

LA 1091 (Robert Boulevard) at Country Club Boulevard/John Slidell Park Roundabout Study

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The City of Slidell, St. Tammany Parish, Louisiana

STAGE 0 FEASIBILITY STUDY

PREPARED FOR

**Regional Planning Commission
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1 - Introduction

This project was commissioned by the Regional Planning Commission to perform a Stage 0 Feasibility Study for a proposed roundabout at the intersection of LA 1091 (Robert Robert) @ Country Club Boulevard & John Slidell Park in the City of Slidell, St. Tammany Parish. The intersection is presently an unsignalized four-way intersection with two-way "Stop" signs controlling the Country Club Boulevard and John Slidell Park approaches. *A Study Location Map, Aerial View of Project Study Area, and Existing Intersection Layout drawing are provided in Figure 1, Figure 2, and Figure 3, respectively, on the following pages.*

The purpose of the study is to examine operational issues and analyze potential safety problems that have been identified by the City of Slidell at the intersection. A roundabout is here considered to address the need for operational improvements at the intersection and as a traffic calming measure to address excess speed in the corridor resulting in potentially unsafe conditions.

The intersection is under the jurisdiction of the Louisiana Department of Transportation and Development (DOTD). Consequently, the study must adhere to DOTD's Engineering Directives and Standards (EDSM No. VI.1.1.5 "Roundabouts") governing the requirements for justification, design, and approval for roundabouts on State highways. Requirements of this policy include the acquisition of site specific traffic data and operational analysis of the intersection that include, but are not limited to, the following key components.

- 7-day, 24-hour Traffic Volume Counts
- Vehicle Classification Counts
- Peak Hour Turning Movement Counts (Weekday A.M. and P.M., Weekend Midday)
- Spot Speed Study
- Crash History (3-years)
- HCM Level of Service Analysis (Existing Intersection)
- SIDRA Intersection Analysis (Proposed Roundabout)
- VISSIM microsimulation computer model
- AutoTURN truck turning analysis

The study includes preparation of a detailed conceptual drawing of the proposed roundabout layout design that follows to the greatest extent DOTD's Roadway Design Procedure and Details Manual for roundabouts. The concept drawing will consider anticipated right-of-way needs, horizontal and vertical geometry details, drainage information, and expected utility relocations.

Following is a description of the work performed for the Stage 0 Feasibility Study and recommendations for the proposed roundabout design.

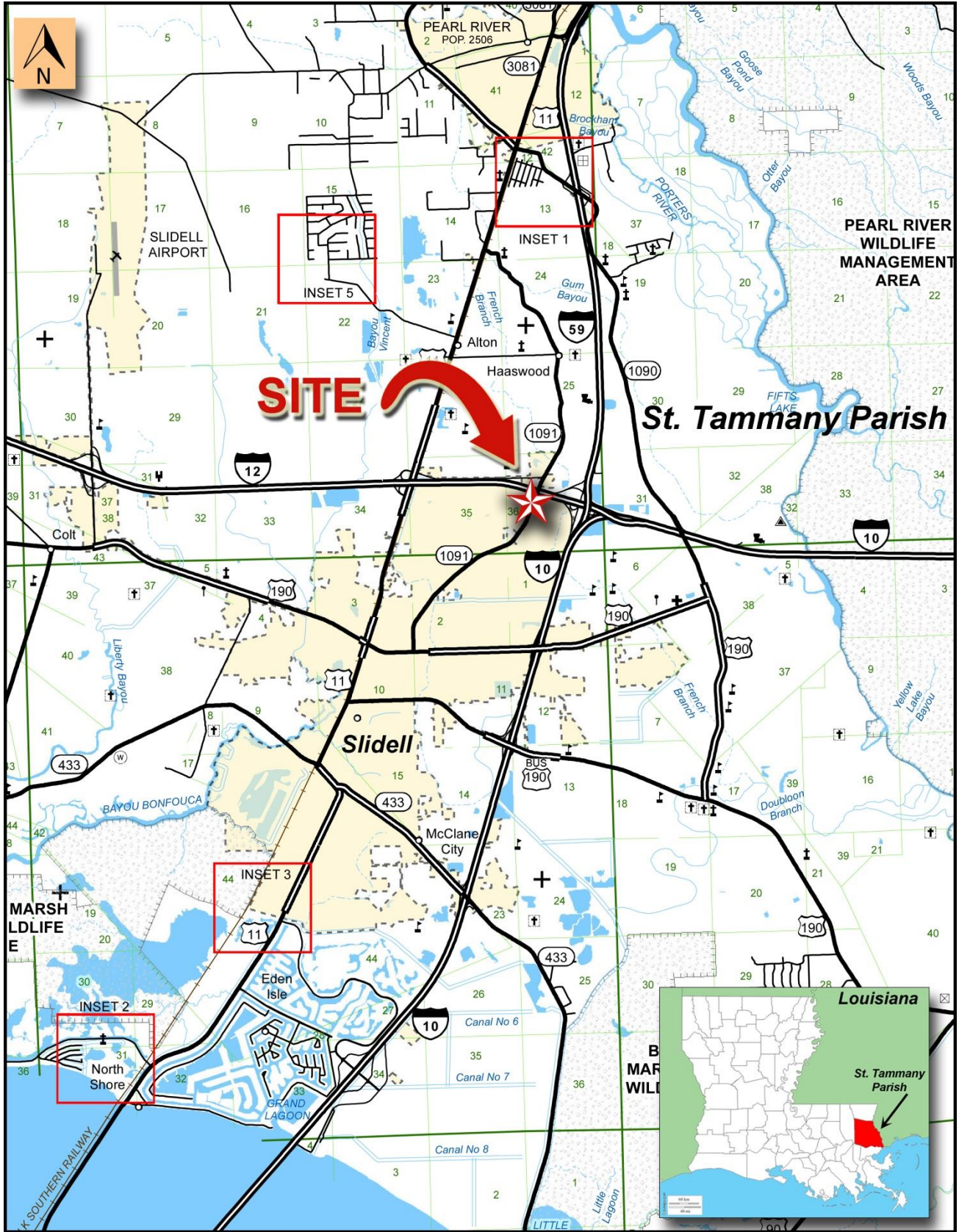


FIGURE 1 - STUDY LOCATION MAP

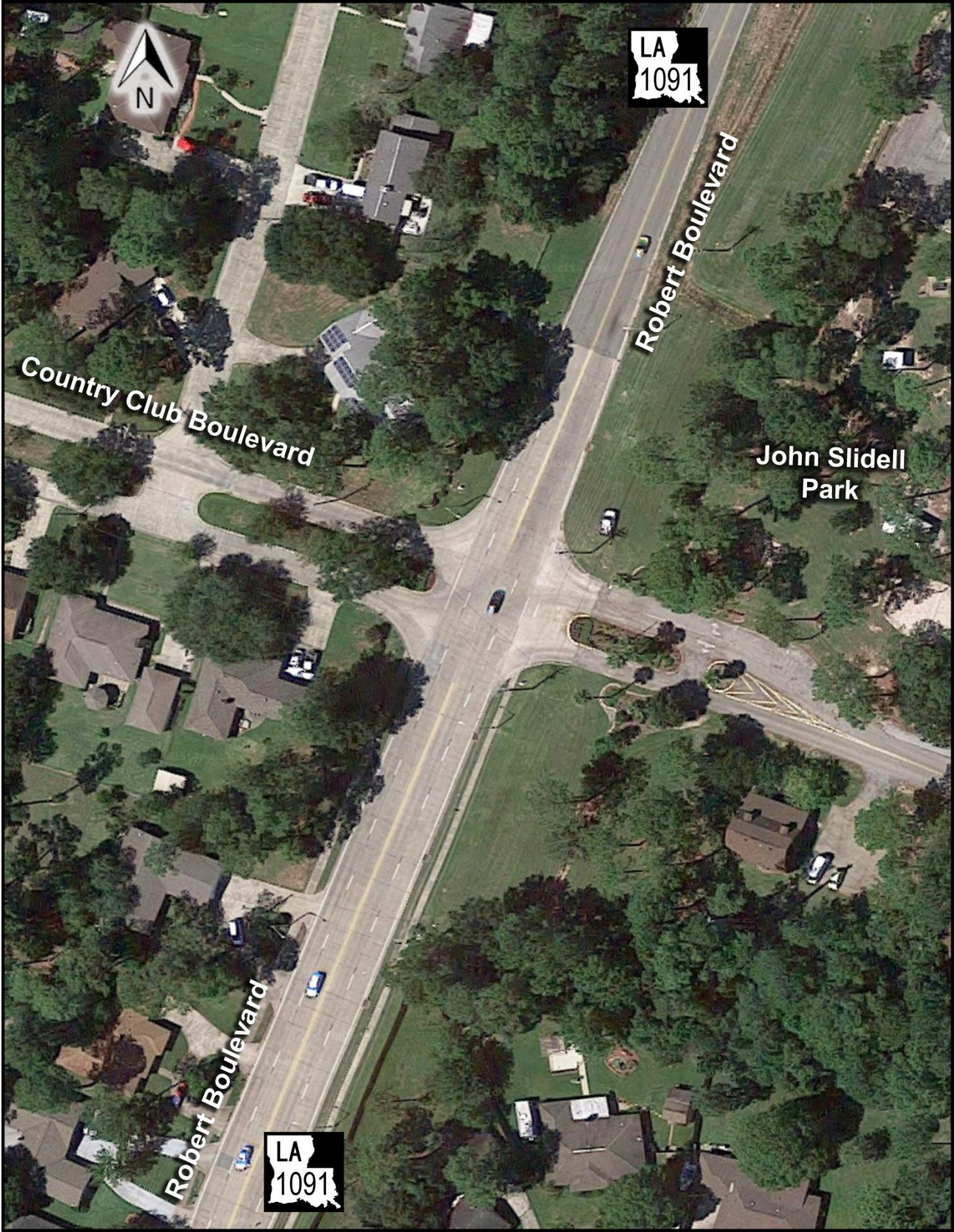


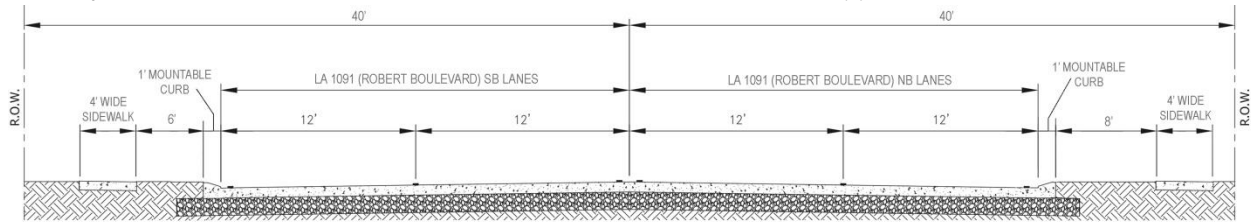
FIGURE 2 - AERIAL VIEW OF PROJECT STUDY AREA

2 - Existing Conditions

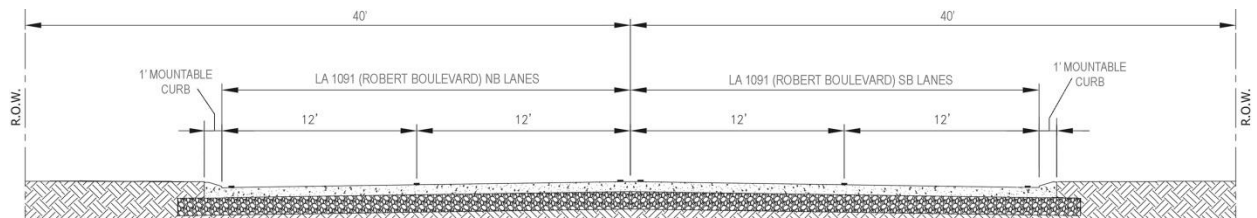
2-1 Roadway Characteristics

LA 1091 (Robert Boulevard) at the study intersection is a two-way, four-lane undivided concrete highway that runs generally north and south. Travel lanes are 12-ft. in width contained within an 80-ft. right-of-way. Drainage is provided by a curb (mountable) and gutter subsurface system that runs adjacent to the roadway. Sidewalks are provided along the LA 1091 (Robert Boulevard) south approach to the intersection and are separated from the roadway by a grass buffer.

Immediately north of the study intersection LA 1091 (Robert Boulevard) transitions to a two-way, two-lane asphalt highway at its overpass with the I-12 interstate. The sidewalk system installed along the southern approach of LA 1091 (Robert Boulevard) to the intersection terminates at the intersection and does not continue north. *Figure 4 below depicts the typical roadway sections on the LA 1091 (Robert Boulevard) north and south approaches to the intersection.*



LA 1091 (ROBERT BOULEVARD) NORTH APPROACH



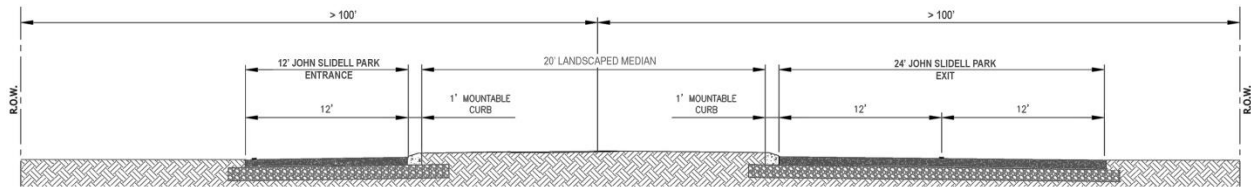
LA 1091 (ROBERT BOULEVARD) SOUTH APPROACH

FIGURE 4 - LA 1091 (ROBERT BOULEVARD) TYPICAL SECTIONS

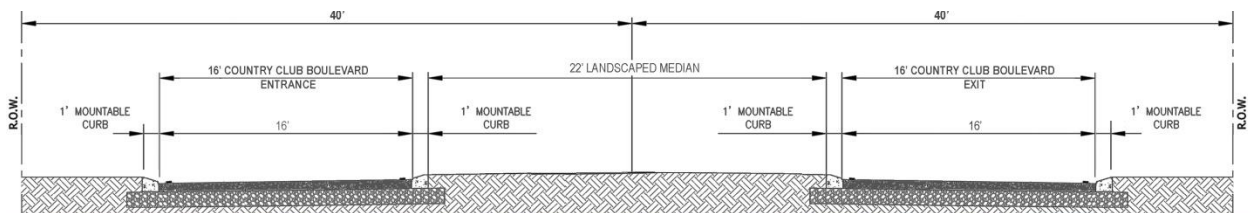
2-1 Roadway Characteristics (Continued)

The entrance/exit to John Slidell Park connects to the intersection from the east as a two-way divided asphalt roadway. One 12-ft. lane is provided for the entrance, while the exit provides two 12-ft. lanes consisting of a shared left-turn/through lane and an exclusive right-turn lane. A 20-ft. landscaped median with mountable curbs separates the entrance/exit lanes. Right-of-way is provided in excess of 100ft. Drainage is to the outside edge of the roadway to the natural ground (no curbs).

Country Club Boulevard serves a residential neighborhood and approaches the intersection from the west as a two-way, two-lane divided concrete roadway. Travel lanes are 16-ft. in width separated by a 22-ft. grass median within an 80-ft. right-of-way. Although constructed for use as one-lane, motorists routinely use the Country Club Boulevard approach as having two-lanes. Drainage is provided by a curb (mountable) and gutter subsurface system that runs adjacent to the roadway. No sidewalks are provided along the roadway. *Figure 5 below shows the typical roadway sections on the Country Club Boulevard and John Slidell Park east and west approaches to LA 1091 (Robert Boulevard).*



JOHN SLIDELL PARK EAST APPROACH



COUNTRY CLUB BOULEVARD WEST APPROACH

**FIGURE 5 - COUNTRY CLUB BOULEVARD & JOHN SLIDELL PARK
 TYPICAL SECTIONS**

2-2 Existing Traffic Controls

The intersection of LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park is presently operated as a four-way, unsignalized intersection with “Stop” signs controlling the Country Club Boulevard and John Slidell Park approaches. LA 1091 (Robert Boulevard) is afforded free-flow operation at the intersection. Full-access turning movements (left-turn, thru, right-turn) are permitted on all four approaches to the intersection. Left-turns movements from LA 1091 (Robert Boulevard) occur from the inside shared left-turn/thru lane during gaps in the opposing traffic stream.

LA 1091 (Robert Boulevard) has a posted speed limit of 40 miles per hour, while Country Club Boulevard is posted at 20 miles per hour and John Slidell Park roadways are posted for 15 miles per hour speed limit.

2-3 Surrounding Land Use

Land use along LA 1091 (Robert Boulevard) within the immediate vicinity of Country Club Boulevard and John Slidell Park is mixed residential and recreational. The northeast and southeast quadrants of the intersection are undeveloped public green spaces owned by the City of Slidell and part of John Slidell Park. The northwest and southwest quadrants are part of Country Club Subdivision and are occupied by single-family detached homes in each quadrant.

The nearest driveway connection along LA 1091 (Robert Boulevard) is located approximately 195-ft. south of the study intersection on the west side of the highway and serves a single-family detached home. No active driveway connections are provided north along LA 1091 (Robert Boulevard) between the intersection and the I-12 overpass. The nearest driveway connection along Country Club Boulevard is for a single-family detached home and is located along the south side of the roadway approximately 75-ft. from the intersection. A driveway connection to an office and maintenance building for John Slidell Park is located along the south side of the entrance lane to the park approximately 260-ft. from the study intersection. *Figure 6 on the following page provides pictures of the green spaces and residential developments located in the four quadrants of the LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park intersection.*



NORTHEAST QUADRANT



NORTHWEST QUADRANT



SOUTHEAST QUADRANT



SOUTHWEST QUADRANT

FIGURE 6-SURROUNDING LAND-USE

2-4 Traffic Data Collection

The LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park intersection is under the jurisdiction of the Louisiana Department of Transportation and Development (DOTD). DOTD’s policy for the justification and approval of roundabouts (EDSM No. VI.1.1.5 “Roundabouts”) requires the collection of site specific traffic data consisting of the following items.

- 7-Day, 24-Hour Traffic Volume Counts
- Vehicle Classification Counts
- Peak Hour Turning Movement Counts (Weekday A.M. and P.M., Weekend Midday)
- Spot Speed Study
- Crash History (3-years)

Following is a description of the results of this traffic data collection effort for the study intersection. *Raw traffic data materials are provided in the Appendix.*

2-4.1 7-Day, 24-Hour Traffic Volume Counts

7-Day, 24-Hour Traffic Volume Counts were conducted on all four approaches to the intersection. These volume counts were collected in fifteen minute intervals with hourly subtotals. The counts were used to determine if the corridor experiences any unique traffic patterns and to target periods to perform Peak Hour Turning Movement Counts. *Table 1 shown below provides the daily totals for each approach to the intersection during each day of the week.*

7-Day, 24-Hour Traffic Volume Counts							
Weekday	LA 1091 (Robert Boulevard) (NB & SB)			Country Club Boulevard (EB) & John Slidell Park (WB)			Grand Total
	NB	SB	Total	EB	WB	Total	
Monday	7345	7902	15247	1188	348	1536	16783
Tuesday	7814	7991	15805	1305	481	1786	17591
Wednesday	7757	8000	15757	1263	502	1765	17522
Thursday	7878	8326	16204	1279	521	1800	18004
Friday	8088	10707	18795	1397	261	1658	20453
Weekend							
Saturday	6640	8132	14772	1250	492	1742	16514
Sunday	5077	6507	11584	820	192	1012	12596

TABLE 1 - 7-DAY, 24-HOUR TRAFFIC VOLUME COUNTS










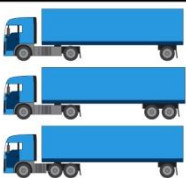



A review of the table above shows typical roadway traffic patterns. The counts indicate the following Average Daily Traffic for LA 1091 (Robert Boulevard).

LA 1091 (Robert Boulevard)

15,900 Vehicles per Day (ADT)

2-4.2 Vehicle Classification Counts

Vehicle Classification Counts were conducted on all approaches to the intersection. As may be expected, the Country Club Boulevard and John Slidell Park approaches see nominal amounts of heavy vehicle traffic. Results for the LA 1091 (Robert Boulevard) vehicle classifications are shown in the table below. *Table 2 below provides the LA 1091 (Robert Boulevard) vehicle classification counts broken down into the FHWA thirteen categories.*

FHWA Vehicle Classifications		Percentage Breakdown
1. Motorcycles 2 axles, 2 or 3 tires		0.2%
2. Passenger Cars 2 axles, can have 1- or 2-axle trailers		74.3%
3. Pickups, Panels, Vans 2 axles, 4-tire single units. Can have 1 or 2 axle trailers		20.7%
4. Buses 2 or 3 axles, full length		1.4%
5. Single Unit 2-Axle Trucks 2 axles, 6 tires (just rear tires), single-unit		3.2%
6. Single Unit 3-Axle Trucks 3 axles, single unit		0.0%
7. Single Unit 4 or More-Axle Trucks 4 or more axles, single unit		0.0%
8. Single Trailer 3- or 4-Axle Trucks 3 or 4 axles, single trailer		0.2%
9. Single Trailer 5-Axle Trucks 5 axles, single trailer		0.0%
10. Single Trailer 6 or More-Axle Trucks 6 or more axles, single trailer		0.0%
11. Multi-Trailer 5 or Less-Axle Trucks 5 or less axles, multiple trailers		0.0%
12. Multi-Trailer 6-Axle Trucks 6 axles, multiple trailers		0.0%
13. Multi-Trailer 7 or More-Axle Trucks 7 or more axles, multiple trailers		0.0%

**TABLE 2 – VEHICLE CLASSIFICATION COUNTS
 LA 1091 (ROBERT BOULEVARD)**

A review of the table indicates the following percentage of Heavy Vehicle Traffic (Classification 4 or higher)

LA 1091 (Robert Boulevard)

4.8% Heavy Vehicles

It should be noted that of this percentage of heavy vehicles, only 0.2% consisted of large trucks with 3-axles or higher.

2-4.3 Peak Hour Turning Movement Counts

Peak Hour Turning Movement Counts of existing traffic were conducted at the LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park intersection during the weekday A.M. and P.M. peak hours and weekend midday peak hour. The 24-hour traffic volume counts taken on Tuesday, Wednesday, and Thursday were used to target the weekday peak periods to conduct turning movement counts, while the Saturday and Sunday 24-hour traffic volume counts were used to identify the weekend peak period. The peak hours identified corresponded with those seen at other nearby intersections where counts were collected by this firm. *Figures 7 on the following page contains the results of the weekday and weekend peak hour traffic counts.*

These traffic counts were collected using current video technologies to insure the most accurate traffic data acquisition and provide visual chronicles of the actual operation of intersections and roadways. This allows for a deeper analysis of the transportation system as well as video archives for future evaluations. Using these video captures together with personnel in-field observations, maximum queue length observations were noted for the four approaches to the intersection. Queue lengths of two vehicles would occasionally occur within the inside shared left-turn/through lanes of free-flowing LA 1091 (Roberts Boulevard) as motorist waited for gaps in the opposing stream of traffic to make left-turns onto Country Club Boulevard or into John Slidell Park. Both Country Club Boulevard and the John Slidell Park exit would see queue lengths of three vehicles on their “Stop” sign approaches. Although traffic volumes levels were considered moderate on these side street approaches, there appeared to be a hesitancy on the part of some motorists as they attempted to judge acceptable gaps to enter the free-flowing traffic streams of LA 1091 (Robert Boulevard), thus causing increase delay times. This “second guessing” appears to be the result on the merge/diverge condition along LA 1091 (Robert Boulevard) just north of the intersection producing unpredictable lane changes in the immediate vicinity of the intersection.

2-4.4 Spot Speed Study

A Spot Speed Study was conducted along the northbound and southbound roadways of LA 1091 (Robert Boulevard) following the procedures outlined in DOTD’s EDSM VI.1.1.1 and Traffic Engineering Manual (Section 20.2). The speed limit along this highway within the study area is presently posted at 40 mile per hour. *Table 3 below provides a summary of the major findings of the Spot Speed Study.*

LA 1091 (Robert Boulevard) Northbound		LA 1091 (Robert Boulevard) Southbound	
Posted Speed Limit	Speed Study Results	Posted Speed Limit	Speed Study Results
SPEED LIMIT 40	85th Percentile Speed 51 mph	SPEED LIMIT 40	85th Percentile Speed 53 mph
	Mean (Average) Speed 46 mph		Mean (Average) Speed 48 mph

TABLE 3 – SPOT SPEED STUDY RESULTS

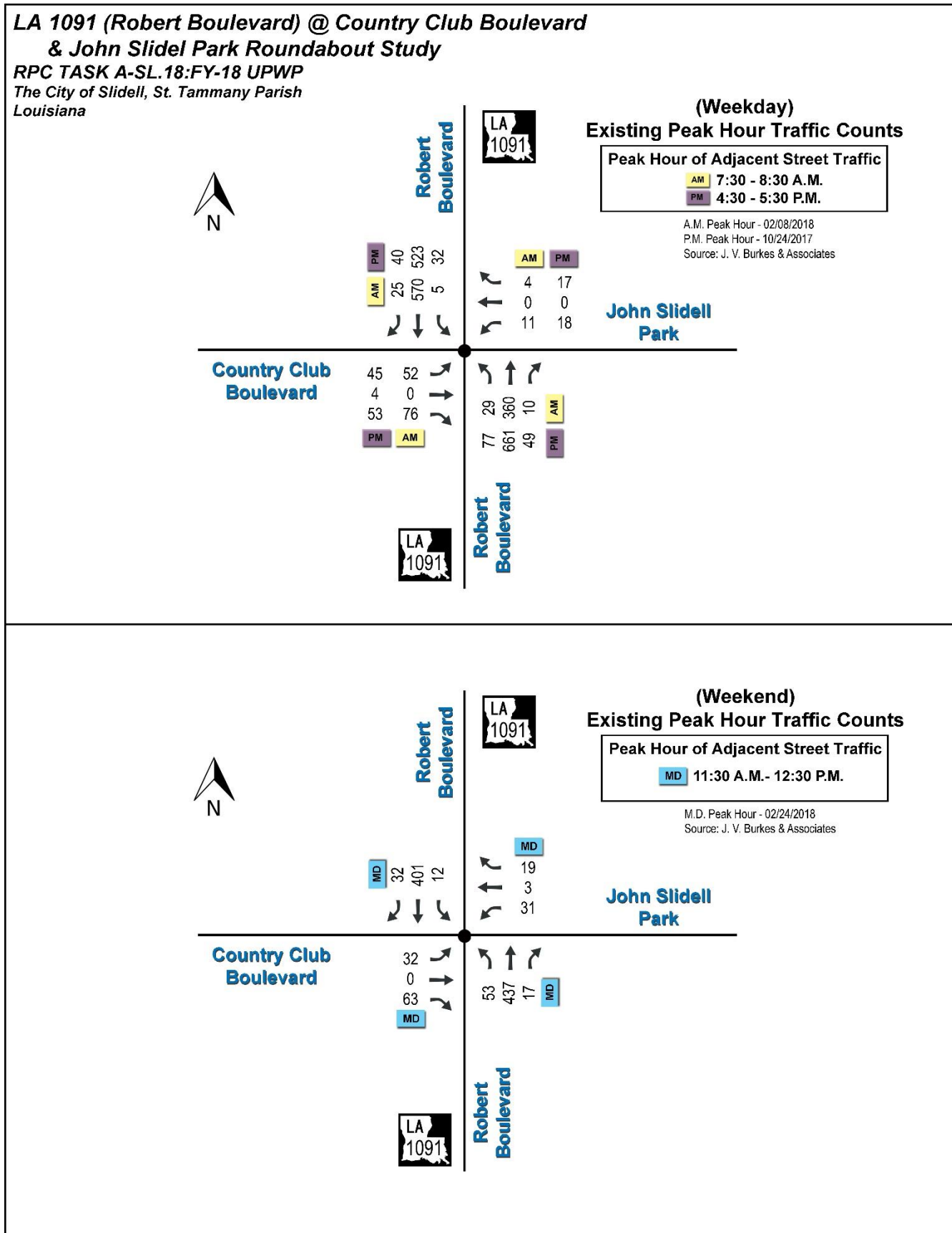


FIGURE 7 - EXISTING PEAK HOUR TRAFFIC COUNTS

2-4.5 Crash History (3 Years)

A Crash History of the intersection was compiled encompassing the past three years (2014, 2015, and 2016) of available authorized crash data. Four types of crashes were recorded at and within the immediate vicinity of the intersection during this three year time period. *Table 4 presented below provides a summary of the type and number of crashes at and within the immediate vicinity of the study intersection, and those considered correctible with the installation of a roundabout.*

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park						
Milepoint 2.01 - 2.04		2014	2015	2016	Total Crashes	Correctible?
Crash Types	Left Turn	1	1	4	6	Correctible
	Rear End	0	0	3	3	Non-Correctible
	Right Angle	1	2	3	6	Correctible
	Side Swipe	0	0	1	1	Non-Correctible
Crash Summary	Total Crashes	2	3	11	16	
	Fatal Crashes	0	0	0	0	
	Injury Crashes	1	1	6	8	

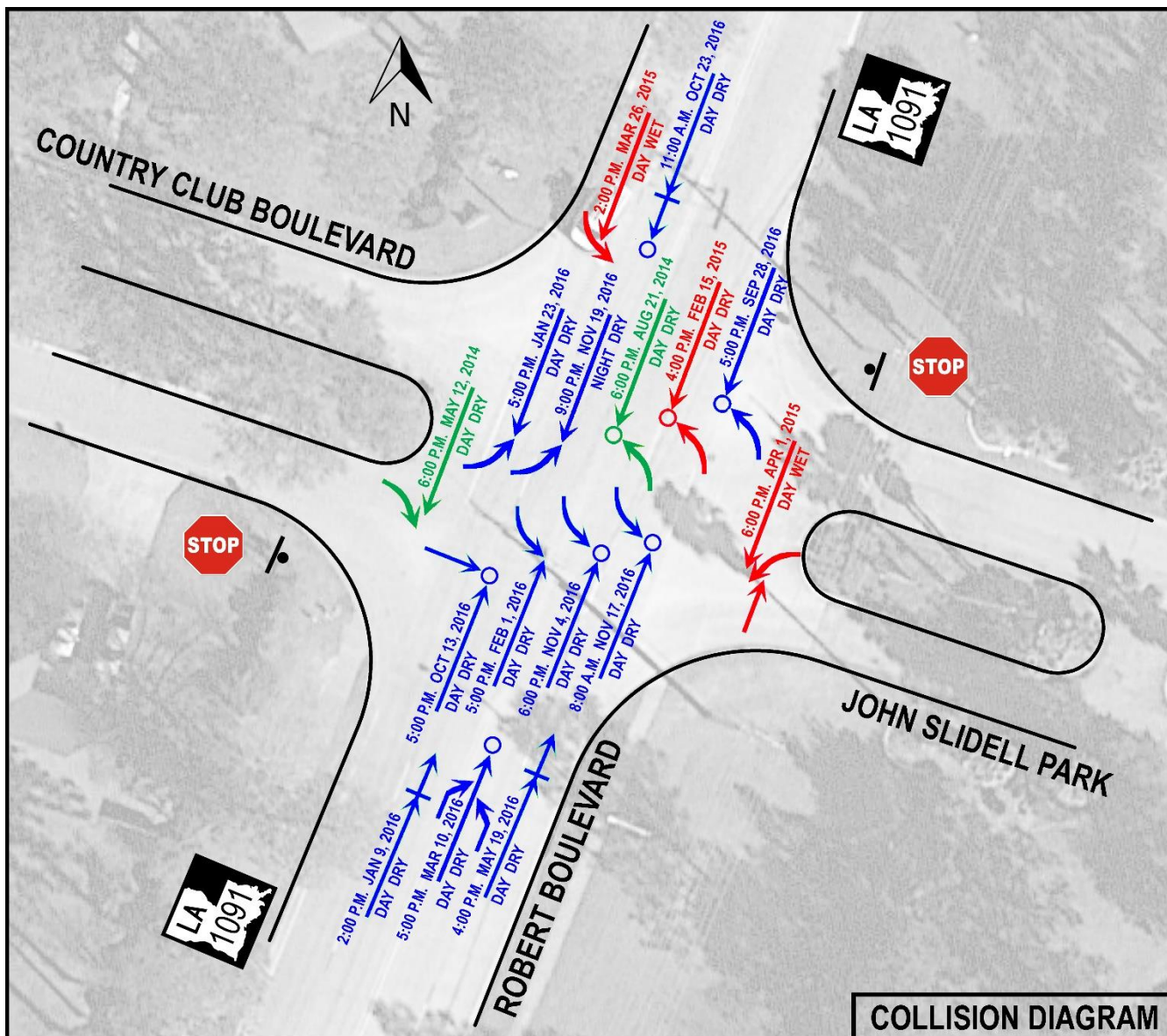
TABLE 4 - CRASH TABLE

A close review of the accident records revealed that of the 6 crashes encoded during this three-year period as “Right Angle” crashes, 5 actually involved a vehicle attempting to make a left-turn and 1 making a right-turn. Only 1 “Right-Angle” crash involved a straight crossing vehicle. This inconsistency is addressed on the Collision Diagram prepared for the intersection. *Figure 8 on the following page provides a Collision Diagram for the intersection during the three year time period specified.*

A review of the Crash Table above indicates the following number of “correctible crashes” (Head On, Right Angle, Left Turn) with the installation of a roundabout.

Number of “Correctible Crashes” with Roundabout

12 Crashes (75% of Total)



COLLISION DIAGRAM

SYMBOLS		CRASH TYPE		YEAR	
	MOVING VEHICLES		REAR ENDS		2014
	INJURY		SIDE SWIPE		2015
	STOP SIGN		LEFT TURN (SAME DIRECTION)		2016
			LEFT TURN (DIFFRENT DIRECTION)		
			RIGHT TURN		
			RIGHT ANGLE		

FIGURE 8 - COLLISION DIAGRAM

2-5 Level of Service and 95th Percentile Queue Length Analysis

A Level of Service (LOS) analysis was performed on the intersection of LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park during the weekday A.M. and P.M. peak hours and weekend Midday peak hour. The analysis is based on existing highway configuration, traffic controls, and collected traffic counts. Using Sidra Intersection (Version 6.1) software, volume to capacity (v/c) ratios, delay times (seconds per vehicle) and corresponding Level of Service (LOS) designations were calculated for each approach lane, each approach, and for the overall intersection. *The results of the capacity analysis of existing conditions (3-Year Build) are presented below in Table 5.*

Sidra Intersection (Version 6.1) was also used to calculate the 95th Percentile Queue Lengths for each approach lane and each directional approach in total. *Table 6 on the following page provides the results of the 95th Percentile Queue Length analysis during the weekday A.M. and P.M. peak hours and weekend midday peak hour.*

Existing (Weekday)

Intersection	Approach Movement		A.M. Peak Hour			P.M. Peak Hour		
			v/c Ratio	DELAY	LOS	v/c Ratio	DELAY	LOS
				(Sec/Veh)			(Sec/Veh)	
LA 1091 (Robert Boulevard) (NB & SB) @ Country Club Boulevard (EB) & John Slidell Park (WB) Two-Way Stop	NB	LT/Thru	0.223	4.2	A	0.450	5.4	A
		Thru/RT	0.045	0.0	A	0.090	0.0	A
		Approach	0.223	0.8	A	0.450	1.5	A
	SB	LT/Thru	0.310	2.4	A	0.335	6.6	A
		Thru/RT	0.062	0.0	A	0.067	0.0	A
		Approach	0.310	0.1	A	0.335	1.1	A
	EB	LT/Thru	0.635	77.8	F	1.917	656.8	F
		RT	0.289	15.3	C	0.174	11.0	B
		Approach	0.635	40.8	E	1.917	318.7	F
	WB	LT/Thru	0.176	55.7	F	0.876	322.4	F
		RT	0.009	5.0	A	0.091	18.0	C
		Approach	0.176	41.4	E	0.876	176.3	F
	Intersection LOS		0.635	5.4	A	1.917	26.4	D

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Existing (Weekend)

Intersection	Approach Movement		Midday Peak Hour		
			v/c Ratio	DELAY	LOS
				(Sec/Veh)	
LA 1091 (Robert Boulevard) (NB & SB) @ Country Club Boulevard (EB) & John Slidell Park (WB) Two-Way Stop	NB	LT/Thru	0.282	2.8	A
		Thru/RT	0.056	0.0	A
		Approach	0.282	0.7	A
	SB	LT/Thru	0.235	2.8	A
		Thru/RT	0.047	0.0	A
		Approach	0.235	0.2	A
	EB	LT/Thru	0.328	45.5	E
		RT	0.147	6.8	A
		Approach	0.328	19.9	C
	WB	LT/Thru	0.372	52.0	F
		RT	0.050	7.3	A
		Approach	0.372	34.9	D
Intersection LOS		0.372	3.8	A	

**TABLE 5 - LEVEL OF SERVICE ANALYSIS
(EXISTING CONDITIONS - 3 YEAR BUILD)**

Existing (Weekday)

Intersection	Approach Movement		A.M. Peak Hour	P.M. Peak Hour
			95th Percentile Queue Length (ft.)	95th Percentile Queue Length (ft.)
LA 1091 (Robert Boulevard) (NB & SB) @ Country Club Boulevard (EB) & John Slidell Park (WB) Two-Way Stop	NB	LT/Thru	12.7	50.9
		Thru/RT	0.0	0.0
		Approach	12.7	50.9
	SB	LT/Thru	1.9	23.9
		Thru/RT	0.0	0.0
		Approach	1.9	23.9
	EB	LT/Thru	70.1	352.1
		RT	32.1	17.6
		Approach	70.1	352.1
	WB	LT/Thru	14.5	80.5
		RT	0.9	8.2
		Approach	14.5	80.5

Existing (Weekend)

Intersection	Approach Movement		Midday Peak Hour
			95th Percentile Queue Length (ft.)
LA 1091 (Robert Boulevard) (NB & SB) @ Country Club Boulevard (EB) & John Slidell Park (WB) Two-Way Stop	NB	LT/Thru	18.7
		Thru/RT	0.0
		Approach	18.7
	SB	LT/Thru	4.5
		Thru/RT	0.0
		Approach	4.5
	EB	LT/Thru	31.4
		RT	15.9
		Approach	31.4
	WB	LT/Thru	35.6
		RT	5.1
		Approach	35.6

**TABLE 6 - 95TH PERCENTILE QUEUE LENGTHS
 (EXISTING CONDITIONS - 3 YEAR BUILD)**

3 – Roundabout Analysis

To initiate the process of determining an appropriate roundabout layout for the LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park intersection, the collected Peak Hour Turning Movement Counts were utilized to perform preliminary SIDRA Intersection roundabout analysis. This initial evaluation was conducted to determine the proper number of lanes to employ at the roundabout to meet current (3-Year Build) and future (20-Year Design) traffic demands.

Based on these preliminary analyzes, a single-lane roundabout was gauged to be sufficient to handle current and future traffic loads. A Conceptual Roundabout Layout Design was then developed for the intersection.

Additional Sidra Intersection analyzes were performed to confirm the Conceptual Roundabout Layout Design would accommodate future traffic volume levels and expected turning movement characteristics. This was followed by utilization of AutoTURN computer software to demonstrate the proposed roundabout layout can accommodate a WB-67 truck, and preparation of a VISSIM computer microsimulation model to show an animation of the anticipated function of the roundabout.

Following is a description of the Conceptual Roundabout Layout Design and results of the analyzes.

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3-1 Conceptual Roundabout Layout Design

A detailed conceptual drawing was prepared on an aerial photograph showing the proposed roundabout layout design. The geometric features of the roundabout followed to the greatest extent possible the criteria outlined in LADOTD Roadway Design Procedure and Details Manual. Preparation of the layout involved attention to existing public right-of-way's, nearby driveway connections, utility locations, sidewalk installations, and drainage systems. Key considerations and designed elements influencing the roundabout layout included the following.

- Single lane roundabout with an inscribed circle of 130 ft. in diameter.
- Use of public (State and City) right-of way only.
- Utilization of the existing two lanes on the LA 1091 (Robert Boulevard) northbound approach and the John Slidell Park exit westbound approach.
- Crosswalk on the LA 1091 (Robert Boulevard) northbound approach connecting the existing sidewalk system.

Figure 9 on the following page provides the Conceptual Roundabout Layout Design resulting from this process.

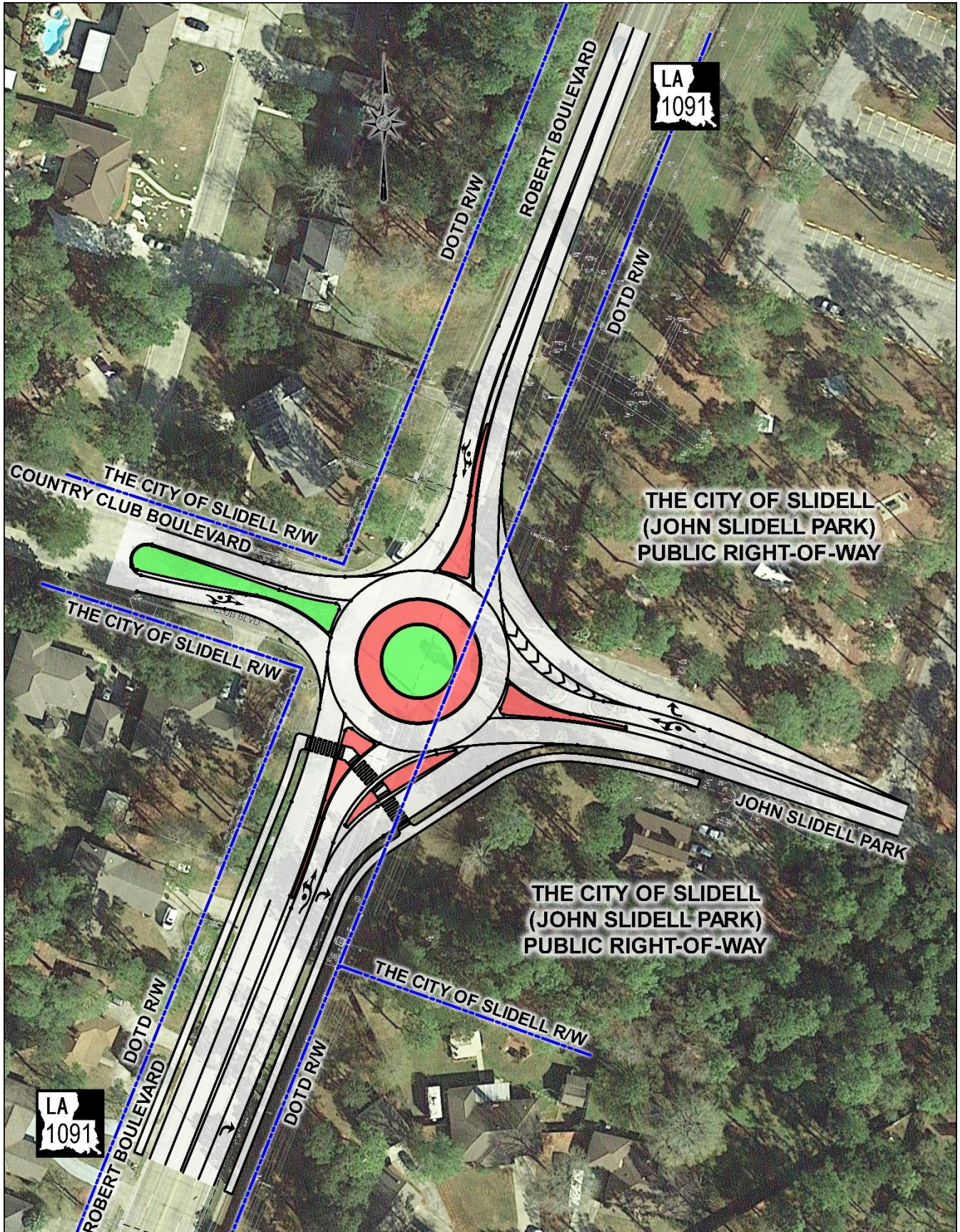


FIGURE 9 - CONCEPTUAL ROUNDABOUT LAYOUT DESIGN

3-2 Sidra Intersection Analysis

Sidra Intersection computer software was used to determine the volume to capacity (v/c) ratio, level of service, and other key parameters for the conceptual roundabout layout design. The Sidra Intersection software settings followed the requirements set forth in the DOTD Roundabout Analysis Brochure.

Three scenarios were analyzed for the intersection as follows. They were the Build Year (3 years from submittal of traffic study), Design Year (20-year design life), and Practical Capacity (year which capacity is reached). Starting with the collected peak hour traffic counts, a traffic growth rate of 0.8% was projected for the LA 1091 (Robert Boulevard) corridor as provided by the Regional Planning Commission transportation growth models. This same 0.8% growth rate was applied to John Slidell Park. Country Club Subdivision has reached its maximum occupancy, so no additional traffic growth was projected for Country Club Boulevard.

The percent of heavy truck traffic along LA 1091 (Robert Boulevard) was coded as 4.8%. This corresponds to the collected Vehicle Classification Counts for heavy vehicles. Projected truck traffic is considered nominal along Country Club Boulevard and John Slidell Park.

Table 7 below presents the findings of the Sidra Intersection analysis for the Conceptual Roundabout Layout Design.

Weekday	V/C	Average Delay (Sec/Veh)	LOS	Queue Distance (ft.)	Build Year (3 Years)
A.M. Peak Hour	0.632	1.3	A	172.5	2021
P.M. Peak Hour	0.691	1.9	A	209.7	2021
Weekend					
Midday Peak Hour	0.496	1.2	A	100.5	2021

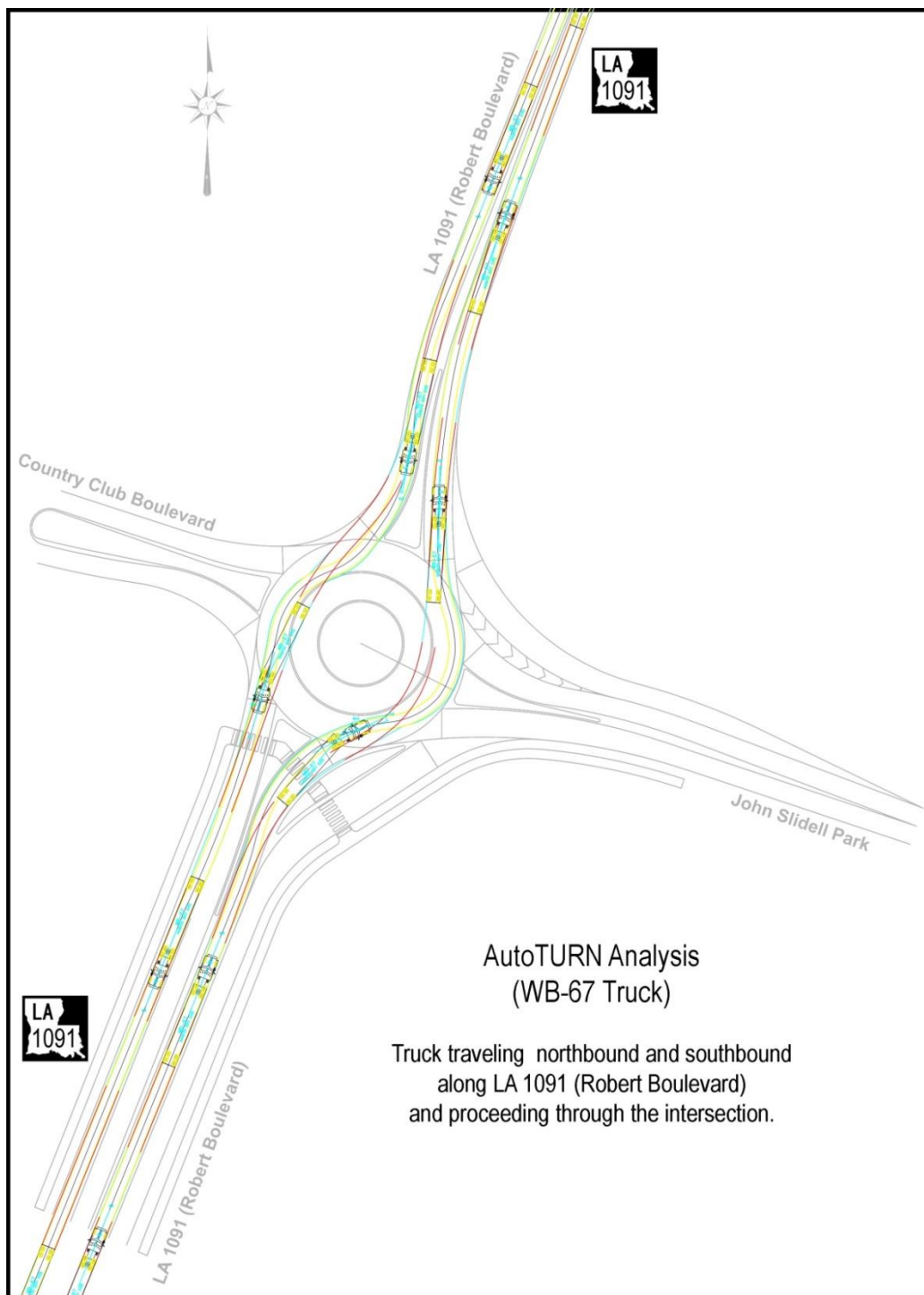
Weekday	V/C	Average Delay (Sec/Veh)	LOS	Queue Distance (ft.)	Design Year (23 Years)
A.M. Peak Hour	0.674	1.3	A	201.0	2041
P.M. Peak Hour	0.730	1.9	A	241.0	2041
Weekend					
Midday Peak Hour	0.526	1.2	A	112.9	2041

Weekday	V/C	Average Delay (Sec/Veh)	LOS	Queue Distance (ft.)	Practical Capacity
A.M. Peak Hour	0.835	1.8	A	403.5	> 50 Years
P.M. Peak Hour	0.900	4.1	A	510.6	> 50 Years
Weekend					
Midday Peak Hour	0.654	1.5	A	173.0	> 50 Years

TABLE 7 - SIDRA INTERSECTION ANALYSIS

3-3 AutoTURN Analysis

An AutoTURN software analysis was performed to demonstrate that the proposed Conceptual Roundabout Layout Design can accommodate a WB-67 truck. Various truck turning movement templates were tested for the different approaches to the intersection. *Electronic copies of the AutoTURN computer files are provided with the report. Figure 10 below provides an example of an AutoTURN turning movement analysis for WB-67 trucks traveling through the intersection along LA 1091 (Robert Boulevard).*



**FIGURE 10 - AUTOTURN ANALYSIS
LA 1091 (ROBERT BOULEVARD) THROUGH MOVEMENT**

3-3 VISSIM Modeling

A VISSIM computer software microsimulation was prepared to show an animation of the anticipated function of the roundabout. Models were created to check the three scenarios evaluated during the Sidra Intersection analysis and calibrated following industry standards. The VISSIM simulation models revealed efficient operation of the Conceptual Roundabout Layout Design and corroborated the results of the Sidra Intersection analysis. *Electronic copies of the VISSIM computer files are provided with the report. Figure 11 below shows screen shots of the VISSIM model animation.*

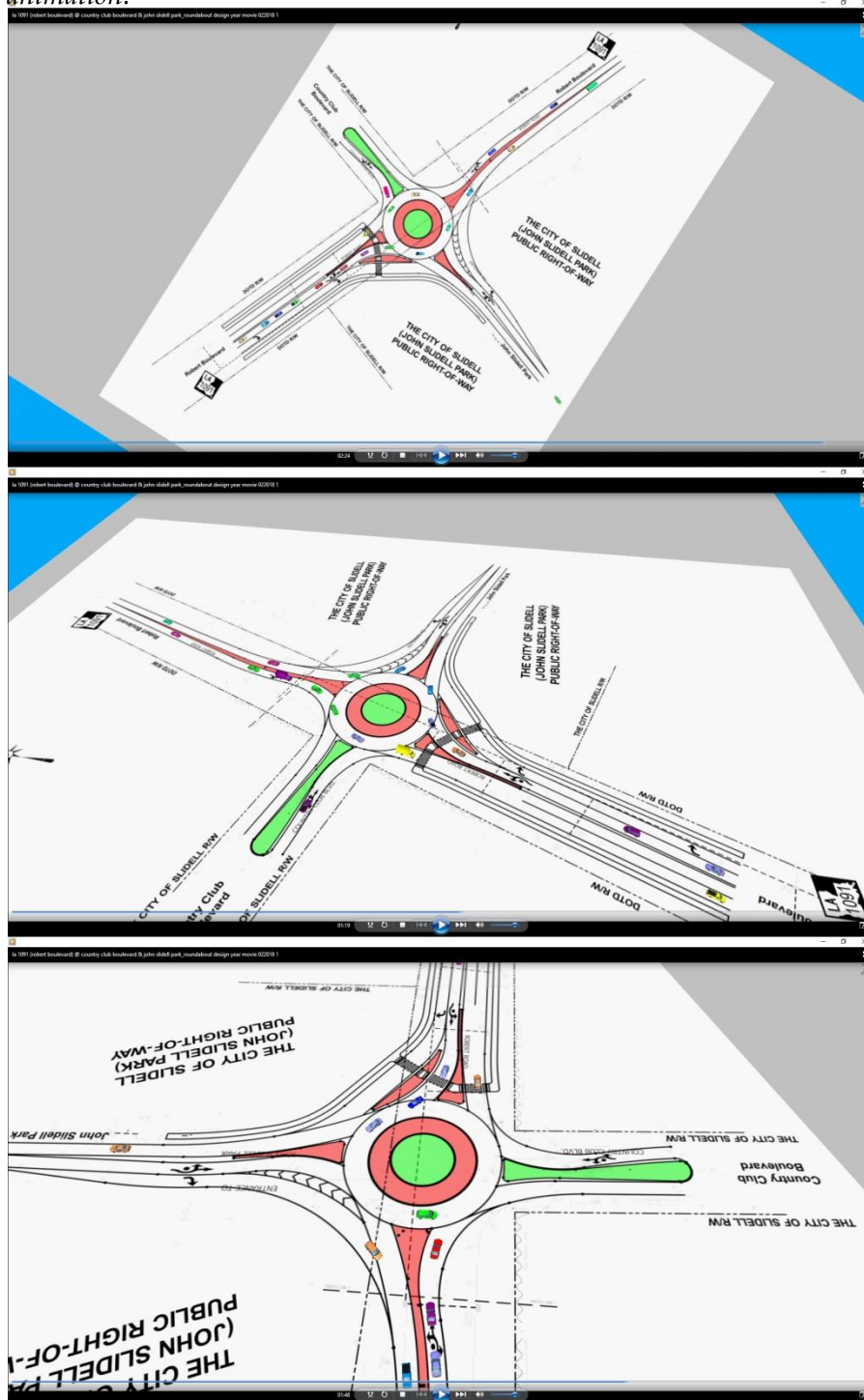


FIGURE 11 - VISSIM MODEL ANIMATION

4 – Conclusions and Recommendations

This Stage 0 Feasibility Study was conducted to determine the suitability of installing a roundabout at the presently unsignalized four-way intersection of LA 1091 (Robert Robert) @ Country Club Boulevard/John Slidell Park in the City of Slidell, St. Tammany Parish. Traffic is controlled at the existing intersection with “Stop” signs for the Country Club Boulevard and John Slidell Park side-street approaches, while LA 1091 (Robert Boulevard) is allowed free-flow operation.

Development surrounding the intersection is mixed residential and recreational. The northwest and southwest quadrants contain homes that are part of the fully-developed Country Club Subdivision. The northeast and southeast quadrants are undeveloped public green spaces owned by the City of Slidell and serve as the entrance/exit to John Slidell Park. The park offers baseball fields and areas for leisure activities and sees routine local activity during the weekday afternoons and all day on Saturdays and Sundays. On occasions the park hosts special events such as large baseball tournaments that bring visitors from outside the city.

The LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park intersection is under the jurisdiction of the Louisiana Department of Transportation and Development (DOTD). This study adhered to DOTD’s Engineering Directives and Standards (EDSM No. VI.1.1.5 “Roundabouts”) governing the requirements for the study of potential roundabout locations.

4.1 Existing Conditions (Findings)

DOTD’s policy required the collection of specific types of traffic counts as well as conducting a speed study, reviewing recent crash history, and performing a HCM Level of Service analysis. Following are key findings from the traffic data collection and analysis of existing conditions.

- 7-day, 24-hour Traffic Volume Counts - The volume counts indicates an Average Daily Traffic (ADT) of 15,900 vehicles per day along LA 1091 (Robert Boulevard) and typical traffic patterns seen in the nearby area.
- Vehicle Classification Counts - Classification counts revealed 4.8% heavy vehicle use along LA 1091 (Robert Boulevard) of which 0.2 % consisted of large trucks with 3-axles or higher. The side street approaches saw negligible heavy vehicle use.
- Peak Hour Turning Movement Counts - Peak hour counts showed the intersection experiences heaviest traffic demands during the weekday P.M. Peak Hour. Weekend peak hour traffic varies depending on events occurring at the park, but typically sees the lowest levels of the week.
- Spot Speed Study - Spot speed studies conducted along the LA 1091 (Robert Boulevard) free-flowing approaches to the intersection revealed 85th percentile speeds exceeding the posted speed limit (40 mph) by more than 10 mph.
- Crash History (3-years) - A review of the intersection crash history during the last 3 years (2014 - 2016) indicates that of the total 18 recorded crashes, 12 (75%) are “correctible crashes” with the installation of a roundabout. Injuries were involved in 8 of the crashes. No fatalities were recorded.

4.1 Existing Conditions (Findings) (Continued)

- Sidra Intersection Analysis – Results of the Sidra Intersection analysis indicates the Country Club Boulevard and John Slidell Park side-street approaches both experience LOS F during the weekday P.M. peak hour.

Noteworthy during field observations was the behavior of some motorists on the “Stop” sign approaches of Country Club Boulevard and John Slidell Park who desired to turn left onto LA 1091 (Robert Boulevard). It appeared they would have difficulty at times judging acceptable gaps in the oncoming traffic streams of LA 1091 (Robert Boulevard). This would result in hesitancy or “second guessing” before making their movement. This appeared to be a result of the merge/diverge condition along LA 1091 (Robert Boulevard) just north of the intersection producing unpredictable lane changes in the immediate vicinity of the intersection.

A review of the hourly subtotals of the 7-day, 24-Hour Traffic Volume Counts reveals that traffic volume levels on the higher-volume minor-street approach (Country Club Boulevard) fail to meet DOTD’s principal warrant (Warrant 1A “Eight-hour Vehicular Volume”) for a traffic signal for any hour throughout the week (see EDSM No: VI.3.1.6 “Traffic Signal”). In addition, evaluation of the collected traffic data indicates the intersection fails to meet all the criteria to fulfill traffic signal Warrant 7 “Crash Experience”. A traffic signal installation is therefore not considered a viable traffic control alternative for this intersection.

Consideration was also given to a Multi-Way Stop application. However, as noted in the MUTCD (Section 2B.07), “Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.” An examination of the 7-day, 24-hour Traffic Volume Counts show that traffic volume along the free-flowing approaches of LA 1091 (Robert Boulevard) accounts for approximately 90% of all traffic seen at the intersection. Moreover, combined vehicular, pedestrian, and bicycle volumes from the minor street approaches fall well short of the minimum volume guidelines specified in the MUTCD. Therefore, a Multi-Way Stop Application is not considered a proper traffic control measure for this intersection.

4.2 Roundabout Analysis (Findings)

Using the collected Peak Hour Turning Movement Counts, SIDRA Intersection analyzes were conducted to develop a Conceptual Roundabout Layout Design that would meet current (3-Year Build) and projected future (20-Year Design) traffic demands and turning movement characteristics.

Key considerations in the development of the conceptual roundabout layout design were a desire to use available public rights-of-way (State and local) and avoid the acquisition of additional private properties. In addition, the layout effort was mindful of nearby driveway connections, utility locations, sidewalk installations, and drainage systems.

4.2 Roundabout Analysis (Findings) - (Continued)

The Sidra Intersection analyzes revealed a single-lane roundabout was sufficient to meet the current and future traffic demands. The concept design also incorporated bypass lanes on the northbound and westbound approaches to the roundabout for exclusive right-turn movements and a pedestrian crosswalk on the northbound approach connecting the existing sidewalks.

In addition to the roundabout accommodating both current and future traffic demands, the roundabout will have the benefit of controlling speeds along the LA 1091 (Robert Boulevard) corridor and reducing accidents currently experienced at the intersection. As noted earlier, the spot speed studies revealed the 85 percentile speed exceeds the posted speed limit by 10 mph or greater and 75% of existing accidents are considered “correctible crashes” with a roundabout.

The Sidra Intersection analysis indicates the Country Club Boulevard and John Slidell Park side-street approaches will see significant reductions in delays with the installation of a roundabout while having limited impact on the efficient flow of traffic along LA 1091 (Robert Boulevard). For one example, during the P.M. peak hour for the Build Year (2021), existing level of service for both side street approaches will go from an existing LOS F to a LOS A. All other approaches to the roundabout will also experience LOS A. *Tables 8A & B and 9A & B on the following pages provide side-by-side comparisons of the Sidra Intersection analyzes for the Build Year (2021) and Design Year (2041), respectively, during the peak hours for the existing intersection (Two-Way Stop) and proposed roundabout.*

A.M. PEAK HOUR (WEEKDAY)												
	Intersection LOS				Intersection Delay (s)			Analysis Year				
Existing (Two-Way Stop)	A				5.4			Build Year (2021)				
Roundabout	A				1.3			Build Year (2021)				
	Approach LOS					Approach v/c Ratio						
	LA 1091 (Robert Boulevard)		Country Club/John Slidell Park			LA 1091 (Robert Boulevard)		Country Club/John Slidell Park				
	NB	SB	EB	WB		NB	SB	EB	WB			
Existing (Two-Way Stop)	A	A	E	E		0.223	0.310	0.635	0.176			
Roundabout	A	A	A	A		0.358	0.632	0.242	0.016			
Delay (sec/veh)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	4.2	0.0	0.8	2.4	0.0	0.1	77.8	15.3	40.8	55.7	5.0	41.4
Roundabout	0.5	0.7	0.5	0.8	0.8	0.8	5.7	5.7	5.7	2.5	4.3	2.9
95th Percentile Queue Length (ft)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	12.7	0.0	12.7	1.9	0.0	1.9	70.1	32.1	70.1	14.5	0.9	14.5
Roundabout	69.4	1.7	69.4	172.5	172.5	172.5	35.1	35.1	35.1	2.1	0.9	2.1
P.M. PEAK HOUR (WEEKDAY)												
	Intersection LOS				Intersection Delay (s)			Analysis Year				
Existing (Two-Way Stop)	D				26.4			Build Year (2021)				
Roundabout	A				1.9			Build Year (2021)				
	Approach LOS					Approach v/c Ratio						
	LA 1091 (Robert Boulevard)		Country Club/John Slidell Park			LA 1091 (Robert Boulevard)		Country Club/John Slidell Park				
	NB	SB	EB	WB		NB	SB	EB	WB			
Existing (Two-Way Stop)	A	A	F	F		0.450	0.335	1.917	0.876			
Roundabout	A	A	A	A		0.691	0.674	0.198	0.040			
Delay (sec/veh)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	5.4	0.0	1.5	6.6	0.0	1.1	656.8	11.0	318.7	322.4	18.0	176.3
Roundabout	1.2	1.0	1.2	1.8	1.7	1.8	5.4	5.4	5.4	6.1	6.9	6.5
95th Percentile Queue Length (ft)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	50.9	0.0	50.9	23.9	0.0	23.9	352.1	17.6	352.1	80.5	8.2	80.5
Roundabout	209.7	8.8	209.7	186.8	186.8	186.8	29.2	29.2	29.2	6.4	5.9	6.4

TABLE 8A - SIDRA INTERSECTION ANALYSIS COMPARISON TABLE (BUILD YEAR 2021)
 EXISTING INTERSECTION (TWO-WAY STOP) VERSUS ROUNDABOUT

MIDDAY PEAK HOUR (WEEKEND)													
	Intersection LOS				Intersection Delay (s)			Analysis Year					
Existing (Two-Way Stop)	A				3.8			Build Year (2021)					
Roundabout	A				1.2			Build Year (2021)					
	Approach LOS					Approach v/c Ratio							
	LA 1091 (Robert Boulevard)		Country Club/John Slidell Park			LA 1091 (Robert Boulevard)		Country Club/John Slidell Park					
	NB	SB	EB	WB		NB	SB	EB	WB				
Existing (Two-Way Stop)	A	A	C	D		0.282	0.235	0.328	0.372				
Roundabout	A	A	A	A		0.441	0.496	0.153	0.047				
	Delay (sec/veh)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB			
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall	
Existing (Two-Way Stop)	2.8	0.0	0.7	2.8	0.0	0.2	45.5	6.8	19.9	52.0	7.3	34.9	
Roundabout	0.4	0.5	0.5	1.2	1.1	1.2	3.8	3.8	3.8	3.2	4.1	3.5	
	95th Percentile Queue Length (ft)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB			
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall	
Existing (Two-Way Stop)	18.7	0.0	18.7	4.5	0.0	4.5	31.4	15.9	31.4	35.6	5.1	35.6	
Roundabout	91.7	2.8	91.7	100.5	100.5	100.5	20.9	20.9	20.9	6.5	4.1	6.5	

**TABLE 8B - SIDRA INTERSECTION ANALYSIS COMPARISON TABLE (BUILD YEAR 2021)
 EXISTING INTERSECTION (TWO-WAY STOP) VERSUS ROUNDABOUT**

A.M. PEAK HOUR (WEEKDAY)												
	Intersection LOS				Intersection Delay (s)			Analysis Year				
Existing (Two-Way Stop)	B				12.5			Design Year (2041)				
Roundabout	A				1.3			Design Year (2041)				
	Approach LOS					Approach v/c Ratio						
	LA 1091 (Robert Boulevard)		Country Club/John Slidell Park			LA 1091 (Robert Boulevard)		Country Club/John Slidell Park				
	NB	SB	EB	WB		NB	SB	EB	WB			
Existing (Two-Way Stop)	A	A	F	F		0.262	0.362	1.102	0.363			
Roundabout	A	A	A	A		0.379	0.674	0.240	0.018			
	Delay (sec/veh)											
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	5.7	0.0	1.1	3.3	0.0	0.1	236.2	25.5	111.8	118.8	6.6	87.8
Roundabout	0.4	0.5	0.4	0.8	0.8	0.8	6.3	6.3	6.3	2.6	4.1	2.9
	95th Percentile Queue Length (ft)											
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	17.5	0.0	17.5	2.9	0.0	2.9	174.4	45.5	174.4	29.4	1.2	29.4
Roundabout	77.2	1.8	77.2	201.0	201.0	201.0	37.4	37.4	37.4	2.5	1.0	2.5
P.M. PEAK HOUR (WEEKDAY)												
	Intersection LOS				Intersection Delay (s)			Analysis Year				
Existing (Two-Way Stop)	F				76.8			Design Year (2041)				
Roundabout	A				1.9			Design Year (2041)				
	Approach LOS					Approach v/c Ratio						
	LA 1091 (Robert Boulevard)		Country Club/John Slidell Park			LA 1091 (Robert Boulevard)		Country Club/John Slidell Park				
	NB	SB	EB	WB		NB	SB	EB	WB			
Existing (Two-Way Stop)	A	A	F	F		0.526	0.402	4.663	2.530			
Roundabout	A	A	A	A		0.730	0.712	0.200	0.052			
	Delay (sec/veh)											
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	7.8	0.0	2.0	9.9	0.0	1.9	2115.4	16.7	1018.6	1292.0	29.7	688.3
Roundabout	1.3	0.9	1.2	1.6	1.6	1.7	5.8	5.8	5.8	7.4	8.7	8.0
	95th Percentile Queue Length (ft)											
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB		
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall
Existing (Two-Way Stop)	69.4	0.0	69.4	41.0	0.0	41.0	642.6	23.6	642.6	288.4	14.3	288.4
Roundabout	241.0	9.3	241.0	216.0	216.0	216.0	31.9	31.9	31.9	8.7	8.4	8.7

TABLE 9A - SIDRA INTERSECTION ANALYSIS COMPARISON TABLE (DESIGN YEAR 2041)
 EXISTING INTERSECTION (TWO-WAY STOP) VERSUS ROUNDABOUT

MIDDAY PEAK HOUR (WEEKEND)													
	Intersection LOS				Intersection Delay (s)			Analysis Year					
	A				7.0			Design Year (2041)					
Existing (Two-Way Stop)	A				1.2			Design Year (2041)					
Roundabout	A				1.2			Design Year (2041)					
	Approach LOS					Approach v/c Ratio							
	LA 1091 (Robert Boulevard)		Country Club/John Slidell Park			LA 1091 (Robert Boulevard)		Country Club/John Slidell Park					
	NB	SB	EB	WB		NB	SB	EB	WB				
Existing (Two-Way Stop)	A	A	E	F		0.327	0.274	0.527	0.692				
Roundabout	A	A	A	A		0.466	0.526	0.147	0.052				
	Delay (sec/veh)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB			
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall	
Existing (Two-Way Stop)	3.7	0.0	0.9	3.8	0.0	0.3	89.3	9.0	36.4	117.6	10.0	77.2	
Roundabout	0.4	0.5	0.4	1.2	1.1	1.2	4.0	4.0	4.0	3.5	4.4	3.8	
	95th Percentile Queue Length (ft)												
	LA 1091 (Robert Boulevard) - NB			LA 1091 (Robert Boulevard) - SB			Country Club Boulevard - EB			John Slidell Park - WB			
	LT/Thru	Thru/RT	Overall	LT/Thru	Thru/RT	Overall	LT/Thru	RT	Overall	LT/Thru	RT	Overall	
Existing (Two-Way Stop)	24.5	0.0	24.5	6.6	0.0	6.6	50.1	18.6	50.1	71.3	7.2	71.3	
Roundabout	101.2	3.0	101.2	112.9	112.9	112.9	21.1	21.1	21.1	7.6	5.0	7.6	

**TABLE 9B - SIDRA INTERSECTION ANALYSIS COMPARISON TABLE (DESIGN YEAR 2041)
 EXISTING INTERSECTION (TWO-WAY STOP) VERSUS ROUNDABOUT**

4.3 Recommended Roundabout Layout Design

Based on geometrical and operational criteria outlined in LADOTD Roadway Design Procedure and Details Manual for Roundabout Design, the following roundabout layout design is recommended for the LA 1091 (Robert Boulevard) @ Country Club Boulevard and John Slidell Park intersection. The proposed single lane roundabout (offset left) consists of the following key parameters.

Inscribed Circle - 130 ft. to accommodate WB-67 design vehicle.

Circulatory Width - 20 ft.

Truck Apron - 18 ft.

Entry Radius - 100 ft. on all approaches to roundabout

Exit Radius - 400 ft. on all exits from the roundabout with the exception to Country Club Boulevard (200 ft. radius). This reduced exit radius is due to right-of-way constraints at Country Club Boulevard.

Auxiliary Lanes - Right-turn bypass lanes on the LA 1091 (Robert Boulevard) northbound approach and John Slidell Park westbound approach.

Splitter Islands - Minimum 75 ft. on LA 1091 (Robert Boulevard) approaches and minimum 50 ft. on the Country Club Boulevard and John Slidell Park approaches.

Pedestrian Crosswalks - Located on the LA 1091 (Robert Boulevard) northbound approach and positioned at least 20 ft. from yield point to center of crosswalk.

Pedestrian Sidewalks - Offset from the circulatory roadway by a minimum of 2 ft.

Figure 12 and 13 on the following pages provide a Plan View and Geometric Details sheet for the Recommended Roundabout Layout Design.

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The AutoTURN analysis indicated that the Recommended Roundabout Layout Design accommodates WB-67 trucks on all approaches and exits to the roundabout with one exception. WB-67 trucks arriving on the LA 1091 (Robert Boulevard) southbound approach and turning right onto Country Club Boulevard overlap the outside edge of the travel lane by approximately 2 feet. There is sufficient space available on this approach to provide additional pavement for the truck over tracking. It should be noted, however, that Country Club Subdivision exclusively serves a residential subdivision and large truck traffic is not routine.

The VISSIM simulation models corroborated the results of the Sidra Intersection analysis and confirmed efficient operation of the Recommended Roundabout Layout Design for both the Build Year (3-Years) and Design Year (20-Years).

Field inspections indicate the roundabout will require the relocations of existing utilities along the east side of LA 1091 (Robert Boulevard) in the immediate vicinity of the intersection. These utility conflicts include buried gas and fiber optic lines that run adjacent to the highway, and above ground poles for overhead power lines and street lights. These utility relocations appear typical of those resulting from a highway widening project and/or installation of a roundabout.

4.3 Recommended Roundabout Layout Design - (Continued)

The roundabout installation will require the acquisition of City of Slidell public right-of-way servicing John Slidell Park. This may require a Section 4(f) environmental review due to the proximity of John Slidell Park, but a determination of de minimis impact is considered likely.

It is recommended that this project is funded as an Urban System Project and incorporated into the Regional Planning Commission (RPC) Transportation Improvement Program (TIP).

A Summary of Estimated Quantities (*See Table 10 on the following pages*) was prepared for the Recommended Roundabout Layout Design and the Opinion of Probable Construction Costs for the project is as follows.

Opinion of Probable Construction Costs = **\$ 2,172,500.00**

THIS COMPLETES THE NARRATIVE OF THE STAGE 0 FEASIBILITY REPORT

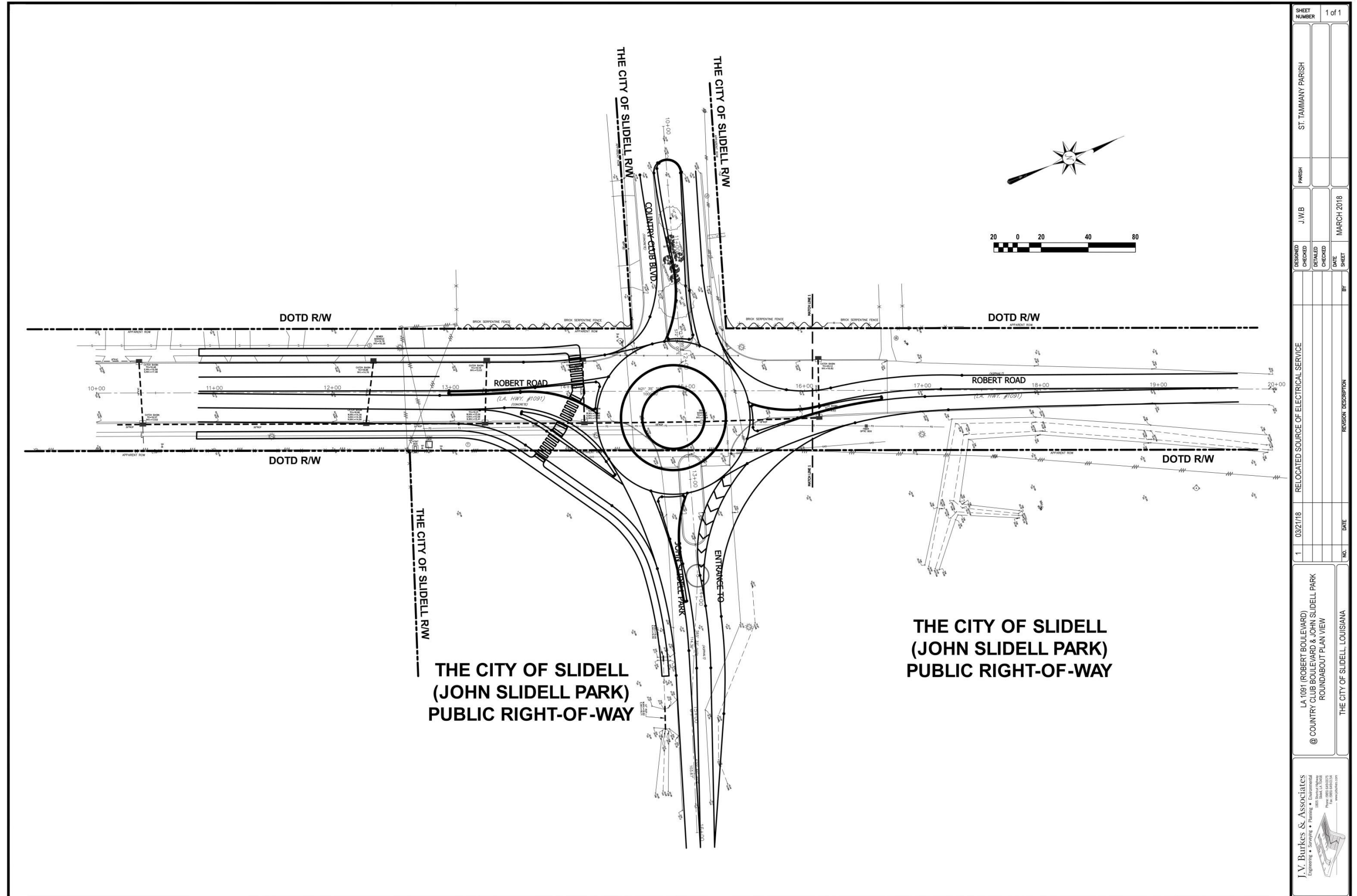


FIGURE 12 - RECOMMENDED ROUNDABOUT LAYOUT DESIGN (PLAN VIEW)

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 Fax: (504) 885-0071
 www.jvburkes.com

LA 1091 (ROBERT BOULEVARD)
 @ COUNTRY CLUB BOULEVARD & JOHN SLIDELL PARK
 ROUNDABOUT PLAN VIEW
 THE CITY OF SLIDELL, LOUISIANA

NO.	DATE	REVISION DESCRIPTION	BY
1	03/21/18	RELOCATED SOURCE OF ELECTRICAL SERVICE	

DESIGNED	CHECKED	DATE	SHEET

J.W.B.	PARISH	DATE
	ST. TAMMANY PARISH	MARCH 2018

SHEET NUMBER	1 of 1
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SUMMARY OF ESTIMATED QUANTITIES

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
201-01-00100	Clearing and Grubbing	LUMP	1	5,000.00	5,000.00
202-01-00100	Removal of Structures and Obstructions	LUMP	1	10,000.00	10,000.00
202-02-02020	Removal of Asphalt Pavement	SQYD	1,800	6.50	11,700.00
202-02-32500	Removal of Portland Cement Concrete Pavement	SQYD	750	10.00	7,500.00
202-02-38500	Removal of Surfacing and Stabilized Base	SQYD	350	12.00	4,200.00
203-01-00100	General Excavation	CUYD	7,200	12.00	86,400.00
203-03-00100	Embankment	CUYD	6,600	24.00	158,400.00
204-02-00100	Temporary Hay or Straw Bales	EACH	55	20.00	1,100.00
204-06-00100	Temporary Silt Fencing	LNFT	2,800	2.00	5,600.00
302-02-05080	Class II Base Course (10" Thick) (Asphaltic Concrete Base on Embankment Layer)	SQYD	6,500	55.00	357,500.00
305-01-04020	Subgrade Layer (12" Thick) (Treated)	SQYD	6,500	20.00	130,000.00
402-01-00100	Traffic Maintenance Aggregate (Vehicular Measurement)	CUYD	350	55.00	19,250.00
502-01-00100	Superpave Asphaltic Concrete	TON	3,800	125.00	475,000.00
509-01-00100	Cold Planing Asphaltic Pavement	SQYD	3,900	9.00	35,100.00
601-01-00700	Portland Cement Concrete Pavement (11" Thick)	SQYD	900	120.00	108,000.00
701-03-01000	Storm Drain Pipe (15"RCP/PP)	LNFT	80	60.00	4,800.00
701-03-01040	Storm Drain Pipe (24"RCP/PP)	LNFT	300	80.00	24,000.00
702-03-00100	Catch Basin (CB-01)	EACH	5	2,500.00	12,500.00
702-03-00500	Catch Basin (CB-06)	EACH	5	3,500.00	17,500.00
706-01-00100	Concrete Walk (4" THICK)	SQYD	320	55.00	17,600.00
706-02-00200	Concrete Drive (6" THICK)	SQYD	400	90.00	36,000.00
707-01-00200	Concrete Curb (Barrier)	LNFT	350	15.00	5,250.00
707-03-00100	Combination Concrete Curb And Gutter	LNFT	4,000	35.00	140,000.00
708-01-00100	Right-Of-Way Monument	EACH	15	300.00	4,500.00
713-01-00100	Temporary Signs and Barricades	LUMP	1	40,000.00	40,000.00
727-01-00100	Mobilization	LUMP	1	150,000.00	150,000.00
729-01-00100	Sign (Type A)	SQYD	210	25.00	5,250.00
729-22-00100	Square Tubing Post with 2-1/4" Anchor	EACH	6	90.00	540.00
731-02-00100	Reflectorized Raised Pavement Markers	EACH	260	10.00	2,600.00
732-01-02040	Plastic Pavement Striping (8" Width) (Thermoplastic 125 mil)	LNFT	450	3.00	1,350.00
732-01-02060	Plastic Pavement Striping (12" Width) (Thermoplastic 125 mil)	LNFT	190	6.00	1,140.00
732-02-02000	Plastic Pavement Striping (Solid Line) (4" Width) (Thermoplastic 90 mil)	MILE	1	9,000.00	11,700.00
732-03-02000	Plastic Pavement Striping (Broken Line) (4" Width) (Thermoplastic 90 mil)	MILE	0.15	5,000.00	750.00
732-03-02010	Plastic Pvmt Strip (Dotted Line) (4" W) (2' L) (Thermo 90 mil)	MILE	0.05	6,500.00	325.00
732-03-02050	Plastic Pvmt Strip (Dotted Line) (12" W) (2' L) (Thermo 90 mil)	MILE	0.05	20,000.00	1,000.00
732-04-01100	Plastic Pavement Legends and Symbols (Arrow - Right Turn)	EACH	2	350.00	700.00
732-04-01133	Plastic Pvmt Lgnds and Symb (Dir Arr Rndbt - Fshk) (Type LC)	EACH	3	1,200.00	3,600.00
732-04-15020	Plastic Pavement Legends and Symbols (Only)	EACH	2	500.00	1,000.00
739-01-00100	Hydo-Seeding	ACRE	4	1,400.00	5,600.00
740-01-00100	Construction Layout	LUMP	1	50,000.00	50,000.00
NS-500-00340	Saw Cutting Asphaltic Concrete Pavement	INLT	7,600	1.00	7,600.00
NS-600-00220	Saw Cutting Portland Cement Concrete Pavement	INLT	4,700	1.00	4,700.00
NS-729-00029	Breakaway Square Tubing Sign Support w/Mowing Pad - Soil	EACH	15	450.00	6,750.00
NS-500-00340	Breakaway Square Tubing Sign Support - Wet Concrete	EACH	10	350.00	3,500.00
Construction Total =					1,975,005.00
10% Contingency =					197,500.50
Final Total =					2,172,505.50

TABLE 10 - SUMMARY OF ESTIMATED QUANTITIES

APPENDIX

Monday

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park
The City of Slidell, St. Tammany Parish, Louisiana

Major Street: NB & SB

LA 1091 (Robert Boulevard) (NB)

LA 1091 (Robert Boulevard) (SB)

Minor Street: EB & WB

Country Club Boulevard (EB)

& John Slidell Park (WB)

Time Start	Major Street			Minor Street			Grand Total
	NB	SB	Total	EB	WB	Total	
12 A.M.	19	49	68	3	1	4	72
1 A.M.	20	22	42	1	0	1	43
2 A.M.	14	23	37	4	0	4	41
3 A.M.	9	18	27	3	0	3	30
4 A.M.	23	34	57	14	3	17	74
5 A.M.	55	96	151	19	3	22	173
6 A.M.	156	245	401	53	15	68	469
7 A.M.	359	481	840	137	16	153	993
8 A.M.	386	436	822	89	27	116	938
9 A.M.	357	483	840	68	48	116	956
10 A.M.	416	486	902	60	43	103	1005
11 A.M.	464	509	973	74	30	104	1077
12 P.M.	505	577	1082	75	19	94	1176
1 P.M.	501	578	1079	76	15	91	1170
2 P.M.	537	536	1073	83	27	110	1183
3 P.M.	665	558	1223	92	38	130	1353
4 P.M.	694	562	1256	81	24	105	1361
5 P.M.	702	563	1265	76	30	106	1371
6 P.M.	546	522	1068	90	2	92	1160
7 P.M.	347	389	736	45	1	46	782
8 P.M.	255	310	565	25	1	26	591
9 P.M.	156	211	367	15	1	16	383
10 P.M.	107	146	253	3	2	5	258
11 P.M.	52	68	120	2	2	4	124
Total	7345	7902	15247	1188	348	1536	16783

24-HOUR TRAFFIC VOLUMES

Tuesday

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park
The City of Slidell, St. Tammany Parish, Louisiana

Major Street: NB & SB

LA 1091 (Robert Boulevard) (NB)

LA 1091 (Robert Boulevard) (SB)

Minor Street: EB & WB

Country Club Boulevard (EB)

& John Slidell Park (WB)

Time Start	Major Street			Minor Street			Grand Total
	NB	SB	Total	EB	WB	Total	
12 A.M.	23	30	53	4	0	4	57
1 A.M.	14	29	43	0	1	1	44
2 A.M.	9	19	28	1	0	1	29
3 A.M.	12	16	28	4	0	4	32
4 A.M.	33	47	80	15	1	16	96
5 A.M.	52	79	131	32	4	36	167
6 A.M.	179	237	416	46	9	55	471
7 A.M.	373	455	828	142	14	156	984
8 A.M.	429	465	894	134	26	160	1054
9 A.M.	379	440	819	67	27	94	913
10 A.M.	410	507	917	71	37	108	1025
11 A.M.	459	528	987	74	26	100	1087
12 P.M.	492	603	1095	96	29	125	1220
1 P.M.	461	568	1029	108	45	153	1182
2 P.M.	523	549	1072	70	27	97	1169
3 P.M.	687	615	1302	90	54	144	1446
4 P.M.	816	569	1385	112	70	182	1567
5 P.M.	805	541	1346	85	62	147	1493
6 P.M.	599	521	1120	69	22	91	1211
7 P.M.	454	448	902	37	18	55	957
8 P.M.	296	291	587	19	5	24	611
9 P.M.	168	201	369	16	4	20	389
10 P.M.	109	152	261	10	0	10	271
11 P.M.	32	81	113	3	0	3	116
Total	7814	7991	15805	1305	481	1786	17591

24-HOUR TRAFFIC VOLUMES

Wednesday

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park
The City of Slidell, St. Tammany Parish, Louisiana

Major Street: NB & SB

LA 1091 (Robert Boulevard) (NB)

LA 1091 (Robert Boulevard) (SB)

Minor Street: EB & WB

Country Club Boulevard (EB)

& John Slidell Park (WB)

Time Start	Major Street			Minor Street			Grand Total
	NB	SB	Total	EB	WB	Total	
12 A.M.	36	45	81	4	0	4	85
1 A.M.	18	27	45	3	0	3	48
2 A.M.	8	15	23	2	0	2	25
3 A.M.	12	18	30	3	0	3	33
4 A.M.	23	40	63	16	2	18	81
5 A.M.	58	89	147	23	10	33	180
6 A.M.	172	235	407	48	9	57	464
7 A.M.	386	463	849	133	15	148	997
8 A.M.	409	462	871	125	22	147	1018
9 A.M.	369	458	827	66	40	106	933
10 A.M.	374	479	853	83	47	130	983
11 A.M.	502	503	1005	80	20	100	1105
12 P.M.	527	561	1088	78	31	109	1197
1 P.M.	439	562	1001	82	30	112	1113
2 P.M.	489	544	1033	91	42	133	1166
3 P.M.	706	575	1281	72	47	119	1400
4 P.M.	783	559	1342	98	71	169	1511
5 P.M.	769	522	1291	89	62	151	1442
6 P.M.	578	570	1148	67	36	103	1251
7 P.M.	417	448	865	42	3	45	910
8 P.M.	332	365	697	32	11	43	740
9 P.M.	187	238	425	16	3	19	444
10 P.M.	115	143	258	5	0	5	263
11 P.M.	48	79	127	5	1	6	133
Total	7757	8000	15757	1263	502	1765	17522

24-HOUR TRAFFIC VOLUMES

Thursday

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park
The City of Slidell, St. Tammany Parish, Louisiana

Major Street: NB & SB

LA 1091 (Robert Boulevard) (NB)

LA 1091 (Robert Boulevard) (SB)

Minor Street: EB & WB

Country Club Boulevard (EB)

& John Slidell Park (WB)

Time Start	Major Street			Minor Street			Grand Total
	NB	SB	Total	EB	WB	Total	
12 A.M.	23	43	66	2	1	3	69
1 A.M.	16	27	43	0	0	0	43
2 A.M.	10	26	36	1	0	1	37
3 A.M.	10	22	32	2	0	2	34
4 A.M.	20	41	61	14	1	15	76
5 A.M.	60	95	155	23	11	34	189
6 A.M.	166	235	401	49	9	58	459
7 A.M.	370	435	805	140	19	159	964
8 A.M.	405	469	874	109	23	132	1006
9 A.M.	378	490	868	74	32	106	974
10 A.M.	374	504	878	81	35	116	994
11 A.M.	451	530	981	61	36	97	1078
12 P.M.	488	609	1097	62	28	90	1187
1 P.M.	482	561	1043	79	44	123	1166
2 P.M.	544	542	1086	84	40	124	1210
3 P.M.	694	584	1278	106	55	161	1439
4 P.M.	807	630	1437	92	109	201	1638
5 P.M.	750	582	1332	101	30	131	1463
6 P.M.	636	563	1199	78	27	105	1304
7 P.M.	485	424	909	50	17	67	976
8 P.M.	328	371	699	23	4	27	726
9 P.M.	204	254	458	33	0	33	491
10 P.M.	107	183	290	11	0	11	301
11 P.M.	70	106	176	4	0	4	180
Total	7878	8326	16204	1279	521	1800	18004

24-HOUR TRAFFIC VOLUMES

Friday

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park
The City of Slidell, St. Tammany Parish, Louisiana

Major Street: NB & SB

LA 1091 (Robert Boulevard) (NB)

LA 1091 (Robert Boulevard) (SB)

Minor Street: EB & WB

Country Club Boulevard (EB)

& John Slidell Park (WB)

Time Start	Major Street			Minor Street			Grand Total
	NB	SB	Total	EB	WB	Total	
12 A.M.	23	49	72	3	0	3	75
1 A.M.	15	40	55	0	0	0	55
2 A.M.	10	22	32	1	0	1	33
3 A.M.	18	19	37	3	1	4	41
4 A.M.	22	35	57	17	2	19	76
5 A.M.	60	97	157	18	3	21	178
6 A.M.	163	218	381	61	13	74	455
7 A.M.	412	472	884	123	18	141	1025
8 A.M.	433	535	968	100	15	115	1083
9 A.M.	383	538	921	126	21	147	1068
10 A.M.	403	437	840	84	29	113	953
11 A.M.	498	680	1178	77	34	111	1289
12 P.M.	512	784	1296	87	20	107	1403
1 P.M.	529	745	1274	104	18	122	1396
2 P.M.	570	796	1366	90	15	105	1471
3 P.M.	669	900	1569	93	32	125	1694
4 P.M.	709	853	1562	84	15	99	1661
5 P.M.	720	825	1545	109	7	116	1661
6 P.M.	607	738	1345	76	4	80	1425
7 P.M.	477	650	1127	41	2	43	1170
8 P.M.	331	528	859	39	5	44	903
9 P.M.	231	347	578	30	4	34	612
10 P.M.	180	247	427	23	3	26	453
11 P.M.	113	152	265	8	0	8	273
Total	8088	10707	18795	1397	261	1658	20453

24-HOUR TRAFFIC VOLUMES

Saturday

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park
The City of Slidell, St. Tammany Parish, Louisiana

Major Street: NB & SB

LA 1091 (Robert Boulevard) (NB)

LA 1091 (Robert Boulevard) (SB)

Minor Street: EB & WB

Country Club Boulevard (EB)

& John Slidell Park (WB)

Time Start	Major Street			Minor Street			Grand Total
	NB	SB	Total	EB	WB	Total	
12 A.M.	48	128	176	2	0	2	178
1 A.M.	27	69	96	0	0	0	96
2 A.M.	20	48	68	0	0	0	68
3 A.M.	14	21	35	2	0	2	37
4 A.M.	15	26	41	10	1	11	52
5 A.M.	31	60	91	7	5	12	103
6 A.M.	77	114	191	18	16	34	225
7 A.M.	155	262	417	59	19	78	495
8 A.M.	280	438	718	75	47	122	840
9 A.M.	389	599	988	85	65	150	1138
10 A.M.	440	599	1039	87	43	130	1169
11 A.M.	487	628	1115	107	32	139	1254
12 P.M.	494	619	1113	102	38	140	1253
1 P.M.	501	551	1052	85	58	143	1195
2 P.M.	551	561	1112	101	55	156	1268
3 P.M.	462	511	973	75	33	108	1081
4 P.M.	493	507	1000	72	55	127	1127
5 P.M.	520	488	1008	97	10	107	1115
6 P.M.	476	459	935	87	5	92	1027
7 P.M.	390	401	791	42	3	45	836
8 P.M.	245	357	602	23	4	27	629
9 P.M.	224	286	510	40	1	41	551
10 P.M.	200	239	439	53	0	53	492
11 P.M.	101	161	262	21	2	23	285
Total	6640	8132	14772	1250	492	1742	16514

24-HOUR TRAFFIC VOLUMES

Sunday

*LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park
The City of Slidell, St. Tammany Parish, Louisiana*

Major Street: NB & SB

Minor Street: EB & WB

LA 1091 (Robert Boulevard) (NB)

Country Club Boulevard (EB)

LA 1091 (Robert Boulevard) (SB)

& John Slidell Park (WB)

Time Start	Major Street			Minor Street			Grand Total
	NB	SB	Total	EB	WB	Total	
12 A.M.	63	81	144	10	0	10	154
1 A.M.	41	75	116	5	0	5	121
2 A.M.	21	45	66	2	3	5	71
3 A.M.	16	41	57	5	1	6	63
4 A.M.	22	38	60	5	2	7	67
5 A.M.	26	39	65	7	1	8	73
6 A.M.	50	82	132	16	9	25	157
7 A.M.	122	164	286	27	3	30	316
8 A.M.	179	281	460	67	6	73	533
9 A.M.	262	333	595	51	7	58	653
10 A.M.	320	497	817	69	16	85	902
11 A.M.	382	547	929	64	16	80	1009
12 P.M.	441	607	1048	66	15	81	1129
1 P.M.	430	475	905	58	30	88	993
2 P.M.	355	501	856	58	19	77	933
3 P.M.	408	412	820	58	26	84	904
4 P.M.	372	392	764	61	21	82	846
5 P.M.	389	411	800	73	7	80	880
6 P.M.	411	472	883	49	2	51	934
7 P.M.	290	374	664	29	4	33	697
8 P.M.	207	279	486	21	3	24	510
9 P.M.	129	182	311	7	0	7	318
10 P.M.	91	110	201	8	0	8	209
11 P.M.	50	69	119	4	1	5	124
Total	5077	6507	11584	820	192	1012	12596

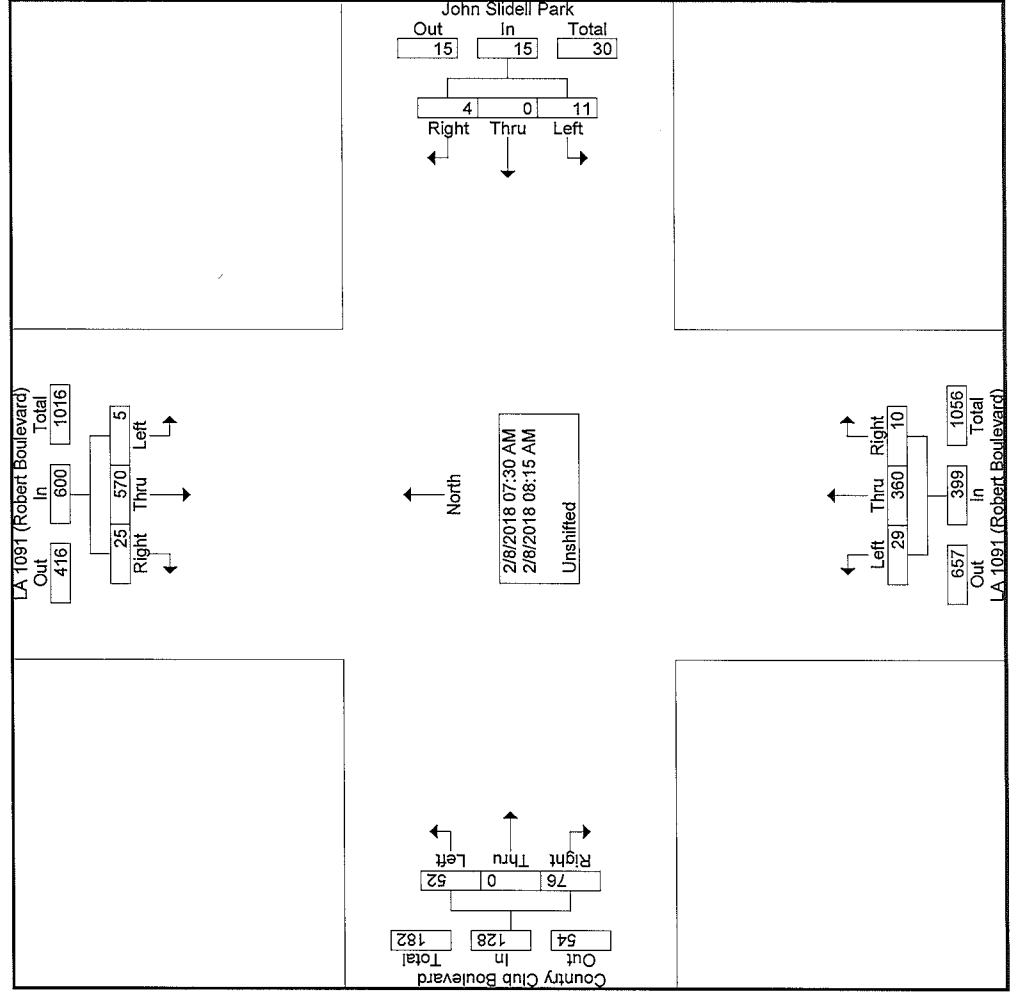
24-HOUR TRAFFIC VOLUMES

J.V. Burkes & Associates
 1805 Shortcut Highway, Slidell, LA 70458

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park

The City of Slidell
St. Tammany Parish, LA

File Name : am peak hour 020818 (thu)
 Site Code : 00000000
 Start Date : 2/8/2018
 Page No : 2



LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park

The City of Slidell
 St. Tammany Parish, LA

File Name : am peak hour 020818 (thu)
 Site Code : 00000000
 Start Date : 2/8/2018
 Page No : 3

Start Time	LA 1091 (Robert Boulevard) From North			John Slidell Park From East			LA 1091 (Robert Boulevard) From South			Country Club Boulevard From West			Int. Total			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		App. Total		
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:30 AM																
07:30 AM	6	131	2	0	0	2	0	71	4	2	108	7	16	0	8	24
07:45 AM	8	164	2	0	0	1	1	104	12	5	104	12	22	0	14	36
08:00 AM	5	136	1	0	0	4	5	77	6	2	85	6	20	0	15	35
08:15 AM	6	139	0	2	0	4	2	360	29	10	90.2	7.3	18	0	15	33
Total Volume	25	570	5	4	0	11	26.7	2.5	15	2.5	399	7.3	76	0	52	128
% App. Total	4.2	95	0.8	0	0	73.3	500	604	824	500	824	604	864	0	40.6	889
PHF	.781	.869	.625	.500	.000	.688	.625	.833	.604	.500	.824	.604	.864	.000	.867	.889

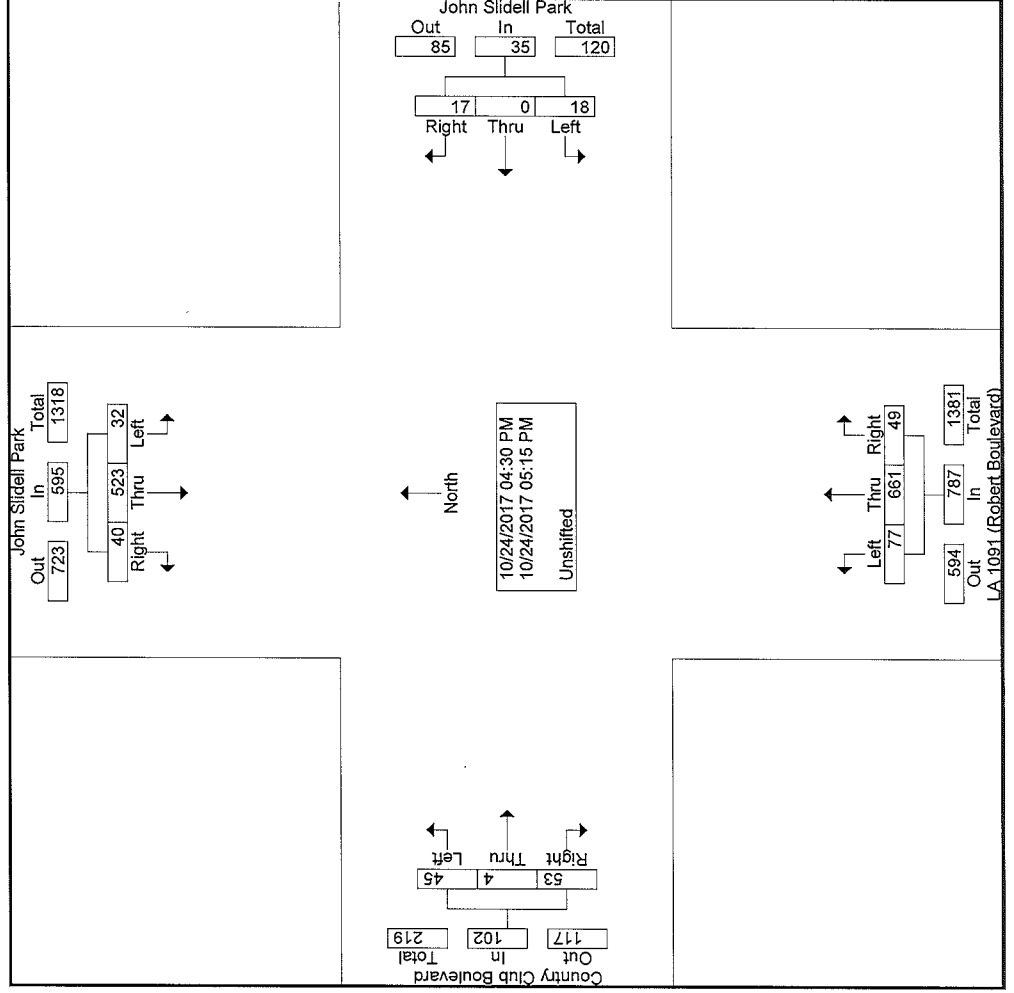
J.V. Burkes & Associates
 1805 Shortcut Highway, Slidell, LA 70458

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park

The City of Slidell

St. Tammany Parish, LA

File Name : PM Peak Hour 102417
 Site Code : 00000000
 Start Date : 10/24/2017
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LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park

The City of Slidell
St. Tammany Parish, LA

File Name : PM Peak Hour 102417
 Site Code : 00000000
 Start Date : 10/24/2017
 Page No : 3

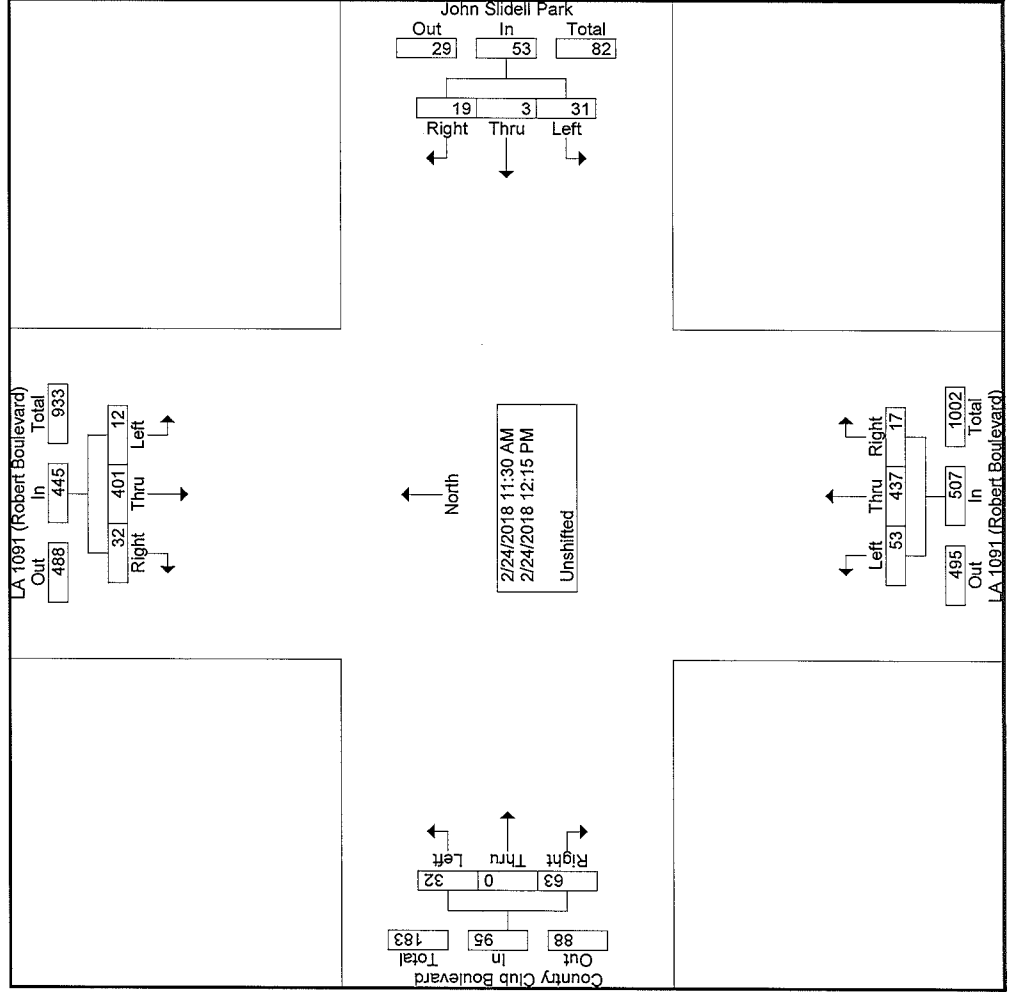
Start Time	John Slidell Park From North				John Slidell Park From East				LA 1091 (Robert Boulevard) From South				Country Club Boulevard From West				
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	11	118	6	135	3	0	5	8	12	162	22	196	7	0	15	22	361
04:45 PM	7	113	12	132	4	0	4	8	7	141	27	175	19	3	10	32	347
05:00 PM	13	133	5	151	3	0	5	8	16	187	14	217	16	0	2	18	394
05:15 PM	9	159	9	177	7	0	4	11	14	171	14	199	11	1	18	30	417
Total Volume	40	523	32	595	17	0	18	35	49	661	77	787	53	4	45	102	1519
% App. Total	6.7	87.9	5.4		48.6	0	51.4		6.2	84	9.8		52	3.9	44.1		
PHF	.769	.822	.667	.840	.607	.000	.900	.795	.766	.884	.713	.907	.697	.333	.625	.797	.911

J.V. Burkes & Associates
 1805 Shortcut Highway, Slidell, LA 70458

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park

The City of Slidell
 St. Tammany Parish, LA

File Name : MD Peak Weekend 022418 (Sat)
 Site Code : 00000000
 Start Date : 2/24/2018
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J.V. Burkes & Associates
 1805 Shortcut Highway, Slidell, LA 70458

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park

The City of Slidell

St. Tammany Parish, LA

File Name : MD Peak Weekend 022418 (Sat)
 Site Code : 00000000
 Start Date : 2/24/2018
 Page No : 3

Start Time	LA 1091 (Robert Boulevard) From North			John Slidell Park From East			LA 1091 (Robert Boulevard) From South			Country Club Boulevard From West			Int. Total	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		App. Total
Peak Hour Analysis From 11:30 AM to 12:15 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 11:30 AM														
11:30 AM	10	97	5	9	1	6	6	108	11	17	0	10	27	280
11:45 AM	7	114	1	5	1	13	4	97	18	19	0	8	27	287
12:00 PM	5	90	4	2	1	5	5	116	13	16	0	5	21	262
12:15 PM	10	100	2	3	0	7	2	116	11	129	0	9	20	271
Total Volume	32	401	12	19	3	31	17	437	53	63	0	32	95	1100
% App. Total	7.2	90.1	2.7	35.8	5.7	58.5	3.4	86.2	10.5	66.3	0	33.7		
PHF	.800	.879	.600	.528	.750	.596	.708	.942	.736	.829	.000	.800	.880	.958

Spot Speed Study

LOCATION:	LA 1091 (Robert Boulevard) 200' south of Country Club Boulevard & John Slidell Park	TIME OF STUDY:	1:15-2:30 P.M.
REPORT#		WEATHER:	Good, Clear
DATE:	February 1, 2018	ROAD CONDITIONS:	Dry
DIRECTION OF TRAVEL:	Northbound	PARISH:	St. Tammany
ROUTE:	LA 1091 (Robert Boulevard)	POSTED SPEED LIMIT:	40 mph
CONTROL SECTION:	852-25		

MEAN (AVERAGE): 46 mph	50TH PERCENTILE: 46 mph
MODE: 45 mph	85TH PERCENTILE: 51 mph
MEDIAN: 46 mph	95TH PERCENTILE: 57 mph
OTTOM OF 10 MPH PACE SPEED: 42 mph	NO. OF OBSERVATIONS: 100
TOP OF 10 MPH PACE SPEED: 52 mph	% OF VEHICLES IN PACE RANGE: 75

SPEED	FREQUENCY	PERCENT	CUMULATIVE PERCENT	SPEED	FREQUENCY	PERCENT	Cumulative PERCENT
15				49	9	0.09	69.00%
16				50	8	0.08	77.00%
17				51	9	0.09	86.00%
18				52	5	0.05	91.00%
19				53	3	0.03	94.00%
20				54			94.00%
21				55			94.00%
22				56	1	0.01	95.00%
23				57			95.00%
24				58	1	0.01	96.00%
25				59			96.00%
26				60	2	0.02	98.00%
27				61	1	0.01	99.00%
28				62	1	0.01	100.00%
29				63			100.00%
30				64			100.00%
31	1	0.01	1.00%	65			100.00%
32			1.00%	66			100.00%
33			1.00%	67			100.00%
34			1.00%	68			100.00%
35	1	0.01	2.00%	69			100.00%
36	2	0.02	4.00%	70			100.00%
37	1	0.01	5.00%	71			100.00%
38	3	0.03	8.00%	72			100.00%
39	1	0.01	9.00%	73			100.00%
40	5	0.05	14.00%	74			100.00%
41	2	0.02	16.00%	75			100.00%
42	5	0.05	21.00%	76			100.00%
43	10	0.10	31.00%	77			100.00%
44	3	0.03	34.00%	78			100.00%
45	13	0.13	47.00%	79			100.00%
46	10	0.10	57.00%	80			100.00%
47	3	0.03	60.00%				100.00%
48			60.00%				100.00%

Spot Speed Study

LOCATION:	LA 1091 (Robert Boulevard) 200' south of Country Club Boulevard & John Slidell Park	TIME OF STUDY:	2:45-4:15 P.M.
REPORT#		WEATHER:	Good, Clear
DATE:	February 1, 2018	ROAD CONDITIONS:	Dry
DIRECTION OF TRAVEL:	Southbound	PARISH:	St. Tammany
ROUTE:	LA 1091 (Robert Boulevard)	POSTED SPEED LIMIT:	40 mph
CONTROL SECTION:	852-25		

MEAN (AVERAGE): 48	50TH PERCENTILE: 49 mph
MODE: 45 & 49 mph	85TH PERCENTILE: 53 mph
MEDIAN: 49 mph	95TH PERCENTILE: 57 mph
OTTOM OF 10 MPH PACE SPEED: 44 mph	NO. OF OBSERVATIONS: 100
TOP OF 10 MPH PACE SPEED: 54 mph	% OF VEHICLES IN PACE RANGE: 75

SPEED	FREQUENCY	PERCENT	CUMULATIVE PERCENT	SPEED	FREQUENCY	PERCENT	Cumulative PERCENT
15				49	12	0.12	59.00%
16				50	6	0.06	65.00%
17				51	8	0.08	73.00%
18				52	4	0.04	77.00%
19				53	9	0.09	86.00%
20				54	4	0.04	90.00%
21				55	2	0.02	92.00%
22				56	2	0.02	94.00%
23				57	1	0.01	95.00%
24				58	1	0.01	96.00%
25				59	1	0.01	97.00%
26				60	2	0.02	99.00%
27				61			99.00%
28				62			99.00%
29				63			99.00%
30				64			99.00%
31				65			99.00%
32				66			99.00%
33				67	1	0.01	100.00%
34				68			100.00%
35	1	0.01	1.00%	69			100.00%
36	2	0.02	3.00%	70			100.00%
37	1	0.01	4.00%	71			100.00%
38			4.00%	72			100.00%
39	2	0.02	6.00%	73			100.00%
40	5	0.05	11.00%	74			100.00%
41	1	0.01	12.00%	75			100.00%
42	1	0.01	13.00%	76			100.00%
43	2	0.02	15.00%	77			100.00%
44	3	0.03	18.00%	78			100.00%
45	12	0.12	30.00%	79			100.00%
46	8	0.08	38.00%	80			100.00%
47	9	0.09	47.00%				100.00%
48			47.00%				100.00%

LADOTD Crash List



Robert Blvd and Country Club Blvd Intersection
Crash Report 2014 - 2017

Route LA 1091 between milepoints 1.80 and 2.151
2014-01-01 to 2017-11-30

Route	Mile Point	Csect	Log Mile	tot acc	pd acc	fat acc	inj acc	num fat	num inj	crash date	most harm evt	manner coll	crash type	surf cond	crash num	ipar ish	hour int	iv agy	dir trav	move prior	ADT	LRS Logmile	
1091	1.80	852-25	1.80	1	0	0	1	0	0	1	2014-01-01	Util Pole/Light Sup	Non Coll	wet	140101220325497	52	21	0	B	S	G	19400	1.801
1091	1.98	852-25	1.98	1	1	0	0	0	0	0	2014-02-27	MV in Trans	Rear End	dry	140307214718399	52	17	1	B	EN	IB	19400	1.977
1091	1.87	852-25	1.87	1	0	0	1	0	0	1	2014-03-05	MV in Trans	Rt Angle	dry	140307033502750	52	21	0	B	ES	AB	19400	1.873
1091	2.04	852-25	2.04	1	1	0	0	0	0	0	2014-05-12	MV in Trans	Rt Angle	dry	140513191218404	52	18	1	B	ES	JA	19400	2.038
1091	1.87	852-25	1.87	1	0	0	1	0	0	1	2014-07-06	MV in Trans	Rt Angle	dry	140713230620796	52	16	1	B	WN	IH	19400	1.870
1091	2.04	852-25	2.04	1	0	0	1	0	0	1	2014-08-21	MV in Trans	Left Turn-f	dry	140826091250347	52	18	1	B	NS	AB	19400	2.040
Total	2014			6	2	0	4	0	4														
1091	1.88	852-25	1.88	1	1	0	0	0	0	0	2015-01-05	MV in Trans	Rt Angle	dry	150105165506442	52	16	1	B	WS	II	17500	1.877
1091	2.04	852-25	2.04	1	0	0	1	0	0	2	2015-02-15	MV in Trans	Left Turn-f	dry	150225013031631	52	16	1	B	NS	IB	17500	2.035
1091	2.04	852-25	2.04	1	1	0	0	0	0	0	2015-03-26	MV in Trans	Rt Angle	wet	150326140555405	52	14	1	B	SS	B	17500	2.039
1091	1.88	852-25	1.88	1	0	0	1	0	0	3	2015-03-27	MV in Trans	Left Turn-f	dry	150329205315146	52	21	1	B	SN	IB	17500	1.879
1091	2.04	852-25	2.04	1	1	0	0	0	0	0	2015-04-01	MV in Trans	Rt Angle	dry	150401203055007	52	18	1	B	WNS	IBB	17500	2.041
1091	1.88	852-25	1.88	1	1	0	0	0	0	0	2015-05-12	MV in Trans	S Swipe(sd)	dry	150512145759970	52	14	1	B	NN	IB	17500	1.877
1091	1.88	852-25	1.88	1	1	0	0	0	0	0	2015-08-08	MV in Trans	Left Turn-e	dry	150817193738222	52	12	0	B	NN	IB	17500	1.876
1091	1.87	852-25	1.87	1	1	0	0	0	0	0	2015-08-22	MV in Trans	Rt Angle	dry	150823121143795	52	09	1	B	WN	IB	17500	1.874
1091	1.87	852-25	1.87	1	1	0	0	0	0	0	2015-12-29	MV in Trans	Left Turn-e	dry	160106205945393	52	18	1	B	NN	IB	17500	1.873
Total	2015			9	7	0	2	0	5														
1091	2.01	852-25	2.01	1	1	0	0	0	0	0	2016-01-09	MV in Trans	Rear End	dry	160114205746670	52	14	0	B	NN	BA	17200	2.011
1091	2.04	852-25	2.04	1	1	0	0	0	0	0	2016-01-23	MV in Trans	Rt Angle	dry	160123063204342	52	17	1	B	ES	IB	17200	2.040

CONFIDENTIAL INFORMATION - This document and the information contained herein is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads which may be implemented utilizing federal aid highway funds; and is therefore exempt from discovery or admission into evidence pursuant to 23 U.S.C. 409. Contact the Traffic Safety Office at (225)379-1871 before releasing any information.

LADOTD Crash List



Robert Blvd and Country Club Blvd Intersection
Crash Report 2014 - 2017

Route LA 1091 between mileposts 1.80 and 2.151
2014-01-01 to 2017-11-30

Route	Mile Point	Csect	Log Mile	tot acc	pdo acc	fat acc	inj acc	num fat	num inj	crash date	most harm evt	manner coll	crash type	surf cond	crash num	par ish	hour	int	iv agy	dir trav	move prior	ADT	LRS Logmile
1091	2.04	852-25	2.04	1	1	0	0	0	0	2016-02-01	MV in Trans	Left Turn-f	2 vehicles	dry	160201180252310	52	17	1	B	SN	IB	17200	2.039
1091	2.02	852-25	2.02	1	0	0	1	0	3	2016-03-10	MV in Trans	S Swipe(sd)	3+ vehicles	dry	160324151926457	52	17	0	B	NNN	HBA	17200	2.018
1091	2.02	852-25	2.02	1	1	0	0	0	0	2016-05-19	MV in Trans	Rear End	2 vehicles	dry	160526023652276	52	16	0	B	NN	BQ	17200	2.018
1091	2.04	852-25	2.04	1	0	0	1	0	2	2016-09-28	MV in Trans	Left Turn-e	2 vehicles	dry	160928221523939	52	17	1	B	NS	IB	17200	2.040
1091	2.04	852-25	2.04	1	0	0	1	0	1	2016-10-13	MV in Trans	Rt Angle	2 vehicles	dry	161020230512952	52	17	1	B	WN	WB	17200	2.038
1091	2.04	852-25	2.04	1	0	0	1	0	1	2016-10-23	MV in Trans	Rear End	2 vehicles	dry	161101023400050	52	11	1	B	SS	BM	17200	2.043
1091	2.04	852-25	2.04	1	0	0	1	0	1	2016-11-04	MV in Trans	Left Turn-e	Motorcycle	dry	161114062414526	52	18	0	B	SN	IB	17200	2.044
1091	2.04	852-25	2.04	1	0	0	1	0	1	2016-11-17	MV in Trans	Left Turn-f	2 vehicles	dry	161123000519403	52	08	1	B	SN	IB	17200	2.038
1091	2.04	852-25	2.04	1	1	0	0	0	0	2016-11-19	MV in Trans	Rt Angle	2 vehicles	dry	161120005455415	52	21	1	B	ES	IB	17200	2.040
Total	2016			11	5	0	6	0	9														
1091	2.04	852-25	2.04	1	1	0	0	0	0	2017-02-14	MV in Trans	Rt Angle	2 vehicles	dry	170214082245392	52	07	1	B	ES	IH	17200	2.038
1091	1.87	852-25	1.87	1	0	0	1	0	1	2017-04-27	MV in Trans	Rear End	2 vehicles	dry	170502155457747	52	16	1	B	SS	BM	17200	1.866
1091	2.03	852-25	2.03	1	1	0	0	0	0	2017-07-08	MV in Trans	Rear End	2 vehicles	dry	170711094426975	52	16	1	B	NN	BA	17200	2.033
1091	1.88	852-25	1.88	1	1	0	0	0	0	2017-08-24	MV in Trans	Rear End	2 vehicles	dry	170829180410309	52	11	0	B	SS	BA	17200	1.876
1091	2.04	852-25	2.04	1	1	0	0	0	0	2017-09-02	MV in Trans	Left Turn-g	2 vehicles	dry	170904041539125	52	19	1	B	EN	IB	17200	2.041
1091	2.04	852-25	2.04	1	0	0	1	0	2	2017-10-24	MV in Trans	Left Turn-f	2 vehicles	dry	171024163906738	52	12	1	B	NS	IB	17200	2.043
Total	2017			6	4	0	2	0	3														
Grand Total				32	18	0	14	0	21														

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report generated by elundin@cityofslidell.org on 12/13/2017 2:57:38 PM



Map Crashes

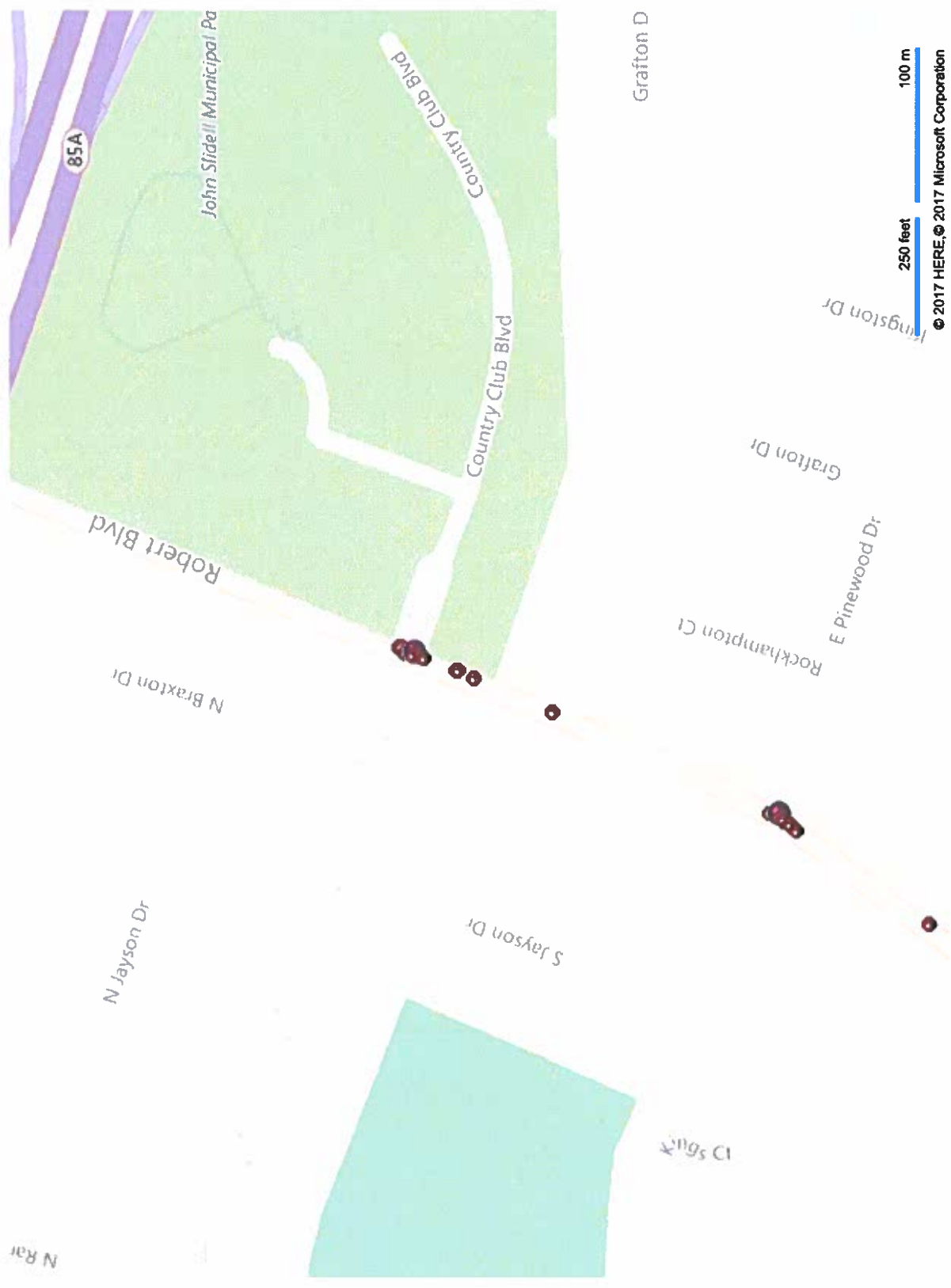
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latitude, longitude:

Measure
Distance:

Current Position:
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Last Clicked Position:

Use Ctrl-Click to
get the LRS ID and
logmile of a point.

Crashes Route LA
1091 between
milepoints 1.80 and
2.151
2014-01-01 to 2017-
11-30



bigger

Lat/Long Formats: dd . dddd dd : mm . mmm dd : mm : ss . s dddmmss

250 feet
100 m
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Map Crashes

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latitude, longitude:

Measure
Distance:

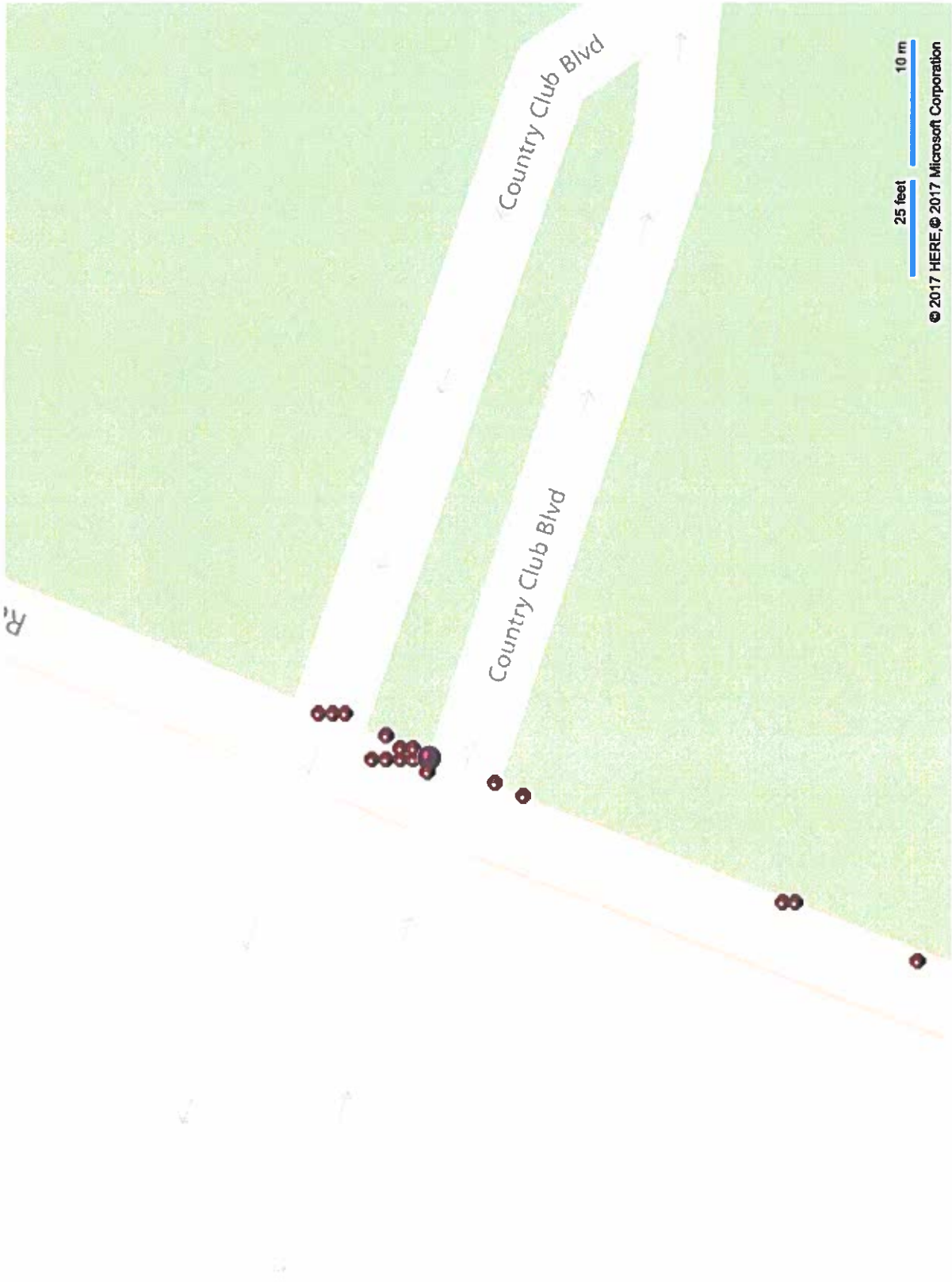
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Use Ctrl-Click to
get the LRS ID and
logmile of a point.

Crashes Route LA
1091 between
milepoints 1.80 and
2.151
2014-01-01 to 2017-
11-30

bigger

Lat/Long Formats: dd . dddd dd : mm . mmm dd : mm : ss . s ddrmmss





Map Crashes

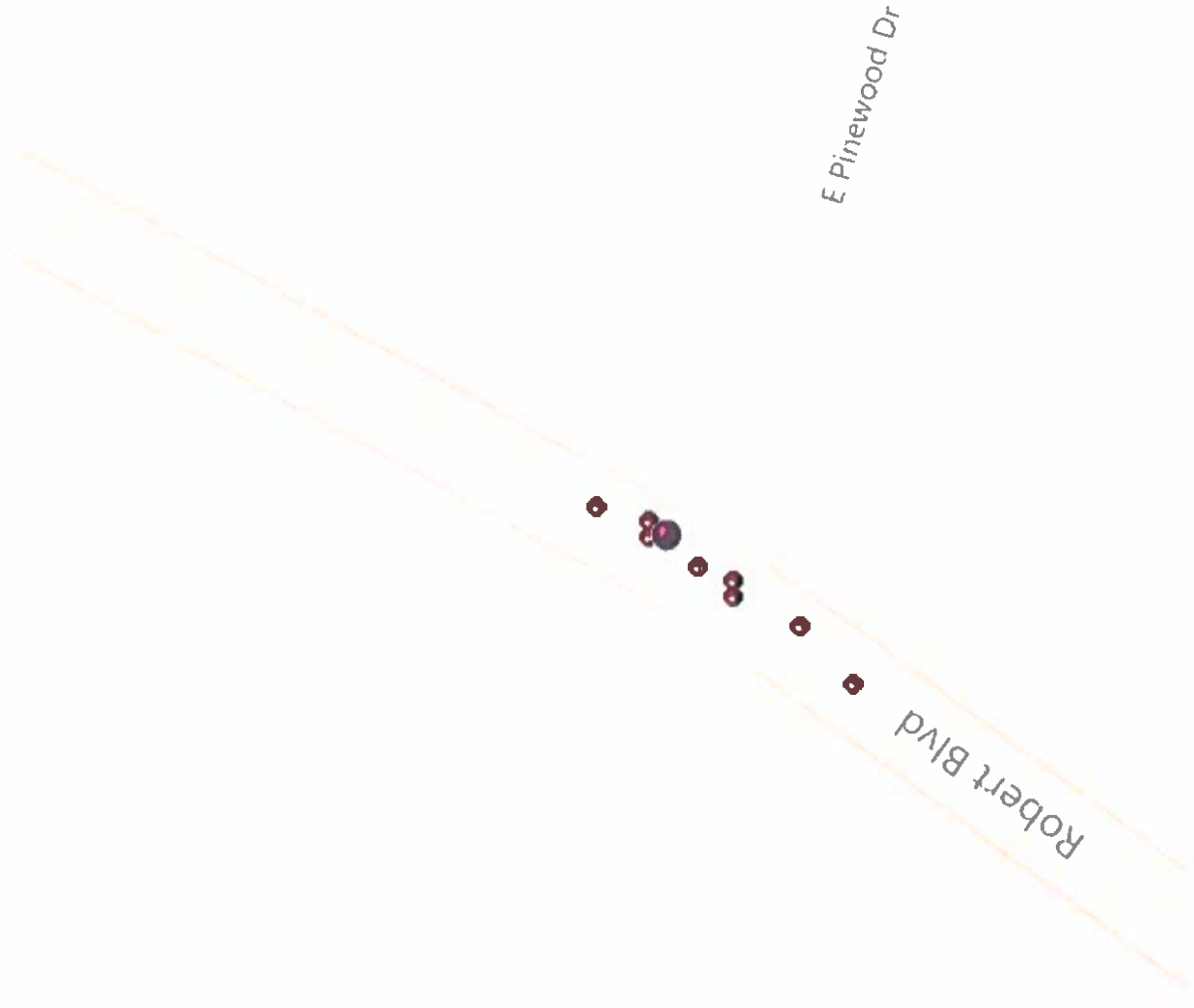
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latitude, longitude:

Measure
Distance:

Current Position:
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Last Clicked Position:

Use Ctrl-Click to
get the LRS ID and
logmile of a point.

Crashes Route LA
1091 between
milepoints 1.80 and
2.151
2014-01-01 to 2017-
11-30



bigger Lat/Long Formats: dd . dddd dd : mm . mmm dd : mm : ss . s ddrmmss

25 feet 10 m
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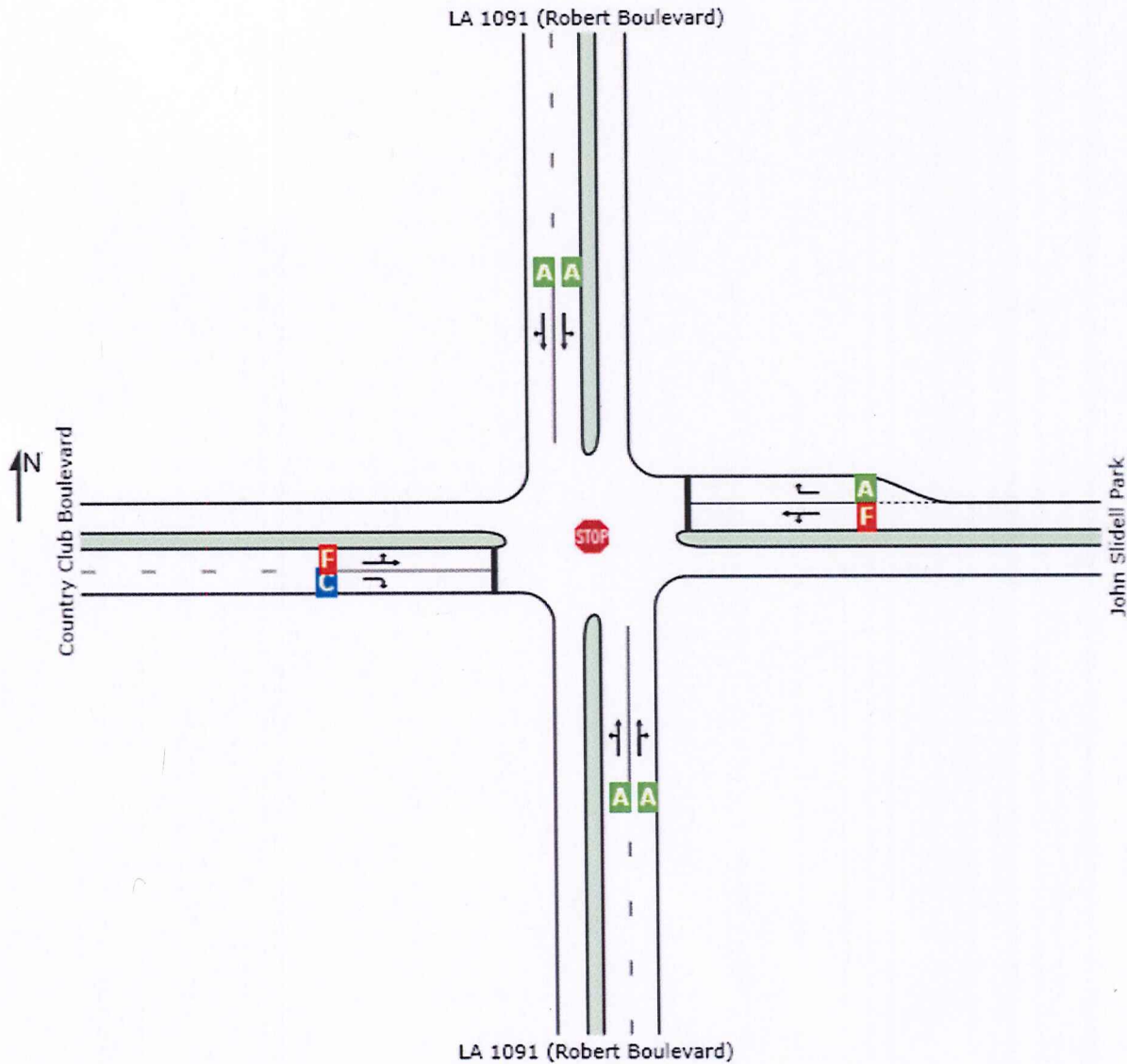
LEVEL OF SERVICE

Site: A.M. Peak Hour_Build Year-3 Year (Final) - Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Stop (Two-Way)
 Design Life Analysis (Final Year): Results for 3 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	E	NA	E	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: A.M. Peak Hour_Build Year-3 Year (Final) - Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Stop (Two-Way)
Design Life Analysis (Final Year): Results for 3 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance ft		per veh	mph
South: LA 1091 (Robert Boulevard)											
3	L2	32	0.0	0.223	4.2	LOS A	0.5	12.7	0.16	0.01	41.2
8	T1	401	4.8	0.223	0.6	LOS A	0.5	12.7	0.13	0.01	43.7
18	R2	11	0.0	0.045	0.0	LOS A	0.0	0.0	0.00	0.00	41.8
Approach		443	4.3	0.223	0.8	NA	0.5	12.7	0.13	0.01	43.5
East: John Slidell Park											
1	L2	12	0.0	0.176	55.7	LOS F	0.6	14.5	0.94	0.94	19.7
6	T1	1	0.0	0.176	29.3	LOS D	0.6	14.5	0.94	0.94	19.7
16	R2	4	0.0	0.009	5.0	LOS A	0.0	0.9	0.58	0.40	34.4
Approach		18	0.0	0.176	41.4	LOS E	0.6	14.5	0.85	0.81	22.1
North: LA 1091 (Robert Boulevard)											
7	L2	6	0.0	0.310	2.4	LOS A	0.1	1.9	0.01	0.00	42.4
4	T1	635	4.8	0.310	0.0	LOS A	0.1	1.9	0.01	0.00	44.7
14	R2	27	0.0	0.062	0.0	LOS A	0.0	0.0	0.00	0.00	41.2
Approach		667	4.6	0.310	0.1	NA	0.1	1.9	0.01	0.00	44.5
West: Country Club Boulevard											
5	L2	57	0.0	0.635	77.8	LOS F	2.8	70.1	0.97	1.07	16.3
2	T1	1	0.0	0.635	59.7	LOS F	2.8	70.1	0.97	1.07	16.3
12	R2	83	0.0	0.289	15.3	LOS C	1.3	32.1	0.80	0.83	29.8
Approach		140	0.0	0.635	40.8	LOS E	2.8	70.1	0.87	0.93	22.2
All Vehicles		1269	3.9	0.635	5.4	NA	2.8	70.1	0.16	0.12	39.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Organisation: J. V. BURKES & ASSOCIATES | Processed: Wednesday, April 18, 2018 2:49:04 PM

Project: C:\Users\WSD\OneDrive\!!JVBU~1-WSD-PC-17867\RPC LA 1091 (Robert) at Country Club Blvd Roundabout Study\SIDRA Files\LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Updated 041818.sip6

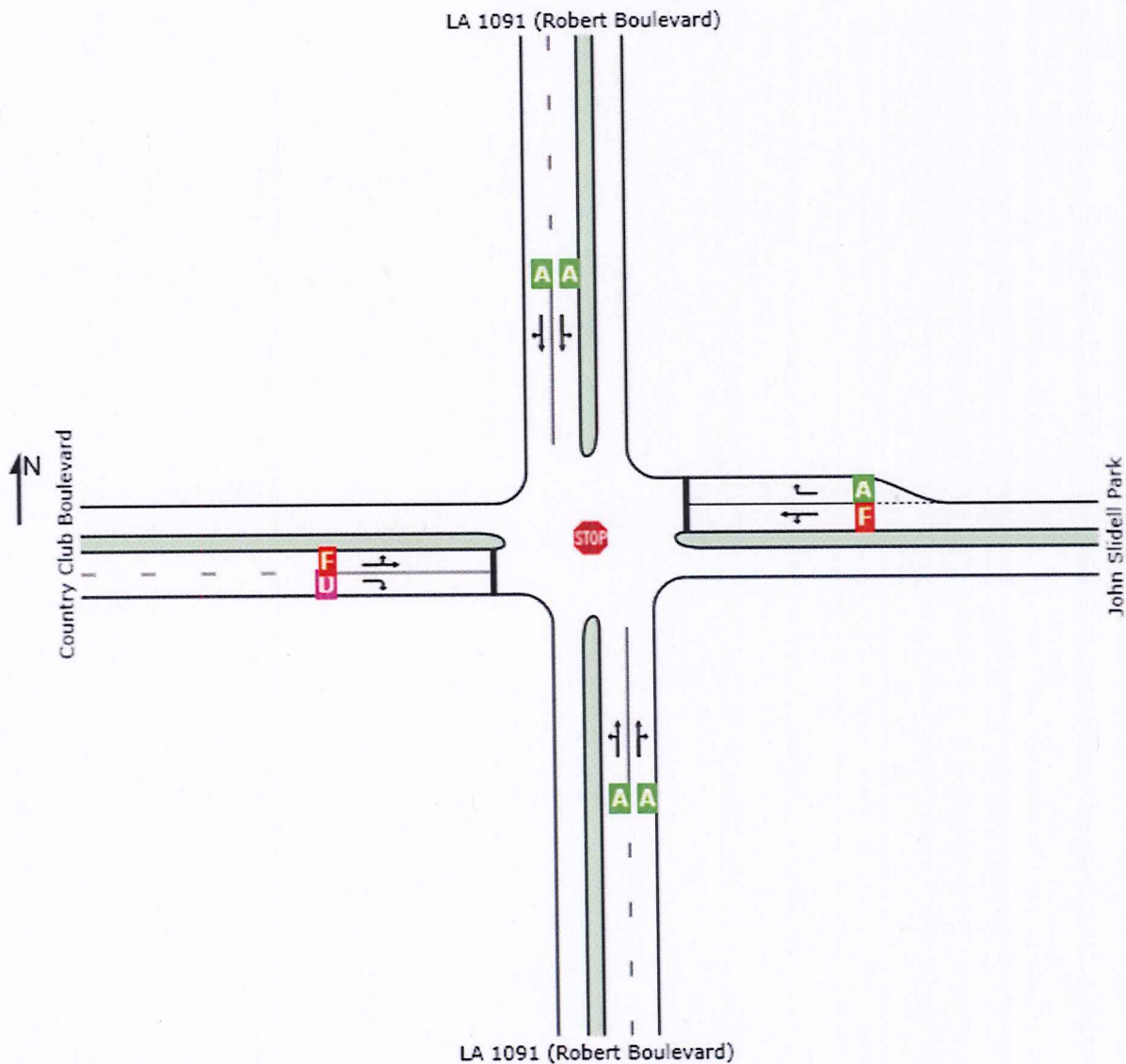
LEVEL OF SERVICE

Site: A.M. Peak Hour_Design Year-23 Year (Final) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak
 Stop (Two-Way)
 Design Life Analysis (Final Year): Results for 23 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	F	NA	F	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: A.M. Peak Hour Design Year-23 Year (Final) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak
 Stop (Two-Way)
 Design Life Analysis (Final Year): Results for 23 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: LA 1091 (Robert Boulevard)											
3	L2	32	0.0	0.262	5.7	LOS A	0.7	17.5	0.17	0.01	41.0
8	T1	470	4.8	0.262	0.8	LOS A	0.7	17.5	0.14	0.01	43.5
18	R2	13	0.0	0.052	0.0	LOS A	0.0	0.0	0.00	0.00	41.8
Approach		515	4.4	0.262	1.1	NA	0.7	17.5	0.14	0.01	43.3
East: John Slidell Park											
1	L2	14	0.0	0.363	118.8	LOS F	1.2	29.4	0.97	1.00	12.7
6	T1	1	0.0	0.363	69.2	LOS F	1.2	29.4	0.97	1.00	12.7
16	R2	5	0.0	0.012	6.6	LOS A	0.0	1.2	0.62	0.47	33.6
Approach		21	0.0	0.363	87.8	LOS F	1.2	29.4	0.88	0.87	15.1
North: LA 1091 (Robert Boulevard)											
7	L2	7	0.0	0.362	3.3	LOS A	0.1	2.9	0.02	0.00	42.4
4	T1	744	4.8	0.362	0.1	LOS A	0.1	2.9	0.02	0.00	44.7
14	R2	27	0.0	0.072	0.0	LOS A	0.0	0.0	0.00	0.00	41.4
Approach		778	4.6	0.362	0.1	NA	0.1	2.9	0.01	0.00	44.5
West: Country Club Boulevard											
5	L2	57	0.0	1.102	236.2	LOS F	7.0	174.4	1.00	1.29	7.5
2	T1	1	0.0	1.102	202.7	LOS F	7.0	174.4	1.00	1.29	7.5
12	R2	83	0.0	0.407	25.5	LOS D	1.8	45.5	0.88	0.95	26.3
Approach		140	0.0	1.102	111.8	LOS F	7.0	174.4	0.93	1.09	13.0
All Vehicles		1453	4.0	1.102	12.5	NA	7.0	174.4	0.16	0.12	35.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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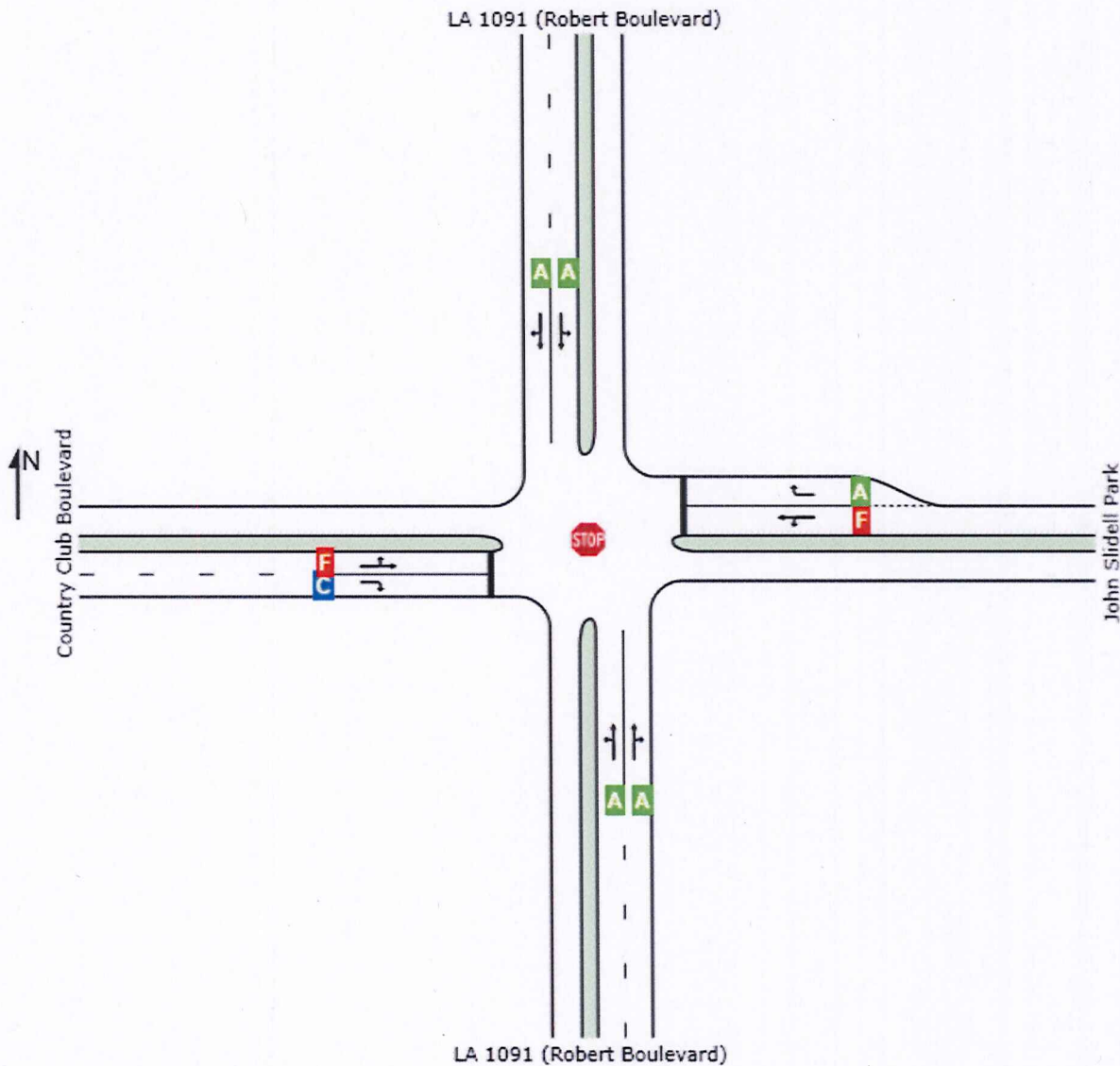
LEVEL OF SERVICE

Site: A.M. Peak Hour Practical Capacity (Capacity) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Stop (Two-Way)
 Design Life Analysis (Capacity): Results for 19 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	F	NA	F	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

Site: A.M. Peak Hour Practical Capacity (Capacity) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Stop (Two-Way)
Design Life Analysis (Capacity): Results for 19 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed mph
		Total veh/h	HV %				Vehicles veh	Distance ft			
South: LA 1091 (Robert Boulevard)											
3	L2	32	0.0	0.254	5.4	LOS A	0.6	16.4	0.17	0.01	41.1
8	T1	455	4.8	0.254	0.7	LOS A	0.6	16.4	0.14	0.01	43.6
18	R2	13	0.0	0.051	0.0	LOS A	0.0	0.0	0.00	0.00	41.8
Approach		499	4.4	0.254	1.0	NA	0.6	16.4	0.14	0.01	43.4
East: John Slidell Park											
1	L2	14	0.0	0.310	99.7	LOS F	1.0	25.2	0.97	0.99	14.3
6	T1	1	0.0	0.310	56.5	LOS F	1.0	25.2	0.97	0.99	14.3
16	R2	5	0.0	0.011	6.2	LOS A	0.0	1.1	0.62	0.46	33.8
Approach		20	0.0	0.310	73.8	LOS F	1.0	25.2	0.88	0.85	16.7
North: LA 1091 (Robert Boulevard)											
7	L2	6	0.0	0.351	3.1	LOS A	0.1	2.7	0.02	0.00	42.4
4	T1	721	4.8	0.351	0.1	LOS A	0.1	2.7	0.01	0.00	44.7
14	R2	27	0.0	0.070	0.0	LOS A	0.0	0.0	0.00	0.00	41.4
Approach		754	4.6	0.351	0.1	NA	0.1	2.7	0.01	0.00	44.5
West: Country Club Boulevard											
5	L2	57	0.0	0.975	183.4	LOS F	5.5	136.9	1.00	1.24	9.2
2	T1	1	0.0	0.975	153.9	LOS F	5.5	136.9	1.00	1.24	9.2
12	R2	83	0.0	0.377	22.8	LOS C	1.7	42.1	0.86	0.92	27.2
Approach		140	0.0	0.975	88.6	LOS F	5.5	136.9	0.92	1.05	15.0
All Vehicles		1414	4.0	0.975	10.2	NA	5.5	136.9	0.16	0.12	36.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LEVEL OF SERVICE

STOP Site: P.M. Peak Hour_Build Year-3 Year (Final) Two-Way Stop

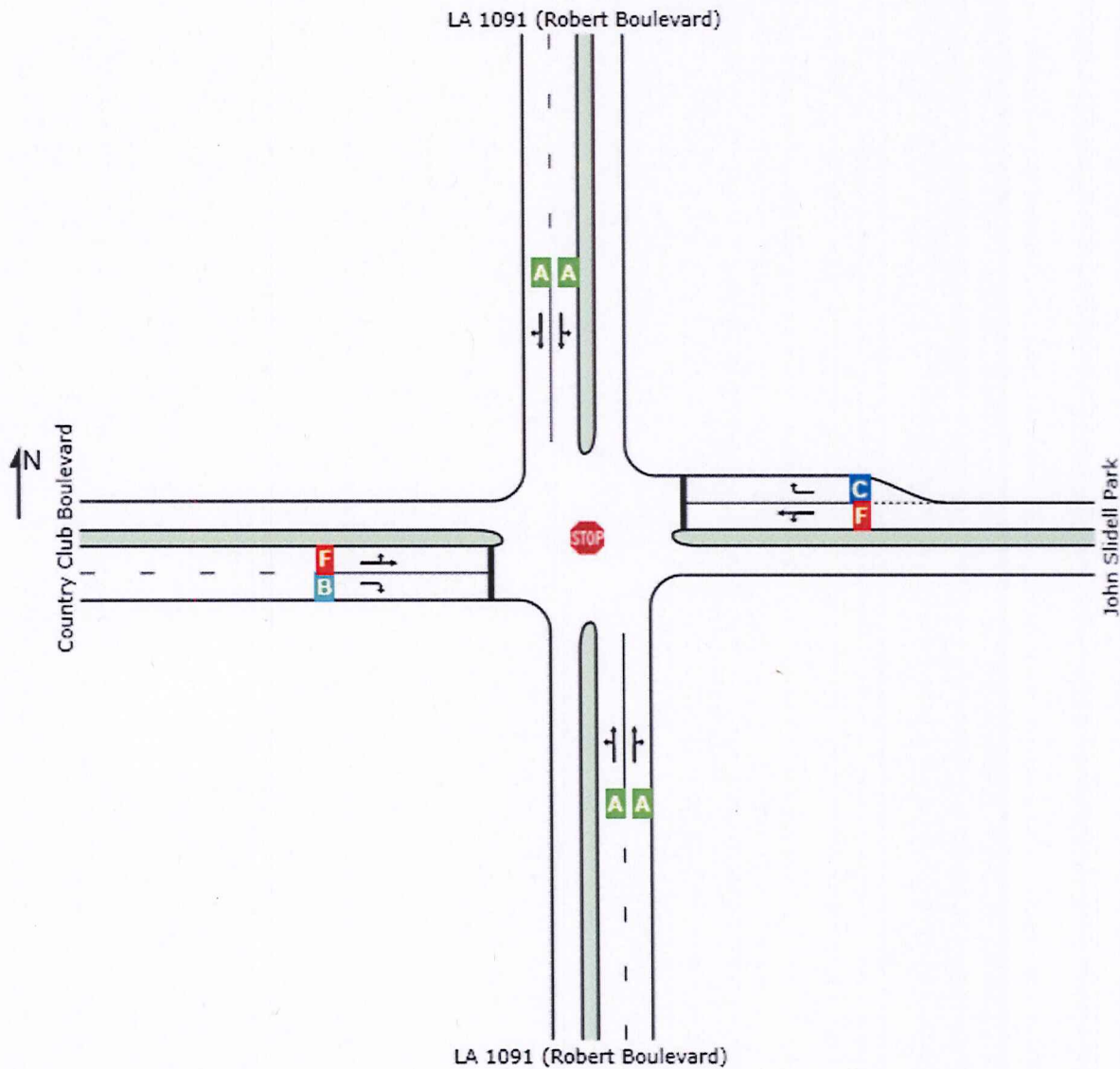
LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak

Stop (Two-Way)

Design Life Analysis (Final Year): Results for 3 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	F	NA	F	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c >$ irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: P.M. Peak Hour_Build Year-3 Year (Final) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Stop (Two-Way)

Design Life Analysis (Final Year): Results for 3 years

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed	
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance ft		per veh	mph	
South: LA 1091 (Robert Boulevard)												
3	L2	84	0.0	0.450	5.4	LOS A	2.0	50.9	0.25	0.03	40.5	
8	T1	736	4.8	0.450	1.2	LOS A	2.0	50.9	0.22	0.03	42.7	
18	R2	55	0.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	40.7	
Approach		874	4.0	0.450	1.5	NA	2.0	50.9	0.21	0.03	42.4	
East: John Slidell Park												
1	L2	20	0.0	0.876	322.4	LOS F	3.2	80.5	1.00	1.09	5.9	
6	T1	1	0.0	0.876	240.9	LOS F	3.2	80.5	1.00	1.09	5.9	
16	R2	19	0.0	0.091	18.0	LOS C	0.3	8.2	0.82	0.82	28.8	
Approach		40	0.0	0.876	176.3	LOS F	3.2	80.5	0.91	0.96	9.4	
North: LA 1091 (Robert Boulevard)												
7	L2	36	0.0	0.335	6.6	LOS A	0.9	23.9	0.17	0.01	41.1	
4	T1	582	4.8	0.335	0.9	LOS A	0.9	23.9	0.15	0.01	43.3	
14	R2	43	0.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.00	40.6	
Approach		661	4.2	0.335	1.1	NA	0.9	23.9	0.14	0.01	43.0	
West: Country Club Boulevard												
5	L2	49	0.0	1.917	656.8	LOS F	14.1	352.1	1.00	1.38	3.1	
2	T1	4	0.0	1.917	593.4	LOS F	14.1	352.1	1.00	1.38	3.1	
12	R2	58	0.0	0.174	11.0	LOS B	0.7	17.6	0.74	0.74	31.6	
Approach		111	0.0	1.917	318.7	LOS F	14.1	352.1	0.86	1.05	5.9	
All Vehicles		1686	3.8	1.917	26.4	NA	14.1	352.1	0.24	0.11	28.5	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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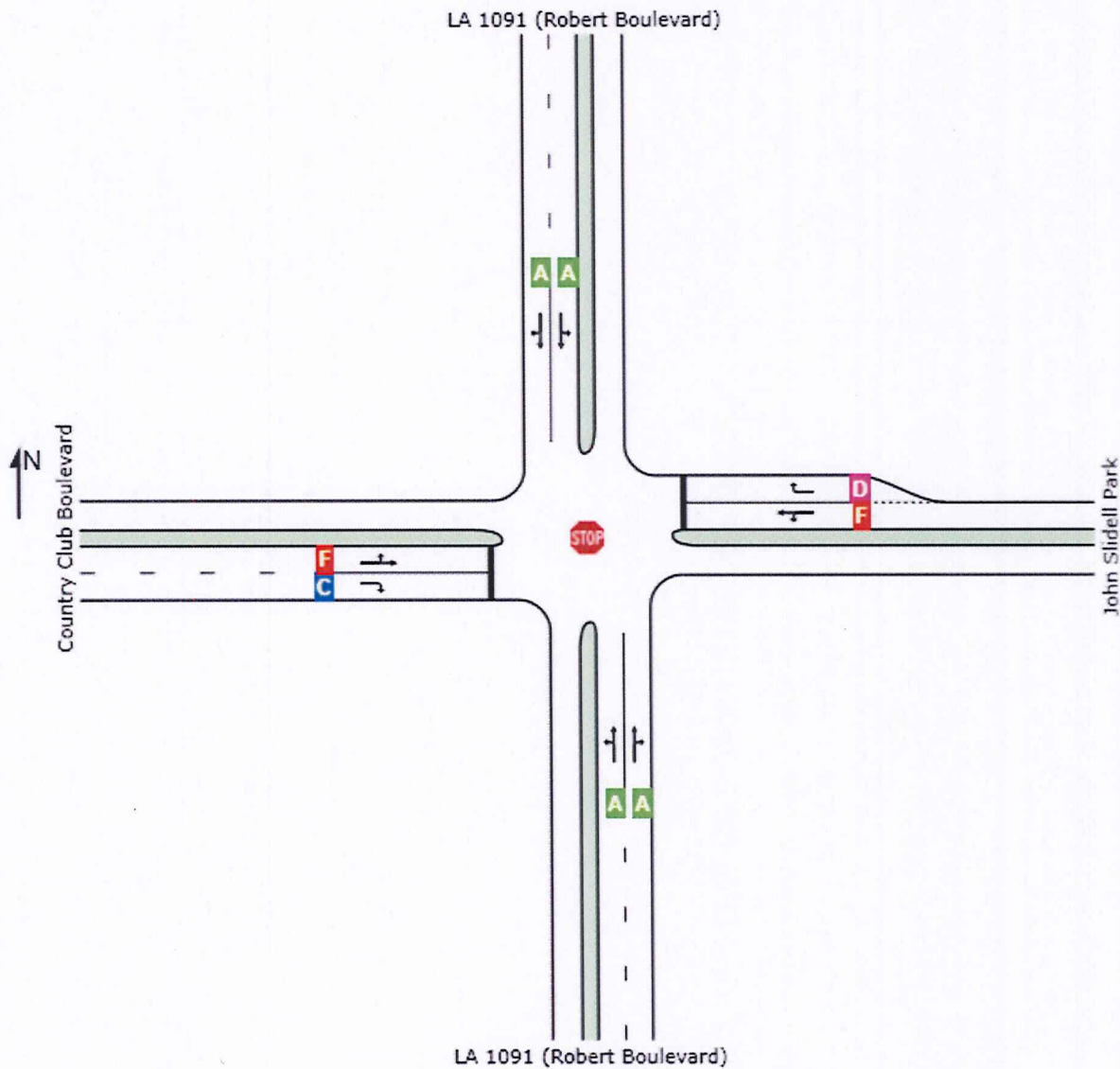
LEVEL OF SERVICE

STOP Site: P.M. Peak Hour_Design Year-23 Year (Final) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Stop (Two-Way)
 Design Life Analysis (Final Year): Results for 23 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	F	NA	F	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: P.M. Peak Hour_Design Year-23 Year (Final) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak

Stop (Two-Way)

Design Life Analysis (Final Year): Results for 23 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: LA 1091 (Robert Boulevard)											
3	L2	84	0.0	0.526	7.8	LOS A	2.7	69.4	0.30	0.04	40.1
8	T1	863	4.8	0.526	1.6	LOS A	2.7	69.4	0.25	0.03	42.4
18	R2	64	0.0	0.105	0.0	LOS A	0.0	0.0	0.00	0.00	40.7
Approach		1011	4.1	0.526	2.0	NA	2.7	69.4	0.24	0.03	42.1
East: John Slidell Park											
1	L2	24	0.0	2.530	1292.0	LOS F	11.5	288.4	1.00	1.18	1.7
6	T1	1	0.0	2.530	1085.2	LOS F	11.5	288.4	1.00	1.18	1.7
16	R2	22	0.0	0.168	29.7	LOS D	0.6	14.3	0.90	0.90	25.1
Approach		47	0.0	2.530	688.3	LOS F	11.5	288.4	0.95	1.04	3.0
North: LA 1091 (Robert Boulevard)											
7	L2	42	0.0	0.402	9.9	LOS A	1.6	41.0	0.23	0.02	40.4
4	T1	683	4.8	0.402	1.5	LOS A	1.6	41.0	0.20	0.02	42.7
14	R2	43	0.0	0.080	0.0	LOS A	0.0	0.0	0.00	0.00	40.9
Approach		768	4.3	0.402	1.9	NA	1.6	41.0	0.19	0.01	42.4
West: Country Club Boulevard											
5	L2	49	0.0	4.663	2115.4	LOS F	25.7	642.6	1.00	1.25	1.0
2	T1	4	0.0	4.663	1955.6	LOS F	25.7	642.6	1.00	1.25	1.0
12	R2	58	0.0	0.233	16.7	LOS C	0.9	23.6	0.82	0.83	29.3
Approach		111	0.0	4.663	1018.6	LOS F	25.7	642.6	0.90	1.04	2.1
All Vehicles		1936	3.8	4.663	76.8	NA	25.7	642.6	0.27	0.11	17.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LEVEL OF SERVICE

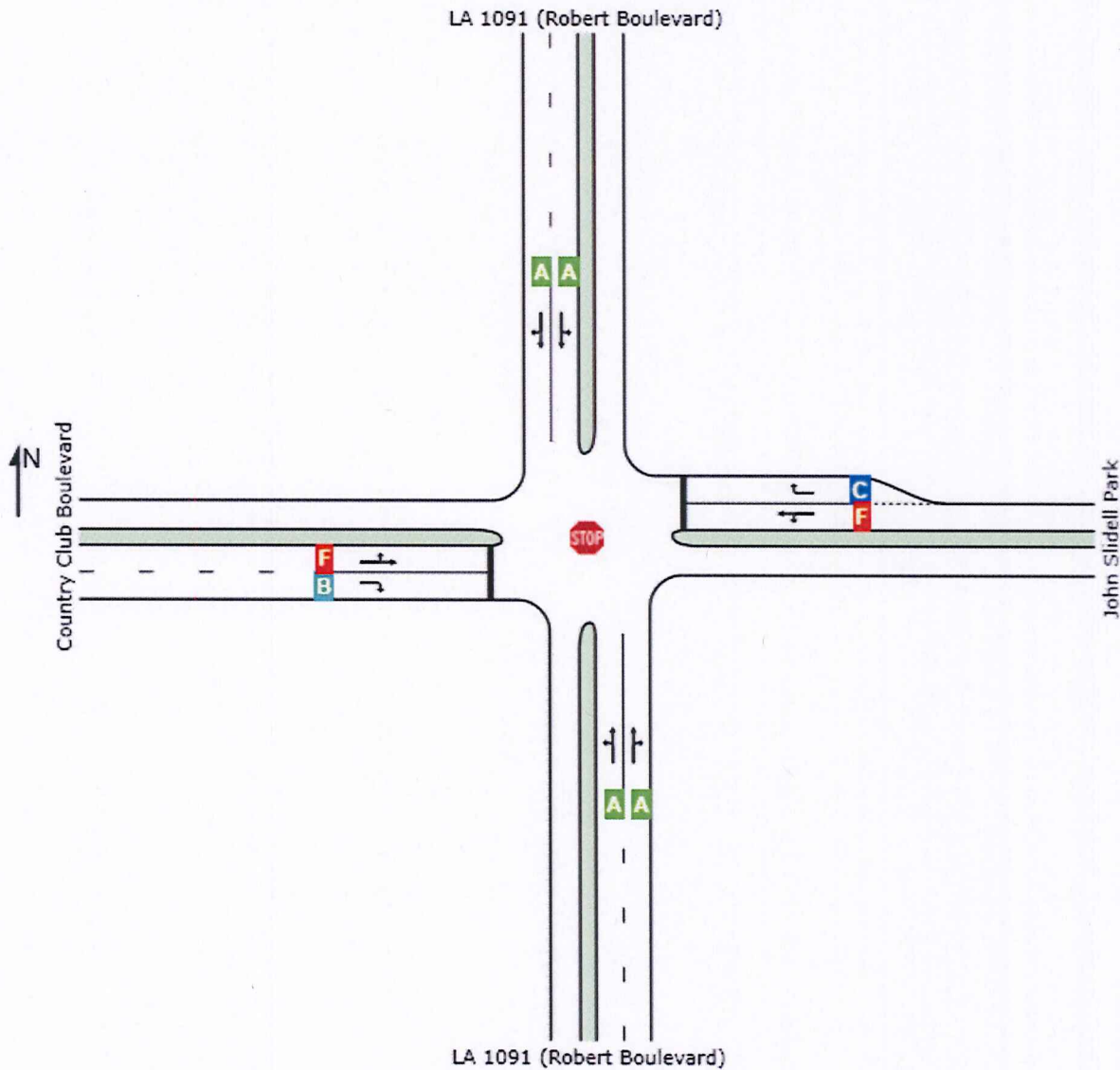
Site: P.M. Peak Hour_Practical Capacity (Capacity) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Stop (Two-Way)

Design Life Analysis (Capacity): Results for 0 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	F	NA	F	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: P.M. Peak Hour_Practical Capacity (Capacity) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Stop (Two-Way)

Design Life Analysis (Capacity): Results for 0 years

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed	
		Total veh/h	HV %	v/c	sec		veh	ft		per veh	mph	
South: LA 1091 (Robert Boulevard)												
3	L2	84	0.0	0.440	5.1	LOS A	1.9	48.8	0.25	0.03	40.5	
8	T1	718	4.8	0.440	1.1	LOS A	1.9	48.8	0.21	0.03	42.8	
18	R2	53	0.0	0.088	0.0	LOS A	0.0	0.0	0.00	0.00	40.7	
Approach		855	4.0	0.440	1.5	NA	1.9	48.8	0.20	0.03	42.4	
East: John Slidell Park												
1	L2	20	0.0	0.764	265.0	LOS F	2.7	66.8	0.99	1.07	6.9	
6	T1	1	0.0	0.764	193.1	LOS F	2.7	66.8	0.99	1.07	6.9	
16	R2	18	0.0	0.084	16.8	LOS C	0.3	7.6	0.81	0.81	29.2	
Approach		39	0.0	0.764	145.8	LOS F	2.7	66.8	0.91	0.95	10.8	
North: LA 1091 (Robert Boulevard)												
7	L2	35	0.0	0.327	6.3	LOS A	0.9	22.2	0.16	0.01	41.2	
4	T1	568	4.8	0.327	0.8	LOS A	0.9	22.2	0.14	0.01	43.4	
14	R2	43	0.0	0.065	0.0	LOS A	0.0	0.0	0.00	0.00	40.5	
Approach		647	4.2	0.327	1.1	NA	0.9	22.2	0.13	0.01	43.1	
West: Country Club Boulevard												
5	L2	49	0.0	1.713	550.3	LOS F	12.6	315.4	1.00	1.38	3.7	
2	T1	4	0.0	1.713	493.9	LOS F	12.6	315.4	1.00	1.38	3.7	
12	R2	58	0.0	0.168	10.5	LOS B	0.7	17.1	0.72	0.72	31.8	
Approach		111	0.0	1.713	267.6	LOS F	12.6	315.4	0.86	1.04	6.8	
All Vehicles		1652	3.7	1.713	22.6	NA	12.6	315.4	0.24	0.11	30.0	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LEVEL OF SERVICE

Site: Midday Weekend Peak Hour_Build Year-3 Year (Final) Two-Way Stop

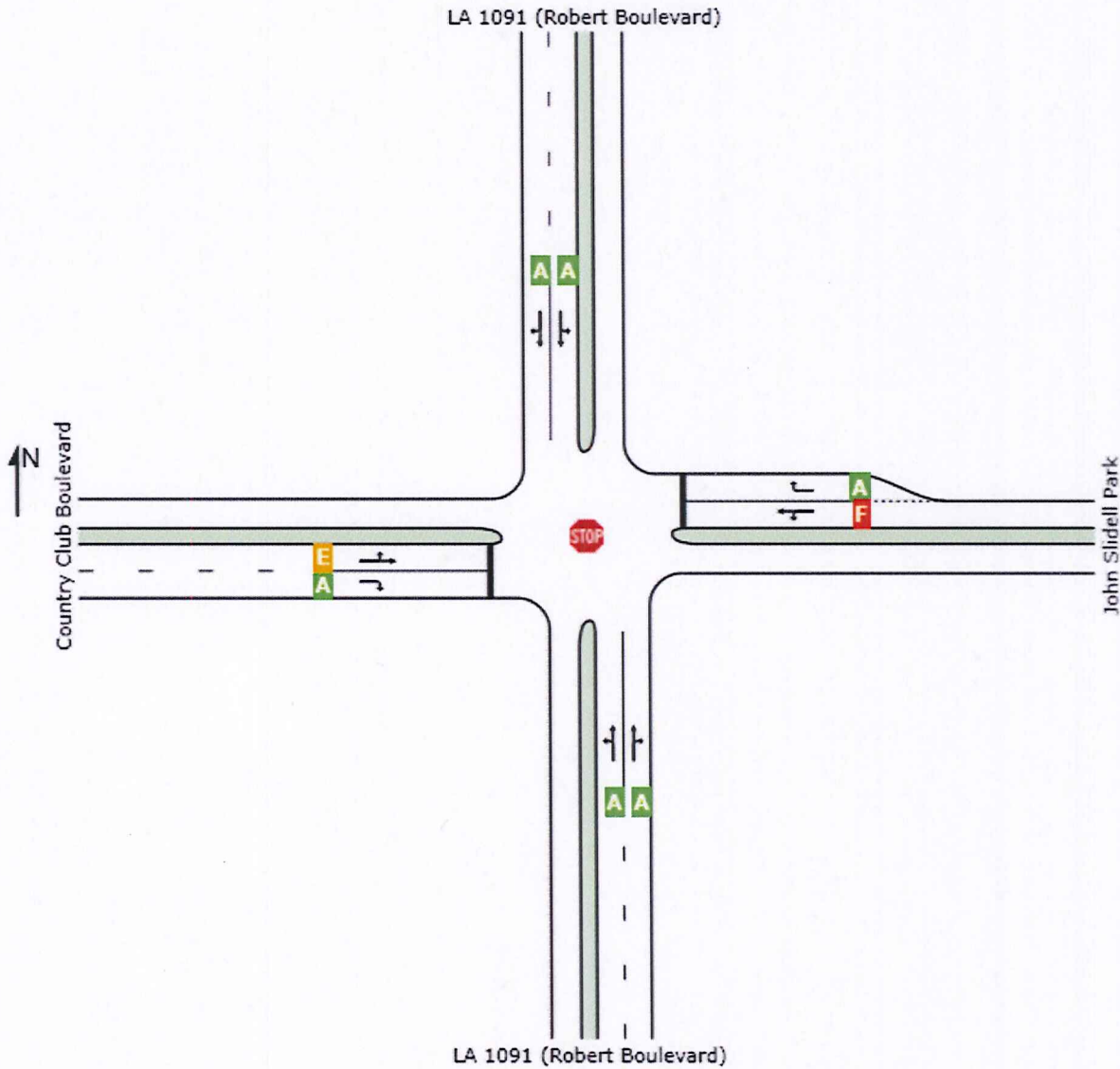
LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour

Stop (Two-Way)

Design Life Analysis (Final Year): Results for 3 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	D	NA	C	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: Midday Weekend Peak Hour_Build Year-3 Year (Final) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour Stop (Two-Way)

Design Life Analysis (Final Year): Results for 3 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed mph
		Total veh/h	HV %				Vehicles veh	Distance ft			
South: LA 1091 (Robert Boulevard)											
3	L2	58	0.0	0.282	2.8	LOS A	0.7	18.7	0.18	0.02	41.2
8	T1	486	4.8	0.282	0.5	LOS A	0.7	18.7	0.15	0.02	43.5
18	R2	19	0.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	41.5
Approach		563	4.1	0.282	0.7	NA	0.7	18.7	0.15	0.02	43.2
East: John Slidell Park											
1	L2	35	0.0	0.372	52.0	LOS F	1.4	35.6	0.93	0.98	20.3
6	T1	3	0.0	0.372	33.8	LOS D	1.4	35.6	0.93	0.98	20.3
16	R2	21	0.0	0.050	7.3	LOS A	0.2	5.1	0.64	0.57	33.3
Approach		59	0.0	0.372	34.9	LOS D	1.4	35.6	0.83	0.83	23.6
North: LA 1091 (Robert Boulevard)											
7	L2	13	0.0	0.235	2.8	LOS A	0.2	4.5	0.05	0.00	42.2
4	T1	446	4.8	0.235	0.1	LOS A	0.2	4.5	0.05	0.00	44.3
14	R2	35	0.0	0.047	0.0	LOS A	0.0	0.0	0.00	0.00	40.3
Approach		495	4.3	0.235	0.2	NA	0.2	4.5	0.04	0.00	44.0
West: Country Club Boulevard											
5	L2	35	0.0	0.328	45.5	LOS E	1.3	31.4	0.93	0.96	21.4
2	T1	1	0.0	0.328	30.6	LOS D	1.3	31.4	0.93	0.96	21.4
12	R2	68	0.0	0.147	6.8	LOS A	0.6	15.9	0.64	0.62	33.5
Approach		104	0.0	0.328	19.9	LOS C	1.3	31.4	0.74	0.74	28.0
All Vehicles		1221	3.7	0.372	3.8	NA	1.4	35.6	0.19	0.11	40.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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LEVEL OF SERVICE

STOP Site: Midday Weekend Peak Hour_Design Year-23 Year (Final) Two-Way Stop

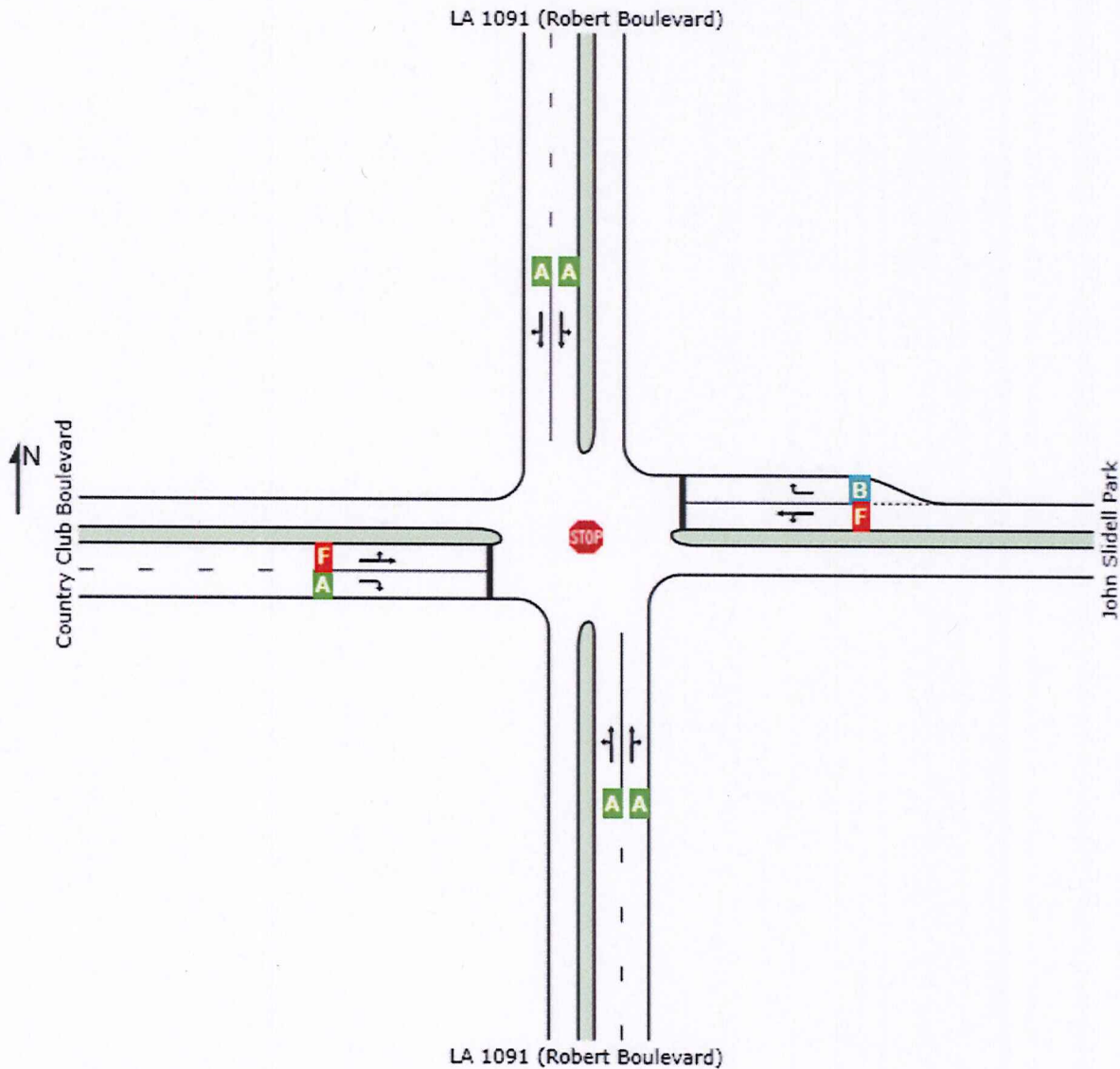
LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour

Stop (Two-Way)

Design Life Analysis (Final Year): Results for 23 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	F	NA	E	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1.0 irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: Midday Weekend Peak Hour_Design Year-23 Year (Final) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour
Stop (Two-Way)

Design Life Analysis (Final Year): Results for 23 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed mph
		Total veh/h	HV %				Vehicles veh	Distance ft			
South: LA 1091 (Robert Boulevard)											
3	L2	58	0.0	0.327	3.7	LOS A	0.9	24.5	0.19	0.02	41.1
8	T1	571	4.8	0.327	0.7	LOS A	0.9	24.5	0.16	0.02	43.5
18	R2	22	0.0	0.065	0.0	LOS A	0.0	0.0	0.00	0.00	41.5
Approach		650	4.2	0.327	0.9	NA	0.9	24.5	0.15	0.02	43.2
East: John Slidell Park											
1	L2	40	0.0	0.692	117.6	LOS F	2.9	71.3	0.98	1.08	12.7
6	T1	3	0.0	0.692	86.3	LOS F	2.9	71.3	0.98	1.08	12.7
16	R2	25	0.0	0.073	10.0	LOS B	0.3	7.2	0.70	0.69	32.0
Approach		69	0.0	0.692	77.2	LOS F	2.9	71.3	0.88	0.94	16.3
North: LA 1091 (Robert Boulevard)											
7	L2	16	0.0	0.274	3.8	LOS A	0.3	6.6	0.06	0.00	42.1
4	T1	524	4.8	0.274	0.2	LOS A	0.3	6.6	0.05	0.00	44.3
14	R2	35	0.0	0.055	0.0	LOS A	0.0	0.0	0.00	0.00	40.6
Approach		574	4.4	0.274	0.3	NA	0.3	6.6	0.05	0.00	44.0
West: Country Club Boulevard											
5	L2	35	0.0	0.527	89.3	LOS F	2.0	50.1	0.97	1.03	15.1
2	T1	1	0.0	0.527	63.5	LOS F	2.0	50.1	0.97	1.03	15.1
12	R2	68	0.0	0.177	9.0	LOS A	0.7	18.6	0.69	0.69	32.5
Approach		104	0.0	0.527	36.4	LOS E	2.0	50.1	0.78	0.81	23.2
All Vehicles		1397	3.8	0.692	7.0	NA	2.9	71.3	0.19	0.12	38.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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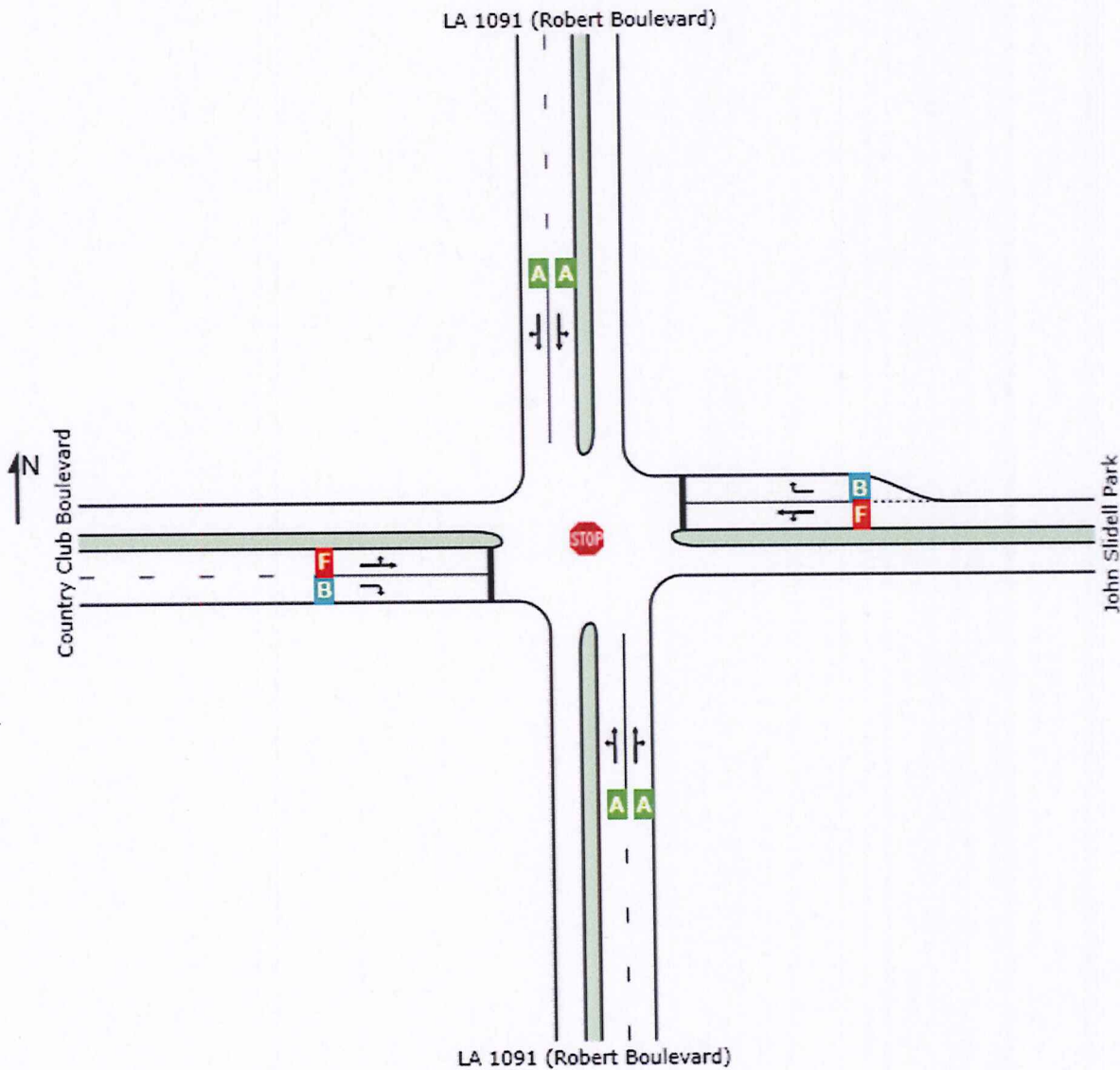
LEVEL OF SERVICE

STOP Site: Midday Weekend Peak Hour Practical Capacity (Capacity) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour
 Stop (Two-Way)
 Design Life Analysis (Capacity): Results for 35 years

All Movement Classes

	South	East	North	West	Intersection
LOS	NA	F	NA	F	NA



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

STOP Site: Midday Weekend Peak Hour_Practical Capacity (Capacity) Two-Way Stop

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour Stop (Two-Way)

Design Life Analysis (Capacity): Results for 35 years

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph	
South: LA 1091 (Robert Boulevard)												
3	L2	58	0.0	0.348	4.4	LOS A	1.1	27.9	0.19	0.02	41.0	
8	T1	628	1.0	0.348	0.8	LOS A	1.1	27.9	0.16	0.02	43.4	
18	R2	24	0.0	0.070	0.0	LOS A	0.0	0.0	0.00	0.00	41.5	
Approach		710	0.9	0.348	1.0	NA	1.1	27.9	0.16	0.02	43.1	
East: John Slidell Park												
1	L2	45	0.0	0.987	215.3	LOS F	5.1	128.4	1.00	1.21	8.2	
6	T1	3	0.0	0.987	173.1	LOS F	5.1	128.4	1.00	1.21	8.2	
16	R2	27	0.0	0.088	11.4	LOS B	0.3	8.6	0.73	0.73	31.4	
Approach		75	0.0	0.987	139.3	LOS F	5.1	128.4	0.90	1.04	11.2	
North: LA 1091 (Robert Boulevard)												
7	L2	17	0.0	0.300	4.4	LOS A	0.3	8.3	0.07	0.00	42.0	
4	T1	576	4.8	0.300	0.3	LOS A	0.3	8.3	0.06	0.00	44.2	
14	R2	35	0.0	0.060	0.0	LOS A	0.0	0.0	0.00	0.00	40.8	
Approach		628	4.4	0.300	0.4	NA	0.3	8.3	0.05	0.00	44.0	
West: Country Club Boulevard												
5	L2	35	0.0	0.690	138.4	LOS F	2.7	67.6	0.98	1.07	11.3	
2	T1	1	4.8	0.690	111.9	LOS F	2.7	67.6	0.98	1.07	11.2	
12	R2	68	0.0	0.203	11.0	LOS B	0.8	21.0	0.74	0.74	31.6	
Approach		104	0.1	0.690	54.5	LOS F	2.7	67.6	0.82	0.86	19.5	
All Vehicles		1517	2.2	0.987	11.3	NA	5.1	128.4	0.20	0.12	35.5	

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

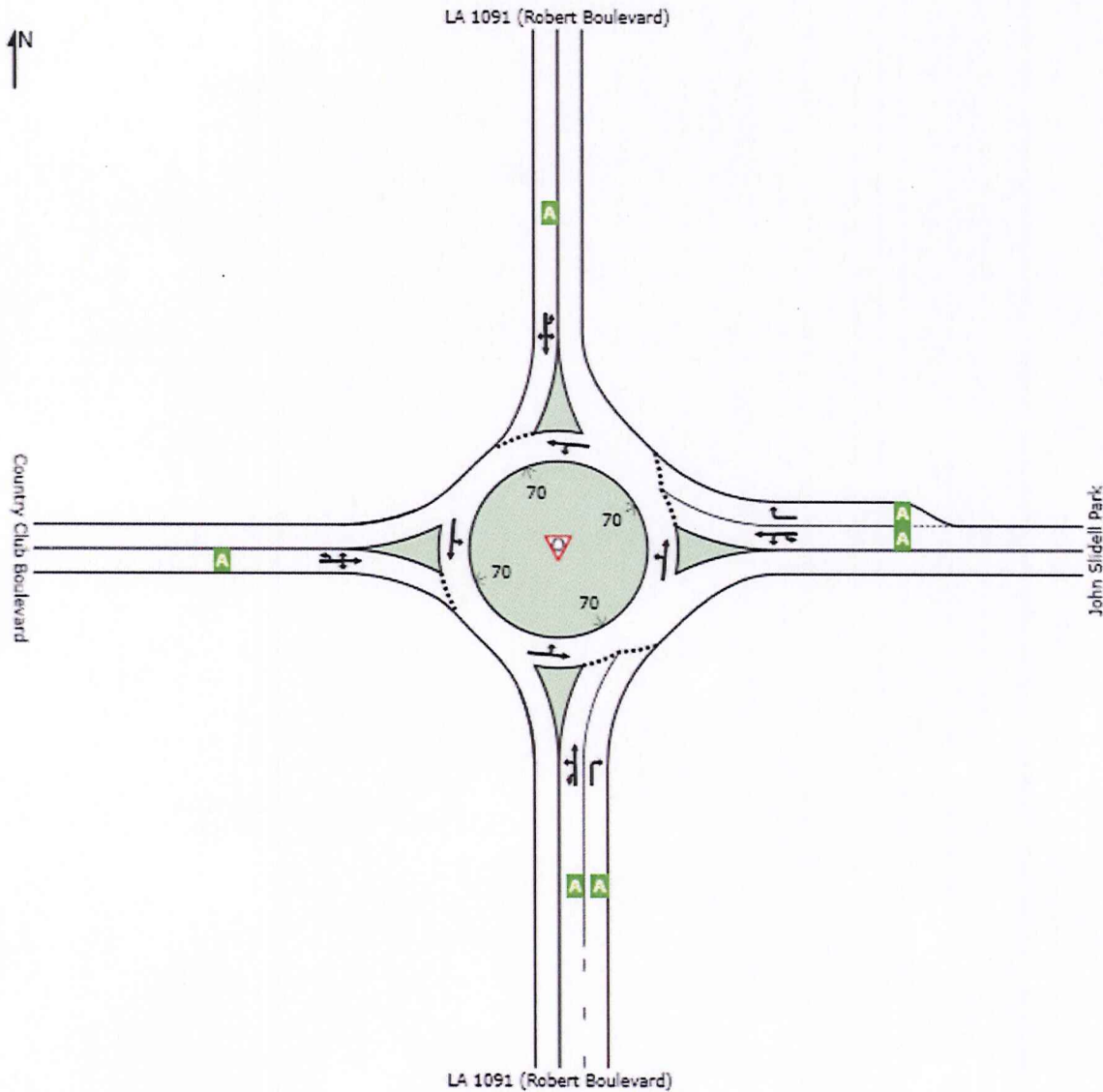
LEVEL OF SERVICE

Site: A.M. Peak Hour_Buid Year-3 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Roundabout
 Design Life Analysis (Final Year): Results for 3 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 **Site: A.M. Peak Hour_Build Year-3 Year (Final)**

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Roundabout

Design Life Analysis (Final Year): Results for 3 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance ft		per veh	mph
South: LA 1091 (Robert Boulevard)											
3u	U	1	0.0	0.358	0.5	LOS A	2.7	69.4	0.31	0.14	39.4
3	L2	32	0.0	0.358	0.5	LOS A	2.7	69.4	0.31	0.14	38.7
8	T1	401	4.8	0.358	0.5	LOS A	2.7	69.4	0.31	0.14	38.1
18	R2	11	0.0	0.014	0.7	LOS A	0.1	1.7	0.26	0.10	38.5
Approach		445	4.3	0.358	0.5	LOS A	2.7	69.4	0.31	0.14	38.2
East: John Slidell Park											
1u	U	1	0.0	0.016	2.5	LOS A	0.1	2.1	0.56	0.36	36.3
1	L2	12	0.0	0.016	2.5	LOS A	0.1	2.1	0.56	0.36	35.7
6	T1	1	0.0	0.016	2.5	LOS A	0.1	2.1	0.56	0.36	35.9
16	R2	4	0.0	0.008	4.3	LOS A	0.0	0.9	0.60	0.39	36.4
Approach		19	0.0	0.016	2.9	LOS A	0.1	2.1	0.57	0.37	35.9
North: LA 1091 (Robert Boulevard)											
7u	U	1	0.0	0.632	0.8	LOS A	6.7	172.5	0.39	0.18	39.3
7	L2	6	0.0	0.632	0.8	LOS A	6.7	172.5	0.39	0.18	38.6
4	T1	635	4.8	0.632	0.8	LOS A	6.7	172.5	0.39	0.18	38.0
14	R2	27	0.0	0.632	0.8	LOS A	6.7	172.5	0.39	0.18	37.8
Approach		668	4.6	0.632	0.8	LOS A	6.7	172.5	0.39	0.18	38.0
West: Country Club Boulevard											
5u	U	1	0.0	0.242	5.7	LOS A	1.4	35.1	0.75	0.70	35.9
5	L2	57	0.0	0.242	5.7	LOS A	1.4	35.1	0.75	0.70	35.4
2	T1	1	0.0	0.242	5.7	LOS A	1.4	35.1	0.75	0.70	35.5
12	R2	83	0.0	0.242	5.7	LOS A	1.4	35.1	0.75	0.70	34.7
Approach		141	0.0	0.242	5.7	LOS A	1.4	35.1	0.75	0.70	35.0
All Vehicles		1273	3.9	0.632	1.3	LOS A	6.7	172.5	0.41	0.23	37.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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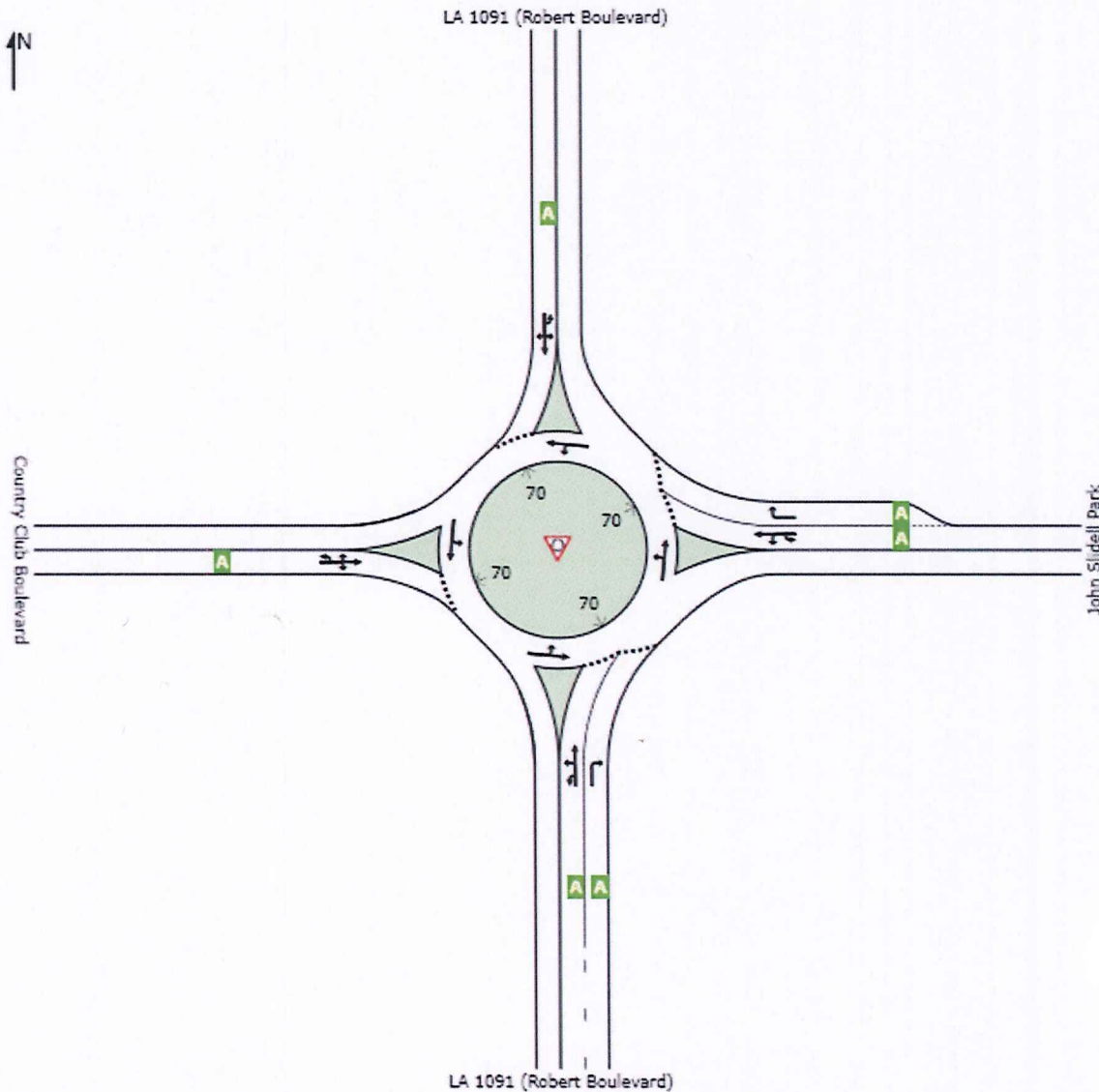
LEVEL OF SERVICE

Site: A.M. Peak Hour_Design Year-23 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Roundabout
 Design Life Analysis (Final Year): Results for 23 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 Site: A.M. Peak Hour_Design Year-23 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Roundabout
Design Life Analysis (Final Year): Results for 23 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: LA 1091 (Robert Boulevard)											
3u	U	1	0.0	0.379	0.4	LOS A	3.0	77.2	0.31	0.14	39.4
3	L2	32	0.0	0.379	0.4	LOS A	3.0	77.2	0.31	0.14	38.7
8	T1	470	4.8	0.379	0.4	LOS A	3.0	77.2	0.31	0.14	38.1
18	R2	13	0.0	0.014	0.5	LOS A	0.1	1.8	0.25	0.09	38.5
Approach		516	4.4	0.379	0.4	LOS A	3.0	77.2	0.31	0.14	38.2
East: John Slidell Park											
1u	U	1	0.0	0.018	2.6	LOS A	0.1	2.5	0.60	0.38	36.2
1	L2	14	0.0	0.018	2.6	LOS A	0.1	2.5	0.60	0.38	35.6
6	T1	1	0.0	0.018	2.6	LOS A	0.1	2.5	0.60	0.38	35.8
16	R2	5	0.0	0.008	4.1	LOS A	0.0	1.0	0.62	0.41	36.6
Approach		22	0.0	0.018	2.9	LOS A	0.1	2.5	0.60	0.39	35.9
North: LA 1091 (Robert Boulevard)											
7u	U	1	0.0	0.674	0.8	LOS A	7.8	201.0	0.42	0.19	39.2
7	L2	7	0.0	0.674	0.8	LOS A	7.8	201.0	0.42	0.19	38.5
4	T1	744	4.8	0.674	0.8	LOS A	7.8	201.0	0.42	0.19	37.9
14	R2	27	0.0	0.674	0.8	LOS A	7.8	201.0	0.42	0.19	37.7
Approach		779	4.6	0.674	0.8	LOS A	7.8	201.0	0.42	0.19	37.9
West: Country Club Boulevard											
5u	U	1	0.0	0.240	6.3	LOS A	1.5	37.4	0.80	0.75	35.6
5	L2	57	0.0	0.240	6.3	LOS A	1.5	37.4	0.80	0.75	35.1
2	T1	1	0.0	0.240	6.3	LOS A	1.5	37.4	0.80	0.75	35.2
12	R2	83	0.0	0.240	6.3	LOS A	1.5	37.4	0.80	0.75	34.4
Approach		141	0.0	0.240	6.3	LOS A	1.5	37.4	0.80	0.75	34.7
All Vehicles		1458	4.0	0.674	1.3	LOS A	7.8	201.0	0.42	0.23	37.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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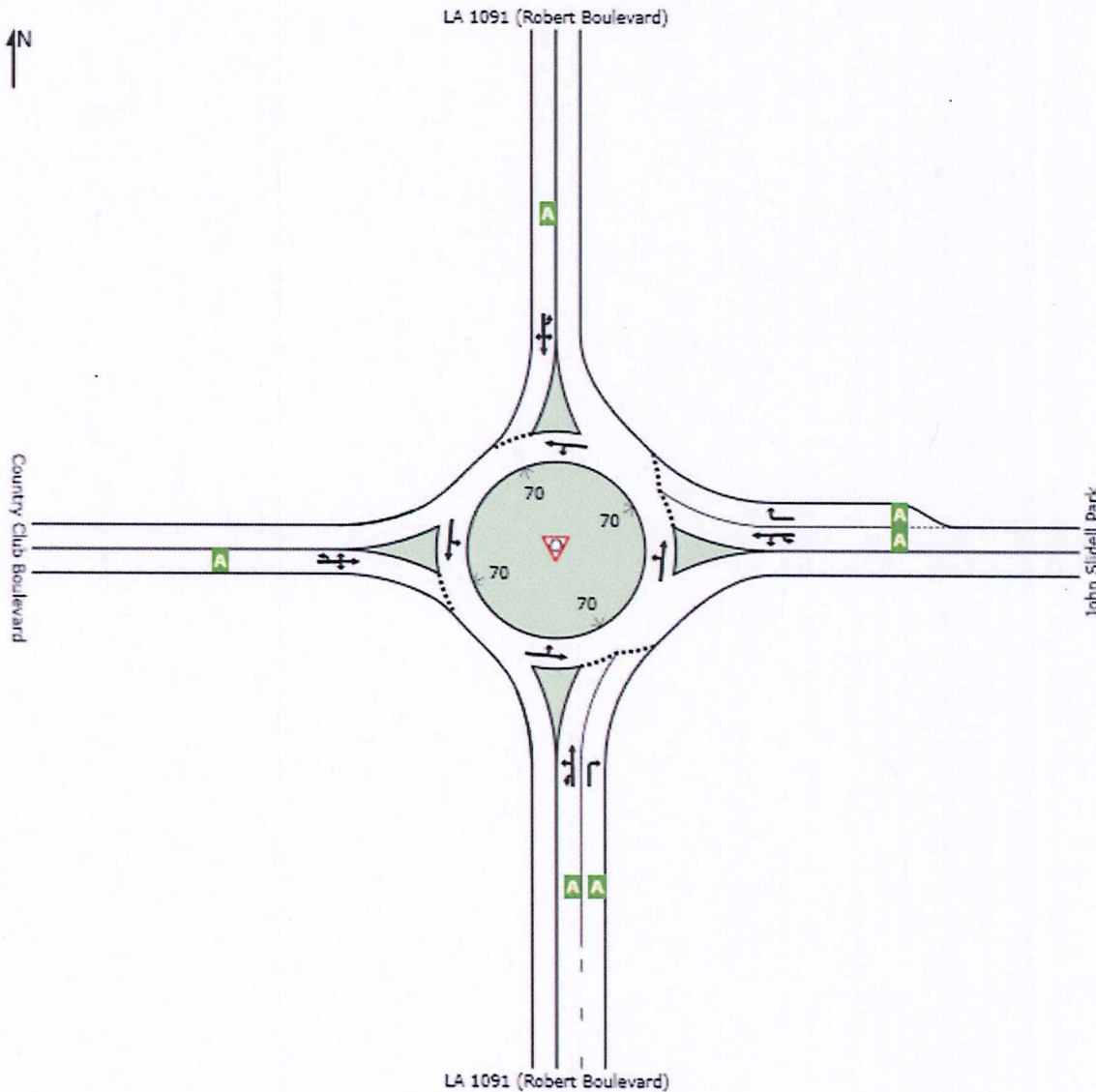
LEVEL OF SERVICE

Site: A.M. Peak Hour Practical Capacity (Capacity)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Roundabout
 Design Life Analysis (Capacity): Results for 50 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

Site: A.M. Peak Hour Practical Capacity (Capacity)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_A.M. Peak Roundabout
Design Life Analysis (Capacity): Results for 50 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed mph
		Total veh/h	HV %				Vehicles veh	Distance ft			
South: LA 1091 (Robert Boulevard)											
3u	U	2	0.0	0.467	0.5	LOS A	4.2	109.0	0.36	0.17	39.2
3	L2	32	0.0	0.467	0.5	LOS A	4.2	109.0	0.36	0.17	38.6
8	T1	583	4.8	0.467	0.5	LOS A	4.2	109.0	0.36	0.17	38.0
18	R2	16	0.0	0.018	0.6	LOS A	0.1	2.3	0.26	0.10	38.5
Approach		632	4.4	0.467	0.5	LOS A	4.2	109.0	0.36	0.17	38.0
East: John Slidell Park											
1u	U	2	0.0	0.024	3.4	LOS A	0.1	3.6	0.67	0.46	35.7
1	L2	18	0.0	0.024	3.4	LOS A	0.1	3.6	0.67	0.46	35.2
6	T1	1	0.0	0.024	3.4	LOS A	0.1	3.6	0.67	0.46	35.3
16	R2	6	0.0	0.012	5.1	LOS A	0.1	1.5	0.68	0.48	35.9
Approach		27	0.0	0.024	3.8	LOS A	0.1	3.6	0.68	0.46	35.4
North: LA 1091 (Robert Boulevard)											
7u	U	2	0.0	0.835	1.4	LOS A	15.6	403.5	0.70	0.33	38.1
7	L2	8	0.0	0.835	1.4	LOS A	15.6	403.5	0.70	0.33	37.4
4	T1	923	4.8	0.835	1.5	LOS A	15.6	403.5	0.70	0.33	36.9
14	R2	27	0.0	0.835	1.4	LOS A	15.6	403.5	0.70	0.33	36.7
Approach		960	4.6	0.835	1.5	LOS A	15.6	403.5	0.70	0.33	36.9
West: Country Club Boulevard											
5u	U	1	0.0	0.345	9.5	LOS A	2.4	60.1	0.95	0.95	33.9
5	L2	57	0.0	0.345	9.5	LOS A	2.4	60.1	0.95	0.95	33.4
2	T1	1	0.0	0.345	9.5	LOS A	2.4	60.1	0.95	0.95	33.6
12	R2	83	0.0	0.345	9.5	LOS A	2.4	60.1	0.95	0.95	32.8
Approach		141	0.0	0.345	9.5	LOS A	2.4	60.1	0.95	0.95	33.1
All Vehicles		1760	4.1	0.835	1.8	LOS A	15.6	403.5	0.60	0.33	36.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

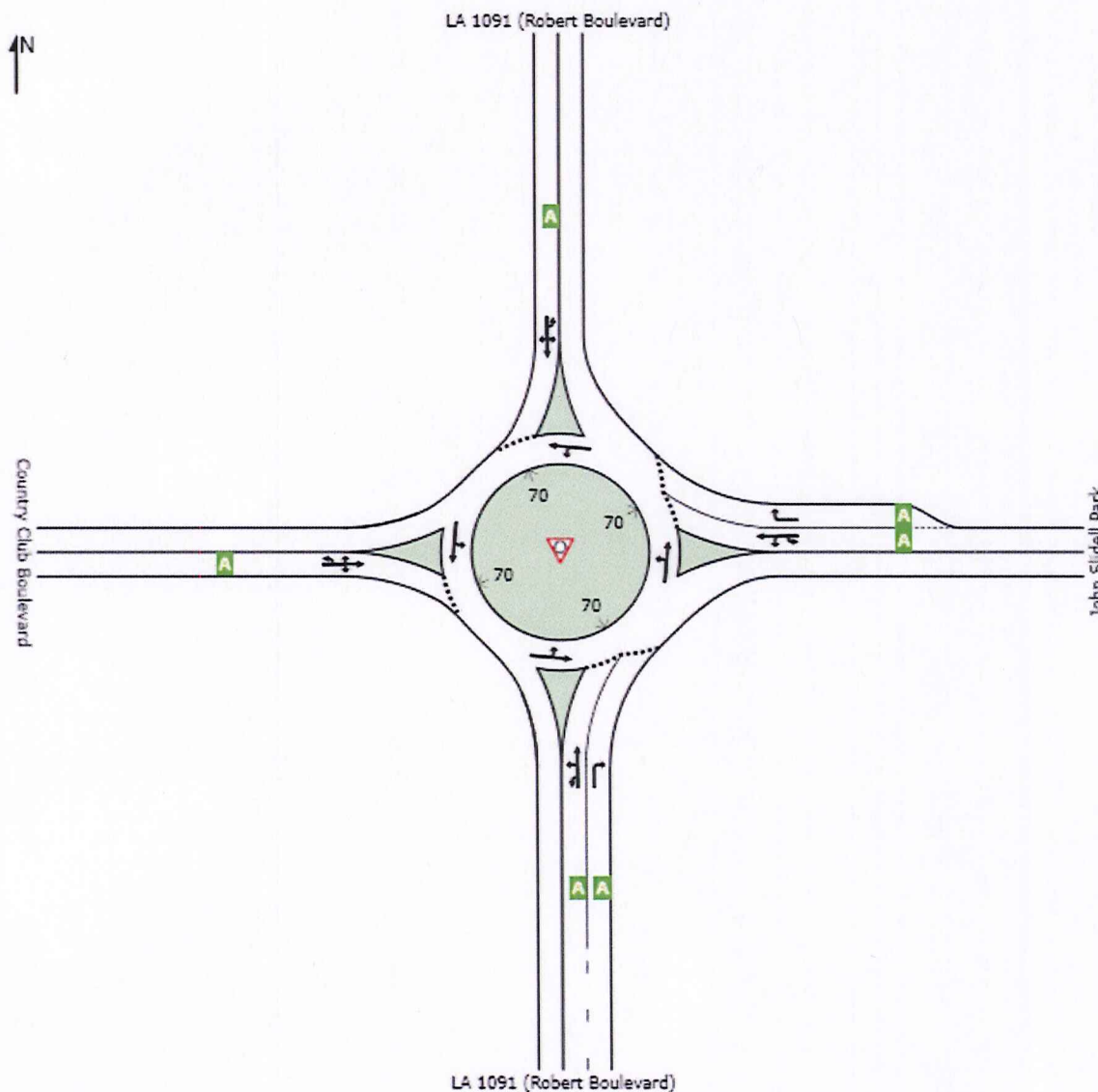
LEVEL OF SERVICE

Site: P.M. Peak Hour_Build Year-3 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Roundabout
 Design Life Analysis (Final Year): Results for 3 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 Site: P.M. Peak Hour Build Year-3 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Roundabout
Design Life Analysis (Final Year): Results for 3 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: LA 1091 (Robert Boulevard)											
3u	U	1	0.0	0.691	1.2	LOS A	8.1	209.7	0.57	0.31	38.4
3	L2	84	0.0	0.691	1.2	LOS A	8.1	209.7	0.57	0.31	37.7
8	T1	736	4.8	0.691	1.3	LOS A	8.1	209.7	0.57	0.31	37.1
18	R2	55	0.0	0.071	1.0	LOS A	0.4	8.8	0.31	0.16	38.3
Approach		875	4.0	0.691	1.2	LOS A	8.1	209.7	0.55	0.30	37.3
East: John Slidell Park											
1u	U	1	0.0	0.040	6.1	LOS A	0.3	6.4	0.82	0.64	34.3
1	L2	20	0.0	0.040	6.1	LOS A	0.3	6.4	0.82	0.64	33.8
6	T1	1	0.0	0.040	6.1	LOS A	0.3	6.4	0.82	0.64	33.9
16	R2	19	0.0	0.039	6.9	LOS A	0.2	5.9	0.81	0.65	34.9
Approach		41	0.0	0.040	6.5	LOS A	0.3	6.4	0.82	0.64	34.3
North: LA 1091 (Robert Boulevard)											
7u	U	1	0.0	0.674	1.7	LOS A	7.2	186.8	0.63	0.39	38.3
7	L2	36	0.0	0.674	1.7	LOS A	7.2	186.8	0.63	0.39	37.7
4	T1	582	4.8	0.674	1.8	LOS A	7.2	186.8	0.63	0.39	37.1
14	R2	43	0.0	0.674	1.7	LOS A	7.2	186.8	0.63	0.39	36.9
Approach		662	4.2	0.674	1.8	LOS A	7.2	186.8	0.63	0.39	37.1
West: Country Club Boulevard											
5u	U	1	0.0	0.198	5.4	LOS A	1.2	29.2	0.76	0.69	36.1
5	L2	49	0.0	0.198	5.4	LOS A	1.2	29.2	0.76	0.69	35.5
2	T1	4	0.0	0.198	5.4	LOS A	1.2	29.2	0.76	0.69	35.6
12	R2	58	0.0	0.198	5.4	LOS A	1.2	29.2	0.76	0.69	34.8
Approach		112	0.0	0.198	5.4	LOS A	1.2	29.2	0.76	0.69	35.1
All Vehicles		1691	3.7	0.691	1.9	LOS A	8.1	209.7	0.60	0.37	37.0

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\WSD\OneDrive\!!JVBU~1-WSD-PC-5079\RPC LA 1091 (Robert) at Country Club Blvd Roundabout Study\SIDRA Files\LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park.sip6

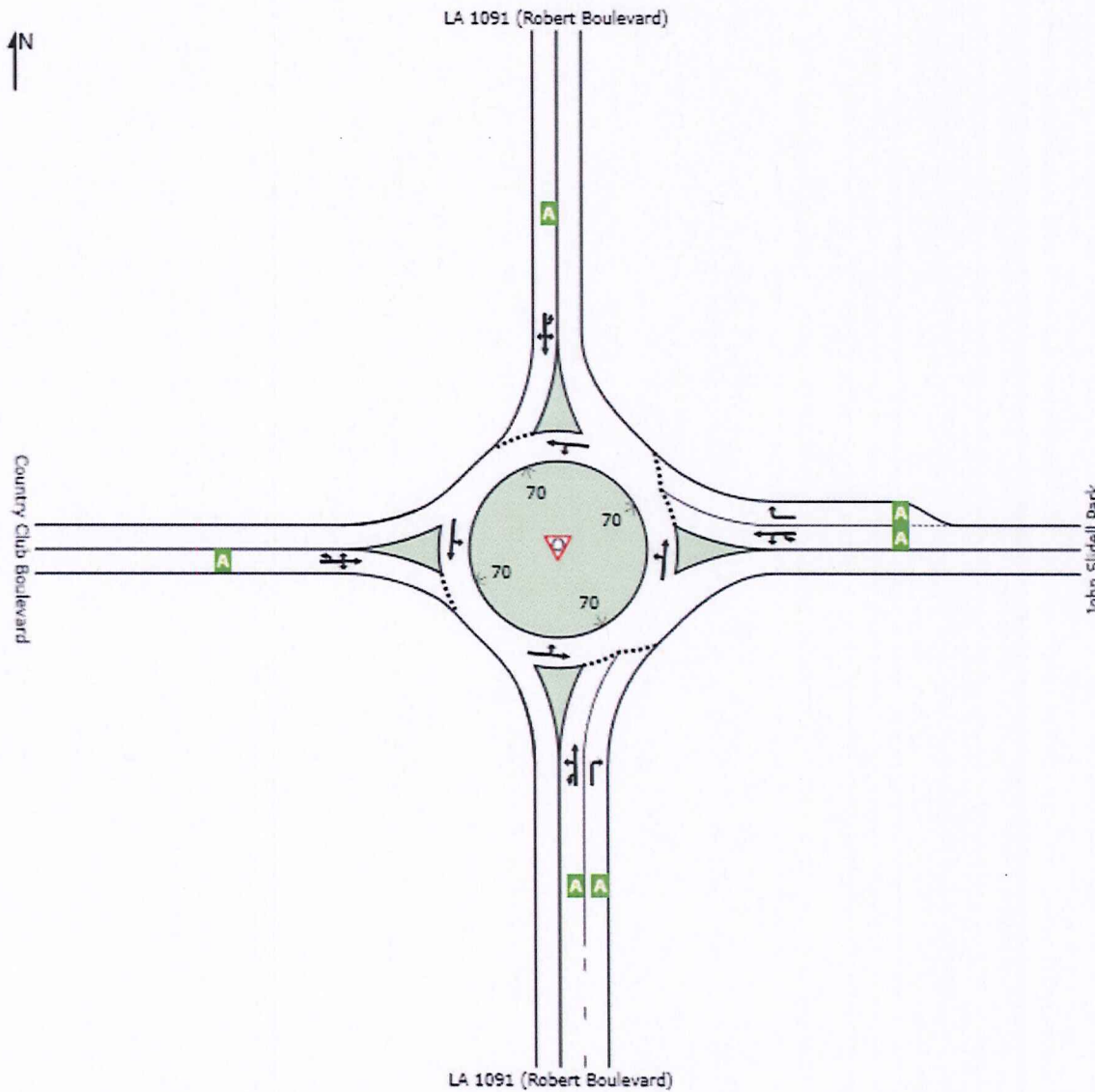
LEVEL OF SERVICE

Site: P.M. Peak Hour Design Year-23 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Roundabout
 Design Life Analysis (Final Year): Results for 23 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c >$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 Site: P.M. Peak Hour_Design Year-23 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Roundabout
 Design Life Analysis (Final Year): Results for 23 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: LA 1091 (Robert Boulevard)											
3u	U	1	0.0	0.730	1.2	LOS A	9.3	241.0	0.61	0.33	38.3
3	L2	84	0.0	0.730	1.2	LOS A	9.3	241.0	0.61	0.33	37.6
8	T1	863	4.8	0.730	1.3	LOS A	9.3	241.0	0.61	0.33	37.0
18	R2	64	0.0	0.073	0.9	LOS A	0.4	9.3	0.31	0.15	38.3
Approach		1012	4.1	0.730	1.2	LOS A	9.3	241.0	0.59	0.32	37.2
East: John Slidell Park											
1u	U	1	0.0	0.049	7.4	LOS A	0.3	8.7	0.90	0.70	33.7
1	L2	24	0.0	0.049	7.4	LOS A	0.3	8.7	0.90	0.70	33.2
6	T1	1	0.0	0.049	7.4	LOS A	0.3	8.7	0.90	0.70	33.3
16	R2	22	0.0	0.052	8.7	LOS A	0.3	8.4	0.88	0.73	33.9
Approach		48	0.0	0.052	8.0	LOS A	0.3	8.7	0.89	0.71	33.5
North: LA 1091 (Robert Boulevard)											
7u	U	1	0.0	0.712	1.6	LOS A	8.4	216.0	0.66	0.40	38.2
7	L2	42	0.0	0.712	1.6	LOS A	8.4	216.0	0.66	0.40	37.5
4	T1	683	4.8	0.712	1.8	LOS A	8.4	216.0	0.66	0.40	37.0
14	R2	43	0.0	0.712	1.6	LOS A	8.4	216.0	0.66	0.40	36.8
Approach		769	4.3	0.712	1.7	LOS A	8.4	216.0	0.66	0.40	37.0
West: Country Club Boulevard											
5u	U	1	0.0	0.200	5.8	LOS A	1.3	31.9	0.82	0.74	35.8
5	L2	49	0.0	0.200	5.8	LOS A	1.3	31.9	0.82	0.74	35.2
2	T1	4	0.0	0.200	5.8	LOS A	1.3	31.9	0.82	0.74	35.4
12	R2	58	0.0	0.200	5.8	LOS A	1.3	31.9	0.82	0.74	34.6
Approach		112	0.0	0.200	5.8	LOS A	1.3	31.9	0.82	0.74	34.9
All Vehicles		1941	3.8	0.730	1.9	LOS A	9.3	241.0	0.64	0.39	36.9

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

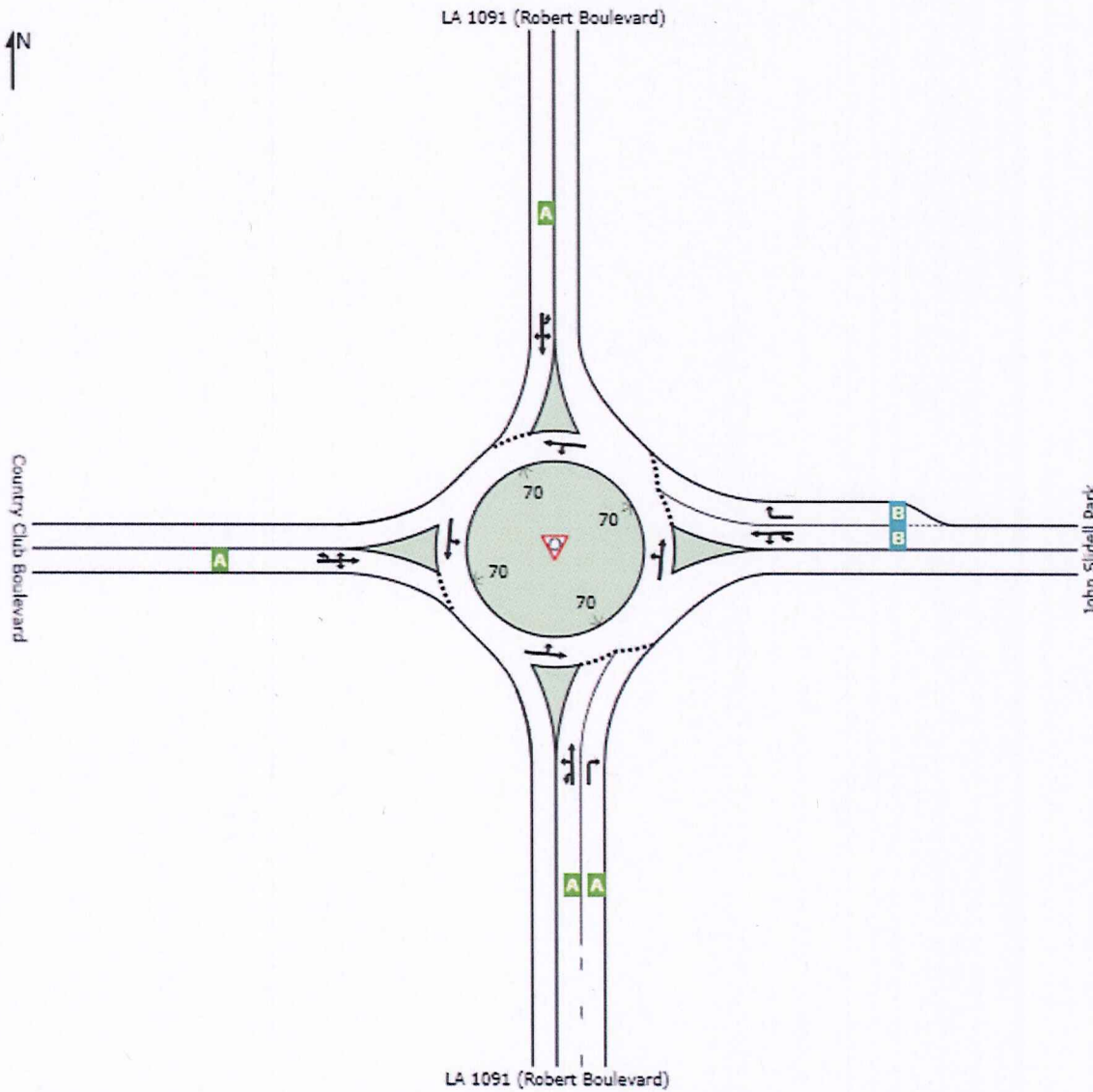
LEVEL OF SERVICE

Site: P.M. Peak Hour Practical Capacity (Capacity)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Roundabout
 Design Life Analysis (Capacity): Results for 50 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	B	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

Site: P.M. Peak Hour_Practical Capacity (Capacity)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_P.M. Peak Roundabout
Design Life Analysis (Capacity): Results for 50 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV %	v/c	sec		Vehicles	Distance		per veh	mph
		veh/h					veh	ft			
South: LA 1091 (Robert Boulevard)											
3u	U	2	0.0	0.900	2.2	LOS A	18.7	484.6	1.00	0.58	36.9
3	L2	84	0.0	0.900	2.2	LOS A	18.7	484.6	1.00	0.58	36.3
8	T1	1070	4.8	0.900	2.4	LOS A	18.7	484.6	1.00	0.58	35.8
18	R2	79	0.0	0.092	1.0	LOS A	0.5	11.9	0.33	0.17	38.3
Approach		1235	4.2	0.900	2.3	LOS A	18.7	484.6	0.96	0.55	36.0
East: John Slidell Park											
1u	U	2	0.0	0.111	14.7	LOS B	0.9	22.9	1.00	0.87	30.4
1	L2	29	0.0	0.111	14.7	LOS B	0.9	22.9	1.00	0.87	30.0
6	T1	1	0.0	0.111	14.7	LOS B	0.9	22.9	1.00	0.87	30.1
16	R2	28	0.0	0.123	16.9	LOS B	0.9	22.4	1.00	0.93	30.2
Approach		59	0.0	0.123	15.7	LOS B	0.9	22.9	1.00	0.89	30.1
North: LA 1091 (Robert Boulevard)											
7u	U	2	0.0	0.888	4.8	LOS A	19.7	510.6	1.00	0.67	36.9
7	L2	52	0.0	0.888	4.8	LOS A	19.7	510.6	1.00	0.67	36.3
4	T1	847	4.8	0.888	5.1	LOS A	19.7	510.6	1.00	0.67	35.7
14	R2	43	0.0	0.888	4.8	LOS A	19.7	510.6	1.00	0.67	35.6
Approach		944	4.3	0.888	5.0	LOS A	19.7	510.6	1.00	0.67	35.8
West: Country Club Boulevard											
5u	U	1	0.0	0.305	8.9	LOS A	2.2	54.8	0.97	0.96	34.1
5	L2	49	0.0	0.305	8.9	LOS A	2.2	54.8	0.97	0.96	33.6
2	T1	4	0.0	0.305	8.9	LOS A	2.2	54.8	0.97	0.96	33.7
12	R2	58	0.0	0.305	8.9	LOS A	2.2	54.8	0.97	0.96	33.0
Approach		112	0.0	0.305	8.9	LOS A	2.2	54.8	0.97	0.96	33.3
All Vehicles		2350	3.9	0.900	4.1	LOS A	19.7	510.6	0.98	0.63	35.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

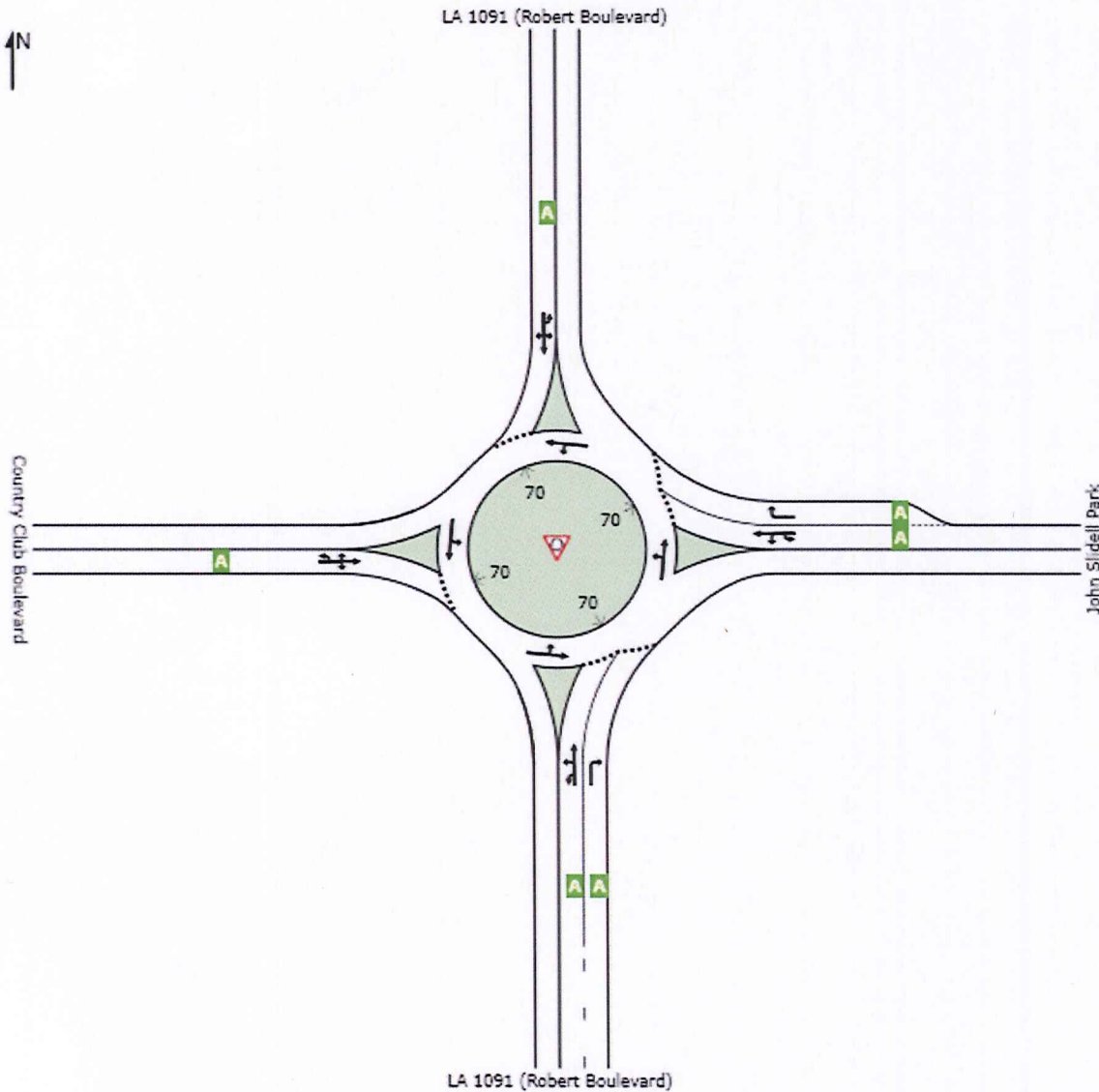
LEVEL OF SERVICE

Site: Midday Weekend Peak Hour_Build Year-3 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour Roundabout
 Design Life Analysis (Final Year): Results for 3 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

 **Site: Midday Weekend Peak Hour_Build Year-3 Year (Final)**

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour Roundabout
Design Life Analysis (Final Year): Results for 3 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV %	v/c	sec		Vehicles	Distance		per veh	mph
		veh/h					veh	ft			
South: LA 1091 (Robert Boulevard)											
3u	U	1	0.0	0.441	0.4	LOS A	3.5	91.7	0.29	0.12	39.4
3	L2	58	0.0	0.441	0.4	LOS A	3.5	91.7	0.29	0.12	38.7
8	T1	486	4.8	0.441	0.5	LOS A	3.5	91.7	0.29	0.12	38.1
18	R2	19	0.0	0.023	0.5	LOS A	0.1	2.8	0.22	0.08	38.6
Approach		564	4.1	0.441	0.5	LOS A	3.5	91.7	0.29	0.12	38.2
East: John Slidell Park											
1u	U	1	0.0	0.047	3.2	LOS A	0.3	6.5	0.62	0.46	35.9
1	L2	35	0.0	0.047	3.2	LOS A	0.3	6.5	0.62	0.46	35.4
6	T1	3	0.0	0.047	3.2	LOS A	0.3	6.5	0.62	0.46	35.5
16	R2	21	0.0	0.032	4.1	LOS A	0.2	4.1	0.63	0.47	36.5
Approach		60	0.0	0.047	3.5	LOS A	0.3	6.5	0.63	0.46	35.8
North: LA 1091 (Robert Boulevard)											
7u	U	1	0.0	0.496	1.1	LOS A	3.9	100.5	0.44	0.25	39.1
7	L2	13	0.0	0.496	1.1	LOS A	3.9	100.5	0.44	0.25	38.4
4	T1	446	4.8	0.496	1.2	LOS A	3.9	100.5	0.44	0.25	37.8
14	R2	35	0.0	0.496	1.1	LOS A	3.9	100.5	0.44	0.25	37.6
Approach		496	4.3	0.496	1.2	LOS A	3.9	100.5	0.44	0.25	37.8
West: Country Club Boulevard											
5u	U	1	0.0	0.153	3.8	LOS A	0.8	20.9	0.64	0.54	37.3
5	L2	35	0.0	0.153	3.8	LOS A	0.8	20.9	0.64	0.54	36.7
2	T1	1	0.0	0.153	3.8	LOS A	0.8	20.9	0.64	0.54	36.8
12	R2	68	0.0	0.153	3.8	LOS A	0.8	20.9	0.64	0.54	36.0
Approach		105	0.0	0.153	3.8	LOS A	0.8	20.9	0.64	0.54	36.2
All Vehicles		1225	3.7	0.496	1.2	LOS A	3.9	100.5	0.40	0.23	37.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: C:\Users\WSD\OneDrive\!!JVB\~1-WSD-PC-5079\RPC LA 1091 (Robert) at Country Club Blvd Roundabout Study\SIDRA Files\LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park.sip6

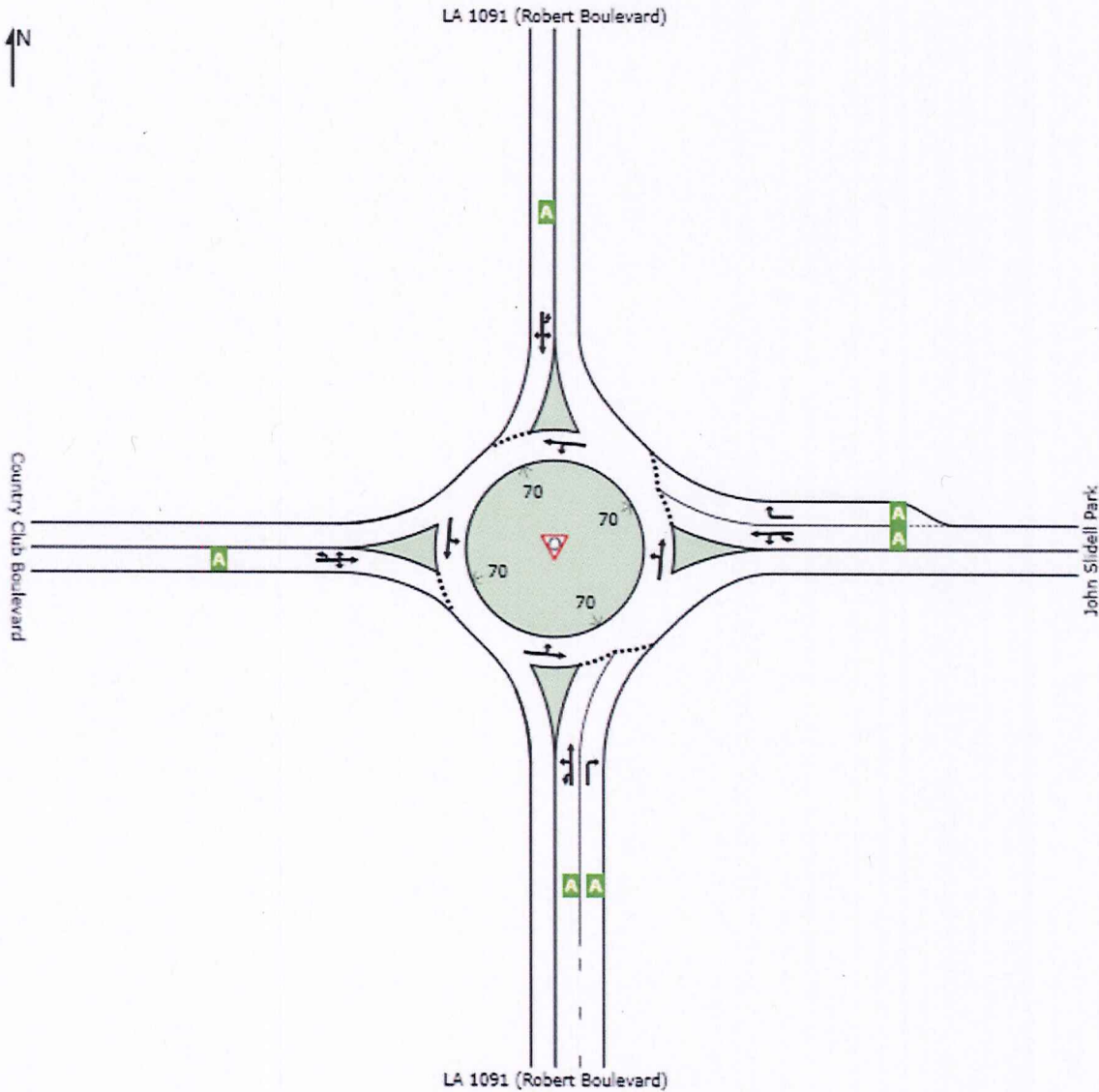
LEVEL OF SERVICE

Site: Midday Weekend Peak Hour_Design Year-23 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour Roundabout
 Design Life Analysis (Final Year): Results for 23 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

Site: Midday Weekend Peak Hour_Design Year-23 Year (Final)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour
 Roundabout
 Design Life Analysis (Final Year): Results for 23 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance ft		per veh	mph
South: LA 1091 (Robert Boulevard)											
3u	U	1	0.0	0.466	0.4	LOS A	3.9	101.2	0.30	0.12	39.4
3	L2	58	0.0	0.466	0.4	LOS A	3.9	101.2	0.30	0.12	38.7
8	T1	571	4.8	0.466	0.4	LOS A	3.9	101.2	0.30	0.12	38.1
18	R2	22	0.0	0.024	0.5	LOS A	0.1	3.0	0.22	0.08	38.6
Approach		652	4.2	0.466	0.4	LOS A	3.9	101.2	0.29	0.12	38.2
East: John Slidell Park											
1u	U	1	0.0	0.052	3.5	LOS A	0.3	7.6	0.67	0.49	35.8
1	L2	40	0.0	0.052	3.5	LOS A	0.3	7.6	0.67	0.49	35.2
6	T1	3	0.0	0.052	3.5	LOS A	0.3	7.6	0.67	0.49	35.4
16	R2	25	0.0	0.037	4.4	LOS A	0.2	5.0	0.67	0.51	36.4
Approach		70	0.0	0.052	3.8	LOS A	0.3	7.6	0.67	0.50	35.6
North: LA 1091 (Robert Boulevard)											
7u	U	1	0.0	0.526	1.1	LOS A	4.4	112.9	0.45	0.26	39.0
7	L2	16	0.0	0.526	1.1	LOS A	4.4	112.9	0.45	0.26	38.3
4	T1	524	4.8	0.526	1.2	LOS A	4.4	112.9	0.45	0.26	37.7
14	R2	35	0.0	0.526	1.1	LOS A	4.4	112.9	0.45	0.26	37.6
Approach		575	4.4	0.526	1.2	LOS A	4.4	112.9	0.45	0.26	37.7
West: Country Club Boulevard											
5u	U	1	0.0	0.147	4.0	LOS A	0.8	21.1	0.68	0.57	37.2
5	L2	35	0.0	0.147	4.0	LOS A	0.8	21.1	0.68	0.57	36.6
2	T1	1	0.0	0.147	4.0	LOS A	0.8	21.1	0.68	0.57	36.8
12	R2	68	0.0	0.147	4.0	LOS A	0.8	21.1	0.68	0.57	35.9
Approach		105	0.0	0.147	4.0	LOS A	0.8	21.1	0.68	0.57	36.1
All Vehicles		1402	3.7	0.526	1.2	LOS A	4.4	112.9	0.41	0.23	37.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

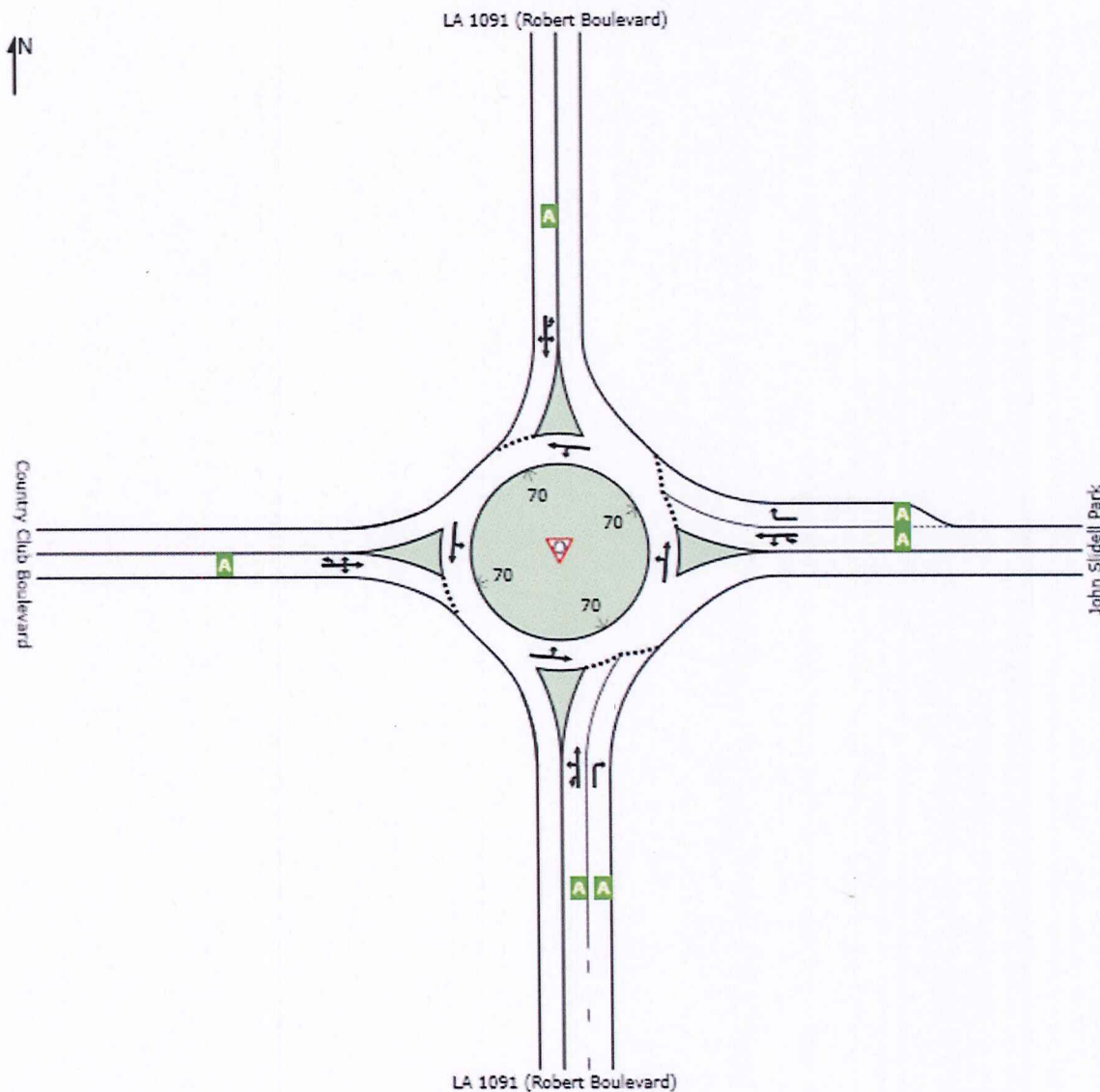
LEVEL OF SERVICE

Site: Midday Weekend Peak Hour_Practical Capacity (Capacity)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour
 Roundabout
 Design Life Analysis (Capacity): Results for 50 years

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c >$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

MOVEMENT SUMMARY

Site: Midday Weekend Peak Hour_Practical Capacity (Capacity)

LA 1091 (Robert Boulevard) @ Country Club Boulevard & John Slidell Park_Midday Weekend Peak Hour

Roundabout

Design Life Analysis (Capacity): Results for 50 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: LA 1091 (Robert Boulevard)											
3u	U	2	0.0	0.550	0.5	LOS A	5.3	133.5	0.34	0.15	39.3
3	L2	58	0.0	0.550	0.5	LOS A	5.3	133.5	0.34	0.15	38.6
8	T1	707	1.0	0.550	0.5	LOS A	5.3	133.5	0.34	0.15	38.6
18	R2	28	0.0	0.030	0.5	LOS A	0.1	3.7	0.23	0.09	38.5
Approach		794	0.9	0.550	0.5	LOS A	5.3	133.5	0.34	0.15	38.6
East: John Slidell Park											
1u	U	2	0.0	0.072	4.6	LOS A	0.5	11.3	0.75	0.58	35.2
1	L2	50	0.0	0.072	4.6	LOS A	0.5	11.3	0.75	0.58	34.6
6	T1	3	0.0	0.072	4.6	LOS A	0.5	11.3	0.75	0.58	34.8
16	R2	31	0.0	0.052	5.7	LOS A	0.3	7.4	0.74	0.59	35.6
Approach		86	0.0	0.072	5.0	LOS A	0.5	11.3	0.74	0.59	35.0
North: LA 1091 (Robert Boulevard)											
7u	U	2	0.0	0.654	1.5	LOS A	6.7	173.0	0.59	0.36	38.5
7	L2	19	0.0	0.654	1.5	LOS A	6.7	173.0	0.59	0.36	37.8
4	T1	649	4.8	0.654	1.6	LOS A	6.7	173.0	0.59	0.36	37.3
14	R2	35	0.0	0.654	1.5	LOS A	6.7	173.0	0.59	0.36	37.1
Approach		705	4.4	0.654	1.6	LOS A	6.7	173.0	0.59	0.36	37.3
West: Country Club Boulevard											
5u	U	1	0.0	0.177	5.4	LOS A	1.1	27.2	0.78	0.70	36.3
5	L2	35	0.0	0.177	5.4	LOS A	1.1	27.2	0.78	0.70	35.7
2	T1	1	4.8	0.177	5.8	LOS A	1.1	27.2	0.78	0.70	35.2
12	R2	68	0.0	0.177	5.4	LOS A	1.1	27.2	0.78	0.70	35.0
Approach		105	0.0	0.177	5.5	LOS A	1.1	27.2	0.78	0.70	35.3
All Vehicles		1691	2.3	0.654	1.5	LOS A	6.7	173.0	0.49	0.29	37.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement

LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option is selected.

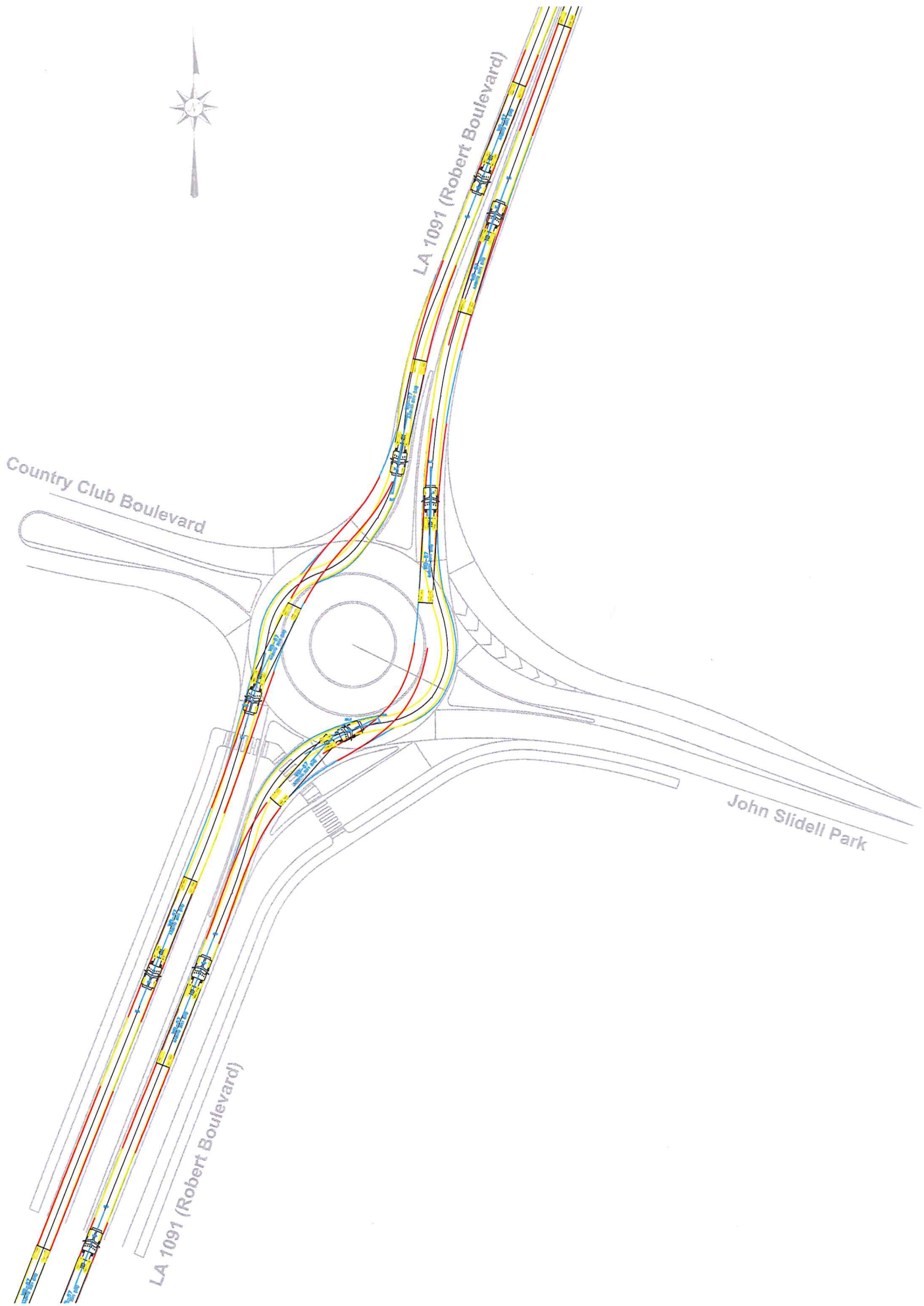
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Country Club Boulevard

LA 1091 (Robert Boulevard)

LA 1091 (Robert Boulevard)

John Slidell Park



LA 1091 (Robert Boulevard)

Country Club Boulevard

John Slidell Park

LA 1091 (Robert Boulevard)



LA 1091 (Robert Boulevard)

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John Slidell Park

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