

REGIONAL PLANNING COMMISSION

STAGE "0" FEASIBILITY STUDY Traffic Signal Timing and Coordination Study Manhattan Boulevard Corridor Jefferson Parish, LA (RPC Task A-3.18; FY-18 UPWP)

The Regional Planning Commission's transportation planning process provides for the establishment and use of a performance-based approach to transportation decision-making to support national and regional goals that serve the mobility needs of people and freight and that fosters economic growth while minimizing transportation-related fuel consumption and air pollution. This traffic project is being carried out by RPC as part of this agency's FAST Act (national highway program) responsibilities and in coordination with the region's Ozone Advance Program. The technical consultant will develop and analyze traffic signal timing strategies to reduce delays, lower emissions, improve fuel consumption, and maximize the progressive movement of traffic through the Manhattan Boulevard Corridor (a parish owned arterial) between Lapalco Blvd. and Westbank Village (875 Manhattan Blvd.). It is anticipated that traffic fatalities and severe injuries will also be reduced by producing smoother traffic flows and fewer stops. Tasks to be performed by the Consultant include:

TASK 1: PROJECT TIMELINE & KICK-OFF MEETING

The Consultant will prepare a draft project schedule including major milestones (PMC meetings, site visits, draft reviews, final report submission, etc.). The timeline will be submitted at a project kick-off meeting that will include the Consultant, all sub-consultants, RPC, Jefferson Parish Department of Engineering, and LADOTD District 02. Other attendees will be invited as necessary. The kick-off meeting will be organized by RPC and 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 consist of the RPC, Jefferson Parish Department of Engineering, Traffic Engineering Division, Jefferson Transit, LADOTD District 02, and representatives from other 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. The PMC will meet three times during the course of the study. In addition, the Consultant will assist RPC in the conduct of meetings with elected officials and other local leaders and organizations in the area to discuss the project's purpose and need and project-related opportunities and concerns. The RPC will initiate these contacts and the Consultant will prepare summary meeting minutes for review and discussion with the PMC.

Task 3: REVIEW OF EXISTING CONDITIONS

An inventory of the existing system will be conducted to identify geometric conditions and other pertinent information that impacts current traffic flow and operations. For this purpose, the Consultant will collect traffic, and bike/ped data at the ten signalized intersections within the Manhattan Boulevard Corridor.

- A. Gathering of Data/TSIs: The Consultant will conduct a field inspection at each study intersection. The Consultant will prepare a Traffic Signal Inventory (TSI) form for each intersection, including a schematic representation of each intersection. The intersection sketch will include the following information: TSI #, street names, north arrow and scale, signal layout (poles, cabinet, heads), signal head numbers (based on TSI), lane numbers, lane assignments (left, thru, right, etc.), turn lane storage lengths, pavement markings, etc. The RPC will provide geo-referenced imagery and GIS information, if needed, to assist the Consultant in the preparation of the intersection sketches and TSI data. This data will be subject to data sharing agreements between RPC and the Consultant.
- B. Turning Movement Counts: The Consultant will collect turning movement counts, including bicycle and pedestrian usage, in 15-minute intervals for the morning peak (7:00 - 9:00 A.M.), mid-day (11:00 - 1:00 P.M.), and afternoon peak (4:00 – 6:00 P.M.) periods for the study intersections (for all approaches – Attachment A). The Consultant will collect twenty-four hour (ADT) counts on all approaches of the study intersections. This data will be used in identifying peak hour periods, determining the length of peak periods for signal plans, and allow MUTCD procedures to be used for signal warrant analysis, as may be needed. Based on discussion with the PMC, 7-day counts will be made at selected locations in major commercial areas to assist in defining weekend plans for signals.
- C. Jefferson Traffic Engineering will provide, if available, existing timing sheets, coordination plans, and traffic signal drawings and suggested timing preferences for the study corridor. Other relevant field data to be collected by the Consultant includes lane geometry, speed limits, parking regulations, storage lengths, signal phasing and queue lengths. The collected field data will be used by the Consultant to understand existing intersection operations and as input into the modeling process.

- D. Speed Study: The Consultant will conduct travel time studies along the Manhattan Boulevard Corridor during the a.m., mid-day, and p.m. peak hours to establish an existing conditions benchmark for future comparisons. The floating car method with travel time/delay worksheets will be used to collect data for 3 runs for each direction during each study period.

TASK 4: ANALYSIS OF EXISTING CONDITIONS

Working with the PMC, the Consultant will utilize the collected field data as well as data provided by RPC (i.e., selected traffic counts and speed data) and Jefferson Traffic Engineering data to establish benchmarks for future analysis. Operational metrics such as delay, average queues, level-of-service, v/c ratios and travel times will be reviewed with the PMC and used as input into development of a model for replicating actual conditions and testing future signal timing patterns to improve operational efficiency and enhance traffic safety.

In addition, the Consultant will identify the type of controllers and other equipment presently being used and develop recommendations for equipment upgrade or replacement, including estimated costs, to better serve multimodal traffic and emergency operations in the corridor. This evaluation process will be carried out in close consultation with Jefferson Parish Traffic Engineering Division.

TASK 5: DEVELOPMENT OF RECOMMENDATIONS

The Consultant will develop an initial set of timing parameters for weekday peak hours, including the a.m., mid-day, and p.m. peak. Parameters shall include: recommended time of day plans, recommended cycle lengths, recommended split times, recommended offset times, and recommendations regarding preemption/priority for emergency vehicles and transit.

During the implementation of the timings into the signal controllers, the Consultant shall be present to assist Jefferson Parish Traffic Engineering personnel in the actual implementation of the timing plans and to insure that there are no errors when inputting the proposed timings into the controllers. RPC views this as a team work effort and wants to have all three entities present (technical consultant, Jefferson Parish and DOTD) when signal timing changes are implemented into the controllers.

In addition, the Consultant will inform the PMC regarding other recommended short-term intersection improvements such as restriping of cross-walks, shoulders, new signal heads, longer left or right turn storage lengths, removal of right turn overlap signals, signage and other improvements to facilitate a.m. and p.m. progression along the corridor.

TASK 6: IMPLEMENTATION AND EVALUATION

The Consultant will conduct a second Travel Time and Delay analysis following implementation of recommended timing parameters for a.m., mid-day, and p.m. peaks. The Consultant will rerun the model and further field test and refine the analysis to optimize progression through the Manhattan Boulevard Corridor. Upon completion of the second Travel Time and Delay runs and refinement of the timing patterns, the Consultant will prepare a technical memorandum summarizing all proposed changes and methodologies used in the analysis, including results of

Synchro and other software analysis, time-space diagrams, and intersection data worksheets and recommendations, including signal equipment changes by intersection. The Consultant will demonstrate how the recommended improvements (measures of effectiveness) compare to the existing conditions analysis. The Consultant will provide RPC and Jefferson Parish with proposed TSIs showing all proposed timings and recommended changes on schematic diagrams. RPC will establish a record system for maintaining the TSI data in an easily accessible format for future use and updating.

TASK 7: BENEFIT-COST ESTIMATION

The Consultant will make use of Synchro and other source data to quantitatively estimate the direct and indirect benefits associated with the proposed signal timing improvements. The Consultant will work with the RPC in establishing benefit-cost ratios for the study intersections based on performance measures relating to delay, safety, emissions, and energy consumption. Output from Synchro or other national reference sources will be used to establish the performance measures, units of measure, and values to estimate quantitatively the benefit-cost ratios. Direct benefits such as reduced delay and fewer stops as well as indirect benefits such as reduced fuel consumption and reduced emissions, i.e., CO, NOx, and VOC reductions will be quantitatively estimated for each intersection and the study corridor.

TASK 8: DRAFT REPORT

The Consultant will submit a draft report to the RPC summarizing study findings and recommendations. Following RPC review, the draft report will be distributed to the PMC for review and comment. The report distribution and PMC review will occur no later than 75% of project completion. The report will include the conceptual layout of each analysis section. The report text will summarize proposed signal timing and operational improvement measures for each intersection and the anticipated benefits for the corridor as a whole, including supporting measures, i.e., crosswalks, striping, and potential pedestrian signals and related cost information. The draft report will be developed in consultation with the RPC and developed in a format suitable for transmittal by RPC to Jefferson Parish.

TASK 9: ENVIRONMENTAL CHECKLIST

The Consultant will prepare and include LADOTD's Stage 0 Environmental Checklist in the draft and final reports.

TASK 10: FINAL DELIVERABLES

Following review and approval of the draft submission, the Consultant will provide RPC with seven (7) bound copies of the Final Stage 0 Feasibility Study Report and supporting plans in hardcopy. A pdf version of the final report and plan packages will also be provided to RPC in pdf format on compact disc. The CD should also include any GIS shapefiles, CAD files, and/or other accessory documentation created during the course of the study.

TIMELINE: 9 Months

BUDGET: \$75,000

ATTACHMENT "A"

**Manhattan Boulevard Corridor
Study Intersections (non-state)**

	Intersection at:	Location:
1.	Lapalco Blvd.	
2.	Central Blvd.	
3.	Gulf Bank and Trust Parking Lot South Entrance	About 250ft north of 9 th St.
4.	Hertz Rent a Car Parking Lot	1950 Manhattan Blvd. Harvey, L A 70058
5.	Regions Bank Parking Lot	1950 Manhattan Blvd. Harvey, L A 70058
6.	Gretna Blvd.	
7.	Starbucks Parking Lot	1950 Manhattan Blvd. Harvey, L A 70058
8.	Ute Dr.	
9.	Chick-fil-A Parking Lot	1950 Manhattan Blvd. Harvey, L A 70058
10.	Westbank Village Shopping Center Parking Lot	1950 Manhattan Blvd. Harvey, L A 70058