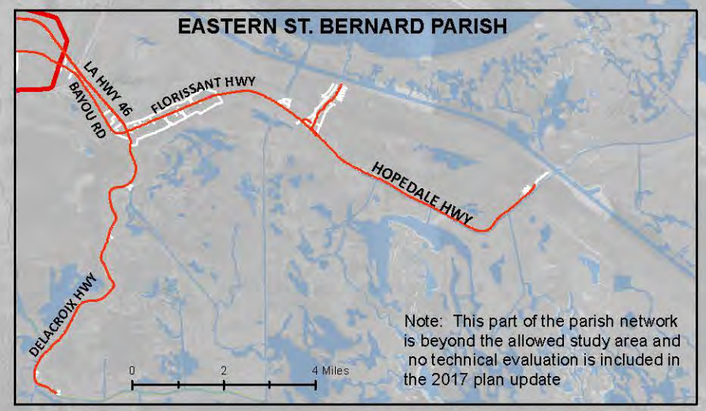
MAP 2 OF 2

N

1 inch = 3,200 feet

0 0.25 0.5 1 1.5 2

Miles



Mississippi River

MISSISSIPPI RIVER TRAIL

EST BERNARD HWY

E JUDGE PEREZ DR

TORRES DR

FARMSITE RD

40 ARPENT TRAIL

LA HWY 46

ACCESS

SYLVIA BLVD

BAYOU RD

ST BERNARD PKWY

St. Bernard State Park

12 13 14 15 16 7

SEE INSET FOR EASTERN ST. BERNARD PARISH

LEGEND

Trailheads

- Existing
- Planned

Shared Use Trails

- Local
- Regional

On Street Bicycle Network

- Local On-street Bikeway
- Regional On-street Bikeway

Existing Facilities

- Completed Projects are Highlighted with Neon Green

Source (Citation)

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St. Bernard Parish

Figure 10. Bikeway Plan Network by Facility Type

MAP 1 OF 2

N

1 inch = 3,200 feet

0 0.25 0.5 1 1.5 2

Miles

Bicycle / Pedestrian Bridge over Paris Road

40 Arpent Canal

Mississippi River

1 BENJAMIN ST
40 ARPENT TRAIL
2 CHALMETTE BATTLEFIELD TRAIL
3
4
5 40 ARPENT TRAIL
17
6
7 FRISCOVILLE AVE
8
9
10
11 MISSISSIPPI RIVER TRAIL
12
MRT - OLD ARABI SPUR
MEHLE AVE
ALEXANDER AVE
PATRICIA ST
CENTER ST
COUGAR DR
ROWLEY BLVD
W JUDGE PEREZ DR
W GENIE ST
W ST BERNARD HWY
MISSISSIPPI RIVER TRAIL (MRT)
JEANLAFELITE PKWY
PACKENHAM AVE
KEANE CT
CHALM NAT PK
SCENIC RD
CHALMNAT CEMETERY RD
KINGS DR
DE LA RONDE DR
OAK TREE LN
PAKENHAM DR
DELILLE ST
LAFONTAINE ST
W VIRTUE ST
PARIS RD
W JOSEPHINE ST
E SOUBELLE ST
E ST AVIDE ST
LAPLACE ST
PLAZA DR
PALMISANO BLVD
VOLPE DR
CHAGNARD DR
JACOB DR
MAGISTRATE ST
FLORIDA AVE
CAMPAGNA DR
MUNSTER BLVD
BARTOLO DR
DEBOUCHEL BLVD
E JUDGE PEREZ DR
ARCHBISHOP HANNAN BLVD
LEGEND DR
CLAIBORNE AVE
RODRIGUEZ LN
E ST BERNARD HWY
GUERRA DR
COLONIAL BLVD
GENERAL PERSHING ST
JACKSON BLVD
TYLER ST
TRIST PL
REISS PL
MARIETTA ST
LYNDEL CT
OHIO ST
DESPAUX DR
E FRANC RD

LEGEND

Trailheads

Existing Planned

Recommended Facilities

- Shared Use Trail
- Route
- Shared Lane Marking
- Neighborhood Greenway
- Bicycle Lane
- Buffered Bicycle Lane
- Separated Bicycle Lane
- Shoulder Bikeway

Existing Facilities

Completed Projects are Highlighted with Neon Green

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St. Bernard Parish

Figure 11. Bikeway Plan Network by Facility Type

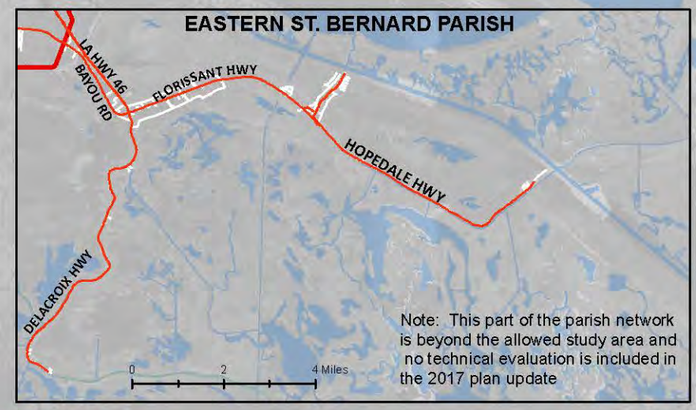
MAP 2 OF 2

N

1 inch = 3,200 feet

0 0.25 0.5 1 1.5 2

Miles



Mississippi River

MISSISSIPPI RIVER TRAIL

E ST BERNARD HWY

E JUDGE PEREZ DR

TORRES DR

FARMSITE RD

40 ARPENT TRAIL

LA HWY 46

ACCESS RD

SYLVIA BLVD

BAYOU RD

ST BERNARD PKWY

St. Bernard State Park

12 13 14 15 16 7

SEE INSET FOR EASTERN ST. BERNARD PARISH

LEGEND

Trailheads

Existing Planned

Recommended Facilities

- Shared Use Trail
- Route
- Shared Lane Marking
- Neighborhood Greenway
- Bicycle Lane
- Buffered Bicycle Lane
- Separated Bicycle Lane
- Shoulder Bikeway

Existing Facilities

Completed Projects are Highlighted with Neon Green

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Figure 14. Paris Rd. Photo Simulation, near Riess Place, Facing South

The following 24 locations were identified as areas in need of additional crossing infrastructure.

Table 9. Crossing Improvements

Map #	Location	Improvement Type	Description of Improvement
1	Paris Rd. and Genie St.	Signalized crossing	Install pedestrian signals, Install perpendicular ADA accessible curb ramps at all corners, install high visibility crosswalk, and tighten corner radii
2	Paris Rd. and E. Solidelle St.	Signalized crossing	Install pedestrian signals, Install perpendicular ADA accessible curb ramps at all corners, install high visibility cross walks
3	Paris Rd. and Riess Pl.	Unsignalized crossing	Install pedestrian signals, Install perpendicular ADA accessible curb ramps at all corners, install high visibility crosswalk and stop bars, install median island
4	Paris Rd. and St. Bernard Hwy.	Signalized crossing	Install pedestrian signals, install perpendicular ADA accessible curb ramps at all corners, install high visibility cross walks, tighten radii, add median on east side of SBH; review necessity of northwest slip lane and pedestrian island.

5	Judge Perez Dr. and west Wal-Mart driveway (across from Hospital)	Signalized crossing	Construct bus pull offs / turn around; Construct new sidewalks from bus stops to hospital/Wal-Mart driveway, Install perpendicular ADA accessible curb ramps at all corners, install high visibility cross walk, install pedestrian signal and tighten curb radii
6	Judge Perez Dr. and Plaza Dr.	Unsignalized crossing	Install pedestrian signals, Install perpendicular ADA accessible curb ramps at all corners, install high visibility cross walks, median cut through, tighten curb radii.
7	Judge Perez Dr. and Laplace St.	Unsignalized crossing	Install pedestrian signal, Install perpendicular ADA accessible curb ramps at all corners, install high visibility crosswalks, median cut through, tighten median radii
8	Judge Perez Dr. and Archbishop Hannan Blvd.	Signalized crossing	Install pedestrian signals, Install perpendicular ADA accessible curb ramps at all corners, install high visibility cross walks median cut through, tighten median radii, tighten southwest corner radii
9	St. Bernard Hwy. and Rowley Dr.	Signalized crossing	Install perpendicular ADA accessible curb ramps at all corners, median cut through, pedestrian signal, high visibility crosswalk
10	St. Bernard Hwy. and Jean Lafitte Pkwy.	Signalized crossing	Install pedestrian signals and high visibility cross walks, median cut through, tighten radii
11	St. Bernard Hwy. and Keane St. / Melvin Perez Pkwy.	Signalized crossing	Install pedestrian signals, Install perpendicular ADA accessible curb ramps at all corners, install high visibility cross walks, median cut through, tighten radii
12	St Bernard Hwy and Pakenham Dr.	Unsignalized crossing	Install perpendicular ADA accessible curb ramps at all corners, median cut through, high visibility crosswalk
13	St. Bernard Hwy. and Jackson Blvd.	Unsignalized crossing	Install perpendicular ADA accessible curb ramps at all corners, median cut through, high visibility crosswalk
14	St. Bernard Hwy. and Delille St.	Unsignalized crossing	Install pedestrian signal Install perpendicular ADA accessible curb ramps at all corners, install high visibility crosswalk, median cut through
15	St Bernard Hwy. and Palmisano Dr. / Murphy Trucking Rd.	Unsignalized crossing	Install pedestrian signal, Install perpendicular ADA accessible curb ramps at all corners, install high visibility crosswalk, install median island on downriver side
16	St. Bernard Hwy. and Despaux Dr. / Leblanc Rd.	Unsignalized crossing	Install pedestrian signal, Install perpendicular ADA accessible curb ramps at all corners, install high visibility crosswalk, median island
17	St Bernard Hwy. and Legend Dr. / Rodriguez Ln	Unsignalized crossing	Install pedestrian signal, Install perpendicular ADA accessible curb ramps at all corners, install high visibility crosswalk

Railroad Crossing

In addition to the canal/railroad crossing identified in the previous section, one additional railroad crossing improvement is recommended. This location, on Friscoville Ave. west of Alexander Ave., is approximately 300 feet from Arabi Elementary School. The existing sidewalks terminate on both sides of the railroad track. The curvature of the road makes it particularly challenging for motor vehicles and pedestrians to see each other.

Table 11. Railroad Crossing

Map #	Location	Improvement Type	Description of Improvement
24	Friscoville Ave. and RR crossing	Railroad crossing:	East and west sides: construct new sidewalk, including smooth level crossing of railroad track on both sides, if feasible

Sidewalk Installations

The survey of the complete streets roadways identified 47.5 miles of the complete streets network with missing sidewalks or sidewalks in poor condition, as shown on Figure 15 and in Table 12, below. Projects 25-38 are on the local street network, while projects 39 -56 are on the state highway network. These projects are priorities because they are located on the Complete Streets network.

Table 12. Sidewalk Projects

Map #	Location	Improvement Type	Description of Improvement
25	Alexander Ave.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
26a	Archbishop Hannan Blvd.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
26b	Archbishop Hannan Blvd.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
27	Center St.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
28a	Colonial Blvd.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
28b	Colonial Blvd.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
29	E. Genie St. (Paris Rd. to Palmisano Blvd.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
30	E. St Avide St.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps

Map #	Location	Improvement Type	Description of Improvement
31a	Friscoville Ave.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
31b	Friscoville Ave.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
32a	Jackson Blvd.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
32b	Jackson Blvd.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
33a	Jean Lafitte Blvd.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
33b	Jean Lafitte Blvd.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
34	Livingston Ave.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
35	Missouri St.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
36	Palmisano Blvd.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
37a	Patricia St. (W. Woodlands Ct. to Jupiter Dr.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
37b	Patricia St. (W Woodlands Ct. to Jupiter Dr.)	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
38a	W. Genie St. (Pakenham Dr. to Paris Rd.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
38b	W Genie St. (Pakenham Dr. to Paris Rd.)	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
39a	Judge Perez Dr. (Angela to Pakenham)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
39b	Judge Perez Dr. (Angela St. to Pakenham Dr.)	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
40a	Judge Perez Dr. (Pakenham Dr. to Jacob Dr.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
40b	Judge Perez Dr. (Pakenham Dr. to Jacob Dr.)	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
41	Judge Perez Dr. (Jacob Dr. to	Sidewalk (new)	construct new sidewalk and ADA accessible

Map #	Location	Improvement Type	Description of Improvement
	Archbishop Hannan Blvd.)	/ Ramps	ramps
42	Judge Perez Dr. (Archbishop Hannan Blvd. to Maureen Ln.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
43a	Judge Perez Dr. (Maureen Ln. to Meraux Ln.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
43b	Judge Perez Dr. (Maureen Ln. to Meraux Ln.)	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed
44	Judge Perez Dr. (Meraux Ln. to Edgar Dr.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
45	Judge Perez Dr. (Edgar Dr. to Colonial Blvd.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
46	Judge Perez Dr. (Colonial Blvd. to Violet Canal)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
47a	St. Claude Ave.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps*
47b	St. Claude Ave.	Sidewalk (replace) / Ramps	replace sidewalk in poor condition and replace curb ramps as needed*
48	W. St. Bernard Hwy.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps*
49	E. St. Bernard Hwy. (Paris Rd. to Jacob Dr.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
50	E. St. Bernard Hwy. (Jacob Dr. to Archbishop Hannan Blvd.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
51	E. St. Bernard Hwy. (Archbishop Hannan Blvd.to Franke Pl. /Edgar Dr.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
52	E. St. Bernard Hwy. (Franke Pl. / Edgar Dr. to Colonial Blvd.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
53	E. St. Bernard Hwy. (Colonial Blvd. to Poydras Junction)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
54	Bayou Rd.	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
55	Paris Rd. (north of Virtue St.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps
56	Paris Rd. (Virtue St. to St. Bernard Hwy.)	Sidewalk (new) / Ramps	construct new sidewalk and ADA accessible ramps

St. Bernard Parish

Figure 15. Complete Streets Network Sidewalk and Pedestrian Facilities Plan

MAP 1 OF 1

N

1 inch = 3,200 feet

0 0.25 0.5 1 1.5 2

Miles

Legend

- Pedestrian Spot Improvement Locations

Complete Streets Network
Sidewalk Installation and Replacement Projects

- Install New Sidewalk
- Replace Existing Sidewalk in Poor Condition

Source (Citation)
This imagery was provided by the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) and the United States Department of Agriculture (USDA).
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Imagery Information:
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St. Bernard Parish Government

RPC Regional Planning Commission Louisiana

soli planning

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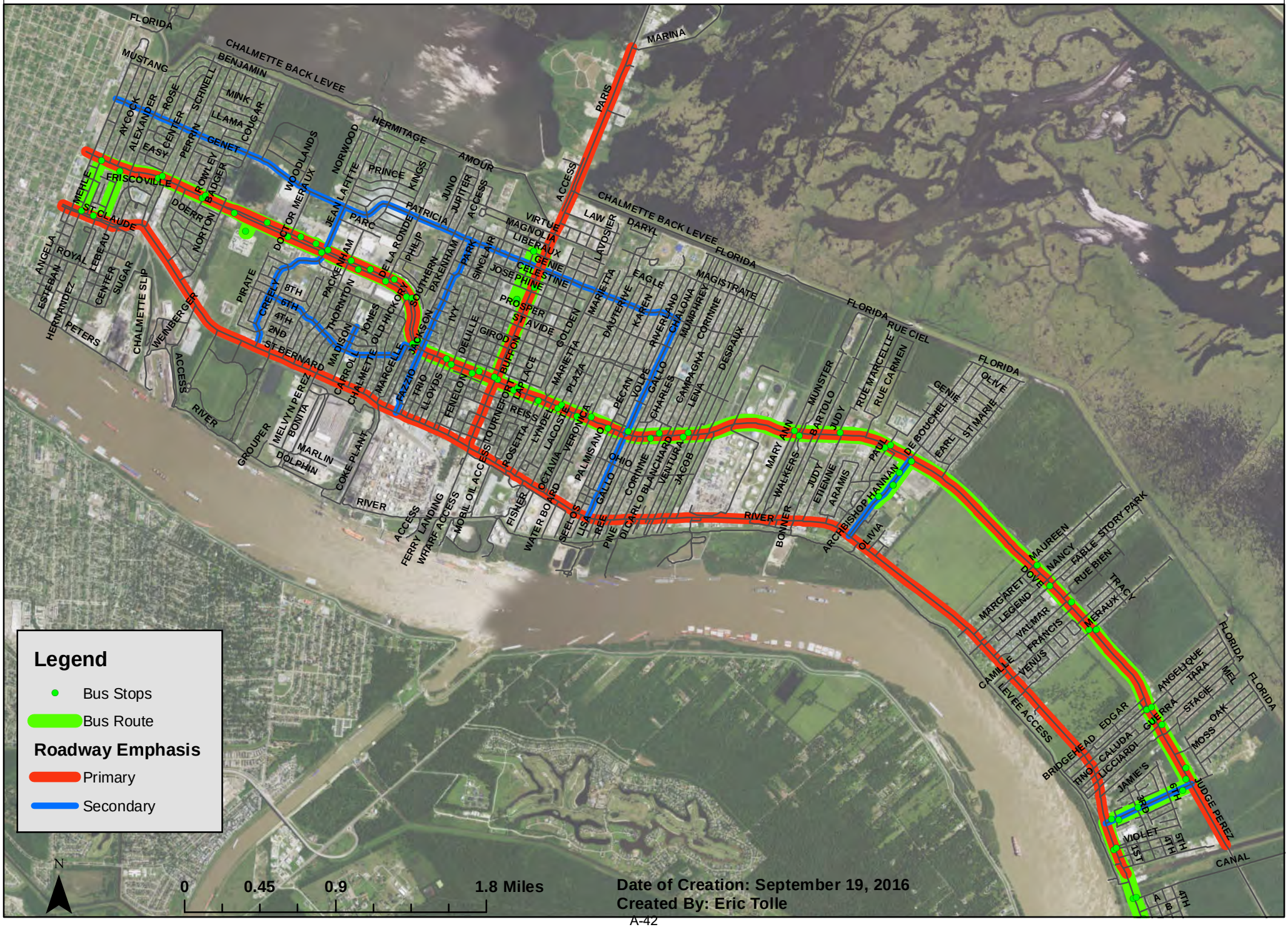
June 2017

St. Bernard Parish Complete Streets Emphasis Map



St. Bernard Parish Bikeway and Pedestrian Plan Update

RPC Task A2.17; FY UPWP

PROJECT BASE MAP 1

Prepared by
Soil Planning, LLC
12.05.2016

N

1 inch = 800 feet

0 0.25 0.5 0.75 1
Miles

LEGEND

- Points of Interest
- Parks

Shared Use Trail Facilities

- Funded
- Complete

On-Street Bicycle Facilities

- Shared Lane (Funded)
- Shared Lane (Under Construction)
- Bicycle Lane (Funded)
- Bicycle Lane (Under Construction)

Source (Citation)
This imagery was provided by the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) and the United States Department of Agriculture (USDA).
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This color infrared (ir6lil) imagery was captured in 2015 and projected to UTM, the unit of measure is meters. The compressed aerial imagery was produced from the geoMP data as true color pansh results. Specific dates are included in imagery metadata at the file level.
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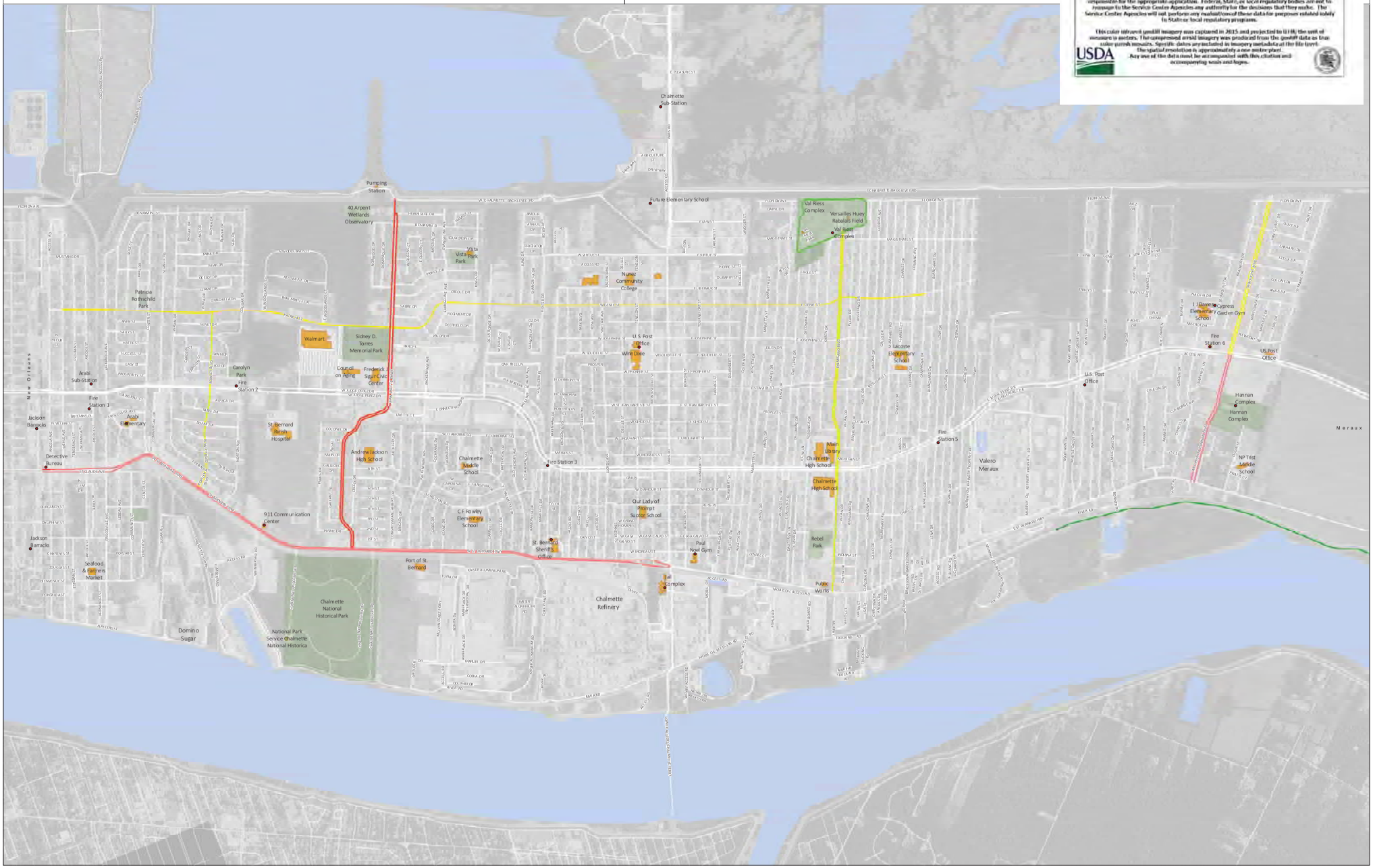

St. Bernard Parish Bikeway and Pedestrian Plan Update

RPC Task A2.17; FY UPWP

PROJECT BASE MAP 2

N

1 inch = 1,200 feet

0 0.5 1 1.5 2

Miles

LEGEND

Points of Interest

Parks

Shared Use Trail Facilities

Funded

Complete

On-Street Bicycle Facilities

Shared Lane (Funded)

Shared Lane (Under Construction)

Bicycle Lane (Funded)

Bicycle Lane (Under Construction)

Prepared by
Soil Planning, LLC
12.05.2016

Source: (Citation)
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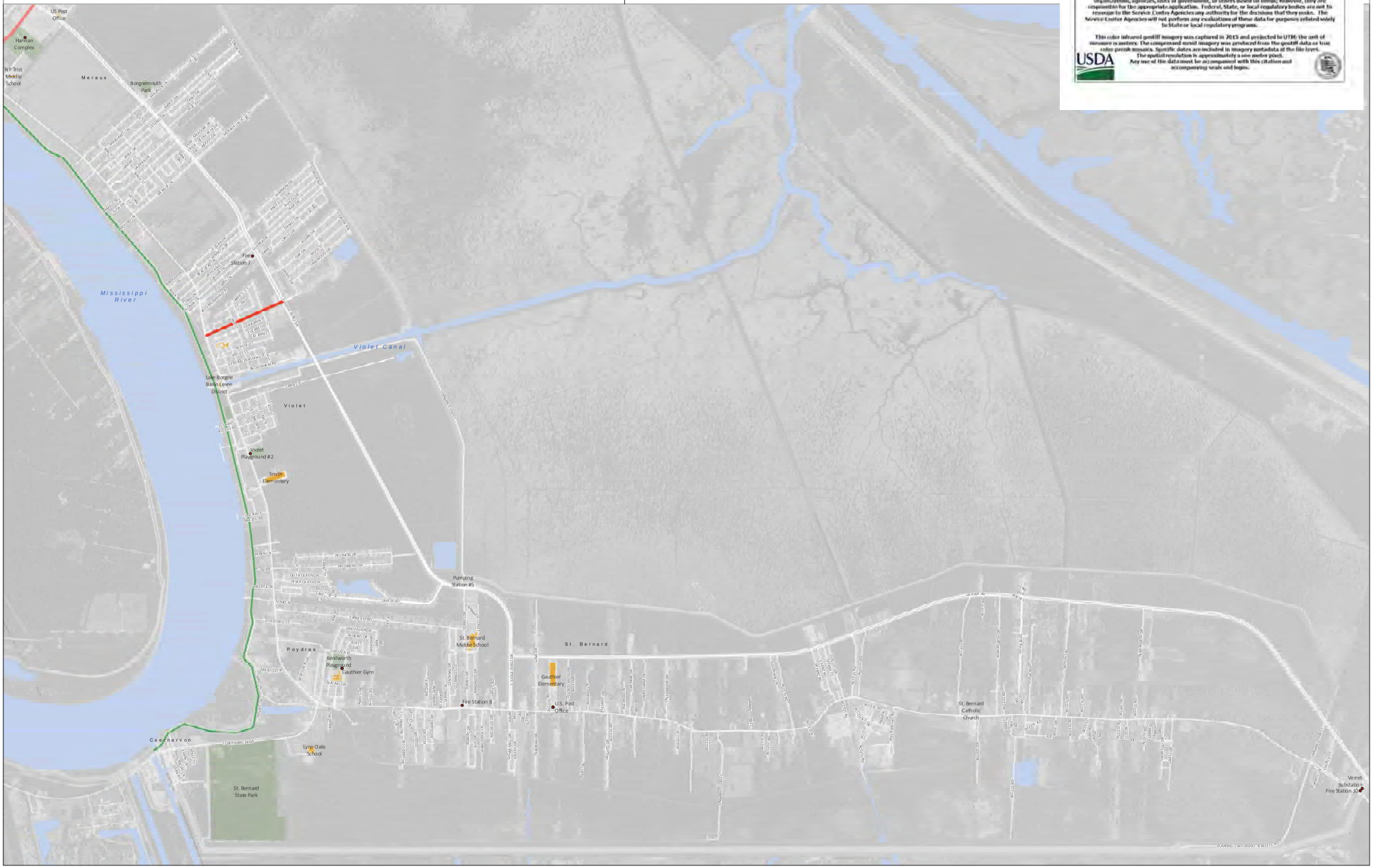

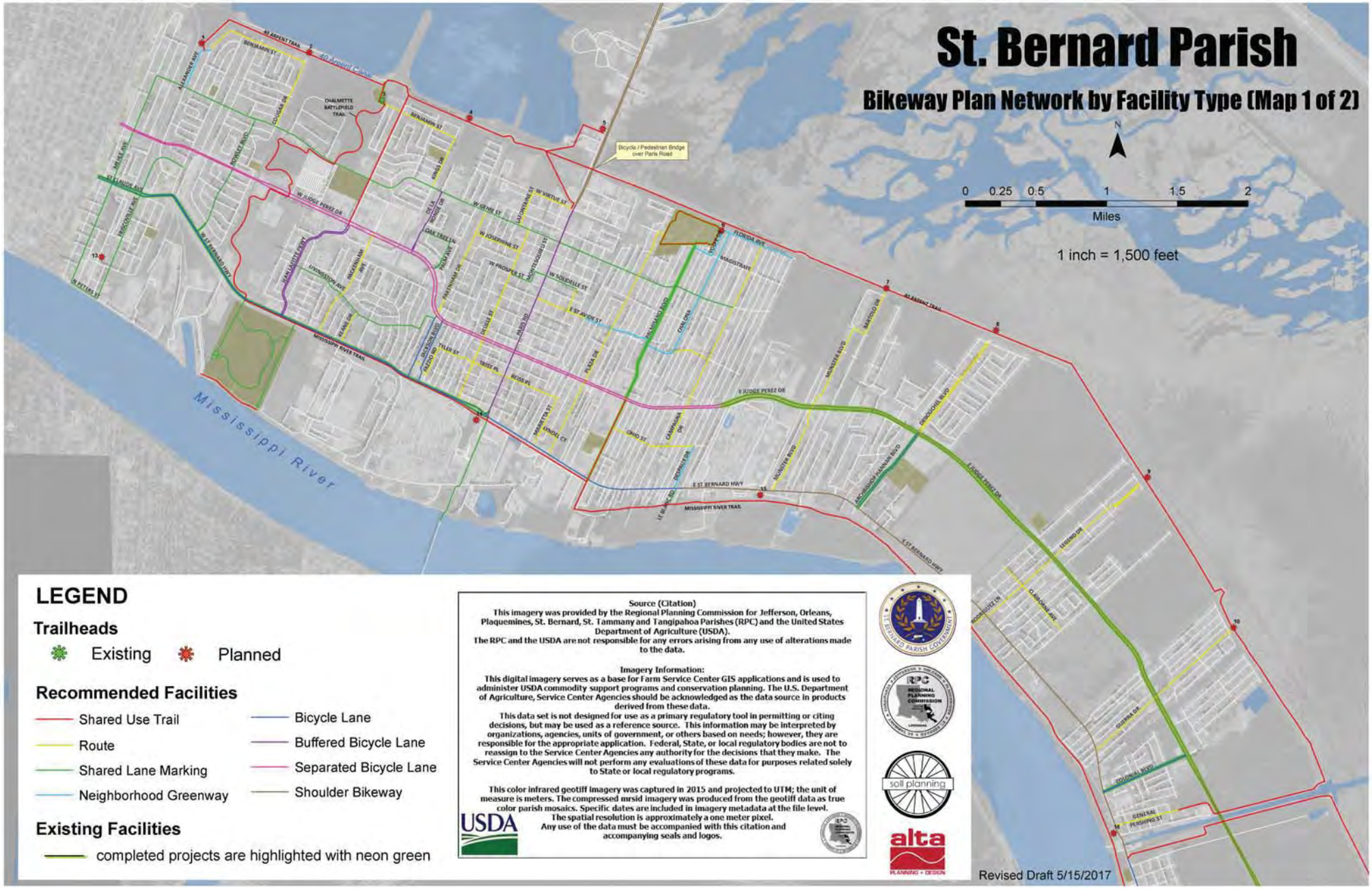
St. Bernard Parish
Bikeway Plan Network by Facility Type (Map 1 of 2)
N
0 0.25 0.5 1 1.5 2
Miles
1 inch = 1,500 feet
Bicycle / Pedestrian Bridge over Paris Road
Mississippi River
LEGEND
Trailheads
Existing
Planned
Recommended Facilities
Shared Use Trail
Route
Shared Lane Marking
Neighborhood Greenway
Bicycle Lane
Buffered Bicycle Lane
Separated Bicycle Lane
Shoulder Bikeway
Existing Facilities
completed projects are highlighted with neon green
Source (Citation)
This imagery was provided by the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) and the United States Department of Agriculture (USDA).
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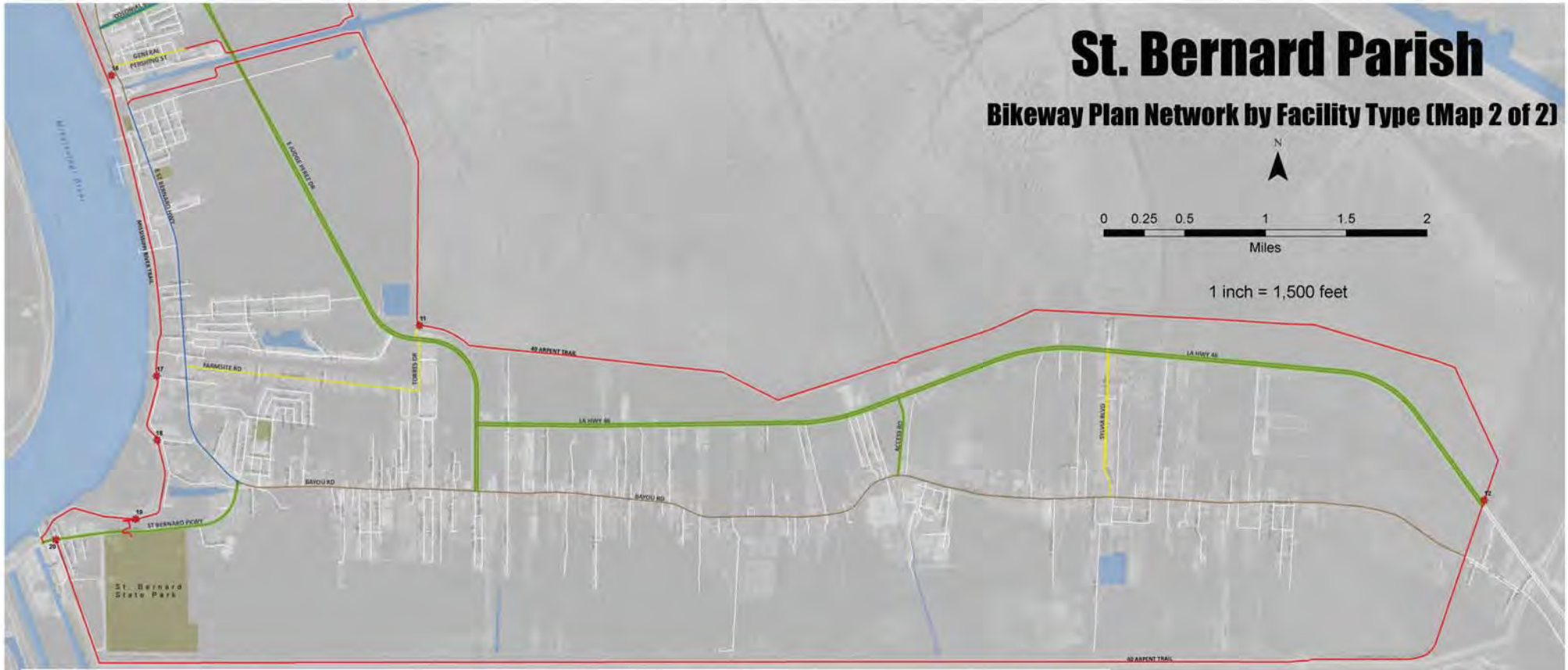
St. Bernard Parish

Bikeway Plan Network by Facility Type (Map 2 of 2)



LEGEND

Trailheads

Existing Planned

Recommended Facilities

- Shared Use Trail
- Route
- Shared Lane Marking
- Neighborhood Greenway
- Bicycle Lane
- Buffered Bicycle Lane
- Separated Bicycle Lane
- Shoulder Bikeway

Existing Facilities

completed projects are highlighted with neon green

Source (Citation)

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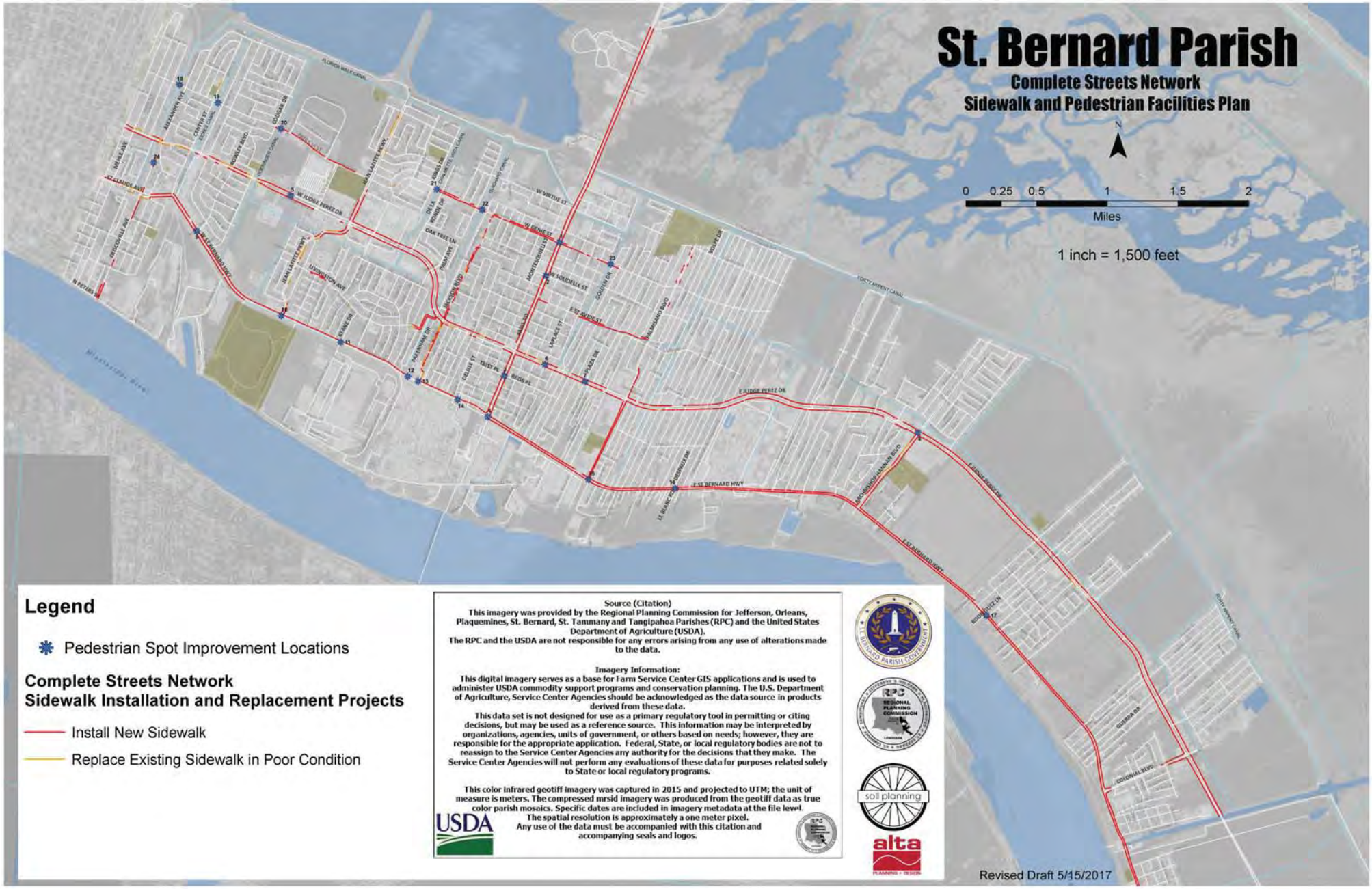
St. Bernard Parish
Complete Streets Network
Sidewalk and Pedestrian Facilities Plan
N
0 0.25 0.5 1 1.5 2
Miles
1 inch = 1,500 feet
Legend
Pedestrian Spot Improvement Locations
Complete Streets Network
Sidewalk Installation and Replacement Projects
Install New Sidewalk
Replace Existing Sidewalk in Poor Condition
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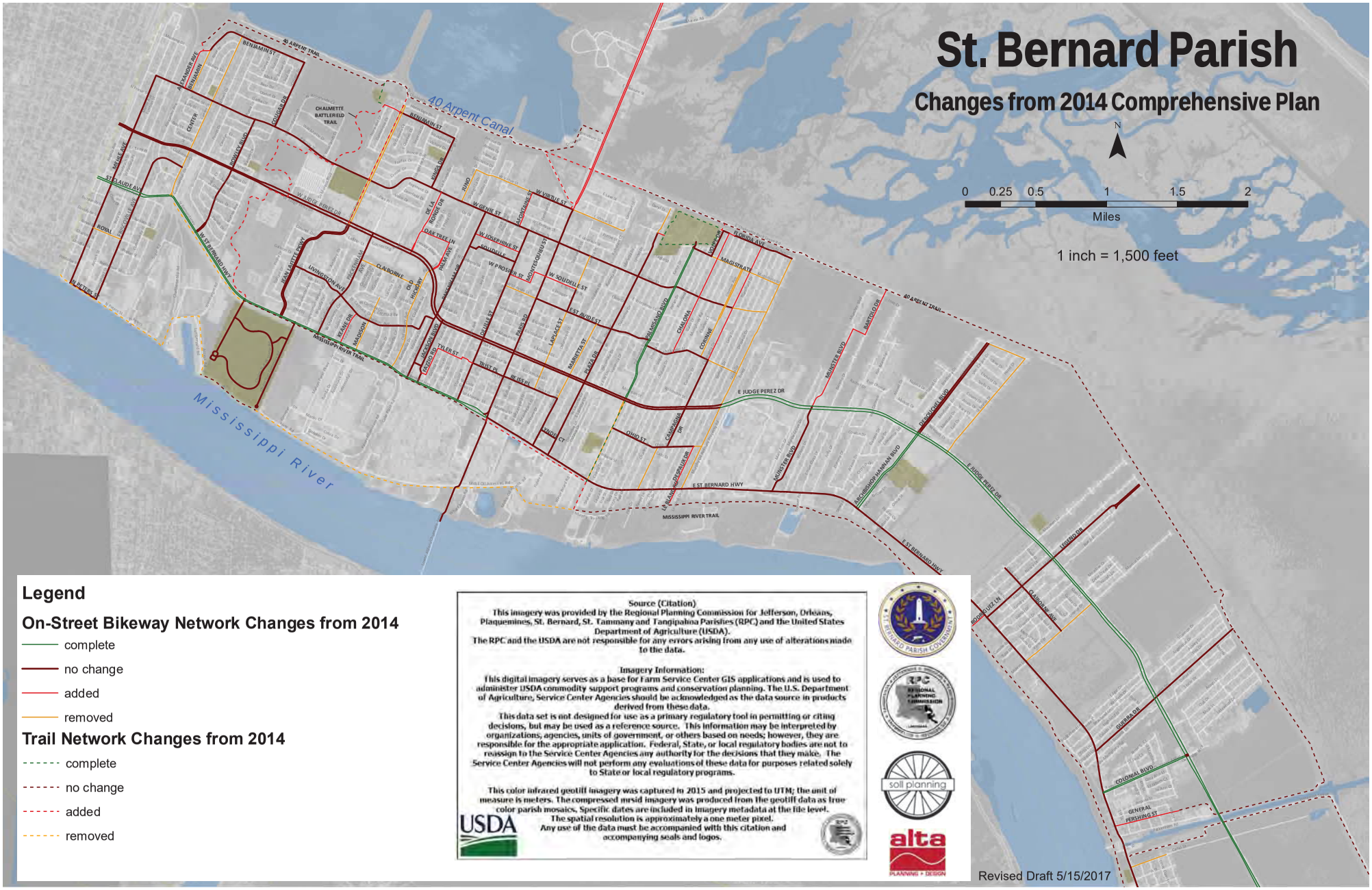
St. Bernard Parish
Changes from 2014 Comprehensive Plan
N
0 0.25 0.5 1 1.5 2
Miles
1 inch = 1,500 feet
40 Arpent Canal
Mississippi River
Legend
On-Street Bikeway Network Changes from 2014
complete
no change
added
removed
Trail Network Changes from 2014
complete
no change
added
removed
Source (Citation)
This imagery was provided by the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) and the United States Department of Agriculture (USDA).
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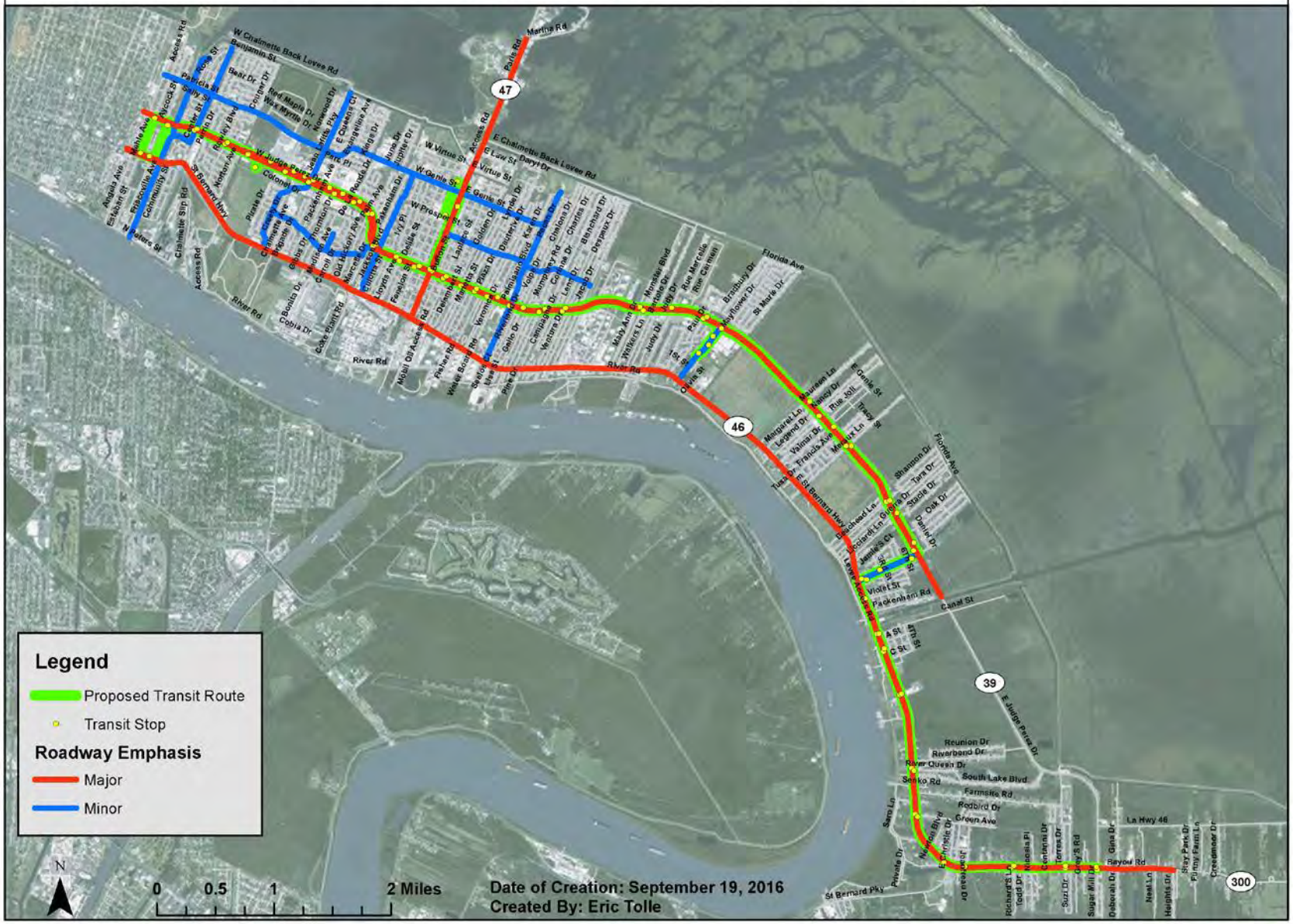
St. Bernard Parish Complete Streets Emphasis Map



LSB / LIT Road Network and Resilience
Stage 0 Feasibility Study
H.015428

Appendix A
Initial Data Collection

Appendix A.2 Initial Data Collection Document

URBAN SYSTEMS inc.

Initial Data Collection

This appendix summarizes the initial data collection for the RPC LIT Road Network Study.

Traffic Volume Data

The objective of the initial data collection was to use seven (7)-day, twenty-four (24)-hour counts to select peak periods for collecting turning movement counts.

Seven (7) day twenty-four (24)-hour counts with classification were collected in October and November 2023 on roadway segments on Paris Rd, East Judge Perez Dr, East St Bernard Hwy, and on I-510 (including Lake Forest Blvd, US 90, and I-10 interchanges). Count location maps, in Google Earth format and raw count data are presented in **Appendix A.2** for the following locations:

Map A – E Judge Perez Dr (LA 39):

- A.1 At Norfolk Southern Railroad Crossing
- A.2 Between Palmisano Blvd and Paris Rd
- A.3 Between Campagna Dr and Palmisano Blvd
- A.4 Between Hannan Blvd and Campagna Dr
- A.5 Between Colonial Blvd and Hannan Blvd
- A.6 Between E St Bernard Hwy and Colonial Blvd
- A.7 Between Bayou Rd and E St Bernard Hwy

Map B – Paris Rd (LA 47):

- B.1 Between Forty Arpent Canal Rd and Bayou Bienvenue
- B.2 Between E Judge Perez Dr and Forty Arpent Canal Rd
- B.3 Between E St Bernard Hwy & E Judge Perez Dr
- B.4 Between Ferry Landing and E St Bernard Hwy

Map C – E St Bernard Hwy:

- C.1 At Norfolk Southern Railroad Crossing
- C.2 Between Palmisano Blvd and Paris Rd
- C.3 Between Hannan Blvd and Palmisano Blvd
- C.4 Between Docville Farm and Hannan Blvd
- C.5 Between Colonial Blvd and Docville Farm
- C.6 Between Monte Longo Ln and Colonial Blvd
- C.7 Between E Judge Perez Dr and Monte Longo Ln

Map – D I-510:

- D.1 Between I-10 and Lake Forest Blvd
- D.2 Between Lake Forest Blvd and Chef Menteur Highway (US 90)
- D.3 Between Almonaster Blvd and US 90
- D.4 Between Bayou Bienvenue and Almonaster Blvd

Map E – I-510 NB/SB at Lake Forest Blvd Interchange Ramps:

- E.1 NB On Directional Ramp from Lake Forest Blvd EB and WB
- E.2 SB Off Directional Ramp to Lake Forest Blvd EB and WB
- E.3 NB Off Directional Ramp to Lake Forest Blvd EB and WB
- E.4 SB Off Directional Ramp to Lake Forest Blvd EB and WB

Map F – I-510 NB/SB at Chef Menteur Highway (US 90) Interchange Ramps:

- F.1 NB On Directional Ramp from US 90 WB and EB
- F.2 NB Off Directional Ramp to US 90 WB
- F.3 NB Off Directional Ramp to US 90 EB
- F.4 SB On Directional Ramp from US 90 EB
- F.5 SB Off Directional Ramp to US 90 WB and EB

Map G – I-510 NB/SB at I-10 Interchange Ramps:

- G.1 NB On Directional Ramp from I-10 WB
- G.2 SB Off Directional Ramp to I-10 WB
- G.3 NB Off Directional Ramp to I-10 EB
- G.4 SB On Directional Ramp from I-10 EB
- G.5 SB Off Directional Ramp to I-10 EB

Peak Period Determination

Graphs representing the seven (7)-day twenty-four (24)-hour counts for each location are presented in **Appendix A.3**, **Figures A-1** through **A-7**. A review of the graphs indicates that the weekday volume patterns were fairly consistent. A review of the counts revealed missing data at the E Judge Perez Dr between E St Bernard Hwy and Colonial Blvd count location #A.6 from 1:30 PM – 11:45 PM on Monday (the final day of counting) as a result of the camera battery running out. At E St Bernard Hwy at Norfolk Southern Railroad Crossing count location #C.1, a train crossed between from 3:34 PM – 4:02 PM on Wednesday impacting the count data. Due to the missing counts and the similar patterns, the Thursday data was selected to be representative of typical travel patterns.

The Thursday volumes for each count location were graphed by fifteen (15) minute periods and are presented in **Appendix A.3**, **Figures A-8** through **A-14.**

Volumes tended to peak during the AM and PM on weekdays resembling a typical commute pattern. Although the peak periods were selected for I-510 and the interchange ramps, only the peak periods for Paris Rd, E Judge Perez, and E St Bernard Hwy (Figures A-8 through A-10) were considered for additional data collection.

Using the earliest start and latest finish of the peak periods identified in **Figures A-8** through **A-10**, the following two (2) peak periods were selected for additional data collection:

- 6:45 AM – 8:45 AM on a weekday.
- 3:30 PM – 5:45 PM on a weekday.