Administrative Use Only
Contract Date: _____

**PROFESSIONAL SERVICES AGREEMENT BETWEEN
WSP MICHIGAN, INC.
AND THE CITY OF ANN ARBOR
FOR PROFESSIONAL SERVICES**

The City of Ann Arbor, a Michigan municipal corporation, having its offices at 301 E. Huron St. Ann Arbor, Michigan 48104 ("City"), and WSP Michigan, Inc. (“Contractor”), a Michigan Corporation with its address at 500 Griswold St, Ste 2600, Detroit, MI 48226, agree as follows:

The Contractor agrees to provide services to the City under the following terms and conditions:

I. DEFINITIONS

Administering Service Area/Unit means Public Services – Engineering.

Contract Administrator means Nicholas Hutchinson, P.E., acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all Plans, Specifications, Reports, Recommendations, and other materials developed for and delivered to City by Contractor under this Agreement.

Project means Traffic Signal Operational Study.

II. DURATION

Contractor shall commence performance on _____, 20____ (“Commencement Date”). This Agreement shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in Article XI. The terms and conditions of this Agreement shall apply to the earlier of the Effective Date or Commencement Date.

III. SERVICES

A. The Contractor agrees to provide professional engineering services ("Services") in connection with the Project as described in Exhibit A. The City retains the right to make changes to the quantities of service within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the services, the contract sum shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.

B. Quality of Services under this Agreement shall be of the level of quality performed by persons regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.

C. The Contractor shall perform its Services for the Project in compliance with all statutory, regulatory, and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement.

D. The Contractor may rely upon the accuracy of reports and surveys provided to it by the City (if any) except when defects should have been apparent to a reasonably competent professional or when it has actual notice of any defects in the reports and surveys.

IV. INDEPENDENT CONTRACTOR

The Parties agree that at all times and for all purposes under the terms of this Agreement each Party's relationship to any other Party shall be that of an independent contractor. Each Party will be solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer/employee relationship, either express or implied, shall arise or accrue to any Party as a result of this Agreement.

V. COMPENSATION OF CONTRACTOR

A. The Contractor shall be paid in the manner set forth in Exhibit B. Payment shall be made monthly, unless another payment term is specified in Exhibit B, following receipt of invoices submitted by the Contractor, and approved by the Contract Administrator.

B. The Contractor will be compensated for Services performed in addition to the Services described in Article III, only when the scope of and compensation for those additional Services have received prior written approval of the Contract Administrator.

C. The Contractor shall keep complete records of work performed (e.g. tasks performed, hours allocated, etc.) so that the City may verify invoices submitted by the Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

VI. INSURANCE/INDEMNIFICATION

A. The Contractor shall procure and maintain during the life of this contract such insurance policies, including those set forth in Exhibit C, as will protect itself and the City from all claims for bodily injuries, death or property damage that may arise under this contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor or anyone employed by them directly or indirectly. Prior to commencement of work under this Agreement, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the policies and endorsements required by Exhibit C. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

B. Any insurance provider of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.

C. To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses, including attorney's fees, resulting or alleged to result, from any acts or omissions by Contractor or its employees and agents occurring in the performance of or breach in this Agreement, except to the extent that any suit, claim, judgment or expense are finally judicially determined to have resulted from the City's negligence or willful misconduct or its failure to comply with any of its material obligations set forth in this Agreement.

VII. COMPLIANCE REQUIREMENTS

A. Nondiscrimination. The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

B. Living Wage. If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

VIII. WARRANTIES BY THE CONTRACTOR

A. The Contractor warrants that the quality of its Services under this Agreement shall conform to the level of quality performed by persons regularly rendering this type of service.

B. The Contractor warrants that it has all the skills, experience, and professional licenses necessary to perform the Services specified in this Agreement.

C. The Contractor warrants that it has available, or will engage, at its own expense, sufficient trained employees to provide the Services specified in this Agreement.

D. The Contractor warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City including real and personal property taxes.

E. The Contractor warrants that its proposal for services was made in good faith, it arrived at the costs of its proposal independently, without consultation, communication or agreement, for the purpose of restricting completion as to any matter relating to such fees with any competitor for these Services; and no attempt has been made or shall be made by the Contractor to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

IX. OBLIGATIONS OF THE CITY

A. The City agrees to give the Contractor access to the Project area and other City-owned properties as required to perform the necessary Services under this Agreement.

B. The City shall notify the Contractor of any defects in the Services of which the Contract Administrator has actual notice.

X. ASSIGNMENT

A. The Contractor shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the City.

B. The Contractor shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

XI. TERMINATION OF AGREEMENT

A. If either party is in breach of this Agreement for a period of fifteen (15) days following receipt of notice from the non-breaching party with respect to a breach, the non-breaching party may pursue any remedies available to it against the breaching party under applicable law, including but not limited to, the right to terminate this Agreement without further notice. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.

B. The City may terminate this Agreement, on at least thirty (30) days advance notice, for any reason, including convenience, without incurring any penalty, expense or liability to Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.

C. Contractor acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the City to effect continued payment under this Agreement are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The Contract Administrator shall give Contractor written notice of such non-appropriation within thirty (30) days after it receives notice of such non-appropriation.

D. The provisions of Articles VI and VIII shall survive the expiration or earlier termination of this Agreement for any reason. The expiration or termination of this Agreement, for any reason, shall not release either party from any obligation or liability to the other party, including any payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

XII. REMEDIES

A. This Agreement does not, and is not intended to, impair, divest, delegate or contravene any constitutional, statutory and/or other legal right, privilege, power, obligation, duty or immunity of the Parties.

B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any agreement between the parties or otherwise.

C. Absent a written waiver, no act, failure, or delay by a Party to pursue or enforce any rights or remedies under this Agreement shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, in one or more instances, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either Party shall subsequently effect its right to require strict performance of this Agreement.

XIII. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated in this Agreement or such other address as either party may designate by prior written notice to the other. Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to the CONTRACTOR, it shall be addressed and sent to:

WSP Michigan, Inc.
500 Griswold St, Ste 2600
Detroit, MI 48226
Attn: Scott Shogan, P.E.

If Notice is sent to the CITY, it shall be addressed and sent to:

City of Ann Arbor
c/o Public Services – Engineering
301 E. Huron St.
Ann Arbor, Michigan 48104
Attn: Nicholas S. Hutchinson, P.E.

With a copy to: The City of Ann Arbor
ATTN: Office of the City Attorney
301 East Huron Street, 3rd Floor
Ann Arbor, Michigan 48104

XIV. CHOICE OF LAW AND FORUM

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction, excepting the principles of conflicts of law. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

XV. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all documents (i.e., Deliverables) prepared by or obtained by the Contractor as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities and other data shall remain in the possession of the Contractor as instruments of service unless specifically incorporated in a deliverable, but shall be made available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Project. Prior to completion of the contracted Services the City shall have a recognized proprietary interest in the work product of the Contractor.

Unless otherwise stated in this Agreement, any intellectual property owned by Contractor prior to the effective date of this Agreement (i.e., Preexisting Information) shall remain the exclusive property of Contractor even if such Preexisting Information is embedded or otherwise incorporated in materials or products first produced as a result of this Agreement or used to develop Deliverables. The City's right under this provision shall not apply to any Preexisting Information or any component thereof regardless of form or media.

XVI. CONFLICTS OF INTEREST OR REPRESENTATION

Contractor certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Contractor further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

Contractor agrees to advise the City if Contractor has been or is retained to handle any matter in which its representation is adverse to the City. The City's prospective consent to the Contractor's representation of a client in matters adverse to the City, as identified above, will not apply in any instance where, as the result of Contractor's representation, the Contractor has obtained sensitive, proprietary or otherwise confidential information of a non-public nature that, if known to another client of the Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

XVII. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

XVIII. EXTENT OF AGREEMENT

This Agreement, together with any affixed exhibits, schedules or other documentation, constitutes the entire understanding between the City and the Contractor with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements or understandings whether written or oral. Neither party has relied on any prior representations, of any kind or nature, in entering into this Agreement. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such form. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended or modified by written amendment signed by the Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

XIX. ELECTRONIC TRANSACTION

The parties agree that signatures on this Agreement may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Agreement.

XX. EFFECTIVE DATE

This Agreement will become effective when all parties have signed it. The Effective Date of this Agreement will be the date this Agreement is signed by the last party to sign it.

FOR CONTRACTOR

By _____
Scott Shogan, P.E.
Its Vice President

Date: _____

FOR THE CITY OF ANN ARBOR

By _____
Christopher Taylor, Mayor

By _____
Jacqueline Beaudry, City Clerk

Approved as to substance

_____
Craig Hupy, P.E.
Public Services Area Administrator

_____
Howard S. Lazarus, City Administrator

Approved as to form and content

_____
Stephen K. Postema, City Attorney

EXHIBIT A

TRAFFIC SIGNAL OPERATATIONAL STUDY
SCOPE OF SERVICES

The Contractor shall provide all items listed in the Scope of Services for RFP (Request for Proposal) #19-11 and the WSP Michigan, Inc. Proposal to RFP #19-11. Both of these documents are included below.

RFP #19-11 – Objective and Scope of Services

Work for all tasks is within the City of Ann Arbor, in Washtenaw County, Michigan. The City of Ann Arbor is located in eastern Washtenaw County and is bordered by Interstate Highway 94 (I-94), US Route 23 (US-23), and Michigan Route 14 (M-14) which are all the major highways linking Ann Arbor to other Michigan cities.

A. Objective

The City of Ann Arbor is seeking a highly qualified consultant or consultant team to provide transportation engineering services for the Traffic Signal Operational Study. The objective of the study is to provide a comprehensive update to the operational parameters of the traffic signal system, optimize its operations to complement installed and planned street and intersection geometric modifications, and prepare the signal system for expected variations in travel condition, demand and mode choice.

The chosen Consultant will work with a designated City Project Manager for this study to coordinate data collection, study progress, and implementation of study results. The Public Services Area staff will oversee the direction of the project and quality of work performed by the chosen Consultant.

B. Scope of Services (from City's RFP #19-11)

1. Background

The City maintains and operates traffic signals at 163 intersections and RRFB's (rectangular rapid flash beacon) at 38 mid-block crossing locations. Many system users choose active modes of travel including Walk, Bike, and Transit. Approximately 50 traffic signals along major commuting routes are equipped with real-time adaptive control technology, namely Split Cycle Offset Optimization Technique (SCOOT). The technology enables equipped intersections to make continual timing plan adjustments, within pre-defined limits, to match real-time service demands. Remaining traffic signals in the City operates with pre-defined timing plans activated by a time-of-day schedule.

2. Objective

The City of Ann Arbor is seeking proposals for conducting a traffic signal operational study. The study will provide a comprehensive update to the operational parameters of the traffic signal system, optimize its operations to complement installed and planned street and intersection geometric modifications, and prepare the signal system for expected variations in travel condition, demand and mode choice.

3. Requirements

A. The consultant or prime consultant of team must maintain MDOT (Michigan Department of Transportation) pre-qualifications in the following service areas.
    a. Design – Traffic: Pavement Markings
    b. Design – Traffic: Safety Studies
    c. Design – Traffic: Signal
    d. Design – Traffic: Signal Operations – Complex

B. All work completed within this study must follow the November 2017 version of MDOT Electronic Traffic Control Device Guidelines, unless as stated otherwise in this scope of services.

C. Update traffic signal clearance interval workbook to MDOT 2018 version template for all traffic signals in the City.
    a. City's existing clearance interval workbook uses MDOT 2015 version template. Majority of data populated in the current workbook were from crosswalk measurements from June 2017.
    b. Measure vehicle paths for Yellow and All Red interval calculations at all traffic signals on a computer using aerial map source approved by the City. Measure vehicle paths at up to 10 intersections in the field, where field conditions are different from aerial map.
    c. Utilize pedestrian crossing measurements from existing clearance interval workbook. Field measure pedestrian crossing elements at up to 20 intersections with traffic signals where intersection geometry has changed from June 2017. All measurements for pedestrian crossing must be physical field measurement.
    d. Field measure pedestrian crossing path at all RRFB locations. Add RRFB locations in clearance interval workbook to calculate pedestrian clearance times compliant with the MMUTCD (Michigan Manual of Uniform Traffic Control Devices).
    e. Submit clearance interval results for City review prior to proceeding to following steps of Study. Highlight proposed changes at complex intersections and any reductions to pedestrian clearance interval.

D. Propose alternative clearance interval values for use during school peaks and under inclement weather conditions.

E. Utilize available traffic data from the City to minimize the need for traffic count collection. List of locations with available traffic counts will be provided to selected consultant. Plan to collect video-based turning movement counts including bicyclist and pedestrian turning movement counts, at up to 80 intersections, where existing data is not available or complete. Time-of-day of turning movement count collection must be approved by the City. Deliver electronic copy of turning movement count in format approved by the City.

F. Collect 24-hour volume counts at up to 15 locations for adjusting time-of-day schedules. Locations of 24-hour volumes counts must be approved by City before data collection.

G. Evaluate left-turn signal phasing at 34 intersections based on road user demand, intersection geometry, and traffic safety of users of all modes.
    a. Plymouth (&Green, &Huron Pkwy, &Nixon, &Murfin/Upland)
    b. Fuller (&Cedar Bend, &Bonisteel, &Glazier, &Fuller Court, &Huron High School Drive)
    c. Barton & Pontiac Trail
    d. Miller & Seventh
    e. Washtenaw (&Huron Pkwy, &Glenwood/Platt, &Manchester/Sheridan)
    f. E. Stadium (&Packard, &Industrial)
    g. W. Stadium (&Seventh, &Pauline, &Liberty)
    h. Maple (&Miller, &Dexter, &Maple Village, &Liberty, &Pauline)
    i. Scio Church (&Seventh, &Main)
    j. Eisenhower (&Ann Arbor-Saline, &Boardwalk, &King George, &Stone School)
    k. Packard &Platt
    l. Ellsworth (&Research (currently unsignalized), &Varsity, &Stone School)

H. All timing plan optimization tasks performed in this study must consider multi-modal LOS (level-of-service). Submit comparison of MOE (measures-of-effectiveness) of optimization process to City for review and approval.

I. Optimize timing plans at intersections listed below. Build existing condition and optimized condition Synchro models for Weekday AM Peak, Midday, PM Peak, and Evening time periods. Provide Morning and Afternoon school timing plans at traffic signals in vicinity of a school. Based on optimized conditions, derive AM Peak and PM Peak timing plans for use under inclement weather conditions. Provide general operating parameters for when various timing plans should be considered for implementation.
    a. Glen/Fuller (12 intersections)
        i. &Huron, &Ann, Ann & Zina Pitcher, &Catherine, &Fuller St, &Maiden/E. Medical, E. Medical & Cancer Center, &Cedar Bend, &Bonisteel, &Glazier, &Fuller Ct, &Huron High School Drive
    b. Geddes/Observatory Area (5 intersections)

i. Geddes & Washtenaw, Geddes & Observatory, Observatory/Forest & Washtenaw, S. University & Washtenaw, Forest & S. University

c. Huron Pkwy (5 intersections)
    i. &Platt, &Huron River Drive, &Geddes Ave, &Fuller/Geddes Rd, &Hubbard
d. Barton & Pontiac Trail (1 intersection)
e. Maple (6 intersections)
    i. &Pauline, &Liberty, &Jackson, &Maple Village, &Dexter, &Miller
f. W. Stadium (5 intersections)
    i. &Maple, &Liberty, &Arbordale/Federal, &Pauline, &Seventh
g. Scio Church (3 intersections)
    i. &Maple, &Seventh, &Main
h. S. Main (9 intersections)
    i. &Washington, &Liberty, &William, &Packard, &Madison, &Hill, &Pauline, &Stadium, &Ann Arbor-Saline
i. N. Main (6 intersections)
    i. &Summit, &Depot, &Beakes/Kingsley, &Catherine/Miller, &Ann, &Huron
j. Select Downtown intersections (15 intersections)
    i. Washington &State
    ii. Liberty (&Thompson, &State)
    iii. N. University & State
    iv. William (&Main, &Fourth, &Fifth, & Division, &Thompson (may be removed), &State)
    v. Packard (&Division, &Thompson, &Hill, & State, Hill & State)

J. Provide optimized timing plans for William and First streets considering future bicycle facilities.

K. Evaluate and propose timing plans with exclusive pedestrian phase at traffic signals near the University of Michigan central campus.

L. Provide optimized timing plans for early morning inbound traffic to the University of Michigan Medical Campus.

M. Provide optimized special event timing plans for Main Street from Stadium to Depot. Assume full street saturation under existing control parameters and approximate congestion dissipation time of two (2) hours.

N. Propose appropriate modeling tools and MOE's for evaluating congested conditions and apply to the Study process with City's approval.

O. Evaluate data collected by this Study and recommend locations for transit signal priority pilot testing.

P. Deliver optimized timing plans in the form of Synchro models, or in other formats approved by the City. Coordinate implementation of optimized timing plans by City Signal Shop.

Q. Generate study report to document the work completed.

Proposed Work Plan

PROJECT UNDERSTANDING

The City of Ann Arbor has been a leader in the State of Michigan for championing safe and equitable mobility for ALL modes of travel on their street network. As the Ann Arbor area continues to grow, including greater density and more mobility options, a coordinated signal system is an essential part of maintaining a high quality of life for commuting, emergency response, pedestrian activity, freight, commerce, and connected mobility. This project continues the behind the scenes work that is often overlooked but is valuable to our everyday mobility experiences. In response to the increased growth, traffic congestion, and changing travel patterns, the City is requesting consultant assistance with conducting a traffic signal operations study to provide updated timing parameters to improve safety and mobility for all roadway users. The City operates and maintains 163 signalized intersections and 38 rectangular rapid flashing beacons (RRFB's) with approximately 50 of the signalized intersections operating on a real-time adaptive control system called SCOOT and the remainder running pre-defined time of day plans.

This project entails a full range of signal operation services, including data collection, system-wide clearance interval updates, signal optimization for normal daily operations, signal timing parameters for inclement weather conditions, special event signal timings along Main Street, left-turn phasing analysis, exclusive pedestrian phase analysis for high pedestrian volume areas, and timings to reflect recent and planned geometric modifications such as bicycle facilities along First Street and William Street.

WSP prepared and co-authored the MDOT Electronic Traffic Control Device Guidelines, upon which the methodologies of this project are based

PROJECT APPROACH

Our team provides the City of Ann Arbor and project partners with the experience, resources and local understanding necessary to ensure a successful project.

To properly execute the analysis and signal re-timing, our team will focus on three key elements:

1. Understanding local issues
2. Conducting thorough on-site engineering reviews
3. Coordination and scheduling

Local Issues

The WSP Team will focus early in the project on working with the City and project partners to help address known operational issues. The WSP Team's previous work in and around the City of Ann Arbor, including operations work for the DDA within the downtown grid for streetscape projects, operational analyses around the University of Michigan Medical Campus, construction traffic impact analyses for various University of Michigan projects, previous City of Ann Arbor Transportation Master Plan work, and Main Street area will ensure the local perspective necessary to make this project a success.

On-Site Engineering Review

One of the most critical facets of this project is on-site engineering evaluation of each intersection, as it lays the groundwork for timing, safety, and deficiency analyses. The engineer responsible for retiming a corridor should conduct a thorough field review of each intersection within the corridor. This effort would include collection of geometric

information, an inventory of existing signal equipment, and observation of peak traffic conditions to aid in identifying deficiencies and calibrating the software models. Consolidating these activities into a single review assures continuity between field and computer analyses and provides the engineer with first-hand information necessary to make the most informed timing decisions.

Coordination and Scheduling

The WSP Team is conscious of the significant time required by City staff to review, approve, and implement the signal timing plans developed as part of this or any project. Our resources will enable the team to prepare project submittals more effectively, allowing for greater review time by City staff while still maintaining an aggressive schedule. Our team has developed a detailed project schedule identifying realistic data collection timeframes given school being in session, holidays and potential weather issues, staggered submittals for various signal bundles, and anticipated review windows to assist the City with scheduling review time. The schedule will be updated periodically and distributed as part of our monthly progress report. The detailed schedule is included following the detailed work plan.

DETAILED WORK PLAN

The City of Ann Arbor provided a comprehensive scope of work in Section II as part of the RFP. The following describes the WSP Team's detailed work plan to execute this project. The tasks and subtasks presented below are not necessarily sequential in nature. All work will be done in accordance with the November 2017 version of the *MDOT Electronic Traffic Control Device Guidelines* and traffic signal timing standards of the City of Ann Arbor.

TASK 1 – PROJECT INITIATION AND COORDINATION

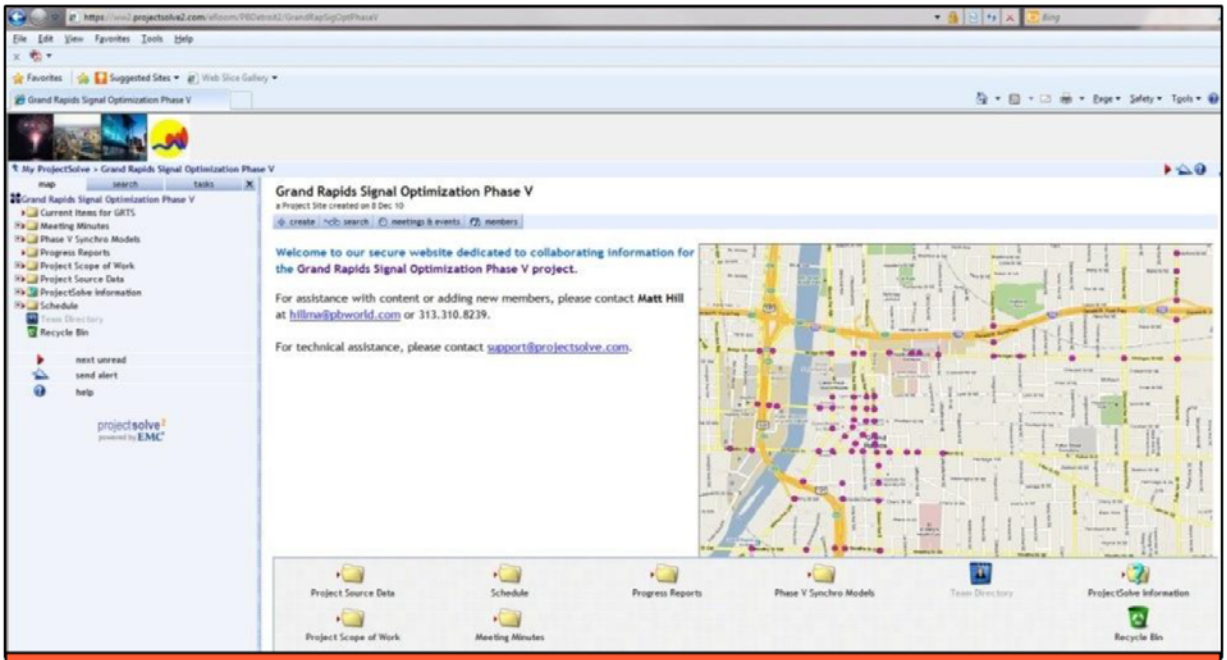
Task 1.1 – Host Project Initiation Meeting

The WSP Team will host a project initiation meeting with the City of Ann Arbor and other local stakeholders as requested by the City, to establish and communicate the project scope and timeline, the coordination requirements between agencies, and any special issues that should be addressed by the optimization project (school timings, inclement weather timings, special event timings, non-motorized considerations, etc.). A detailed map showing the locations of the project signals being re-timed will be provided to the project team by WSP.

Task 1.2 – Conduct Project Status Meetings

The WSP Team will attend up to eight (8) status meetings at the City, WSP facility, or online where the progress towards the completion of the project will be discussed in detail. One week prior to the meeting, a written project status report will be provided to the City and other project partners. WSP will also meet project partners in the field up to five (5) separate times to work out any unique timing schemes, intersection layouts, or otherwise non-standard operations as needed. To keep the team coordinated and all project personnel up to date, a ProjectSolve2 website will also be created for the project that will host project files for the City's use and review. ProjectSolve2 is a secure Internet-based collaboration tool that allows project teams of all sizes to communicate easily regardless of their location. With today's decentralized project teams and distributed production environments, ProjectSolve2 answers the demand for centralized information management and decision support. ProjectSolve2 software easily facilitates the review process from a user-friendly website. WSP is currently utilizing the software for the program management of several projects. Some of the benefits include:

- Facilitating team coordination and cohesion, accelerating project start-up.
- Eliminating many simple but time-consuming information requests and administrative tasks.
- Capturing valuable knowledge in a manner that enables future re-use.
- Tracking of reviewer's comments over the life of the project. "Items Requiring City of Ann Arbor Attention" folder allows instant access to a real-time list of items requiring City or project partner action on the project, reducing the time spent sifting through emails to determine what needs to be addressed.



ProjectSolve2 was used successfully on the Grand Rapids Signal Optimization Phase 5 for communication and collaboration needs.

Task 1.3 – Prepare Monthly Written Progress Reports
Monthly progress reports will be prepared using the format specified by the City.

Deliverables:
- Meeting minutes
- Monthly progress reports
- Project map

TASK 2: DATA COLLECTION

Task 2.1 – Prepare Detailed Data Collection Plan
The team will prepare a detailed data collection plan, including collection procedures, standards, and schedule. The plan will be presented for approval at the project initiation meeting before beginning the data collection effort. This allows the City and WSP Team to optimize the proposed schedule based on any construction projects, routing detours, special events, etc. identified that would impact data collection.

Task 2.2 – Obtain and Review Signal Locations and Current Timing Plans
The team will coordinate with the City to obtain all current timing plans and parameters within four (4) weeks of the project initiation meeting. Signal
information for locations immediately upstream/downstream to a project signal will also be collected and reviewed per City approval.

Task 2.3 – Conduct Turning-Movement Counts
Available traffic count data from the City of Ann Arbor will be utilized where applicable to minimize the data collection effort for this project. This data will be provided to WSP by the City of Ann Arbor at the project initiation meeting. The

WSP Team will collect turning-movement counts at up to 80 additional locations where existing data is not available or complete. The turning-movement counts will be collected by team partner Mannik & Smith Group, Inc. using video-based (MioVision) equipment for a two-hour AM peak period, a two-hour PM peak period, and a two-hour mid-day/off-peak period. These counts will include pedestrians and bicycles as well as vehicle classification. All counts will be conducted on Tuesdays, Wednesdays, and Thursdays only, unless otherwise specified by the City. The data collection plan described in Task 2.1 will clearly specify restrictions, such as holiday periods, school vacations, inclement weather conditions and other events that may lead to abnormal traffic conditions. Exact periods will be determined during the project and approved by the City's project manager.

Task 2.4 – Conduct Average Daily Traffic Counts

Team partner Mannik & Smith Group, Inc. will obtain 24-hour average daily traffic (ADT) approach counts at select locations (up to 15) as identified by WSP and the City at the project initiation meeting. These approach counts will be used to evaluate time-of-day schedules for the signals being optimized. All counts will be conducted on Tuesdays, Wednesdays, and Thursdays only, unless otherwise specified by the City. Exact locations will be determined during the project and approved by the City's project manager.

Deliverables:

- Data collection plan
- Traffic count data (in electronic format specified by the City)

TASK 3: ENGINEERING EVALUATION

Task 3.1 – Conduct Field Operational and Geometric Review

The project engineer assigned to conduct the signal retiming of a given corridor/signal grouping will perform a field review of each signal in the corridor/grouping. The field review will include collection of geometric data, inventory of signal equipment, posted speed limits, grades, signage (no turn on red, e.g.), pedestrian facilities (heads and pushbuttons), bicycle facilities, distance between signalized locations, and a review of operations (to assist in identifying deficiencies to be addressed with the signal retiming effort).

Task 3.2 – Update Clearance Intervals (Vehicle and Pedestrian)

Using the most current City and MDOT standards (in accordance with the latest *Michigan Manual on Uniform Traffic Control Devices*), WSP will update the City's traffic signal clearance interval workbook to the MDOT 2018 version template for ALL traffic signals in the City. The City has existing clearance intervals in the MDOT 2015 version from June 2017 measurements, these measurements will be used where available. Measurements for vehicle Yellow and All Red interval calculations will be done on a computer using an aerial image approved by the City. WSP will measure vehicle paths at up to 10 intersections in the field where field conditions are different from the aerial imagery. Pedestrian crossing measurements from the existing clearance interval workbook will be used in the updated workbook. Where intersection geometry has changed from June 2017, WSP will perform physical field measurements of pedestrian crossing elements for up to 20 intersections. Field measurement of pedestrian crossing elements will be conducted by WSP for ALL 38 RRFB locations and added to the updated clearance interval workbook. The updated clearance interval workbook will be provided to the City for review prior to performing any signal optimization tasks. The updated workbook will highlight any significant changes of clearance intervals at complex intersections as well as any reductions to pedestrian clearance intervals to aid in the City's review.

Task 3.3 – Prepare Alternative Clearance Intervals (Vehicle and Pedestrian)

Where agreed upon between WSP and the City, alternative clearance intervals will be calculated for use during school peaks and under inclement weather conditions. These alternative clearance intervals will either assume a reduced walking speed for pedestrians, reduced speed limit/travel speed for vehicles, or both (depending on the location) to calculate the alternative clearance intervals.

Task 3.4 – Prepare Time-Of-Day Schedules
The WSP Team will prepare time-of-day schedules based on 24-hour count data obtained in Task 2. The time-of-day schedule analysis will consider traffic volume data to determine timing plan hours of operation for the AM Peak, Midday, PM Peak, and Evening operations over the course of a week. MDOT's excel template for calculating flash and time-of-day schedules as developed by WSP will be used for this analysis.

Task 3.5 – Left-Turn Phasing Analysis
WSP will conduct a left-turn phasing analysis at the 34 intersections listed in Section II of the City's RFP. This will include a field measurement of existing sight distance and use of MDOT's most current left-turn phasing analysis spreadsheet tool which accounts for left-turn volume, opposing volumes to the left-turn traffic, intersection geometrics, crash history, and left-turn vehicle delay. This spreadsheet was developed by WSP for MDOT via research on nationwide best practices related to the implementation of left-turn phasing and is incorporated into *MDOT's Electronic Traffic Control Device Guidelines*. The most recent 24 months of crash data will be obtained by WSP for each of the 34 intersections from the website ***www.michigantrafficcrashfacts.org*** for this analysis.

Task 3.6 – Transit Signal Priority Pilot Test Recommendations
WSP will review the data obtained as part of this study in conjunction with reviewing the transit routes of both University of Michigan and AAATA transit vehicles and coordinate with the City to identify locations for performing a transit signal priority (TSP) pilot testing. Factors for determining candidate locations would include frequency of transit vehicles, locations where vehicle phases conflicting with the TSP phases are not running minimum splits, and locations where TSP would not significantly degrade the mobility on conflicting approaches when activated.

Deliverables:
- Updated vehicle and pedestrian clearance interval workbook (electronic Microsoft Excel format)
- Time-of-day analysis (electronic Microsoft Excel format)
- Left-turn phasing analysis (electronic Microsoft Excel format)
- Candidate transit signal priority pilot testing locations (electronic memorandum)

TASK 4: TIMING OPTIMIZATION

Task 4.1 – Prepare and Calibrate Existing Conditions Synchro Networks
The WSP Team will obtain base Synchro models (where available) from the City for update. Where existing models do not exist, the WSP Team will create existing conditions models using Synchro (Version 10) and will submit to the City in the version of their preference (9 or 10). Each model will be examined using the SimTraffic simulation program to assure that the network is properly calibrated and validated to field conditions per guidelines set forth in *MDOT's Electronic Traffic Control Device Guidelines*. AM peak, Midday, PM peak, and Evening time periods will be modeled in addition to any special time periods specified by the City in the vicinity of a school. Up to 70 locations will be modeled as part of this task and models will be prepared in bundles not to exceed 15 signals per bundle to keep deliverable packages more manageable for City review. This equates to approximately 5 bundles with AM Peak, Midday, PM Peak, and Evening models in each bundle (20 models in total). Specific locations include the following per Section II of the RFP (color coded by grouping in the RFP):

1. Glen/Huron
2. Glen/Ann
3. Ann/Zina Pitcher
4. Glen/Catherine
5. Glen/Fuller
6. Fuller/Maiden Lane/EMCD
7. EMCD/Cancer Center
8. Fuller/Cedar Bend
9. Fuller/Bonisteel
10. Fuller/Glazier
11. Fuller/Fuller Ct
12. Fuller/Huron HS*
13. Geddes/Washtenaw
14. Geddes/Observatory
15. Observatory/Washtenaw/Forest
16. S. University/Washtenaw
17. S. University/Forest
18. Huron Pkwy/Platt
19. Huron Pkwy/Huron River Dr
20. Huron Pkwy/Geddes
21. Huron Pkwy/Fuller/Geddes*
22. Huron Pkwy/Hubbard
23. Barton/Pontiac Trail*
24. Maple/Pauline
25. Maple/Liberty
26. Maple/Jackson
27. Maple/Maple Village
28. Maple/Dexter
29. Maple/Miller*
30. W. Stadium/Maple
31. W. Stadium/Liberty
32. W. Stadium/Arbordale/Federal
33. W. Stadium/Pauline
34. W. Stadium/7th*
35. Scio Church/Maple
36. Scio Church/7th*
37. Scio Church/Main*
38. S. Main/Washington
39. S. Main/Liberty
40. S. Main/William**
41. S. Main/Packard
42. S. Main/Madison
43. S. Main/Hill
44. S. Main/Pauline
45. S. Main/Stadium*
46. S. Main/Ann Arbor-Saline
47. N. Main/Summit
48. N. Main/Depot
49. N. Main/Beakes/Kingsley
50. N. Main/Catherine/Miller
51. N. Main/Ann
52. N. Main/Huron
53. Washington/State
54. Liberty/Thompson
55. Liberty/State
56. N. University/State
57. William/4th
58. William/5th
59. William/Division
60. William/Thompson (potential removal)
61. William/State
62. Packard/Division
63. Packard/Thompson
64. Packard/Hill
65. Packard/State
66. Packard/Hill/State
67. 1st/Miller
68. 1st/Huron
69. 1st/Washington
70. 1st/Liberty

*Potential AM Peak and PM Peak school timing location
**Also coordinate with downtown William grouping

Task 4.2 – Conduct Daily Optimization Analysis

Optimization analyses will be conducted using Synchro/SimTraffic (Version 10) to select the most beneficial cycle lengths, splits and offset plan for each corridor aimed at reducing delay and enhancing mobility throughout the network. This optimization will include the locations and time periods developed in Task 4.1 including AM Peak and PM Peak timing plans for locations within the vicinity of a school (potential locations indicated in the above list). Signal phasing will also be examined and optimized within the context of local standards and signal equipment compatibility. SimTraffic will be used as a check to confirm progression and queuing conditions derived in Synchro under optimized conditions. All clearance intervals will be updated to reflect the updated clearance intervals developed in Task 3.2. Once complete the Synchro/SimTraffic models will be delivered electronically to the City for review and approval.

Task 4.3 – Inclement Weather Optimization Analysis

Using the optimized AM and PM Peak models from Task 4.2 as a base, clearance intervals will be updated to reflect the inclement weather clearance intervals developed in Task 3.3. Speed limits will also be adjusted in the models to reflect a reasonable expected travel speed during inclement weather conditions as agreed upon by WSP and the City. The models will then be optimized for the inclement weather conditions and general operating parameters developed to serve as guidance/thresholds for when these timing plans should be implemented. This methodology is similar to WSP's methodology used to develop inclement weather timings for the City of Lansing.

Task 4.4 – Main Street Special Event Optimization Analysis

WSP will develop optimized special event timings along Main Street from Stadium to Depot (14 locations) assuming fully saturated conditions and an existing dissipation time of approximately two hours. The special event timings will seek to

maximize vehicle throughput along Main Street while also balancing effective and safe non-motorized crossings at signalized locations. WSP proposes utilizing the optimized Midday Synchro model developed in Task 4.2 for this corridor as the base model. This will represent base conditions for cross-street traffic. Different cycle length scenarios will be evaluated with split and offset adjustments. The volumes along Main Street will be artificially increased to saturated conditions (V/C >= 1) for each cycle length scenario to identify the bottleneck location(s) along the corridor. These bottleneck locations represent the maximum throughput (vehicles per hour). Key scenario MOE's to compare with this approach are total volume throughput along Main Street (vehicles per hour), estimated time to recover to normal operations (dissipation time), cross-street queue containment (which scenario is queue spillback between adjacent blocks minimized), pedestrian and bicycle delay. This methodology is similar to the approach used by WSP for the Integrated Corridor Management pilot project in Oakland County, where WSP developed special timings to faciliate improved mobility along parallel detour routes during major incidents along I-75.

Task 4.5 – William and First Streets Future Bicycle Facilities Optimization Analysis
Using the optimized models from Task 4.2 as a base, WSP will coordinate with the City to prepare a single alternative optimized set of timings along William Street and along First Street taking into consideration laneage/geometry for future bicycle facilities along these roadways. This includes up to four (4) locations along First Street and up to six (6) locations along William Street for the AM Peak, Midday, PM Peak, and Evening time periods (4 models in total)

Task 4.6 – Exclusive Pedestrian Phase Optimization Analysis
Using the optimized models from Task 4.2 as a base, the WSP Team will coordinate with the City to identify up to ten (10) locations to evaluate exclusive pedestrian phasing at signals near the University of Michigan central campus.

Task 4.7 – Early Morning Inbound to University of Michigan Medical Campus Optimization Analysis
WSP will review the AM Peak timings developed in Task 4.2 and adjust as necessary to accommodate early morning ingress to the University of Michigan Medical Campus. Count data will drive these adjustments and may require only a change to the time-of-day operations. Up to 19 locations will be analyzed.

Task 4.8 – Prepare Multi-Modal Measures of Effectiveness (MOE) Data
WSP will compile MOEs for both existing and optimized conditions, including vehicle intersection delay and level of service, pedestrian intersection level of service, and bicycle intersection level of service using the methodologies of the current *Highway Capacity Manual 6th Edition*. Network parameters such as total zone delay, vehicle stops, corridor travel time, emissions, and fuel use will also be summarized by WSP. All MOEs will be provided to the City for review and approval. This data will be prepared for the 70 locations identified in the RFP as well as the network parameters for the individual bundles (5 bundles).

Task 4.9 – (OPTIONAL TASK) – VISSIM Model of Project Intersections

With continued development and new projects coming on-line regularly within the City of Ann Arbor, there has been a push for better analysis tools to determine the impacts to the transportation network of these projects. Microsimulation is one of those tools, and WSP proposes this optional task to leverage the data collected and developed as part of this project to build a master microsimulation base model for the AM Peak and PM Peak of all locations modeled in this project (up to 90 intersections). WSP proposes that the VISSIM microsimulation platform be used for this, as the City already has a license to this software. VISSIM provides detailed multi-modal analysis and can address complex geometric and signal operations, including transit signal priority, making this an ideal tool for dialing in TSP parameters for the pilot locations identified in this project. VISSIM can also run a SCOOT emulator, which means the actual adaptive control logic the City is currently running can be modeled in VISSIM and not approximated as is the current practice in Synchro. VISSIM models can also be imported into the companion software VISUM, which is a travel demand forecasting tool. Dynamic traffic assignment can be performed in VISUM to better understand traffic flow/circulation dynamics at the city-level versus the regional-level, where sometimes the finer detail at the city-level is lost. Developing these microsimulation base models would utilize the data from this project to set the stage for future study work of more complex projects and provide a state-of-the-art tool to the City to use internally and/or share with project teams working in the City.

WSP recently used VISSIM for an operations analysis of the Fuller/Maiden Lane intersection to capture multi-modal impacts of different design alternatives.

Deliverables:

- Electronic Synchro/SimTraffic network files
- Measures of effectiveness summary memorandums
- VISSIM base models (optional)

Task 5: Timing Plan Preparation and Implementation

Task 5.1 – Prepare "Red-Lined" Timing Plans and Final Permits

WSP will prepare a red-lined timing plan in the preferred format of the City for each signal location based on the optimized timings, updated clearance intervals, and time-of-day/flash plans generated in the previous tasks. This will be done for up to 90 signalized locations. Once the City's comments are addressed, final timing plans will be prepared for implementation with the City's Signal Shop and provided electronically.

Task 5.2 – Before Travel Time Runs

WSP will conduct "before" travel time investigations using the PC-Travel software just before the optimized timing plans are implemented. Travel time data will be collected with a GPS receiver and laptop. Locations where there are three or fewer signals along a corridor will not have travel time runs conducted in the field. Instead we will utilize SimTraffic output to generate existing and optimized measures of effectiveness. WSP will coordinate with the City to have all traffic controller clocks and detection checked prior to the "before" runs to represent true baseline conditions. These travel time runs will only be conducted for the AM Peak, Midday, and PM Peak time periods during normal operations.

Task 5.3 – Conduct Field Review
After implementation, WSP will conduct a field review during peak conditions to observe traffic operations and verify that the timings were input properly. In addition to verifying normal operations, WSP will perform one field review of the special event timings along Main Street during a special event date agreed upon between WSP and the City.

Task 5.4 – Prepare Adjustment Recommendations
The WSP Team will prepare any necessary recommendations for final changes to the signal operations after conducting the field review. Updated signal timing plans (City specified timing permit format) and Synchro models will be submitted accordingly.

Task 5.5 – After Travel Time Runs
After implementation of recommended adjustments, WSP will conduct "after" travel time runs in the same fashion as the "before" travel time runs for use in assessing the effectiveness of the optimization. Locations where SimTraffic output was used to generate existing MOEs will be evaluated in the same manner for optimized conditions. These travel time runs will only be conducted for the AM Peak, Midday, and PM Peak time periods during normal operations. Up to 5 travel time runs in each direction will be collected for the three time periods for the 5 different bundles.

Deliverables:
- Red-lined timing plans (electronic) and final timing permits (electronic)
- Before and after travel time data (will be included in final report)
- Recommended timing revisions

TASK 6: PROJECT DOCUMENTATION

Task 6.1 – Prepare Benefit/Cost Analysis
The WSP Team will conduct an analysis of B/C for the project based on before and after travel time data collected in the field (or SimTraffic where the corridor is three or fewer signals). The B/C analysis will be completed using the MDOT B/C analysis method/spreadsheet WSP helped develop or other method as requested by the City. The B/C analysis will be included in the Final Report and will include corridor specific B/C summaries as well as an overall project B/C that will also be summarized on a one-page project cut sheet.

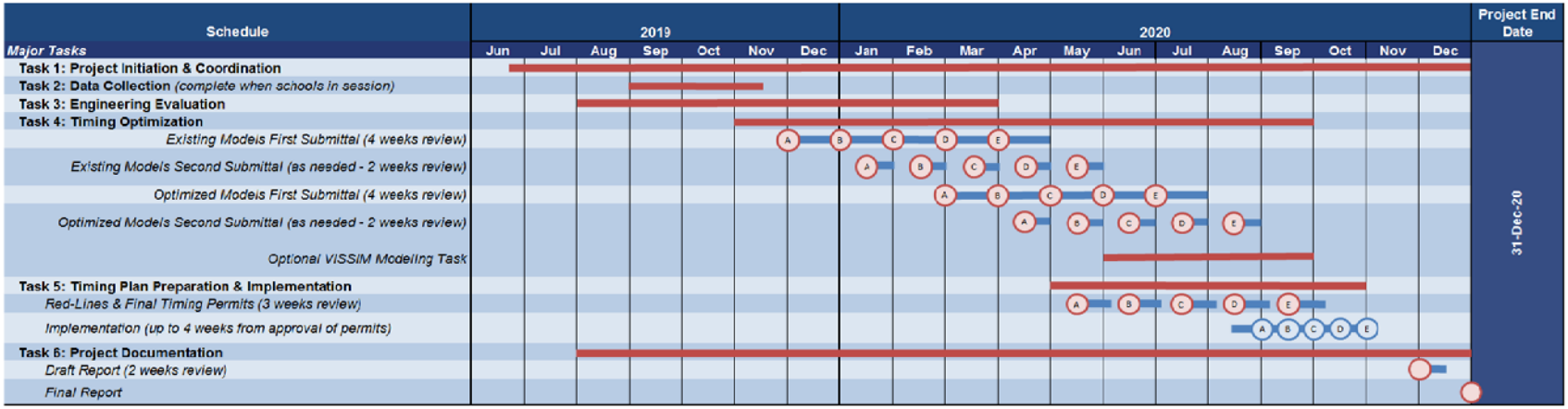
Task 6.2 – Prepare Final Project Report
The team will meet with the City and project partners to discuss any comments on the draft report. WSP will then prepare a Final Project Report, documenting all tasks and deliverables for the signal optimization.

Task 6.3 – Project Summary Presentation and Cut Sheet
WSP will prepare a PowerPoint presentation summarizing the overall project and present this to the project partners after the final project report has been completed. In addition, a one page project cut sheet will be prepared highlighting the overall benefits of this project to the public in a user-friendly format for public consumption. Highlights will include cost savings, fuel/emissions savings, travel time savings, and any other noteworthy benefits this project will provide. Celebrating the accomplishments of this program in a public facing way is a good way to explain the value of the service and encourage future funding.

Deliverables:
- Draft and final project reports (electronic format and six hard copies)
- A PowerPoint presentation summarizing project
- Project summary cut sheet
- USB flash drive containing final report and all appendix information in original form and pdf versions as applicable

SCHEDULE

WSP anticipates performing the services described herein by December 31, 2020, assuming written notice to proceed is received on or before June 2019 as illustrated in the proposed project schedule on the following page. This is approximately an 18 month schedule, and while there are opportunities to condense this schedule to meet the one year project schedule indicated in RFP Addendum 1, WSP feels the proposed schedule is realistic given implementation and field review constraints with needing both the University of Michigan and area schools to be in session. This schedule assumes staggered submittal dates for different portions (bundles) of the project area, which will be prioritized at the project initiation meeting to determine which locations fall under which bundle. Inclement weather, special event, exclusive pedestrian phases, early morning ingress, future proposed conditions, and school ingress/egress models are assumed as part of the optimized model submittals as part of their respective bundle submittals. Again, this schedule could be condensed by consolidating bundles into larger submittal packages and reducing the amount of City review time if requested by the City.



Legend

- WSP Team deliverable (letter indicates bundle being submitted; no more than 15 signals per bundle)
- City action item
- Task duration
- City review/implementation time

Notes:
*Authorization to begin work June, 2019
*Optional VISSIM modeling task at the discretion of the City

EXHIBIT B
COMPENSATION

General

Contractor shall be paid for those Services performed pursuant to this Agreement inclusive of all reimbursable expenses (if applicable), in accordance with the terms and conditions herein. The Compensation Schedule below/attached states nature and amount of compensation the Contractor may charge the City:

Traffic Signal Operational Study Cost Proposal (Without Optional Task 4.9 - VISSIM Modeling)

WSP Michigan Inc.	TASK 1 HOURS	TASK 2 HOURS	TASK 3 HOURS	TASK 4 HOURS	TASK 5 HOURS	TASK 6 HOURS	TOTAL HOURS		BURDENED HOURLY RATE*		LABOR COST
Scott Shogan, PIC	2	0	0	0	0	0	2	x	$ 287.53	=	$ 575.07
Matthew Hill, Project Manager	81	0	8	160	40	24	313	x	$ 169.10	=	$ 52,927.40
Daniel Cook, Optimization Engineer	36	16	84	428	176	56	796	x	$ 106.72	=	$ 84,945.66
Lauren Warren, Transportation Engineer	36	32	4	176	80	56	384	x	$ 121.55	=	$ 46,674.00
Josh Billotti, Optimization Engineer	0	32	106	280	240	40	698	x	$ 88.22	=	$ 61,575.12
Joyce Yassin, Optimization Engineer	0	0	40	80	0	0	120	x	$ 106.40	=	$ 12,767.60
Jason Pittenger, Microsimulation Engineer	0	0	0	0	0	0	0	x	$ 102.38	=	$ -
Mike Scheuer, QAQC Engineer	0	0	30	216	20	24	290	x	$ 153.18	=	$ 44,421.09
							0	x	$ -	=	$ -
							0	x	$ -	=	$ -
TOTAL HOURS FOR WSP Michigan Inc.	**155**	**80**	**272**	**1,340**	**556**	**200**	**2,603**				
Direct Expenses											
Mileage							11,000.00	x	$ 0.58		$ 6,380.00
Reproduction & Mailings							5.00	x	$ 35.00		$ 175.00
Total for WSP Michigan Inc.											**$ 310,440.95**

The Mannik & Smith Group, Inc.	TASK 1 HOURS	TASK 2 HOURS	TASK 3 HOURS	TASK 4 HOURS	TASK 5 HOURS	TASK 6 HOURS	TOTAL HOURS		BURDENED HOURLY RATE*		LABOR COST
Jean Hartline, PE, PTOE, Lead Traffic Engineer/QAQC	0	20	0	0	0	0	20	x	$ 209.00	=	$ 4,180.00
Dan Helou, PE Lead Traffic Engineer	0	60	0	0	0	0	60	x	$ 126.00	=	$ 7,560.00
Technician	0	350	0	0	0	0	350	x	$ 80.00	=	$ 28,000.00
TOTAL HOURS FOR THE MANNIK & SMITH GROUP, INC.	**0**	**430**	**0**	**0**	**0**	**0**	**430**				
Direct Expenses											
Mileage							1,000.00	x	$ 0.58		$ 580.00
MioVision Equipment Charges							130.00	x	$ 40.00		$ 5,200.00
Miovision Processing							1.00	x	$ 12,000.00		$ 12,000.00
Total for The Mannik & Smith Group, Inc											**$ 57,520.00**

	TASK 1 HOURS	TASK 2 HOURS	TASK 3 HOURS	TASK 4 HOURS	TASK 5 HOURS	TASK 6 HOURS	TOTAL HOURS
TOTAL HOURS FOR ALL CONSULTANTS	155	510	272	1,340	556	200	3,033

TOTAL COSTS **$ 367,960.95**

* Overhead for WSP Michigan Inc. is 135%, overhead for The Mannik & Smith Group is 161.04%, fee is 11%

EXHIBIT C
INSURANCE REQUIREMENTS

From the earlier of the Effective Date or the Commencement Date of this Agreement, and continuing without interruption during the term of this Agreement, Contractor shall have, at a minimum, the following insurance, including all endorsements necessary for Contractor to have or provide the required coverage.

A. The Contractor shall have insurance that meets the following minimum requirements:

1. Professional Liability Insurance or Errors and Omissions Insurance protecting the Contractor and its employees in an amount not less than $1,000,000.

2. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:

   Bodily Injury by Accident - $500,000 each accident
   Bodily Injury by Disease - $500,000 each employee
   Bodily Injury by Disease - $500,000 each policy limit

3. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the following minimum limits of liability are required:

$1,000,000	Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined
$2,000,000	Per Project General Aggregate
$1,000,000	Personal and Advertising Injury

4. Motor Vehicle Liability Insurance equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. Further, the limits of liability shall be $1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

5. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle

coverage enumerated above, for each occurrence and for aggregate in the amount of $1,000,000.

B. Insurance required under A.3 and A.4 above shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City for any insurance listed herein.

C. Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and unqualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company; name(s), email address(es), and address(es) of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions, which may be approved by the City in its sole discretion; (c) that the policy conforms to the requirements specified. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days, a copy of the policy(ies) and all required endorsements to the City. If any of the above coverages expire by their terms during the term of this contract, the Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.