

FREDERICKSBURG AREA METROPOLITAN PLANNING ORGANIZATION (FAMPO)

Fredericksburg City
Spotsylvania County
Stafford County

Mark Dudenhefer
Chairperson

Paul Agnello
FAMPO Administrator

FAMPO RESOLUTION 18-19

A RESOLUTION OF THE FREDERICKSBURG AREA METROPOLITAN PLANNING ORGANIZATION AUTHORIZING STAFF TO WORK WITH MICHAEL BAKER INTERNATIONAL TO EXECUTE THE I-95 PHASE 2 HIGHWAY STUDY SUPPLEMENTS

WHEREAS, in light of new congestion problems on I-95 associated with the extension of the 95 Express Lanes to Exit 143, existing congestion problems on I-95 associated with the Rappahannock River Crossings, and several planned improvements along the I-95 corridor that could significantly change existing traffic behavior, the FAMPO Policy Committee desires to conduct a Phase 2 multimodal study of I-95 to analyze congestion problems between mile point 148 and mile point 110 and their possible solutions in time for the 2045 Long Range Transportation Plan effort and the next round of Smart Scale project applications in the spring of 2018; and

WHEREAS, the FAMPO FY2018 Unified Planning Work Program (UPWP) includes an account for this examination; and

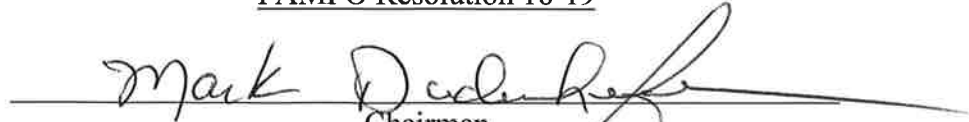
WHEREAS, working with Michael Baker International, a FAMPO on-call consultant, staff has completed two task orders for this I-95 Phase 2 Highway Study at a total cost of \$181,009 to conduct additional modeling as a result of recent changes due to the January, 2018 Fred Ex announcement and ITS project development work due to the State's new I-95 ITS/ICM study initiative, to be completed by June 2018 and funded with RSTP monies; and

WHEREAS, the attached Task Orders provides detailed information on the work elements, job assignments, costs and schedule for this work;

NOW, THEREFORE, BE IT RESOLVED BY THE FREDERICKSBURG AREA METROPOLITAN PLANNING ORGANIZATION THAT STAFF IS DIRECTED TO EXECUTE THE ATTACHED TASK ORDER WITH MICHAEL BAKER INTERNATIONAL AND TO COMPLETE THE WORK DESCRIBED THEREIN.

Adopted by the FAMPO Policy Committee at its meeting on February 26, 2018.

FAMPO Resolution 18-19


Chairman
Fredericksburg Area Metropolitan Planning Organization

Date: _____

TASK ORDER REQUEST

FAMPO Parking Management/Travel Information

February 17, 2018

OVERVIEW

FAMPO is looking to leverage innovative and evolving technologies in the realm of “smart parking” to increase mobility in the I-95 corridor, reduce motorist dissatisfaction with a lack of real-time parking availability information, and better utilize parking capacity as some parking lot locations are oversubscribed while others contain vacancies. FAMPO envisions this as an opportunity to implement asset-light solutions that leverage current and planned public (VDOT 511) and private (Google, Apple, INRIX, etc.) information aggregation platforms. This would limit the risk of obsolescence, market applications to the widest audience and maximize the impact of any investment.

This scope of work is to assist FAMPO in defining the key issues related to parking and general mobility in the I-95 corridor, help to identify implementable technology solutions for the region to pursue, research the topic including comparable efforts in the region and document the findings for consensus building with regional partners. While the focus is likely to be on parking management solutions, the study will take an open approach as not to preclude future enhancements for expansion to meet other traveler information needs (e.g., transit services, travel times by alternate modes, delays, reservations, security and seat management). As this study includes a research element, parking management will be given priority with other areas investigated as determined by the consultant and as the funding permits. FAMPO will be kept apprised. After consultation with VDOT, it is expected that the degree to which other elements can be investigate will be clearer. The schedule for this effort is being driven by the deadlines to allow FAMPO to submit a Smart Scale application(s) during the 2018 cycle.

Several subtasks are needed to identify and document a workable set of solutions tailored to the FAMPO region. While these steps are likely to evolve over the course of this effort, as currently envisioned the main step involved are as follows:

- Communicate with key people, including those with VDOT’s Operations Division in the Central Office who have been engaged with innovative park-and-ride lot parking management systems, FHWA, and other experts to obtain relevant information, experiences and insights for a smart parking program for the Fredericksburg Metropolitan area.
- After consulting with VDOT, reconvene with FAMPO to develop a comprehensive problem statement.
- Conduct additional investigations and inquiries to build upon the VDOT observations and perspectives. Then, a series of recommendations could be tailored to create a customized “smart parking” solution for the FAMPO region. This includes a review of the Smart Scale application process so that a compelling application/funding request can be developed for the solution(s) can be developed.
- Provide final and draft recommendations for FAMPO to present to agency partners to develop consensus and gather any final insights.
- Provide supplemental documentation in support of a Smart Scale funding application. This is an effort FAMPO staff will undertake independent of consultant team.

Below are the tasks necessary to accomplish the above activities.

Task 1 – Project Initiation and Management

Estimated Effort for Consultant Team –36 Hours– 16% of total effort.

This task is intended as a formal kick-off to the effort and includes an in-person meeting and conference call to establish an overview of the project, discuss initial concepts and begin to identify the areas of interest on which to focus. Also at this time Baker will establish project protocols, communications, etc. This task also covers general administration including invoicing.

- One conference call/webinar the purpose of which is to:
 - Share baseline knowledge and recent updates
 - Discuss project approach/areas of most interest
 - Establish general administrative procedures
 - Include discussion of approval processes/participants
 - Obtain materials (previous applications by FAMPO, available local studies/plans, etc.)
- Monthly Progress reports (along with invoicing) and internal project management

Work Product:

- Monthly progress reports

Task 2 - Review State of the Practice,

Estimated Effort for Consultant Team – 94 Hours– 41% of total effort.

The consultant will participate in a meeting with VDOT to discuss similar efforts in the I-66 corridor that can be adopted for this effort. Using the information gathered at the meeting, the consultant will work with FAMPO staff to refine the problem definition for this effort. Finally, the consultant will perform additional research and create a white paper on the local experience, current practice and emerging technologies/concepts.

- Meet with VDOT (face-to-face at FAMPO's offices – scheduled for February 8th) regarding the approach and recommendation developed regarding innovative technology related to parking/mobility management opportunities that have been implemented in the State or will be implemented as part of the Transform 66 program.
 - Recommendations for FAMPO will likely pivot off the Integrated Corridor Management (ICM) concepts being developed for I-66
 - Would ensure consistency between systems and simplify
 - Should be reviewed in the context of the I-95 corridor, I-66 may not be directly comparable
- Follow-up conference call/webinar with FAMPO staff to develop a clear problem definition prior to additional research
- Literature review/internet research
- Calls to other agencies (as identified in meetings and through research – and may include VRE, DRPT, VDOT NOVA) for insights

- *Work with GWRideConnect to develop and review survey questions to be administered at a regularly scheduled lot visit by the RideConnect staff to gather local knowledge and augment the research effort.*
- Memorandum listing major findings from research effort

Work Product:

- A short technical memorandum summarizing research findings and the recommendation from the VDOT consultation effort.

TASK 3 – Development and Documentation of a Recommended Approach/Support for Consultation with Agency Partners

Estimated Effort for Consultant Team – 100 Hours– 43% of total effort.

The consultant team will work on the major deliverable for this project, development and documentation of a concise statement of the problem and a comprehensive set of recommended solutions/projects. All proposed solutions will be done with an eye to scalability such as projects that can be initially done as a pilot project and subsequently expanded in scale, geography (number of locations/lots) and/or functionality (aspects in addition to parking management.) To achieve this the consult will work in concert with FAMPO to ensure only reasonable and achievable options are included. This task will include completing the following elements:

- Follow-up Conference call/Webinar with VDOT to clarify
- Conference call/Webinar to discuss recommendations
- Draft and Final memorandums detailing the proposed project approach –
 - Intended for agency review and input
 - Will be laid out in a way consistent with what is needed for the Smart Scale application
 - Creating an approach memorandum rather than a Smart Scale application maintains flexibility in what is suggested, and avoids undue focus on the application itself
 - Scope, schedule and costs at this stage will be general estimates intended to be guidance to decision makers
 - FAMPO staff will largely be responsible for development and submission of the Smart Scale application, giving the agency maximum flexibility. Consultant support for the application process is limited to the supplemental materials highlighted in Task 4 below, including assistance with the detailed scoping, scheduling and cost for (only) those items that FAMPO includes in their 2018 Smart-Scale application.
- Support materials for FAMPO outreach efforts to partner agencies

Work Product:

- A technical memorandum (Draft and final) of not more than 15 pages (inclusive of figures and tables) stating the problem definition and recommended approach/solutions. The document is intended as an insert into the larger I-95 Phase 2 Study as an appendix.
- Supplemental materials, specifically PowerPoint slides, describing the findings and recommendations of this effort to be included with the final I-95 Phase 2 presentation

SCHEDULE

The study will be completed largely by April 30th, 2018, in order for FAMPO to have adequate time to present the recommendations of this effort to their partnering agencies for concurrence and to allow time to prepare the application in time for the following deadlines:

- June 1, 2018 – Pre-Application Submission Deadline (5:00 p.m.)
- August 1, 2018 – Full Application Submission Deadline (5:00 p.m.)

COST

The total labor cost is \$46,758 which is derived from 230 hours at fully burdened rates spread across multiple job classifications from the Consultant Team. Direct expenses are expected to be \$1,261 for travel to/from meetings in the study area, and printing. Therefore, the total project cost will be \$48,019.

FAMPO Parking Mgt/Travel Info Smart Scale

2/17/2018

TEAM PROJECT TOTALS

	Labor	ODCs	Total*
Baker	\$ 26,008	\$ 705	\$ 26,713
ATCS	\$ 20,749	\$ 556	\$ 21,305
	\$ 46,758	\$ 1,261	\$ 48,019

BAKER PROJECT TOTALS

LABOR					
Task No.	Task	BAKER	Total Hours	BAKER	Total Cost
FAMPO Parking Mgt/Travel Info Smart Scale					
1	Project Initiation and Management	24	24	\$4,718	\$4,718
2	Review of State of the Practice	60	60	\$10,214	\$10,214
3	Development of Recommended Approach	70	70	\$11,076	\$11,076
0	Smart Scale Application Supplemental Materials	0	0	\$0	\$0
	Total	154	154	\$26,008	\$26,008

ODC's						
Task No.	Task	BAKER				TOTAL
		Reproduction	Travel	Vendors	Communication / Postage	
FAMPO Parking Mgt/Travel Info Smart Scale						
1	Project Initiation and Management	\$100	\$0	\$0	\$0	\$100
2	Review of State of the Practice	\$150	\$250	\$0	\$0	\$400
3	Development of Recommended Approach	\$205	\$0	\$0	\$0	\$205
	Total	\$455	\$250	\$0	\$0	\$705

SUB TOTAL	
FAMPO Parking Mgt/Travel Info Smart Scale - Baker	
Labor	\$26,008
ODC's	\$705
Total	\$26,713

ATCS PROJECT TOTALS

LABOR					
Task No.	Task	ATCS	Total Hours	ATCS	Total Cost
FAMPO Parking Mgt/Travel Info Smart Scale					
1	Project Initiation and Management	12	12	\$2,754	\$2,754
2	Review of State of the Practice	34	34	\$9,560	\$9,560
3	Development of Recommended Approach	30	30	\$8,435	\$8,435
	Total	76	76	\$20,749	\$20,749

ODC's						
Task No.	Task	ATCS				TOTAL
		Reproduction	Travel	Vendors	Communication / Postage	
FAMPO Parking Mgt/Travel Info Smart Scale						
1	Project Initiation and Management	\$50	\$0	\$0	\$56	\$106
2	Review of State of the Practice	\$100	\$100	\$0	\$0	\$200
3	Development of Recommended Approach	\$250	\$0	\$0	\$0	\$250
	Total	\$400	\$100	\$0	\$56	\$556

SUB TOTAL		
FAMPO Parking Mgt/Travel Info Smart Scale - ATCS		
Labor		\$20,749
ODC's		\$556
Total		\$21,305

TASK ORDER REQUEST

I-95 Corridor Evaluation Phase 2 Supplemental Scope

February 20, 2018

OVERVIEW

The scope document below describes supplemental work activity needed as part of Baker's original Task Order #13. Changing conditions in the political and funding landscape have led to numerous revisions to technical work and have changed needs for the study effort. Below are tasks that describe work to be performed by Baker and ATCS to deliver needed study results through April 2018.

Task 1 - Document Review

No supplemental work expected for this task

Task 2 - Supplemental Data Collection

No supplemental work expected for this task

TASK 3 - Travel Demand Model Development & Forecasts

Subtask 3.1 – Peer review of recently updated Version 3.1 FAMPO Model

No supplemental work expected for this task

Subtask 3.2 - Establish Forecasting Methodology

No supplemental work expected for this task

Subtask 3.3 – Development Forecasts

Develop 2030 and 2045 forecasts for three (3) Build alternatives, testing three new interchange additions/improvements: Exit 126 with super braided ramps, Exit 124, and Exit 128. Develop also, 2030 and 2045 forecasts for a variant of the No-Build plus v2 concept. This variant will exclude the northern tail of I-95 NB between Exit 133 and 136. Only the No-Build forecasts will be developed with the specific intent of informing the microscopic VISSIM analysis described in Task 4. Consequently, the forecasts will need to take the form of peak hour volumes on each element of infrastructure in the VISSIM study area for the typical weekday AM & PM peak hours as well as peak hour on Sunday. There will be no VISSIM analysis of the Build alternatives, thus these forecasts may be targeted to support other analyses. All forecasts developed in this task will focus on the I-95 mainline, its interchanges and any auxiliary lanes; and will not include roadway intersections in the corridor.

Work Product:

- The products of this task will be incorporated in the deliverables of subsequent tasks. In addition, a memorandum will be prepared which documents methodology used.

Task 4 – Existing, 2030 No-Build, and 2045 No-Build Conditions

This subtask includes simulation of the No-Build Plus 2 with the Exit 133 interchange improvements and without the northern tail of I-95 NB between Exit 133 and 136. Using the travel forecasts developed by Michael Baker, traffic operations will be analyzed with VISSIM for the No-Build Plus 2 as described. The time periods to be examined include weekday AM Peak Hour, weekday PM Peak Hour and Sunday Peak Hour. The consultant will simulate 2030 forecast year for all three time periods.

The consultant will refine the currently developed VISSIM model for I-95 excluding the US 1, Route 3, US 17, and Centreport interchanges. The modeled network will be limited to the I-95 facility (including all general purpose lanes, CD lanes, express lanes, and ramps) and exclude signalized intersection on each side of the I-95 interchanges. The image below illustrates the geographic VISSIM analysis area. The VISSIM model will be used to generate various performance measures such as travel times, level of service, queuing, hours of delay, etc. This information will be documented with figures, tables, VISSIM animations and slideshows as appropriate. Results from this work need to be provided in a way that is presentable to audiences of varying levels of technical background.

As part of this subtask, to help with decision-making about addressing the challenging SB merge between Exits 130 and 126, the consultant will use VISSIM to test various merge concepts versus demand volume and create a 'shape' or 'set of curves' that express the operational performance characteristics. The study team can use this graphic to test various demands (i.e. years) or design ideas (e.g. inclusion of at-grade slip ramps) when considering levels of infrastructure investment.

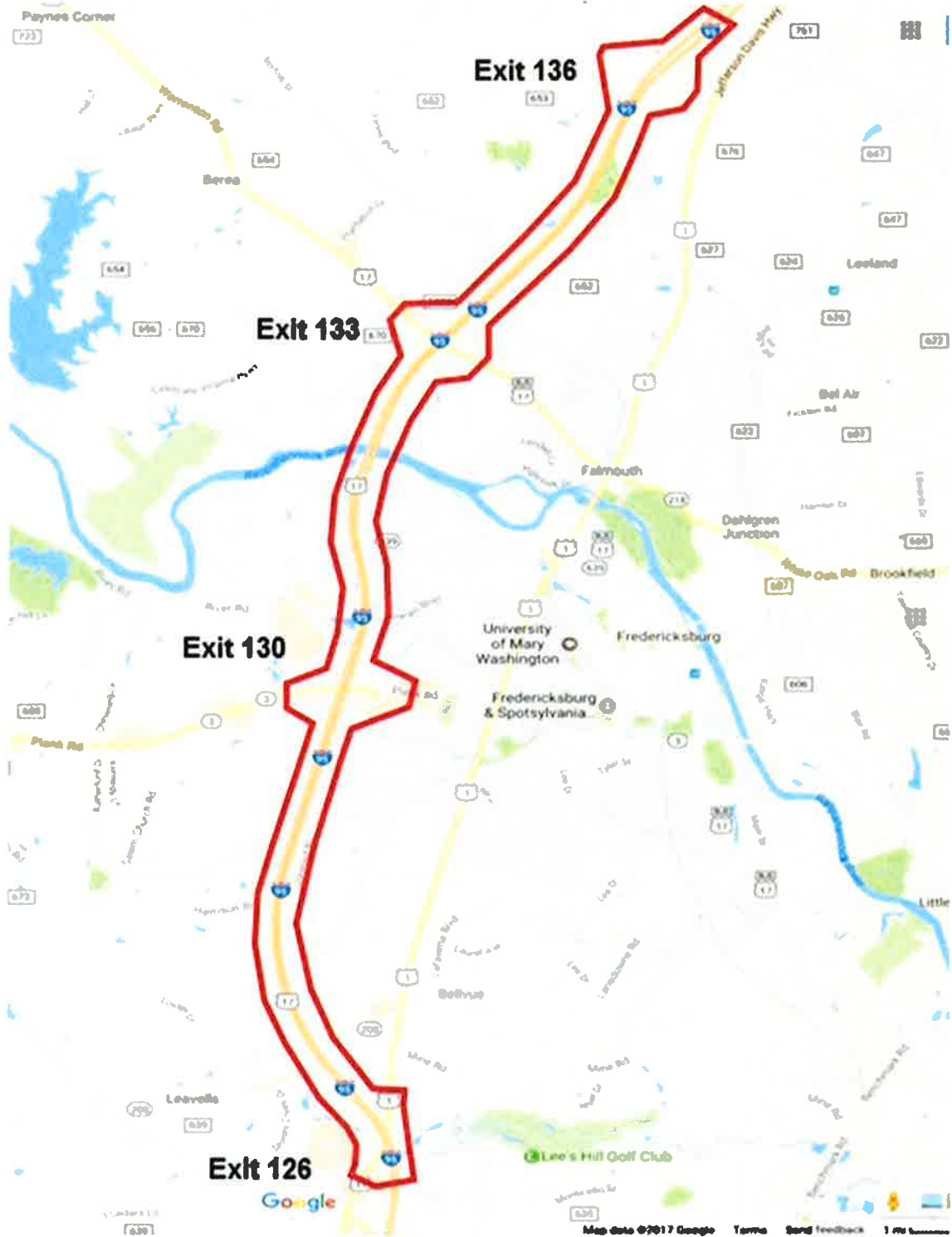
Task 4 Meetings

The consultant will meet with GWRC/FAMPO and others to present and discuss the findings of the traffic operations analyses and simulation efforts. Dynamic displays of traffic movements simulated through the VISSIM software tool will be presented at the meeting.

Work Product:

The products of this task will be incorporated in the deliverables of subsequent tasks. In addition, a technical memorandum will be prepared that documents 2030 No-Build Plus 2 with and without the Exit 133 interchange improvements and the northern tail of I-95 NB between Exit 133 and 136.

VISSIM Study area



Task 5 – 2030 & 2045 Build Conditions

No supplemental work expected for this task

Task 6 – Version 3.1 Travel Model Review and LRTP Support

No supplemental work expected for this task

Task 7 – Economic Benefits

No supplemental work expected for this task

Task 8 - Technical Report

A technical report will be prepared that documents the work done in Supplemental Tasks 1 – 7. Draft and final documents will be prepared based on review by GWRC staff.

Work Products:

- Draft Technical Report
- Final Technical Report

Task 9 - Project Meetings

A Study Work Group has been established that will participate in development of the 2045 Long Range Planning process as well as this I-95 Phase 2 Study. It is assumed that the consultant team will attend a number of monthly Study Work Group meetings to discuss progress and results from the Phase 2 Study. These monthly Study Work Group meetings are expected to end in April, 2018. Beyond the Study Work Group, this scope assumes additional meetings at the discretion of GWRC staff. These could take the form of briefings to Councils, Boards, or VDOT. The supplemental consultant budget assumes a total of 4 meetings that can be allocated by GWRC staff across the purposes described in this subtask as well as continued VDOT/FAMPO/Consultant support and collaboration for the northbound river crossing design and analysis. No public involvement is assumed as part of this scope.

In addition to the meetings described in the above paragraph, the following is included in this scope of work. The consultant will attend one Fredericksburg area meeting with VDOT & FHWA to discuss analysis requirements associated with testing of new I-95 access points. This meeting will be staffed by two from the consultant team. Separately, Baker (one staff member) will attend a March 1 meeting with the City Manager to discuss project findings specifically related to new interstate access within City boundary.

Work Products:

- Results of these meetings will fold into other tasks.

Task 10 - Project Presentations

The development and delivery of presentations will be needed at various points in the study. It is assumed that the consultant will prepare for and deliver a maximum of four supplemental presentations during the

course of Supplemental Tasks 1 – 7 and these presentations will take place during the meetings described in Task 9. GWRC staff will decide how to allocate these presentations across the timeframe of the study.

Work Products:

- Slideshow presentation in electronic format
- Up to 2 consultant staff for each presentation

SCHEDULE

The study will be completed by April 2018 in order for GWRC to meet deadlines associated with the completion of the 2045 Long Range Plan and the next round of Smart Scale.

COST

The total labor cost is \$131,325 which is derived from 730 hours at fully burdened rates spread across multiple job classifications from the Consultant Team. Direct expenses are expected to be \$1,665 for travel to/from meetings in the study area, and printing. Therefore, the total supplemental project cost will be \$132,990.

I-95 Corridor Evaluation Phase 2 Supplement

2/20/2018

TEAM PROJECT TOTALS

	Labor	ODCs	Total
Baker	\$ 87,915	\$ 970	\$ 88,885
ATCS	\$ 43,410	\$ 695	\$ 44,105
	\$ 131,325	\$ 1,665	\$ 132,990

BAKER PROJECT TOTALS

LABOR					
Task No.	Task	BAKER	Total Hours	BAKER	Total Cost
I-95 Corridor Evaluation Phase 2 Supplement - BAKER					
1	Document Review	0	0	\$0	\$0
2	Supplemental Data Collection	0	0	\$0	\$0
3	Travel Demand Model Development & Forecasts	216	216	\$31,204	\$31,204
4	Existing, 2030 No-Build & 2045 No-Build Conditions	0	0	\$0	\$0
5	2030 & 2045 Build Conditions	0	0	\$0	\$0
6	Version 3.1 Travel Model Review and LRTP Support	0	0	\$0	\$0
7	Economic Benefits	0	0	\$0	\$0
8	Technical Report	88	88	\$16,540	\$16,540
9	Project Meetings	166	166	\$33,573	\$33,573
10	Final Project Presentations	24	24	\$6,598	\$6,598
	Total	494	494	\$87,915	\$87,915

ODC's						
Task No.	Task	BAKER				TOTAL
		Reproduction	Travel	Vendors	Communication/Postage	
I-95 Corridor Evaluation Phase 2 Supplement - BAKER						
1	Document Review	\$0	\$0	\$0	\$0	\$0
2	Supplemental Data Collection	\$0	\$0	\$0	\$0	\$0
3	Travel Demand Model Development & Forecasts	\$60	\$0	\$0	\$0	\$60
4	Existing, 2030 No-Build and 2045 No-Build Conditions	\$0	\$0	\$0	\$0	\$0
5	2030 & 2045 Build Conditions	\$0	\$0	\$0	\$0	\$0
6	Version 3.1 Travel Model Review and LRTP Support	\$0	\$0	\$0	\$0	\$0
7	Economic Benefits	\$0	\$0	\$0	\$0	\$0
8	Technical Report	\$0	\$0	\$0	\$0	\$0
9	Project Meetings	\$80	\$500	\$0	\$0	\$580
10	Final Project Presentations	\$80	\$250	\$0	\$0	\$330
	Total	\$220	\$750	\$0	\$0	\$970

SUB TOTAL	
I-95 Corridor Evaluation Phase 2 Supplement - BAKER	
Labor	\$87,915
ODC's	\$970
Total	\$88,885

ATCS PROJECT TOTALS

LABOR					
Task No.	Task	ATCS	Total Hours	ATCS	Total Cost
I-95 Corridor Evaluation Phase 2 Supplement - ATCS					
1	Document Review	0	0	\$0	\$0
2	Supplemental Data Collection	0	0	\$0	\$0
3	Travel Demand Model Development & Forecasts	0	0	\$0	\$0
4	Existing, 2030 No-Build & 2045 No-Build Conditions	107	107	\$18,526	\$18,526
5	2030 & 2045 Build Conditions	0	0	\$0	\$0
6	Version 3.1 Travel Model Review and LRTP Support	0	0	\$0	\$0
7	Economic Benefits	0	0	\$0	\$0
8	Technical Report	69	69	\$11,443	\$11,443
9	Project Meetings	25	25	\$6,572	\$6,572
10	Final Project Presentations	35	35	\$6,869	\$6,869
Total		236	236	\$43,410	\$43,410

ODC's						
Task No.	Task	ATCS				TOTAL
		Reproduction	Travel	Vendors	Communication/Postage	
I-95 Corridor Evaluation Phase 2 Supplement - ATCS						
1	Document Review	\$0	\$0	\$0	\$0	\$0
2	Supplemental Data Collection	\$0	\$0	\$0	\$0	\$0
3	Travel Demand Model Development & Forecasts	\$0	\$0	\$0	\$0	\$0
4	Existing, 2030 No-Build and 2045 No-Build Conditions	\$60	\$0	\$0	\$0	\$60
5	2030 & 2045 Build Conditions	\$0	\$0	\$0	\$0	\$0
6	Version 3.1 Travel Model Review and LRTP Support	\$0	\$0	\$0	\$0	\$0
7	Economic Benefits	\$0	\$0	\$0	\$0	\$0
8	Technical Report	\$0	\$0	\$0	\$0	\$0
9	Project Meetings	\$135	\$375	\$0	\$0	\$510
10	Final Project Presentations	\$125	\$0	\$0	\$0	\$125
Total		\$320	\$375	\$0	\$0	\$695

SUB TOTAL	
I-95 Corridor Evaluation Phase 2 Supplement - ATCS	
Labor	\$43,410
ODC's	\$695
Total	\$44,105

I-95 Phase 2 Highway Element Supplement - Draft Schedule to Completion

15-Feb-18

Active Tasks		February	March	April	May	June
A	Travel Demand Forecasts					
B	Operational Analysis					
C	Documentation/Technical Report			●	▲ ●	

LEGEND

- ▲ Regional Transportation Forum
- FAMPO Presentation (one of two potential dates)

Note: Additional meetings and presentation not yet scheduled are described in Tasks 9 & 10 of the Phase 2 supplemental scope