RESOLUTION NO. 06-16
CITY OF CENTERVILLE, OHIO

SPONSORED BY COUNCILMEMBER John Beals ON THE 15th DAY OF February, 2016.

A RESOLUTION AUTHORIZING THE CITY MANAGER TO ENTER INTO AN AGREEMENT BETWEEN THE CITY OF CENTERVILLE AND TEC ENGINEERING, INC., FOR THE MOT-WILMINGTON PIKE SIGNAL SYSTEM UPGRADE PROJECT.

WHEREAS, the City solicited proposals for professional engineering services using a Qualification Based Selection (QBS) process for the MOT-Wilmington Pike Signal Upgrade Project ("Project"); and

WHEREAS, the Project consist of the upgrade of communications between 12 intersections along the Wilmington Pike Corridor between SR 725 (Alex-Bell Road) and Dille Drive and Feedwire Road from Wilmington Pike to Clyo Road; and

WHEREAS, additional components include complete rebuild of 4 traffic signals, and equipment upgrades at an additional 8 traffic signals; and

WHEREAS, the Project includes supplying complete traffic signal plans and specifications for the Project; and

WHEREAS, the engineering portion of the project is locally funded with cost sharing between the City of Centerville (+/-51%) and Greene County (+/-49%); and

WHEREAS, the City has determined that the proposal for professional engineering services from TEC Engineering, Inc. is the best proposal utilizing the Ohio Department of Transportation's QBS process for said services for the Project; and

NOW, THEREFORE, THE MUNICIPALITY OF CENTERVILLE HEREBY RESOLVES THAT:

SECTION 1. The proposal submitted by TEC Engineering, Inc. for the Project at a price of $119,482.00 with a contingency amount of $11,000 (plus or minus 10%), if additional work becomes necessary, is hereby accepted.

SECTION 2. That the City Manager is hereby authorized to enter into a contract with TEC Engineering, Inc. for the Project upon terms, conditions and at a time acceptable to the City Manager.

SECTON 3. That this resolution shall take effect on the earliest date allowed by law.

PASSED this 15th day of February, 2016.

Brook A Compton
Mayor of the City of Centerville, Ohio

ATTEST:

Julia M. Weaver
Clerk of Council of the City of Centerville, Ohio

CERTIFICATE

The undersigned, Clerk of the Council of the City of Centerville, Ohio, hereby certifies that the foregoing is a true and correct copy of Resolution Number 06-16, passed by the Council of the City of Centerville, Ohio, on the 15th day of February, 2016.

Julia M. Weaver
Clerk of Council

Approved as to form, consistency
with the Charter and Constitutional Provisions.
Department of Law
Scott A. Liberman
Municipal Attorney

EXHIBIT "A"

PROFESSIONAL SERVICES AGREEMENT

THIS PROFESSIONAL SERVICES AGREEMENT (this "Agreement") is made and entered into this _____ day of _____ 2016 by and between the City of Centerville, Ohio, whose address is 7970 South Suburban Road, Centerville, OH, 45458 ("Client") and TEC Engineering, Inc., an Ohio corporation, whose address is 7288 Central Parke Blvd., Mason, OH, 45040 ("TEC").

SECTION 1. GENERAL DESCRIPTION OF PROJECT

Client hereby retains TEC to perform and TEC hereby agrees to perform the Services (as defined in Section 2) in accordance with the terms and conditions set forth in this Agreement. The project in connection with which the Services will be provided is generally described as follows: Wilmington Pike Traffic Signal Upgrade (PID# 95662) (the "Project").

SECTION 2. GENERAL DESCRIPTION OF PROFESSIONAL SERVICES

The professional services to be provided by TEC are described in Attachment 1 to this Agreement, which is incorporated herein by reference (the "Services").

SECTION 3. CONTACT PERSON

Client and TEC shall each appoint a contact person who shall have the authority to act on behalf of each party, including, by way of illustration and not by way of limitation, to define the scope of the Services, transmit instructions, receive information, and recommend changes in the Services (the "Contact Persons"). The Contact Person for Client shall be: James Brinegar, PE, and the Contact Person for TEC shall be: Michael J. Hafner, PE, PTOE.

SECTION 4. DATE OF COMMENCEMENT; DURATION

The Date of Commencement for the Services provided pursuant to this Agreement shall be the later of (a) the date on which the Agreement is fully executed and (b) the date agreed in writing by the Contact Persons. TEC shall use commercially reasonable efforts to provide the Services on or before July 1, 2017, subject to delays attributable to Force Majeure (as defined in Section 6.22) and delays caused by or attributable to any act or neglect of Client or any agent, employee, or other person or entity in privity with Client (other than TEC) (a "Client Delay").

SECTION 5. COMPENSATION

Client shall pay TEC the costs incurred by TEC in the proper performance of the Services pursuant to this Agreement, including without limitation, (a) the cost of the time spent by TEC's employees on the performance of the Services at their applicable billable rates, (b) costs of materials, supplies, transportation, equipment, communication, delivery charges, copying and reproduction, services, machinery and tools used in connection with the performance of the Services by TEC; provided, however, the costs of materials, supplies, equipment, machinery and tools that are not fully consumed by the performance of the Services shall be based on the diminution in value of such items attributable to the performance of the Services. Notwithstanding the foregoing, in no event shall the costs described in the foregoing sentence exceed **one hundred seventeen thousand, three hundred forty-five and 00/100 Dollars ($117,345.00)**, subject to adjustment as expressly provided in, and pursuant to, this Agreement.

SECTION 6. TERMS AND CONDITIONS

6.1 Invoice Procedures and Payment: TEC shall submit invoices to Client for the Services rendered during each invoicing period, which shall generally be on a monthly basis. The amount of each invoice shall be determined by the actual work performed method whereby TEC will provide the total number of hours or percentage of the Services accomplished during the invoicing period. Such invoices shall also separately list reimbursable expenses, if applicable. In no event shall the aggregate amount of such invoices exceed the maximum amount set forth in Section 5. Such invoices shall be submitted not more frequently than monthly by TEC and shall be due and payable within thirty (30) days of the date of the invoice.

6.2 Expert Witness Services: It is understood and agreed that TEC's services under this Agreement do not include any participation in any litigation. Should such services be required, a Professional Service Agreement Addendum may be negotiated between Client and TEC describing the services desired and providing a basis for compensation to TEC.

6.3 Opinion of Probable Construction Cost/Cost Estimates: Client hereby acknowledges that TEC cannot and does not represent or warrant that opinions or estimates of probable construction or operating costs provided by TEC will not vary from actual costs incurred by Client.

6.4 Indemnification: TEC agrees to indemnify and hold harmless Client, its agents, officials and employees, against any and all suits or claims that may be based on any injury to persons or property to the extent that such suits or claims are a result of the gross negligence or willful misconduct of TEC or any person employed by TEC

6.5 Insurance: TEC shall carry, throughout the term of this Agreement, workers compensation insurance, commercial general liability insurance, professional liability insurance, and automobile liability insurance. Upon the written request of Client, Client shall be named as a co-insured under any such policy if such coverage is available. Upon the written request of Client, TEC shall provide Client a current certificate evidencing each insurance policy prior to commencement of the Services.

6.6 Assignment/Third Parties: Neither Client nor TEC will assign or transfer its interest in this Agreement without the written consent of the other; provided, however, TEC reserves the right to subcontract any portion of the Services without the prior written consent of Client. Nothing in this Agreement shall be construed as creating any rights, benefits, or causes of actions for any third party against TEC or Client.

6.7 Termination; Delay; Suspension: In the event the Project is terminated, canceled, or abandoned by Client, Client may terminate this Agreement upon thirty (30) days written notice to TEC. Upon any such termination, Client shall pay TEC for the Services provided up to the date of such termination together with all reimbursable expenses incurred up to the date of such termination. In the event the Project is suspended or delayed, Client may delay or suspend TEC's performance of the Services upon thirty (30) days written notice to TEC. If Client delays or suspends TEC's performance of the Services for more than thirty (30) days, (a) TEC may

terminate this Agreement upon giving fifteen (15) days written notice or (b) the compensation payable to TEC pursuant to Section 5 may be equitably renegotiated and mutually agreed to by the parties hereto. Upon any such termination described in subsection (a) above, Client shall pay TEC for the Services provided up to the date of such termination together with all reimbursable expenses incurred up to the date of such termination.

6.8 Default: If TEC or Client default in their obligations under this Agreement, and such default continues for more than ten (10) days after written notice (with respect to defaults relating to the payment of money) or thirty (30) days after written notice (with respect to all other defaults), the non-defaulting party shall have all remedies available at law or in equity, including, without limitation, termination of this Agreement. Notwithstanding the foregoing, prior to terminating this Agreement, the non-defaulting party shall provide a termination notice to the defaulting party which notice shall describe the default in reasonable detail. If the defaulting party cures the default within seven (7) days of receipt of such notice, the non-defaulting party's termination notice shall be null and void.

6.9 Disputes: If a controversy or claim arises out of or relates to this Agreement, or the breach thereof, then the parties agree to make a good faith effort to settle the issue through direct discussion between the parties prior to having recourse to a judicial forum.

6.10 Standard of Care: TEC agrees to perform the Services in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

6.11 Waiver: No waiver of any condition or agreement in this Agreement by either Client or TEC will imply or constitute its further waiver of that or any other condition or agreement.

6.12 Relationship: TEC is an independent contractor to Client in performing the Services under this Agreement and is not an employee, agent, joint-venturer, or partner of Client.

6.13 Client's Responsibilities: Client shall promptly provide TEC all pertinent data, criteria, and information including but not limited to: design objectives and constraints, space and use requirements, operational information, budgetary limits, flexibility and expandability requirements, and any other available project data such as sketches, reports, prior designs, soil, tests, surveys, and plans. TEC shall be entitled to rely on any and all information provided pursuant to this Section 6.13. Client shall review TEC's work thoroughly and promptly, provide direction as necessary, and, if at any time Client becomes aware of any defect, shall promptly give notice of such defect in the work or services provided. Client shall provide access to the project site to the extent necessary or appropriate in connection with the performance of the Services.

6.14 Bankruptcy: If TEC or Client is adjudged to be bankrupt, makes a general assignment for the benefit of its creditors, or if a receiver is appointed on account of its insolvency, such event shall be deemed a default by such party under this Agreement.

6.15 Change Orders; Additional Services: During the course of the term of this Agreement, Client shall have the right to request changes in the Services and/or to request additional services from TEC. Any such changes requested by Client shall be effective only if contained in a change order ("Change Order") signed by Client and TEC, which provides for (a) the adjustment, if any, in the compensation payable to TEC pursuant to Section 5, (b) the method of payment of any such increase and (c) the extension, if any, of the time for completion of the Services.

6.16 Execution of this Agreement: Neither Client nor TEC will be bound under this Agreement until both Client and TEC have duly executed and delivered to the other this Agreement. If this Agreement has been executed first by TEC and has not been executed by Client prior to April 4, 2016, at 11:59 p.m., TEC shall have the right to revoke its signature to this Agreement, in which event this Agreement shall be null and void and of no force or effect. This Agreement may be executed and delivered via telecopy or PDF with the same force and effect as if originals of this Agreement were executed and delivered by Client and TEC.

6.17 Severability: If any provision of this Agreement is found by a court of competent jurisdiction to be illegal, invalid, or unenforceable, the remainder of this Agreement will not be affected, and in lieu of each provision that is found to be illegal, invalid, or unenforceable, a provision will be added as a part of this Agreement that is as similar to the illegal, invalid, or unenforceable provision as may be possible and be legal, valid, and enforceable.

6.18 Captions; Exhibits: The captions are inserted in this Agreement only for convenience of reference and do not define, limit, or describe the scope or intent of any provisions of this Agreement. The exhibits and attachments to this Agreement, if any, are incorporated into the Agreement.

6.19 Attorneys' Fees: Intentionally omitted

6.20 Preparation of Agreement: This Agreement has been prepared by TEC and its professional advisors and reviewed by Client and its professional advisors. TEC and Client believe that this Agreement is the product of all of their efforts, that it expresses their agreement, and that it should not be interpreted in favor of either TEC or Client or against either TEC or Client merely because of their efforts in preparing it.

6.21 Authorization: If Client signs this Agreement as a corporation, limited liability company or partnership, each of the persons executing this Agreement on behalf of Client warrants to TEC that Client is a duly authorized and existing corporation, limited liability company or partnership, that Client has full right and authority to enter into this Agreement, and that each and every person signing on behalf of Client is authorized to do so. Upon TEC's request, Client will provide evidence satisfactory to TEC confirming these representations.

6.22 Force Majeure: The performance by TEC of its obligations under this Agreement will be excused by delays due to strikes, lockouts, labor trouble, inability to procure labor or materials or reasonable substitutes for them, failure of power, governmental requirements, restrictions or laws, fire or other damage, war or civil disorder, or other causes beyond TEC's reasonable control (collectively, "Force Majeure").

6.23 Entire Agreement, Amendments, Governing Law: This Agreement embodies the entire agreement and understanding between the parties, and there are no other agreements and understandings, oral or written, with reference to the subject matter hereof that are not merged herein and superseded hereby. No alteration, change, or modification of the terms of this Agreement shall be valid unless made in writing and signed by both parties hereto. This Agreement shall be governed by the laws of the state where the Services are performed.

6.24 Notices: Any notice required hereunder shall be sufficiently given when sent to the Contact Person for Client or TEC via United States certified mail, return receipt requested, or via overnight courier with receipt verification to the address set forth in the introductory paragraph above, or by personally delivering such notice to the party to be in receipt thereof.

6.25 Confidentiality: TEC agrees that the terms set forth in this Agreement and the information obtained by TEC in connection with the performance of the Services shall remain confidential and shall not be revealed or disclosed to any person or party except (a) with the written consent of Client; (b) as may be disclosed to TEC's attorneys, accountants and other representatives that are involved in the consummation of this Agreement and the Services; (c) as may be required by applicable law; (d) as may be necessary in connection with assisting TEC in obtaining necessary governmental approvals; and (e) in connection with any litigation or dispute resolution between the parties.

IN WITNESS WHEREOF, TEC and Client have duly executed this Agreement. The effective date of this Agreement shall be the last date whereby all parties listed below have executed this Agreement. Such date shall be recorded in the first paragraph of this Agreement.

CITY OF CENTERVILLE, OHIO

BY: _____ DATE: _____

Printed Name & Title

FORM and LEGALITY APPROVED:

BY: _____

Printed Name & Title

TEC ENGINEERING, INC.

BY: _____ DATE: _____

Printed Name & Title EDWARD R. WILLIAMS, VICE PRESIDENT

ATTACHMENT 1

[INSERT SPECIFIC SCOPE OF SERVICES]

MOT – WILMINGTON PIKE
WILMINGTON PIKE TRAFFIC SIGNAL UPGRADE
PID No. 95662

VERSION 2 – 2/4/2016

SCOPE OF SERVICES

The proposed project will provide upgraded communication between the traffic signals along the Wilmington Pike Corridor. The project also includes the complete rebuild of 4 traffic signals, and equipment upgrades at the remaining 8 traffic signals. Local intersection work is needed to improve safety and operations and/or to meet current design standards.

Project Limits

The following intersections are included in the proposed improvement project:

1. Wilmington Pike & W. Franklin St. (SR 725)
2. Wilmington Pike & Whites Corner Road
3. Wilmington Pike & Briggs Road
4. Wilmington Pike & Center Point Drive
5. Wilmington Pike & Clyo Road
6. Wilmington Pike & Miami Valley Drive
7. Wilmington Pike & I-675 NB Ramps
8. Wilmington Pike & I-675 SB Ramps
9. Wilmington Pike & Whipp/Feedwire Road
10. Wilmington Pike & Dille Drive
11. Feedwire Road & Charles Drive
12. Feedwire Road & Clyo Road

System-wide Scope of Services

The proposed project will replace the existing copper interconnect with a spread spectrum radio interconnect system for communication between intersections. Remote access to the system is proposed to be provided through a cellular modem connected to the on-street master. Additionally, TEC will evaluate options for connectivity to the City's central based traffic signal system and provide recommendations/design plans, if feasible. System retiming (for post-construction implementation) will be developed and included in the plans. Timing will be developed for local intersection parameters and system wide coordination.

The specific local intersection scope of services includes the following:

1. **Wilmington Pike & SR 725 (Alex Bell/Franklin)**
   - Local equipment upgrades including:
     - Install interconnect equipment
     - Review/revise intersection detection to improve operations

2. **Wilmington Pike & Whites Corner (see #5)**
3. **Wilmington Pike & Briggs Road (see #5)**
4. **Wilmington Pike & Center Point Drive (see #5)**

5. **Wilmington Pike & Clyo Road**
   - Full traffic signal rebuild including:
     - Mast arm design with combination LED street lighting
     - New vehicular signal heads with back plates
     - Countdown pedestrian signal heads
     - Pedestrian pushbuttons
     - Non-intrusive detection (all approaches)
     - New controller & cabinet with uninterruptible power supply (UPS)
     - Install interconnect equipment

6. **Wilmington Pike & Miami Valley Drive**
   - Local equipment upgrades including:
     - New controller in existing cabinet
     - Uninterruptible power supply (UPS)
     - Retro-fit existing pedestrian heads with countdown modules
     - Replace pushbuttons as needed.
     - Install interconnect equipment

7. **Wilmington Pike & I-675 Northbound Ramp (see #8)**
8. **Wilmington Pike & I-675 Southbound Ramp**
   - Local equipment upgrades including:
     - New vehicular signal heads with back plates. The ability of the existing signal supports to accommodate back plates will be reviewed and back plates will be included where feasible.
     - Retro-fit existing pedestrian heads with countdown modules
     - Replace pushbuttons as needed.
     - Install interconnect equipment

9. **Wilmington Pike & Whipp/Feedwire (see #11)**
10. **Wilmington Pike & Dille Drive (see #11)**
11. **Feedwire Road & Charles Drive**
    - Local equipment upgrades including:
      - Install interconnect equipment

12. **Feedwire Road & Clyo Road (Old Possum Run)**
    - Local equipment upgrades including:
      - New controller in existing cabinet
      - New vehicular signal heads
      - Install interconnect equipment

The end products of the design task will be Plans, Specifications, and Cost Estimates (PS&E) package suitable for letting. The design documents will detail the project design topology, the type of equipment used, the placement of equipment, and the standards to be used for the

installation of the equipment in such a manner that potential contractors can accurately bid on and build the desired system.

The following Phases/Tasks are based on ODOT's staged design process. Specific task references to ODOT standard task lists are listed for cross-referencing purposes where applicable.

GENERAL TASKS

Project Management

The consultant will keep City/ODOT informed of the project status regularly and provide the opportunity for input and direction in a timely manner. This day-to-day project support will be supplemented with the following project management tasks.

Meetings

The consultant will attend a project meeting at the end of each design stage to review the plan documents with the City prior to ODOT submission. The consultant will prepare meeting minutes to document the discussions and decisions made at these meetings within five business days following each meeting.

Progress Reports

The consultant will prepare monthly progress reports, which will be submitted to the City along with monthly invoices. The progress reports will summarize the services performed during the invoice period and describe the activities anticipated in the upcoming invoice period. Invoices will not be processed without a Progress Report for that time period.

General Tasks Deliverables

- Monthly progress reports and invoices
- Meeting minutes, as needed

PHASE 1: PLANNING PHASE

Turning Movement Counts (Task 1.3.C.A)

The consultant will complete weekday peak hour turning movement counts for each of the 12 intersections within the project. Twelve (12) hours of turning movement count data will be collected for each intersection. The peak hours to be counted will be 6am to 6pm, unless directed otherwise by the City. This count data will be utilized for both traffic signal warrant analysis and system timing development tasks.

The consultant will also complete weekend peak hour turning movement counts for each of the 12 intersections within the project. Two (2) hours of turning movement count data will be collected for each intersection on the weekend. The peak hours to be counted will be determined from the results of the Mechanical Counts (described on the following page) and coordination with the City.

Mechanical Counts (Radar Counts) (Task 1.3.C.B)

The consultant will complete a minimum of 5 full days (Wednesday through Sunday) of mechanical counts at the following locations:

1. Wilmington Pike between Center Point Drive and Briggs Road
2. Wilmington Pike between Clyo Road and Miami Valley Drive
3. Wilmington Pike between I-675 and Whipp/Feedwire
4. Feedwire Road between Wilmington Pike and Charles Drive

Pneumatic Hose Counter and/or Non-intrusive Radar Counters will be utilized to collect volume/speed data for both directions of traffic at the locations specified. This count data will be utilized for identifying specific peak hours of traffic and also for system timing development tasks.

Equipment Inspection and Recommendations

Field Equipment Inspection

The consultant's IMSA certified Traffic Signal Inspectors will complete a full inspection of the existing traffic signals in order to help establish the final extent of work needed at each location. These inspections will confirm the condition and functionality of the existing equipment, cabinets, and wiring. These initial inspections will help ensure all proposed elements can be implemented at the intersections and also identify area constructability issues that can be then be accounted for during the design phase of the project.

Data Analysis & Review

The consultant team including project engineers, traffic signal inspectors and constructability experts will review the results of the field inspections to develop a listing of local intersection specific recommendations and overall system recommendations. A back plate installation assessment will be completed at locations where back plates are proposed at existing traffic signal installations. Recommendations will include equipment needs and/or specific design requirements for the intersections/corridor.

Curb Ramp Condition Review

The consultant will complete a field review of existing curb ramps at the following intersections:

1. Wilmington Pike & W. Franklin St. (SR 725)
2. Wilmington Pike & Whites Corner Road
3. Wilmington Pike & Briggs Road
4. Wilmington Pike & Center Point Drive
5. Wilmington Pike & Clyo Road
6. Wilmington Pike & Miami Valley Drive

For the omitted six (6) intersections:

- Five (5) intersections have recently been reconstructed/redesigned and it is assumed that the curb ramps meet ADA standard.
- One (1) intersection does not have any pedestrian facilities

The results of the field review will be compiled and provided to the City in a summary document which will include the curb ramp condition and work needed at each location to meet ADA standards.

PTZ Camera Location/View Testing

The consultant will utilize a temporary camera (non-ptz) deployment to test the potential view for up to (8) individual camera locations. The consultant will coordinate with the City on the specific locations to be tested. For the terms of this work item, a location will be defined as a specific corner at an intersection, not the entire intersection itself. The individual views will be recorded and provided to the City for review and selection of PTZ camera locations for design.

Phase 1 Deliverables

The consultant will furnish City/ODOT:

- Peak hour turning movement count data sheets (12 intersections)
- Field Inspection Summary Forms
- Equipment Recommendations summary document
- Curb Ramp Condition summary document
- PTZ camera view recordings

PHASE 2: PRELIMINARY ENGINEERING PHASE (STAGE 1 PLANS)

Field Survey and Mapping (Task 2.3.A)

The consultant will perform field surveys utilizing a professional surveyor throughout the project corridor to establish horizontal control for project construction. A local vertical datum will be used where necessary to provide vertical datum information for signage placement and other critical interfaces. Local benchmarks will be established within a 300' distance of critical interfaces. Where available, vertical control will utilize benchmarks from previous intersection related projects. No level loop or vertical closure will be provided for local assumed benchmarks. Horizontal control and local vertical datum information will also be extended along peripheral corridors within the limits of proposed improvements. All mapping will use Station & Offset references.

Full topographic survey will be completed for the following locations:

1. Wilmington Pike & Whites Corner Road
2. Wilmington Pike & Briggs Road
3. Wilmington Pike & Center Point Drive
4. Wilmington Pike & Clyo Road

The consultant will utilize record plan information to establish an approximate representation of horizontal roadway alignments throughout the corridor. The City will provide the consultant with electronic (CAD) format design plans of the recently completed/proposed improvements within the project limits. The consultant will review and incorporate the provided information into the base plan.

The consultant will locate existing right of way along Wilmington Pike between SR 725 and Dille Drive and on Feedwire Road between Wilmington Pike and Clyo Road. This process will include online and courthouse research and field work to locate right of way and property monuments. Centerlines for Wilmington Pike and Feedwire Road will be established (or recreated from previous roadway design work) for Wilmington Pike and Feedwire Road within the limits stated above.

For intersections included in the project that are not to be fully surveyed (as shown above), GIS or previous plan data will be added to the CAD basemap to represent the existing features at each intersection. No survey work beyond that needed for recreating existing right of way will be performed at intersections not indicated for full topographic survey.

Identify Construction Limits (Task 2.3.B.I)
The consultant will develop construction limits for the project based upon a review of work required at each location. Construction limits are not anticipated to extend beyond the existing right-of-way limits.

Documentation of Proprietary Bid/Alternate Bid Justification (Task 2.3.D.A/B)
The consultant will coordinate with the City to develop the required documentation to obtain proprietary and/or alternate bid justification for the traffic signal equipment.

Signal Warrant Analysis (Task 2.3.E.A)
The consultant will complete a traffic signal warrant analysis for the twelve (12) signalized intersections included in the project. This analysis will review the volume based warrants only.

Utility Research and Identification (Task 2.3.G.A)
The consultant will coordinate with Ohio Utilities Protection Service and directly with utility companies to commence gathering of utility information within the project limits. In addition to power and telephone utilities, the consultant will coordinate utilities under ODOT jurisdiction. Initial coordination will begin upon development of preliminary exhibits depicting utility information available from record plans and field observations. These exhibits will be submitted to appropriate utility companies, in order to commence communication and speed the identification of underground facilities. Upon completion and field checking of base plan sheets, the consultant will provide corrected plans incorporating known utility information to the necessary utility companies for review and coordination.

Stage 1 Design (Task 2.7)

Update Title Sheet/Schematic Plan/General Notes (Task 2.7.A.A/B/C)
The consultant will update the project Title Sheet to include:

- Project designation.
- Design designation.
- Index of sheets for Stage 1 submission to facilitate review comments.
- Location map.
- Project description

The consultant will also develop general notes including the list of utilities and base notes associated with the proposed work. A schematic plan will also be developed in accordance with L&D Volume 3, Section 1303.

Locate Signal Poles and Controller

The consultant will develop traffic signal plan sheets showing the location of existing/proposed traffic poles and traffic signal controllers.

Perform Airway/Highway Clearance Analysis (2.7.G.A)

The need for Airway/Highway Clearance documentation for the Wilmington Pike Traffic Signal Upgrade project was examined by the consultant. Since the project is not located within 20,000 feet of a public use or military airport/heliport this work item is not required. Therefore no Airway/Highway Clearance Analysis will be prepared by the consultant.

Systems Engineering/23 CFR 940 Documentation (2.7.G.F)

The need for SEA documentation for the Wilmington Pike Traffic Signal Upgrade project was examined by the consultant. Per table 1397-1 of the Traffic Engineering Manual (TEM), SEA exempt projects include:

- Changes and/or upgrades to an existing traffic signal system, including signal timing revisions, additional phases (vehicle or pedestrian) or detector installation.
- Installation of cameras that are not functionally integrated into other types of systems; for example, cameras solely for the purpose of traffic data collection or surveillance cameras

The above descriptions are consistent with the scope and scale of the Wilmington Pike Traffic Signal Upgrade project. Therefore no SEA documentation will be prepared by the consultant.

Phase 2 Deliverables

- Project Basemapping
- Proprietary Bid/Alternate Bid Documentation
- Traffic Signal Warrant Analysis Summary
- Stage 1 plan set.
    - One (1) unbound 11x17 for City review
    - Three (3) unbound 11x17 for ODOT review
    - One (1) electronic format – Adobe Acrobat PDF (all parties)

PHASE 3: ENVIRONMENTAL ENGINEERING PHASE (STAGE 2 PLANS)

Stage 2 Design (Task 3.3)

Traffic Signals (Task 3.3.D)

The consultant will prepare the required signal plan sheets for inclusion in the Stage 2 plan set including traffic signal upgrade, traffic signal design and interconnect plans. Traffic signal design plans will follow the guidelines shown in the Office of Traffic Engineering Signal Design Reference Packet.

Maintenance of Traffic (Task 3.3.E.A)
The consultant will prepare the required MOT plan notes for inclusion in the stage 2 plans.

Utility Coordination and Documentation (Task 3.3.J.A)
Upon identification of proposed improvement locations and after receipt and drafting of utility information requested during base plan development; the consultant will identify likely utility conflicts arising from the proposed design. Where feasible, improvement locations will be adjusted to eliminate or minimize utility conflicts. Remaining conflicts between existing facilities and proposed improvements will be brought to the attention of the City. Additional utility coordination will then occur based on the input and requirements of the City and affected utility company. No conflicts are anticipated.

Prepare Cost Estimates (Task 3.8)
The consultant shall use ESTIMATOR software and follow the Office of Estimating guidelines for the preparation of the interim cost estimate. The consultant will also provide an Excel format estimate for City use.

Phase 3 Deliverables
The consultant will develop a Stage 2 draft of the plans, specifications, and estimates.

- Interim Cost Estimate
- Stage 2 plan set.
    - One (1) unbound 11x17 for City review
    - Three (3) unbound 11x17 for ODOT review
    - One (1) electronic format – Adobe Acrobat PDF (all parties)

PHASE 4: FINAL ENGINEERING PHASE

Stage 3 Design (Task 4.2)

Quantities and Notes (Task 4.2.A)
The consultant will calculate and summarize pay item quantities for each work type within the project. Quantities will be organized for summary by item number, and standard summary sheets as is pertinent to the services. Necessary notes and specifications for all items will be compiled and included in the plan set.

Traffic Signal Plans (Task 4.2.B)
The consultant will finalize details, as needed, on the traffic signal plans including wiring diagram/pole charts/timing charts. Timing charts will be developed for each signalized intersection within the project. Local timing and system timing will be reviewed and developed. Signal timings will be developed using Synchro and Simtraffic. The consultant will review the local intersection timing including phasing and timing parameters analysis. All basic timing parameters (minimum green, clearance intervals, walk, min. initial, etc.) will be reviewed, calculated and checked, and basic timing adjustments will be proposed where necessary. Minimum green times will be

determined per local agency policy or in the absence of a policy will be per ODOT recommendations outlined in the Traffic Signal module of the Traffic Academy. Vehicle clearance intervals will be per ITE recommendations or local standards. Pedestrian clearance intervals will be calculated per OMUTCD requirements. Walk times should typically be 4-7 seconds depending on demand. The consultant will develop a minimum of four system timing plans to cover the following periods; AM peak, Midday, PM peak, and off peak hours. Local timing recommendations and coordinated timing recommendations will be included within the plan set on timing specific plan sheets.

Prepare Cost Estimates and Revise Milestones (Task 4.3)
The consultant will revise and update the cost estimates based upon any changes during the Stage 3 design.

Submission of Final Tracings and Documentation (Task 4.4.A)
The consultant will provide the final plans to the City/ODOT for inclusion in the bid package.

Phase 4 Deliverables
The deliverables will include final plans, notes, construction cost estimate(s) required for preparation of bidding documents by the City. The consultant will furnish:

- Stage 3 plan set (for review).
  - One (1) unbound 11x17 for City review
  - Three (3) unbound 11x17 for ODOT review
  - One (1) electronic format – Adobe Acrobat PDF (all parties)
- Final Construction Cost Estimate (Estimator/Excel Format)
- Upon review of Stage 3 plans
  - Complete set of plans in TIFF format
  - Complete set of plans in searchable Adobe Acrobat PDF

<u>If Authorized Tasks</u>
The consultant has included an "if authorized" cost to review and redesign existing curb radii on a single intersection quadrant basis. If this work is authorized, the consultant will review the existing curb radius for the intersection quadrant, propose a new radius that would fit within the existing right of way and is constructible, and prepare a construction drawing showing elevations, pavement section, curb ramp, and estimated quantities. This work is assumed to be limited to the four (4) intersections that include a full topographic survey. If intersections outside of those four are to be considered, additional costs would be needed to perform a limited topographic survey.

<u>Variations from the Scope of Services</u>
This Scope of Services document is based on the consultant's knowledge of project requirements at the time when the document was prepared, and serves as the basis for the price proposal and agreed fee. However, changes in the work may be required as the project develops and more complete information becomes available. As the project develops, the consultant will advise the Client of significant changes in the work that may require

modification of the agreement. Modification of the agreement or written authorization to proceed will be required prior to the performance of additional work. In short, at all times the consultant remains responsible to advise the City of work that exceeds the scope of services.

Schedule

The consultant will provide the above described services according the following schedule.

Milestone	Date
Authorized Design Consultant	03/07/2016 (assumed)
Stage 1 Plans - Submitted	06/13/2016
Stage 1 Plans - Complete	07/13/2016
Stage 2 Plans - Submitted	11/14/2016
Stage 2 Plans - Complete	12/14/2016
Stage 3 Plans - Submitted	03/27/2017
Stage 3 Plans - Complete	04/27/2017
Local Let PS&E Package to District	06/01/2017
Plan Package Received in C.O.	07/01/2017

Fee Summary

A detailed breakdown of the proposed total hours, personnel categories, and labor rates associated with all project tasks are attached to this document for review.

	PROPOSAL COST SUMMARY				DETAILED BREAKDOWN OF PROPOSED TOTAL HOURS, PERSONNEL CATEGORIES, AND LABOR RATES										DETAILED BREAKDOWN OF DIRECT COSTS				
PROJECT NAME:	Wilmington Pike Traffic Signal Upgrade				Wilmington Pike Traffic Signal Upgrade										Wilmington Pike Traffic Signal Upgrade				
PROJECT NUMBER:	95662				95662										95662				
CONSULTANT:	TEC Engineering, Inc				TEC Engineering, Inc										TEC Engineering, Inc				
DATE:	04-Feb-16				04-Feb-16										04-Feb-16				
	FEE OVERVIEW				HOURS BY TASK										DIRECT COSTS				
					HOURS BY PERSONNEL CATEGORY														
Task - Description	Total Hours	Hourly Costs	Direct Costs	Total Costs	QA/QC Mgr $ 178.00	Proj Manager $ 148.00	Proj Engineer $ 107.00	Design Engineer $ 85.00	Technician $ 55.00	Surveyor $ 103.00	Sr. Technician $ 77.00	Signal Tech/Insp $ 105.00	Total Hours	Hourly Costs	Reports $ 45.00	Production (Per Sheet) $ 0.40	Mileage $ 0.52	Total
1.0 Planning Phase																		
1.3.C.A Turning Movement Counts																		
(i) Weekday Turning Movement (12 intersections/12 hour turn counts ea.)	161	$ 12,547	$ 26	$ 12,573			5				156		161	$ 12,547			50	$ 26.00
(ii) Weekend Turning Movement (12 intersections/2 hour turn counts ea.)	24	$ 1,848	$ -	$ 1,848							24		24	$ 1,848				$ -
1.3.C.A Mechanical Counts																		
(i) Bi-directional Mechanical Counts (4 locations)	17	$ 1,399	$ 52	$ 1,451			3				14		17	$ 1,399			100	$ 52.00
Equipment Inspection and Recommendations																		
(i) Field Equipment Inspection	22	$ 2,082	$ 52	$ 2,134		4			8			10	22	$ 2,082			100	$ 52.00
(ii) Data Analysis/Review	20	$ 2,288	$ 31	$ 2,319		4	8					8	20	$ 2,288			60	$ 31.20
(a) Local Intersection Recommendations	3	$ 382	$ -	$ 382		1	2						3	$ 382				$ -
(b) System Recommendations	2	$ 214	$ -	$ 214			2						2	$ 214				$ -
Curb Ramp Condition Review																		
(i) Field Review to determine ADA compliance	5	$ 535	$ 31	$ 566			5						5	$ 535			60	$ 31.20
(ii) Summary of Findings	3	$ 321	$ 31	$ 352			3						3	$ 321			60	$ 31.20
PTZ Camera Location/View Testing																		
(i) View Testing/Coordination	17	$ 1,163	$ 31	$ 1,194			1		8		8		17	$ 1,163			60	$ 31.20
Planning Phase - Subtotal	274	$ 23,759	$ 255	$ 23,014	0	9	29	0	16	0	202	18	274	$ 23,759				$ 254.80
2.0 Preliminary Engineering Phase																		
2.3.A Field Survey and Mapping																		
(i) Identify Control from Counties and Previous Plans	4	$ 412	$ -	$ 412						4			4	$ 412				$ -
(ii) Research Existing Right of Way (County and Road Records)	8	$ 824	$ -	$ 824						8			8	$ 824				$ -
(iii) Identify property ownership adjacent to work areas	2	$ 206	$ -	$ 206						2			2	$ 206				$ -
(iv) Field locate right of way monumentation	32	$ 3,088	$ 62	$ 3,150						24	8		32	$ 3,088			120	$ 62.40
(v) Storm and Sanitary Sewer depths and pipe sizes (4 intersections)	16	$ 1,440	$ 21	$ 1,461						8	8		16	$ 1,440			40	$ 20.80
(vi) Full Topographic Survey (4 intersections)	64	$ 5,760	$ 83	$ 5,843						32	32		64	$ 5,760			160	$ 83.20
(vii) Develop CAD Basemap	24	$ 2,472	$ -	$ 2,472						24			24	$ 2,472				$ -
(viii) Determine Existing Right of Way and Add to CAD Basemap	24	$ 2,472	$ -	$ 2,473						24			24	$ 2,472				$ -
(ix) Add Existing Centerline to Wilmington Pike and Feedwire Road	4	$ 412	$ -	$ 414						4			4	$ 412				$ -
(x) Add GIS and Existing Plan Data to CAD Basemap	16	$ 1,880	$ -	$ 1,863		4	8			4			16	$ 1,850				$ -
(xi) Field Review Basemap Information	4	$ 592	$ 21	$ 617		4							4	$ 592			40	$ 20.80
2.3.B Roadway																		
2.3.B.I (i) Identify Construction Limits	5	$ 447	$ -	$ 447			1	4					5	$ 447				$ -
2.3.D Traffic Control																		
2.3.D.A/B (i) Proprietary Material/Alternate Bid Justifications	4	$ 592	$ -	$ 592		4							4	$ 592				$ -
2.3.E Signals																		
2.3.E.A (i) Signal Warrant Analysis (12 locations)	15	$ 1,542	$ -	$ 1,542		1	12		2				15	$ 1,542				$ -
2.3.G Utilities																		
2.3.G.A (i) Utility Research and Identification	8	$ 930	$ -	$ 930		2	4			2			8	$ 930				$ -
2.7 Stage 1 Design																		
2.7.A A/C (i) Develop Title Sheet & Schematic Plan	7	$ 497	$ -	$ 497			1	2	4				7	$ 497				$ -
2.7.A.B (ii) General Notes	8	$ 554	$ -	$ 554			2	4					8	$ 554				$ -
(iii) Locate Signal Poles and Controller (4 intersections)	18	$ 1,744	$ -	$ 1,744		2	4	12					18	$ 1,744				$ -
(iv) Prepare Stage 1 plan package	8	$ 516	$ 30	$ 546		2			4				8	$ 516		75		$ 30.00
2.8 Project Management																		
2.8.A (i) Meetings (Stage 1 Review Meeting)	4	$ 510	$ 5	$ 515		2	2						4	$ 510			10	$ 5.20
2.8.B (ii) General Oversight	8	$ 1,304	$ -	$ 1,304	4	4							8	$ 1,304				$ -
Preliminary Engineering Phase - Subtotal	279	$ 28,174	$ 232	$ 28,406	4	28	34	22	10	136	48	0	279	$ 28,174				$ 38.20

	PROPOSAL COST SUMMARY				DETAILED BREAKDOWN OF PROPOSED TOTAL HOURS, PERSONNEL CATEGORIES, AND LABOR RATES										DETAILED BREAKDOWN OF DIRECT COSTS				
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PROJECT NUMBER:	95662				95662										95662				
CONSULTANT:	TEC Engineering, Inc.				TEC Engineering, Inc.										TEC Engineering, Inc.				
DATE:	04-Feb-16				04-Feb-16										04-Feb-16				
	FEE OVERVIEW				HOURS BY TASK										DIRECT COSTS				
					HOURS BY PERSONNEL CATEGORY														
Task - Description	Total Hours	Hourly Costs	Direct Costs	Total Costs	QA/QC Mgr $ 178.00	Proj Manager $ 148.00	Proj Engineer $ 107.00	Design Engineer $ 85.00	Technician $ 55.00	Surveyor $ 103.00	Sr Technician $ 77.00	Signal Tech/Insp $ 105.00	Total Hours	Hourly Costs	Reports $ 45.00	Production (Per Sheet) $ 0.40	Mileage $ 0.52	Total
3.0 Environmental Engineering Phase																			
3.3 Stage 2 Design																			
3.3.D.A (i) Signal Upgrade Plans (8 intersections)	72	$ 7,184	$ -	$ 7,184		8	40		16			8	72	$ 7,184				$ -	
(ii) Signal Design Plans (4 intersections)	198	$ 20,196	$ -	$ 20,196		32	120		40			4	198	$ 20,196				$ -	
3.3.D.B (iii) Interconnect Plans	38	$ 3,756	$ -	$ 3,756		6	18		8			4	38	$ 3,756				$ -	
3.3.E.A (iv) Maintenance of Traffic Notes	3	$ 277	$ -	$ 277			1	2					3	$ 277				$ -	
3.3.J.A (v) Utility Coordination and Documentation	5	$ 576	$ -	$ 576		1	4						5	$ 576				$ -	
(vi) Prepare Stage 2 plan package	10	$ 736	$ 100	$ 836		2			8				10	$ 736		250		$ 100.00	
3.8 Cost Estimate																			
3.8.A (i) Develop Cost Estimate - Stage 2	8	$ 554	$ -	$ 554			2	4					8	$ 554				$ -	
3.9 Project Management																			
3.9.A (i) Meetings (Stage 2 Review Meeting)	5	$ 836	$ 5	$ 843		2.5	2.5						5	$ 836			10	$ 5.20	
3.9.B (ii) General Oversight	18	$ 2,808	$ -	$ 2,808	8	8							18	$ 2,808				$ -	
Environmental Engineering Phase - Subtotal	349	$ 36,826	$ 105	$ 36,930	8	61.5	185.5	6	72	0	0	16	349	$ 36,826				$ 105.20	
4.0 Final Engineering Phase																			
4.2 Stage 3 Design																			
4.2.A (i) Quantities and Notes																			
(a) Project Notes (General, MOT, Signal, Interconnect)	48	$ 4,632	$ -	$ 4,632		8	24		16				48	$ 4,632				$ -	
(b) Quantities and Summary Sheets	40	$ 3,588	$ -	$ 3,588		4	8	20	8				40	$ 3,588				$ -	
4.2.B (iii) Traffic Signal Plans																			
(a) Traffic Signal Plan Details (Wiring diagram/pole chart/timing chart)	40	$ 4,192	$ -	$ 4,192		8	24		8				40	$ 4,192				$ -	
(i) System Modeling & Analysis																			
(a) System Observations	12	$ 1,448	$ 26	$ 1,474		4	8						12	$ 1,448			50	$ 26.00	
(b) Synchro Model Creation	14	$ 1,580	$ -	$ 1,580		2	12						14	$ 1,580				$ -	
(c) Clearance Intervals (Y & AR + W & FDW)	9	$ 796	$ -	$ 796		1	4		4				9	$ 796				$ -	
(d) Future Timing Plan Development (AM, MD, OFF, PM)	48	$ 5,464	$ -	$ 5,464		8	40						48	$ 5,464				$ -	
(b) Coordination Timing Sheets	7	$ 702	$ -	$ 702		1	2	4					7	$ 702				$ -	
(iv) Prepare Stage 3 plan package	10	$ 736	$ 100	$ 836		2			8				10	$ 736		250		$ 100.00	
4.3 Cost Estimate																			
4.3.A (i) Develop Cost Estimate - Stage 3	6	$ 554	$ -	$ 554			2	4					6	$ 554				$ -	
4.4 Final Plan Package																			
4.4.A (i) Final Tracings and Documentation	24	$ 2,480	$ -	$ 2,480		8	8		8				24	$ 2,480				$ -	
4.8 Project Management																			
4.5.A (i) Meetings (Stage 3 Review Meeting)	3	$ 383	$ 5	$ 388		1.5	1.5						3	$ 383			10	$ 5.20	
4.5.B (ii) General Oversight	18	$ 2,808	$ -	$ 2,808	8	8							18	$ 2,808				$ -	
Final Engineering Phase - Subtotal	277	$ 28,163	$ 131	$ 28,294	8	36.5	133.5	28	52	0	0	0	277	$ 28,163				$ 131.20	
TOTAL PARTS 1-4	1179	$ 116,621	$ 716	$ 117,345	20	151	382	66	160	138	250	34	1179	$ 116,621					
If Authorized Tasks																			
Curb Radius Reconstruction (per corner)																			
(i) Preliminary Design New Corner Radius	3	$ 382	$ -	$ 382		1	2						3	$ 382				$ -	
(ii) Final Intersection Design (elevations, curbs, ramps, quantities)	9	$ 1,004	$ -	$ 1,005		1	8						9	$ 1,004				$ -	
(iii) General Oversight	5	$ 770	$ -	$ 770	1	4							5	$ 770				$ -	
If Authorized Tasks - Subtotal	17	$ 2,138	$ -	$ 2,137	1	6	10	0	0	0	0	0	17	$ 2,138				$ -	