



March 12, 2019

Mr. Michael Gallagher, P.E.  
Director of Public Works  
Town of Vienna  
127 Center Street South  
Vienna, VA 22180

Re: Task #5 – Route 123 and Route 243 Traffic Signal Upgrades (Phase 2)  
**Design of Three Traffic Signal Replacements**

Mr. Gallagher:

Whitman, Requardt and Associates, LLP is pleased to provide you with our proposal to perform engineering services for the referenced project. The purpose of this task is to prepare contract documents for signal improvements along Route 123 (Maple Avenue) and Route 243 (Nutley Street) identified in the Traffic Signal Equipment Inventory and Needs Assessment prepared by WRA (dated December 21, 2018). These design plans will achieve the Town's overall plan to interconnect and upgrade all traffic signal controllers and cabinets along Route 123 and Route 243 within the Town limits to allow the Town to manage their signals from a singular point using the McCain Transparency TMS Software and Server. WRA understands that the Town of Vienna has been awarded funds in response to their FY 2018 SmartScale application and that the project must comply with the scope and schedule outlined in the SmartScale application including all federal and state requirements.

Based on the Needs Assessment, the following is a summary of the recommended improvements to be included in this task:

- Three full signal replacements at (intersection numbers correspond to the intersection numbers contained in the Needs Assessment):
  1. Route 243 (Nutley Street) and Tapawingo Road
  12. Route 123 (Maple Avenue) and Follin Lane
  13. Beulah Road and Church Street (signal replacement to be funded separately from SmartScale funds)

## 1. SCOPE OF WORK

### Task 1: Survey

Surveys will be performed by our subconsultant, Rice Associates. A copy of their proposed scope of services is attached. Surveys will be performed at the three intersections where signal replacements are proposed including approximately 50 feet beyond the curb returns along all approaches (see attached scopes).

At this time, it is not known whether temporary or permanent easements and/or right-of-way acquisition will be required to accommodate signal equipment. A separate purchase order will be prepared if easements and/or right-of-way acquisition are required.

### Task 2: Base Plan Preparation

**Signal Replacements:** WRA will utilize the survey information from Rice Associates to develop CADD files of all field surveys, right-of-way, and topographic mapping. This information will be modified in the appropriate plan sheet format (Scale 1" = 25') to create base plans to be used throughout the project. The project will be prepared in Microstation.

### Task 3: Preliminary Design

WRA will prepare traffic signalization plans in accordance with VDOT requirements as well as Town of Vienna equipment preferences. Preliminary plans will identify existing and proposed locations for signal equipment including

mast arm and pedestrian poles, signal heads, junction boxes, and conduit runs. If desired by the Town, WRA will attend and participate in a field meeting with Town staff. This will include the discussion of unusual situations and locations of major signal equipment items (e.g., poles and signal cabinets). WRA will incorporate the Town's comments as a result of the field meeting into the plans.

#### **Task 4: Semi-Final Design**

Based on comments from the Town, semi-final signalization plans will be prepared depicting all proposed signal equipment including conduit runs, wiring, mast arm lengths, signal head placement, mast arm lengths, detection, signing and pavement markings, signal phasing diagram, color sequence chart, pavement markings and signing. A Title Sheet and General Notes Sheet will also be prepared, including a legend, quantities, construction notes, and maintenance of traffic notes. A construction cost estimate will be prepared at this stage.

#### **Task 5: Final Design**

WRA will finalize the signal plans and verify that all Town and VDOT comments have been addressed throughout the design process. The construction cost estimate will be updated.

#### **Task 6: Assembly and Checking of Construction Plans**

WRA will work with the Town to determine whether the proposed improvements will be advertised as one contract or multiple contracts. It is assumed that the Nutley Street at Tapawingo Road and Maple Avenue at Follin Lane intersections may potentially be advertised as a separate contract from the signal interconnect plans that are being designed as a separate task to avoid delays to the implementation of the centralized signal system. Additionally, the Beulah Road at Church Street signal replacement may also be advertised as a separate contract since it will be funded separately from the SmartScale project.

WRA will complete the final assembly, checking and incorporating all plans into the final construction documents. WRA will provide the City with the bid tab quantities for all plans designed and developed by WRA and any Special Provisions or elements not addressed in the 2016 VDOT Road and Bridge Specifications. A final Engineers' Estimate will also be provided in Excel for each contract. The Town will prepare the remaining elements of the bid package(s), including the front-end documents.

#### **Task 7: Town Coordination**

This proposal assumes four meetings with Town and VDOT staff including the pre-bid meetings and the preconstruction meetings.

## **2. EXCLUSIONS**

The following is a list of items that are specifically not included in the Scope of Work:

- Coordination of franchise utility relocations (or dry utilities)
- Plats
- Geotechnical investigations
- Construction administration/inspection services including responding to RFIs
- Design of any proposed or relocated drainage facilities
- Preparation of a VSMP Permit (disturbance is less than 2500 sf)
- Design exceptions and waivers – it is assumed that this will not be required for the project
- Street lighting
- Traffic analysis, modeling, or signal timing analysis
- Environmental documentation (it is assumed that this will be prepared by VDOT)
- Phase I, II and Phase III Environmental Assessments and intrusive testing of soil or groundwater



- A formal wetland delineation, U.S. Army Corps of Engineers jurisdictional determination, or acquisition of wetland permits
- Cultural resource assessments

### 3. SCHEDULE

Upon notice to proceed, WRA will meet and coordinate with the Town to establish the design schedule in coordination with the established VDOT SmartScale schedule which has a Field Inspection deadline of September 16, 2019. WRA is committed to meeting the established SmartScale schedule which has an advertisement date of September 10, 2020.

### 4. ESTIMATED FEE

The fee for this task order is based on the payroll factor and direct expense rates contained in our Contract Agreement. The staff hours to perform this work are detailed in the proposal worksheet, Attachment A. The total Task Order budget is **\$113,227.10**. This budget will not be exceeded without the Town of Vienna's prior approval.

We are prepared to begin immediately upon your notice to proceed. If this proposal is acceptable, please sign at the appropriate location below and return one copy for our files. It is a great pleasure to work for the Town of Vienna and we look forward to the successful completion of this project.

Whitman, Requardt and Associates, LLP



Dana Trone  
Vice President

Enclosures

cc: Tyler Long, WRA

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name & Title

\_\_\_\_\_  
Date



**Town of Vienna On-Call Task Order Contract**  
**Task #5 - Route 123 and Route 243 Traffic Signal Upgrades (Phase 2)**  
**Three Traffic Signal Replacements**

**COST PLUS BILLABLE HOURLY RATES CONTRACT**

A.	DIRECT LABOR, ESCALATION, PAYROLL BURDEN, FEE Est. Man-hours X Fixed Billable Hourly Rates	\$ 73,532.18
B.	NONSALARY DIRECT COSTS, ESTIMATE	\$ 913.00
C.	SUB-CONSULTANT FEES	
	Nutley Street at Tapawingo Road	\$ 12,903.69
	Maple Avenue at Follin Lane	\$ 13,318.81
	Beulah Road at Church Street	\$ 12,559.42
		<u>\$ 38,781.92</u>
D.	TOTAL ESTIMATED COST PLUS FIXED FEE (A+B+C)	\$ 113,227.10
E.	CONTINGENCY 0% (D)	\$ -
F.	LIMITING FEE (MAXIMUM TOTAL COMPENSATION) (D+E)	<b>\$ 113,227.10</b>

**COMPUTATION OF SALARY, PAYROLL BURDEN AND FEE**

	<u>HOURS</u>	<u>RATE</u>	<u>AMOUNT</u>
SENIOR MANAGER	83	<u>\$187.46</u>	<u>\$15,559</u>
PROJECT MANAGER/SENIOR PROJECT ENGINEER	162	<u>\$155.96</u>	<u>\$25,266</u>
PROJECT ENGINEER	182	<u>\$127.94</u>	<u>\$23,285</u>
ENGINEER	96	<u>\$98.15</u>	<u>\$9,422</u>
<b>TOTAL</b>	<u><b>523</b></u>	<u><b>NA</b></u>	<u><b>\$73,532</b></u>

**Town of Vienna On-Call Task Order Contract**  
**Task #5 - Route 123 and Route 243 Traffic Signal Upgrades (Phase 2)**  
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**Distribution of Manhours**

	SENIOR MANAGER		PROJECT MANAGER/SENIOR PROJECT ENGINEER		PROJECT ENGINEER		ENGINEER		TOTAL	
TASK	\$187.46		\$155.96		\$127.94		\$98.15			
	HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS	HOURS	DOLLARS
Route 123 and Route 243 Signal Upgrades (Phase 2)	83	\$15,559	162	\$25,266	182	\$23,285	96	\$9,422	523	\$73,532.18
PERCENT	15.87%	21.16%	30.98%	34.36%	34.80%	31.67%	18.36%	12.81%	100%	100%
TOTALS	83	\$15,559.18	162	\$25,265.52	182	\$23,285.08	96	\$9,422.40	523	\$73,532.18

**Town of Vienna On-Call Task Order Contract**  
**Task #5 - Route 123 and Route 243 Traffic Signal Upgrades (Phase 2)**  
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**LABOR ESTIMATE**

	Staff-Hours by Classification				
Task	SENIOR MANAGER	PROJECT MANAGER/SENIOR PROJECT ENGINEER	PROJECT ENGINEER	ENGINEER	Total
Task 1 - Survey					
Survey coordination	4	8			12
Task 2 - Base Plan Preparation					
Signal Replacement (3 locations)	4	8	16	8	36
Task 3 - Preliminary Design					
Signal Replacement (3 locations)	24	40	60	40	164
Field Meeting	4	4			8
Address Town Comments	4	8	8		20
Task 4 - Semi-Final Design					
Signal Replacement (3 locations)	8	24	40	20	92
Cost Estimate	1	4	12	4	21
Address Town Comments	1	4	4	4	13
Task 5 - Final Design					
Signal Replacement (3 locations)	4	8	20	20	52
Cost Estimate	1	2	4		7
Address Town Comments	1	2	4		7
Task 6 - Construction Plans					
Signal Replacement (3 locations)	2	8	12		22
Update cost estimate	1	2	2		5
Special provisions	4	20			24
Task 7 - Town Coordination					
Attend meetings	20	20			40
<b>Task Subtotal</b>	<b>83</b>	<b>162</b>	<b>182</b>	<b>96</b>	<b>523</b>

**COST PLUS FIXED BILLABLE HOURLY RATES CONTRACT  
COMPUTATION OF FEE**

<ul style="list-style-type: none"> <li>▪ <u>TRAVEL</u> Travel for design meetings (preliminary, field, etc.) and site visits</li> </ul>	
Anticipate                      5 round trips @        220 miles                                      1100 miles @        0.580 /mi	\$638.00
<ul style="list-style-type: none"> <li>▪ <u>POSTAGE/OVERNIGHT MAIL</u> Allowance for shipment of plans, reports, brochures, etc.</li> </ul>	\$25.00
<ul style="list-style-type: none"> <li>▪ <u>REPRODUCTION</u> Charge will be made for printing various submittals for the Town including three internal distribution and permanent file copies. Cost of review and check prints during design will not be charged to the job.</li> </ul>	\$250.00
<ul style="list-style-type: none"> <li>▪ <u>MATERIALS &amp; SUPPLY</u> Includes film, developing and enlargements of photographs for inventory of existing conditions.</li> </ul>	\$0.00

<b>TOTAL</b>	<b>\$913.00</b>
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