



Matthew Kelly
Chairman
Paul Agnello
FAMPO Administrator

FAMPO RESOLUTION 20-01

APPROVING THE SCOPE AND BUDGET FOR CONSULTANT SERVICES FOR LAFAYETTE BOULEVARD TRAFFIC STUDY

WHEREAS, the City of Fredericksburg has requested that FAMPO complete a multimodal study of the Lafayette Boulevard corridor; and

WHEREAS, this work activity is included in the fiscal year 2020 FAMPO Unified Planning Work Program (UPWP); and

WHEREAS, this study effort will develop potential candidate projects for consideration in SMART SCALE Round 4 and other State funding programs; and

WHEREAS, FAMPO staff applied for and was awarded a \$125,000 FY2019 Virginia Department of Rail and Public Transportation (DRPT) Technical Assistance Grant to complete the Phase 1 transit component of the Multimodal study; and

WHEREAS, FAMPO approved the use of FAMPO consultants to complete the Phase 1 transit component of the Multimodal study in Resolution 19-17 on 12/10/2018; and

WHEREAS, FAMPO has consulted with VDOT, the City of Fredericksburg, and the Technical Committee to receive input on the study effort and worked with its consultants Michael Baker International and Foursquare ITP to develop a scope and budget for the Phase 2 Lafayette Boulevard Traffic Study component of the Multimodal Study in the amount of \$125,000;

NOW, THEREFORE, BE IT RESOLVED that the Fredericksburg Area Metropolitan Planning Organization hereby approves the use of FAMPO on-call consultants in the amount of \$125,000 to assist staff with completing the Lafayette Boulevard Traffic Study as part of the Lafayette Boulevard Multimodal Study effort.

Adopted by the Policy Committee at its meeting on July 15, 2019.

Matthew Kelly, Chairman
Fredericksburg Area Metropolitan Planning Organization
Policy Committee

TASK ORDER REQUEST

Lafayette Boulevard Traffic Study

Overview

It has been requested that Michael Baker International (Baker) conduct a detailed corridor traffic study for the segment of Lafayette Boulevard from US Route 1 to St. Paul Street.

Task 1 – Project Management and Coordination

This task consists of time required to administer the project addressing contract matters, internal project coordination, agency coordination (GWRC/FAMPO, the City of Fredericksburg, and VDOT), supervision and general quality control, and project management responsibilities consisting of project organization and scheduling. This task will also include coordination with the consultant conducting the Transit/TDM Study along this portion of Lafayette Boulevard.

Task 2 – Data Collection

Traffic Data Collection

AM and PM peak period weekday turning movement counts will be conducted at the locations along Lafayette Boulevard listed below. In addition, one 72-hour volume/class/speed count will be conducted along Lafayette Boulevard. The counts will take place in the fall of 2019 when schools are in session. This task includes processing the raw counts and the determination of the AM and PM peak hours for analysis.

- Twin Lake Drive (existing signal)
- Old Greenwich Dr (existing signal)
- Hotchkiss St / Alliance Way (existing signal)
- Butternut Drive (leads to neighborhood on east side of Lafayette)
- Laurel Avenue (leads to neighborhood on east side of Lafayette)
- Harrison Road (existing signal)
- Lassen Lane (Route 1 cut-through south of Harrison Road intersection)
- Mall Drive/Falcon Drive (Existing signal)
- Route 2 and westbound Route 3 ramps (for Task 6)

Crash Data Collection

Prior to the site field review discussed in the next section, Baker will investigate crash data within the study corridor using data from the tableau public webpage supplemented by more recent data (2019) obtained from VDOT (if needed). Crash locations and crash types will be used to assist with the identification of areas with safety issues. A heat map will be generated from this data displaying high crash locations. This review will be used to identify any safety 'hot spots' that may deserve additional focus when recommendations are being prepared.

Site Field Review

Baker will conduct a site field review at the study intersections. Potential preliminary improvement recommendations will be noted during the field review for further discussion with the project team. The consultant will be looking for significant design or functional shortcomings.

During the field review, Baker will collect the following information to assist in the selection of the study intersections:

- Crossover, intersection, median and access configurations, deficiencies and issues/concerns
- Documentation of safety hot spot areas identified in the crash data heat map (notes & photographs)

Measurements for the various roadway features will be based on a combination of GIS information and tools such as Google Earth.

Task 3 – Existing Conditions Evaluation

Baker will conduct existing conditions AM and PM operational analyses for the study intersections identified in Task 2. The analyses will be completed using Synchro software. Results of the analyses will include delay, Level of Service (LOS), and queue lengths.

A safety assessment will be conducted along the corridor using the crash data collected in Task 2 and the data from the site field review. The detailed assessment will include a graphical presentation of the crash types, crash severities, and the identification of possible crash causes at each location.

An access spacing evaluation will be conducted along the corridor using data from the field visit. Distances between signalized intersections, stop-controlled intersections, and commercial driveways will be compared to the VDOT Access Management Standards in the latest Design Manual.

Baker will review and identify existing geometric characteristics at the study intersections related to issues with vertical and horizontal roadway alignment, adequacy of turn lane lengths at intersections/crossovers, any spillovers into thru lanes, and sight distance. These assessments will be primarily based on professional engineering judgment in the application of VDOT's standards. Observed non-standard features will be noted, however a review of "as-built" drawings will not be performed.

Task 4 – Future No-Build Conditions Evaluation

The future traffic volumes and turning movements at the study intersections will be developed based on background growth rates published in previous studies and confirmed using the FAMPO Regional Travel Demand Model.

Baker will conduct future year No-Build AM and PM operational analyses for study intersections using the Synchro Software. Potential corridor and intersection recommendations will be noted based on the results of the analysis.

Task 5 – Recommendations and Future Build Conditions Evaluation

Based on the results of Task 4, recommendations for the corridor and study intersections will be developed using an iterative process that considers the best use of the three available lanes on the Lafayette Boulevard mainline. The considerations will include:

- Existing Center Turn Lane
- Two lanes SB and 1 lane NB
- One lanes SB and 2 lanes NB
- A series of roundabouts along Lafayette Blvd

Draft recommendations will be developed and analyzed for discussion and feedback from stakeholders (see Task 7). Final recommendations will be developed based on the comments from the draft recommendations. Future year AM and PM peak hour operational analyses will be conducted for the final set of recommendations using the Synchro Software. Roundabout analyses will be conducted using Sidra.

The final recommendations will be presented in a format that is Smart Scale ready. This will include cost estimates, intersection conceptual sketches, improvement type (congestion, safety, etc.) and potentially breaking out recommendations into phases for better cost/benefit ratios. The preparation of any required Signal Justification Reports (SJRs) is not included in this scope of work.

Task 6 – AMTRAK/VRE Southern Access Assessment

The purpose of this task is to identify a potential new southern access point to the AMTRAK/VRE parking lot from the Route 2/Dixon Street area. A high-level assessment will be conducted that includes the following:

- Mapping environmental constraints based on readily-available information
- Vertical and Horizontal Conceptual Engineering using publicly available survey (topography)
- One option will include a possible connection at the Route 2 intersection with the westbound Route 3 ramps
- An operational analysis of the tie-in point to the existing roadway network (assumed along Route 2)
- A technical Memo summarizing the results and findings of the assessment
- Cost Estimates (not including ROW costs)

Task 7 – Meetings

It is expected that three in-person meetings and two WebEx meetings will be held with agency stakeholders to kick off the project, address methodologies, results, or any comments/concerns. This task includes preparation and participation for the meetings. This task does not include any formal meetings with the City Council.

Task 8 – Reporting

Baker will package all data collection findings and evaluation results into a technical report. Electronic copies of the report will be submitted to the stakeholder agencies for review. Two hard copies of the final document can be submitted upon request.

Schedule

It is expected that a draft report will be delivered within 7 months of Notice to Proceed (assumed mid-July). A final report will be delivered within two weeks of receiving comments on the draft submission.

Task	2019						2020	
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
1 Project Management and Coordination								
2 Data Collection								
3 Existing Conditions Evaluation								
4 Future No-Build Conditions Evaluation								
5 Recommendations and Future Build Conditions Evaluation								
6 AMTRAK/VRE Southern Access Assessment								
7 Meetings								
8 Submit Draft Report								
Submit Final Report (Anticipated)								

Cost

The total labor cost is \$118,860 which is derived from 898 hours at fully burdened rates. Direct expenses are expected to be \$6,140. Therefore, the total project cost will be \$125,000.

PROJECT TOTALS
Lafayette Boulevard Traffic Study

LABOR

Task No.	Task	Hours	Total Cost	Work Percentage by Hours
1	Project Management and Coordination	18	\$ 2,972	2.50%
2	Data Collection	32	\$ 4,114	3.46%
3	Existing Conditions Evaluation	72	\$ 8,904	7.49%
4	Future No-Build Conditions Evaluation	84	\$ 10,271	8.64%
5	Recommendations and Future Build Conditions Evaluation	206	\$ 27,584	23.21%
6	AMTRAK/VRE Southern Access Assessment	184	\$ 24,147	20.32%
7	Meetings	236	\$ 31,588	26.58%
8	Reporting	66	\$ 9,279	7.81%
TOTALS		898	\$ 118,860	100.00%

ODC's

Task No.	Task	Reproduction	TOTAL
1-8	All Tasks	\$6,140.00	\$6,140.00
TOTALS		\$6,140.00	\$6,140.00

GRAND TOTALS

Labor	\$118,860
ODC's	\$6,140
Total	\$125,000

Lafayette Boulevard Traffic Study						
MICHAEL BAKER INTERNATIONAL - Direct Costs						
		Reproduction	Travel	Communication/Postage	Traffic Counts	
Task No.	Task					TOTAL
1	Project Management and Coordination	\$5.00				\$5.00
2	Data Collection	\$5.00	\$82.00		\$5,663.00	\$5,750.00
3	Existing Conditions Operational Analysis	\$5.00				\$5.00
4	2040 Background Condition Forecast Volumes	\$5.00				\$5.00
5	2040 Background Condition Operational Analysis	\$5.00				\$5.00
6	Trip Generation and Trip Distribution	\$5.00				\$5.00
7	2040 Build Conditions - Operational Analysis and Recommendations	\$5.00				\$5.00
8	Meetings	\$100.00	\$250.00			\$350.00
9	Reporting	\$10.00				\$10.00
	TOTALS	\$145.00	\$332.00	\$0.00	\$5,663.00	\$6,140.00