

**STAGE 0 FEASIBILITY STUDY**  
**SCOPE OF SERVICES**

**US 190 (Gause Boulevard West) @ Carroll Road & Sunset Drive**  
**Roundabout Study**  
**(RPC Task SL-1.18G; FY-18 UPWP)**

The purpose of this project is to perform a Stage 0 Feasibility Study for a proposed roundabout at the intersection of US 190 (Gause Boulevard West) @ Carroll Road & Sunset Drive. This study will serve as an addendum to the original Stage 0 Feasibility Study along this US 190 corridor perform by Neel-Schaffer on behalf of the Regional Planning Commission (RPC) dated June 30, 2014 “US 190 (LA 433 to US 11) Interim Capacity/Widening Improvements”. This study is a follow up effort that will update data inputs of the aforementioned study as it relates to the intersections of US190 (Gause Blvd. West) at Carroll Road/Sunset Drive, Maris Stella Street, and Westminster Drive; and further, accomplish a roundabout study for these intersections consistent with DOTD standards.

Per the aforementioned effort by Neel Shaffer, the construction cost estimate for these three intersections as described in the study would require a multi-year funding commitment to undertake. As such, this supplemental study will also examine the feasibility of implementing a roundabout at the US 190 (Gause Boulevard West) @ Carroll Road & Sunset Drive intersection as a “stand-alone” project, and will include a corridor system analysis of the adjacent signalized intersections to the east and west at the intersections of US 190 (Gause Boulevard West) @ Maris Stella Street and US 190 (Gause Boulevard West) @ Westminster Drive. Given the scarcity of funding, RPC’s goal is to prioritize investments in the corridor to projects that demonstrate safety and operational improvements as quickly and cost effectively as possible.

The intersection is under the jurisdiction of the Louisiana Department of Transportation and Development (DOTD). Consequently, the study will adhere to DOTD’s Engineering Directives and Standards governing the requirements for the justification, design, and approval for roundabouts on State highways (EDSM No. VI.1.1.5 “Roundabouts”). The study shall be managed by and the report signed and stamped by a Professional Engineer (P.E.).

This project will include the following tasks:

**TASK 1: PROJECT TIMELINE AND KICK-OFF MEETING**

The Consultant will prepare a draft project schedule including major milestones for the Tasks to follow. The timeline will be submitted at a project kick-off meeting that will include representatives from the Consultant, any sub-Consultant, the City of Slidell, DOTD District 62, the Regional Planning Commission (RPC), and St. Tammany Parish. Other attendees will be invited as necessary. The kick-off meeting will take place within two (2) weeks of the Notice to Proceed.

**TASK 2: PROJECT MANAGEMENT COMMITTEE**

The Consultant will assist RPC in establishing and supporting a Project Management Committee to guide the technical work effort and to review the Consultant’s work products. The PMC will include the RPC, the City of Slidell, DOTD District 62, and representatives from other city/parish officials as deemed appropriate. The Consultant will provide all necessary agendas, handouts and exhibits in advance of the PMC meetings for RPC review and approval and prepare summary minutes of the meetings. RPC anticipates not more than four (4) PMC meeting will be required.

### **TASK 3: SITE INVESTIGATION AND DATA COLLECTION**

Comprehensive site investigations and Peak Hour Turning Movement Counts will be made at the three intersections included in the study area to allow an accurate assessment of the traffic and physical characteristics of the site.

For the intersection of US 190 (Gause Boulevard West) @ Carroll Road & Sunset Drive, the data collection efforts will also include but may not be limited to the following.

**Crash History** – A crash history of the intersection will be determined for the past 3 years and a chart developed listing the number of “correctible crashes”. Correctible crashes are defined as head-on, right-angle, and left-turn collisions.

**Traffic Volume Counts** – 7-day, 24-hour traffic volume counts will be conducted on each approach to the intersections. These counts will contain hourly subtotals and include vehicle classification amounts. Counts must be completed during a 7-day period that does not include a holiday or special event not typically seen at the site. Said traffic counts will be forwarded to LA DOTD District 062 traffic section with a recommendation for a determination of the peak AM Mid-day, and PM traffic periods.

**Peak Hour Turning Movement Counts** – Pending approval of the peak hours by District 062 traffic section, vehicle and pedestrian peak hour turning movement counts will be collected at the intersections during the weekday A.M. and P.M. peak hours. Vehicle and pedestrian peak hour turning movement counts will be collected at the intersection during the weekday A.M. and P.M. peak hours. These counts must be completed during a period that does not include a holiday or special event.

**Speed Study** – Vehicle travel speeds will be collected along the US 190 (Gause Boulevard West) approaches to the intersection to perform a speed study following the methods defined by DOTD’s EDMS VI.1.1.1 and the DOTD Traffic Engineering Manual.

### **TASK 4: ROUNDABOUT AND SYSTEM OPERATIONAL ANALYSIS**

Utilizing the traffic data collected in Tasks 3, the Consultant will conduct a roundabout operational analysis for the intersection of US 190 (Gause Boulevard West) @ Carroll Road & Sunset Drive, and a system analysis including the US 190 (Gause Boulevard West) intersections at Maris Stella Street and Westminster Drive.. All analyses will be undertaken per DOTD guidelines<sup>1</sup> :

The analysis will include the following evaluations<sup>7</sup>

**HCM Level of Service Analysis (Existing Intersection)** – For comparison purposes, a HCM Level of Service Analysis will be performed on the existing operational state of the intersections during the A.M. and P.M. peak hours using the existing geometry, traffic controls, and traffic volumes. Delay times (seconds per vehicles) and corresponding Level of Service (LOS) designations and v/c ratios will be calculated using Synchro Software (Version 7 or higher).

**Sidra Intersection Analysis (Roundabout)** – For the roundabout analysis, Sidra Intersection computer software will be used to determine the level of service and v/c ratio for the proposed roundabout. The collected peak hour traffic counts shall be projected out from the anticipated build year of the roundabout to allow a design life of 20 years. In this case the build year is considered to be 3 years from submittal of the traffic study. The Sidra Intersection software settings and final analysis reports must be set to follow the requirements set forth in the DOTD Roundabout Analysis Brochure. An electronic copy of the Sidra

analysis file shall be submitted with the report. Level of Service and v/c ratios for the roundabout Sidra analysis will be compared to the HCM analysis for the existing unsignalized intersection.

**VISSIM Modeling** – A VISSIM computer software model will be prepared to show an animation of the anticipated function of the roundabout and corridor system. An electronic copy of the model will be submitted with the report. The VISSIM model shall be calibrated using LADOTD standards for the calibration of traffic models.

**AutoTURN Analysis** – The report must provide an AutoTURN analysis to demonstrate that the proposed roundabout layout can accommodate a WB-67 truck.

#### **TASK 5: CONCEPTUAL ROUNDABOUT LAYOUT DESIGN**

The Consultant will prepare a detailed conceptual drawing on an aerial photograph showing the proposed roundabout layout design. The layout shall follow to the greatest extent possible the LADOTD Roadway Design Procedure and Details Manual for roundabouts. The concept drawing will include but not be limited to the following.

- Appropriate geometry for the entry and exit of the design vehicle
- Potential horizontal and/or vertical geometry issues
- Apparent right-of-way as determine from available information and site visits.
- Anticipated required right-of-way
- Nearby driveways, intersections, and traffic control types within the 95% queue length.
- Apparent utility locations determined from available information and site visit.
- Anticipated utility relocations
- Sidewalk locations
- Apparent drainage issues

#### **TASK 6: DRAFT REVIEW**

A draft report with all documentation described above will be submitted to the City of Slidell and others on the PMC. The report will include the conceptual layout of the roundabout and descriptions of the proposed improvements. The Consultant will prepare and include LADOTD’s Stage 0 Environmental Checklist in the draft and final reports.

#### **TASK 7: FINAL DELIVERABLES**

Following review and approval of the draft submission, the Consultant will provide RPC with ten (10) bound copies of the Final Study Report and supporting plan packages. A pdf version of the final report and plan packages will also be provided and include all accessory documentation created during the course of the study.

**TIMELINE: 8 Months**

**BUDGET: \$65,000.00**

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<sup>i</sup> DOTD Guidance can be found:

[http://wwwsp.dotd.la.gov/Inside\\_LaDOTD/Divisions/Engineering/Traffic\\_Engineering/Pages/Traffic\\_Simulation.aspx](http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Traffic_Engineering/Pages/Traffic_Simulation.aspx)