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Local Agency Lake County Division of Transportation	L O C A L A G E N C Y	 Illinois Department of Transportation Engineering Services Agreement For Non-MFT Funds	C O N S U L T A N T	Consultant Parsons Transportation Group
County Lake				Address 650 E. Algonquin Road, Suite 400
Section 18-00999-53-TL				City Schaumburg
Project No. -----				State IL
Job No. -----				Zip Code 60173
Contact Name/Phone/E-mail Address Jon Nelson 847-377-7473 JPNelson@lakecountyil.gov				Contact Name/Phone/E-mail Address Joseph Brahm 847-925-0120 j.brahm@delcan.com

THIS AGREEMENT is made and entered into this _____ day of _____, 2018 between the above Local Agency (LA) and Consultant (ENGINEER) and covers certain professional engineering services in connection with the PROJECT. Federal-aid funds allotted to the LA by the state of Illinois under the general supervision of the Illinois Department of Transportation (STATE) will be used entirely or in part to finance engineering services as described under AGREEMENT PROVISIONS.

Project Description

Name	2018 Signal Coordination and Timing	Route	Various	Length	Structure No.
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Termini	<hr/>				

Description: Provide design and integration services for the Phase 4 Lake County Passage system development in accordance with the Schedule A Scope of Work.

Agreement Provisions

I. THE ENGINEER AGREES,

1. To perform or be responsible for the performance, in accordance with STATE approved design standards and policies, of engineering services for the LA for the proposed improvement herein described.
2. To attend any and all meetings and visit the site of the proposed improvement at any reasonable time when requested by representatives of the LA or STATE.
3. To complete the services herein described within _____ calendar days from the date of the Notice to Proceed from the LA, excluding from consideration periods of delay caused by circumstances beyond the control of the ENGINEER.

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4. The classifications of the employees used in the work should be consistent with the employee classifications and estimated man-hours shown in EXHIBIT A. If higher-salaried personnel of the firm, including the Principal Engineer, perform services that are indicated in Exhibit A to be performed by lesser-salaried personnel, the wage rate billed for such services shall be commensurate with the payroll rate for the work performed.
5. That the ENGINEER is qualified technically and is entirely conversant with the design standards and policies applicable for the PROJECT; and that the ENGINEER has sufficient properly trained, organized and experienced personnel to perform the services enumerated herein.
6. That the ENGINEER shall be responsible for the accuracy of the work and shall promptly make necessary revisions or corrections resulting from the ENGINEER's errors, omissions or negligent acts without additional compensation. Acceptance of work by the STATE will not relieve the ENGINEER of the responsibility to make subsequent correction of any such errors or omissions or for clarification of any ambiguities.
7. That all plans and other documents furnished by the ENGINEER pursuant to this AGREEMENT will be endorsed by the ENGINEER and will affix the ENGINEER's professional seal when such seal is required by law. Plans for structures to be built as a part of the improvement will be prepared under the supervision of a registered structural engineer and will affix structural engineer seal when such seal is required by law. It will be the ENGINEER's responsibility to affix the proper seal as required by the Bureau of Local Roads and Streets manual published by the STATE.
8. That the ENGINEER will comply with applicable federal statutes, state of Illinois statutes, and local laws or ordinances of the LA.
9. The undersigned certifies neither the ENGINEER nor I have:
 - a. employed or retained for commission, percentage, brokerage, contingent fee or other considerations, any firm or person (other than a bona fide employee working solely for me or the above ENGINEER) to solicit or secure this AGREEMENT,
 - b. agreed, as an express or implied condition for obtaining this AGREEMENT, to employ or retain the services of any firm or person in connection with carrying out the AGREEMENT or
 - c. paid, or agreed to pay any firm, organization or person (other than a bona fide employee working solely for me or the above ENGINEER) any fee, contribution, donation or consideration of any kind for, or in connection with, procuring or carrying out the AGREEMENT.
 - d. are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal department or agency,
 - e. have not within a three-year period preceding the AGREEMENT been convicted of or had a civil judgment rendered against them for commission of fraud or criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property,
 - f. are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (e) and
 - g. have not within a three-year period preceding this AGREEMENT had one or more public transactions (Federal, State or local) terminated for cause or default.
10. Scope of Services to be provided by the ENGINEER are included as Schedule A.

II. THE LA AGREES,

1. To furnish the ENGINEER all presently available survey data and information
2. To pay the ENGINEER as compensation for all services rendered in accordance with this AGREEMENT, on the basis of the following compensation formula. The Total compensation for this shall not exceed **\$99,685.34**.

Cost Plus Fixed Fee ☒ CPFF = 14.5%[DL + R(DL) + OH(DL) + IHDC]

Where: DL = Direct Labor
 IHDC = In House Direct Costs
 R = Complexity Factor
 OH = Consultant Firm's Actual Overhead Factor

3. To pay the ENGINEER using one of the following methods as required by 49 CFR part 26 and 605 ILCS 5/5-409:

☒ With Retainage

- a) Upon receipt of monthly invoices from the ENGINEER and the approval thereof by the LA, monthly payments for the work performed shall be due and payable to the ENGINEER, such payments to be equal to 90% of the value of the partially completed work minus all previous partial payments made to the ENGINEER.

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- b) **Final Payment** – Upon approval of the work by the LA but not later than 60 days after the work is completed and reports have been made and accepted by the LA and the STATE, a sum of money equal to the basic fee as determined in this AGREEMENT less the total of the amounts of partial payments previously paid to the ENGINEER shall be due and payable to the ENGINEER. For the purposes of this Agreement, LA and the State shall provide any comments or exceptions to the Engineer's reports within 20 business days following submission of the report in question. Failure to comment within this time frame shall conclusively indicate acceptance of said report by LA and the State. This same time frame shall apply upon any resubmission of a report by the Engineer following the provision of comments by LA and the State.

☐ Without Retainage

- a) **For progressive payments** – Upon receipt of monthly invoices from the ENGINEER and the approval thereof by the LA, monthly payments for the work performed shall be due and payable to the ENGINEER, such payments to be equal to the value of the partially completed work minus all previous partial payments made to the ENGINEER.
- b) **Final Payment** – Upon approval of the work by the LA but not later than 60 days after the work is completed and reports have been made and accepted by the LA and STATE, a sum o money equal to the basic fee as determined in this AGREEMENT less the total of the amounts of partial payments previously paid to the ENGINEER shall be due and payable to the ENGINEER.
4. The recipient shall not discriminate on the basis on the basis of race, color, national origin or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR part 26. The recipient shall take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR part 26 and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as violation of this agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31U.S.C. 3801 et seq.).

III. IT IS MUTALLY AGREED,

1. That no work shall be commenced by the ENGINEER prior to issuance by the LA of a written Notice to Proceed.
2. That tracings, plans, specifications, estimates, maps and other documents prepared by the ENGINEER in accordance with this AGREEMENT shall be delivered to and become the property of the LA and that basic survey notes, sketches, charts and other data prepared or obtained in accordance with this AGREEMENT shall be made available, upon request, to the LA or to the STATE, without restriction or limitation as to their use. Notwithstanding the above, the ENGINEER shall be entitled to reuse any work product produced pursuant to this Agreement, provided that the LA and the STATE shall be responsible for any liabilities that arise in connection with such reuse.
3. The LA acknowledges that the ENGINEER will utilize and/or provide as part of its work product software (the "Software") which is currently owned either by Delcan or a third party. The Engineer agrees to grant the LA a royalty-free, nonexclusive, nontransferable, personal, irrevocable, perpetual, license including access to all source codes and readable documentation to reproduce; use; modify; recompile; review; evaluate; maintain; upgrade or reinstall the Software, but only to the extent necessary to manage, maintain, operate, develop, and improve the transportation systems within the geographical boundaries of Lake County. This includes the use of the Software by IDOT and other Lake County municipalities to maintain and/or operate the transportation system in Lake County. The LA agrees to require third parties who wish to obtain technical information, including but not limited to, all technical documents, software documentation and source code regarding the Software to execute a Confidentiality Agreement, marked and attached as Schedule B, prior to the LA disclosure of any information. The LA shall not be restricted in any way from releasing information, including proprietary information, in response to a subpoena, court order, or other legal process but shall promptly notify ENGINEER in writing of the demand for information before the LA responds to such demand. Notwithstanding the forgoing, any Commercial Off the Shelf Software (COTS) provided to the LA through this agreement shall be subject to the terms and conditions set forth in the COTS license agreements.
4. That all reports, plans, estimates and special provisions furnished by the ENGINEER shall be in accordance with the current Standard Specifications for Road and Bridge Construction, Bureau of Local Roads and Streets Administrative Policies, Federal-Aid Procedures for Local Highway Improvements or any other applicable requirements of the STATE, it being understood that all such furnished documents shall be approved by the LA and the STATE before final acceptance. During the performance of the engineering services herein provided for, the ENGINEER shall be responsible for any loss or damage to the documents herein enumerated while they are in the ENGINEER's possession and any such loss or damage shall be restored at the ENGINEER's expense.

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5. That none of the services to be furnished by the ENGINEER shall be sublet, assigned or transferred to any other party or parties without written consent of the LA. The consent to sublet, assign or otherwise transfer any portion of the services to be furnished by the ENGINEER shall not be construed to relieve the ENGINEER of any responsibility for the fulfillment of this agreement.
6. To maintain, for a minimum of 3 years after the completion of the contract, adequate books, records and supporting documents to verify the amounts, recipients and uses of all disbursements of funds passing in conjunction with the contract; the contract and all books, records and supporting documents related to the contract shall be available for review and audit by the Auditor General and the STATE; and to provide full access to all relevant materials. Failure to maintain the books, records and supporting documents required by this section shall establish a presumption in favor of the STATE for the recovery of any funds paid by the STATE under the contract for which adequate books, records and supporting documentation are not available to support their purported disbursement.
7. The payment by the LA in accordance with numbered paragraph 3 of Section II will be considered payment in full for all services rendered in accordance with this AGREEMENT whether or not they be actually enumerated in this AGREEMENT, with the exception of payment for additional work which is requested by LA and in relation to which it is agreed between the parties that additional compensation will be paid.
8. That the ENGINEER shall be responsible for any and all damages to property or persons arising out of an error, omission and/or negligent act in the prosecution of the ENGINEER's work and shall indemnify and save harmless the LA, the STATE, and their officers, agents and employees from all suits, claims, actions or damages of any nature whatsoever resulting therefrom. These indemnities shall not be limited by the listing of any insurance policy.
9. This AGREEMENT may be terminated by the LA upon giving notice in writing to the ENGINEER at the ENGINEER's last known post office address. Upon such termination, the ENGINEER shall cause to be delivered to the LA all drawings, plats, surveys, reports, permits, agreements, soils and foundation analysis, provisions, specifications, partial and completed estimates and data, if any, from soil survey and subsurface investigation with the understanding that all such material becomes the property of the LA. The LA will be responsible for reimbursement of all eligible expenses to date of the written notice of termination. Furthermore, this Agreement may be terminated by the Engineer in the event that LA is in material breach of its obligations hereunder, provided that the Engineer first provides 30 days written notice of its intentions and also provided that said breach has not been remedied within the 30 day notice period. LA acknowledges and agrees that the Engineer cannot warrant the fitness of any work that is incomplete due to early termination or suspension of the work, or that is altered, revised, amended or modified without the Engineer's knowledge and consent or used for any purpose other than that for which it was originally intended.

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10. This certification is required by the Drug Free Workplace Act (30ILCS 580). The Drug Free Workplace Act requires that no grantee or contractor shall receive a grant or be considered for the purpose of being awarded a contract for the procurement of any property or service from the State unless that grantee or contractor will provide a drug free workplace. False certification or violation of the certification may result in sanctions including, but not limited to, suspension of contract or grant payments, termination of a contract or grant and debarment of the contracting or grant opportunities with the State for at least one (1) year but no more than five (5) years.

For the purpose of this certification, "grantee" or "contractor" means a corporation, partnership or other entity with twenty-five (25) or more employees at the time of issuing the grant, or a department, division or other unit thereof, directly responsible for the specific performance under a contract or grant of \$5,000 or more from the State, as defined in the Act.

The contractor/grantee certifies and agrees that it will provide a drug free workplace by:

- a. Publishing a statement:
 - (1) Notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance, including cannabis, is prohibited in the grantee's or contractor's workplace.
 - (2) Specifying the actions that will be taken against employees for violations of such prohibition.
 - (3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will:
 - (a) abide by the terms of the statement; and
 - (b) notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.
- b. Establishing a drug free awareness program to inform employees about:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's or contractor's policy of maintaining a drug free workplace;
 - (3) Any available drug counseling, rehabilitation and employee assistance program; and
 - (4) The penalties that may be imposed upon an employee for drug violations.
- c. Providing a copy of the statement required by subparagraph (a) to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.
- d. Notifying the contracting or granting agency within ten (10) days after receiving notice under part (B) of paragraph (3) of subsection (a) above from an employee or otherwise receiving actual notice of such conviction.
- e. Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by,
- f. Assisting employees in selecting a course of action in the event drug counseling, treatment and rehabilitation is required and indicating that a trained referral team is in place.
- g. Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act.

11. The ENGINEER or subconsultant shall not discriminate on the basis of race, color, national origin or sex in the performance of this AGREEMENT. The ENGINEER shall carry out applicable requirements of 49 CFR part 26 in the administration of DOT assisted contracts. Failure by the ENGINEER to carry out these requirements is a material breach of this AGREEMENT, which may result in the termination of this AGREEMENT or such other remedy as the LA deems appropriate.

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12. In the event the ENGINEER fails to meet any of its contractual obligations, as set forth in this AGREEMENT, then the LA, at its option, may consider the AGREEMENT as canceled effective with the delivery of written Notice of Termination for Cause to the ENGINEER, and the ENGINEER shall have no further claims or rights against the LA except as set forth herein. The LA may, as additional remedies, and without prejudice to or waiver of any other right or remedy which it possesses hereunder or as a matter of law, and after delivering a Notice of Termination for Cause to the ENGINEER, secure services from any other available source and any reasonable cost resulting as damages incurred by the LA due to the negligence of the ENGINEER shall be charged back to the ENGINEER, or the LA may deduct any such cost from any payments due or to become due ENGINEER, if any. In addition to any difference in cost for services, incurred by the LA, the ENGINEER shall pay the LA for any costs, fees, or expenses, including administrative, engineering and legal expenses incurred by the LA due to the failure of the ENGINEER to meet such obligations. The foregoing costs, fees and expenses, may, at the direction of the LA, be deducted from any sums remaining due for services properly performed prior to the effective date of the cancellation and termination. The ENGINEER's total liability to the LA under this paragraph shall not exceed \$250,000.

A Notice of Termination for Cause may be delivered to the ENGINEER upon the occurrence of any of the following:

- a. If the ENGINEER becomes insolvent, commits any act of bankruptcy, makes a general assignment for the benefit of creditors, or becomes the subject of any proceeding commenced under any statute or law for the relief of debtors;
 - b. If a receiver, trustee or liquidator of any of the property or income of the ENGINEER shall be appointed;
 - c. If the ENGINEER shall fail to perform the scope of services, or any part thereof, with the diligence necessary to maintain its progress and complete the scope of services as prescribed by the time schedule and shall fail to take such steps as reasonably directed by the LA to remedy such failure within thirty (30) days after written notice thereof from LA;
 - d. If the ENGINEER shall violate any of the terms, provisions, conditions or covenants contained in this Agreement and shall fail to take such steps as reasonably directed by the LA to remedy such default within Thirty (30) days after written notice thereof from LA.
13. For greater certainty, the ENGINEER shall have no obligation to provide services where funds to pay compensation for such services are not available and/or approved, except as required pursuant to Section I.6.
14. Hardware purchased under this agreement will be invoiced to the LA with no mark up by ENGINEER.

Executed by the LA:

Lake County

(Municipality/Township/County)

ATTEST:

By: _____

By: _____

Clerk

Title: _____

(SEAL)

Executed by the ENGINEER: Parsons Transportation Group

ATTEST:

By: _____

By: _____

Title: _____

Title: _____

2018 Signal Coordination & Timing Contract

Introduction

The proposed work for the 2018 Signal Coordination and Timing Contract is based Signal Coordination and Timing (SCAT), Traffic Responsive Implementation, and coding updates to the Lake County Automated Traffic Signal Performance Metrics. Each individual task is expected to increase productivity and decrease vehicle delay for the drivers of Lake County.

Scope of Services

Signal Optimization Study

List of Intersections:

1. Cedar Lake Rd & Clarendon Dr
2. Cedar Lake Rd & Rosedale Ct
3. Cedar Lake Rd & Washington St
4. Cedar Lake Rd & Hart Rd
5. Washington St & Hainesville St
6. Washington St & Lake St

Data Collection: A majority of the field data collection for various corridors will have been accomplished in the Synchro modeling portion of the 2012 contract. The consultant will collect turning movement counts at each intersection using Miovision™ cameras, or of a similar method with equivalent accuracy. A before travel time study will be completed for all three peak periods for comparison to after study conditions. 24 hour system detector counts will be compiled over 7 consecutive days for use in developing a cost benefit ratio and emissions data.

Data Analysis: The Synchro networks for the various corridors will be pulled from the countywide Synchro model and combined with count data from the data collection task. The Synchro networks will be analyzed to develop optimized coordination plans for all three peak periods.

Implementation: Time of day steps will be developed for the corridors based on analysis of the traffic counts as well as field observations. The 3 coordination plans developed in the data analysis portion of the study will be submitted to LCDOT prior to implementation for review and comment. After review, the consultant will download via Centrac to field controllers. The consultant will be in the field observing the corridors as the database downloads occur, or monitor from traffic PTZ cameras from the PASSAGE ATMS, if they exist. Adjustments will be made in the field over several observation periods to maximize operating efficiency.

Evaluation: After implementation on new coordination plans on a corridor, a second travel time survey will be completed. This along with system detector data collected will be used to determine emission and fuel consumption reductions, a cost benefit ratio, and other measures of effectiveness, based on formulas from the most recent Texas Transportation Institutes' Urban Mobility Study. This summary of MOE's along with traffic count data and Synchro analysis will be compiled into an electronic final report in Adobe PDF format.

QA/QC: An established Quality Assurance / Quality Control process used on all IDOT SCAT work orders will be used on the optimization portion of this contract. QA/QC checks during each task of the optimization study will insure an efficient and accurate study end product.

List of Deliverables: The following work products and/or reports will be provided to LCDOT at various stages during this contract.

1. Progress reports will be emailed to County staff once a month for the entire length of the contract, updating the status of various tasks on various corridors that may be under study at any one point in time
2. For each corridor the end product will be a printed final report binder with CD's containing all electronic files. The final report will contain:
 - a. Summary Report, including system description, analysis, methodology, MOE comparison results, cost benefit savings, change in fuel consumption, and special recommendations or observations.
 - b. Synchro analyses for each intersection and count period.
 - c. Synchro Time Space Diagrams for the Corridor
 - d. Summary of turning movement traffic counts used in the Synchro analysis
 - e. Before and after speed and delay runs.
 - f. 7-day System Detector Counts

Traffic Responsive Implementation

List of Intersections:

1. Saunders Rd & Discover Rd/Takeda Pkwy
2. Saunders Rd & Baxter Pkwy
3. Saunders Rd & Parkway North Blvd
4. Deerfield Rd & Saunders Rd
5. Deerfield Rd & Parkway North Blvd
6. IH 94 EB (SB) On-Ramp & Deerfield Rd
7. IH 94 WB (NB) Off-Ramp & Deerfield Rd
8. Deerfield Rd & Castlewood Ln
9. Deerfield Rd & Wilmont Rd

Data Analysis: The consultant will determine which detectors to use for each traffic signal for the traffic responsive plan and modify the detector settings for each traffic signal to enable ECPI logs, NTCIP volume and NTCIP occupancy. The consultant will create a traffic algorithm in Centrac and create initial settings in each of the following tabs: Settings, Arterial, Inbound, and Outbound. Each cycle level should correspond to a change in cycle length. Each offset level should correspond to a change in arterial progression (i.e. Heavy NB flow, Heavy SB flow, dual progression, etc.). Finally, Each split level should correspond to a change in side street vs mainline traffic. The Max V+K0 should be reflective of actual traffic along the corridor. The traffic responsive system will be monitored for a period of at least two weeks and proven suitable prior to implementation.

Implementation: The traffic responsive plan developed in the data analysis portion of the study will be submitted to LCDOT prior to implementation for review and comment (screenshots are acceptable). After review, the consultant will create a scheduled event and enable the traffic responsive plan.

Evaluation: The consultant will be monitoring the traffic responsive plan for a period of three months utilizing Centrac reporting. Adjustments will be made in Centrac over several observation periods to maximize operating efficiency.

QA/QC: An established Quality Assurance / Quality Control process used on all IDOT SCAT work orders will be used on the optimization portion of this contract. QA/QC checks during each task of the optimization study will insure an efficient and accurate study end product.

List of Deliverables: The following work products and/or reports will be provided to LCDOT at various stages during this contract.

1. Progress reports will be emailed to County staff once a month for the entire length of the contract, updating the status of various tasks on various corridors that may be under study at any one point in time
2. For each corridor the end product will be a printed final report binder with CD's containing all electronic files. The final report will contain:
 - a. Summary Report, including any changes made to controller detector settings, analysis, methodology, all settings programmed in the traffic algorithm and special recommendations or observations.
 - b. Weekly TRP progress before implementation, including timestamps when a new coordination plan is recommended per day.
 - c. Weekly TRP progress after implementation, including timestamps when a new coordination plan is implemented per day.

Automated Traffic Signal Performance Metrics

The goal of the automated traffic signal performance metric (ATSPM) website is to allow Lake County to greatly improve the quality of signal operations. It allows Lake County to optimize intersections and corridors when they need to be re-optimized, instead of on a set schedule. Currently, Lake County is operating with software version 4.0.1 from the Open Source Application Development Portal (OSADP). The consultant will have full access to the server with the code base Lake County is using. The current ATSPM website can be accessed on the TMC network or via VPN onto the TMC network at the following website: <http://atspm.lcpassage.com/SPM/>

Objectives: With 300 hours assigned in the scope for the ATSPM section of the 2018 Signal Coordination and Timing Contract, the following objectives are desired:

1. Update the Lake County ATSPM website to software version 4.2.0 (expected version is to be release in Summer, 2018)
 - a. The update can be done in the form of a “fresh” install or only updating the code that is modified. All Lake County programming must remain intact (i.e. logos, login credentials, FAQ text, traffic signal configurations, etc.)
2. Update the ATSPM code to make the Purdue Link Pivot feature fully operational.
3. Analyzing individual code updates at <https://github.com/udotdevelopment/ATSPM>.
 - a. Providing recommendations to Lake County on the code updates that will have a benefit to Lake County, including any enhancements that the consultant can make.
 - b. Implementing code updates after approved by Lake County.
4. Analyzing any specialized code updates specific for Lake County.
5. Analyzing the feasibility of integrating the ATSPM functionality to the PASSAGE ATMS client.