

ATTACHMENT A SCOPE OF SERVICES

This project involves the assessment, procurement, and design of an adaptive traffic signal system for use on Butterfield Road from Allanson Road to Highway 137 in Libertyville, IL. This includes the intersections of Butterfield Road and Allanson Road/Greggs Parkway, Huntington Drive, Golf Road, Crane Boulevard, IL Route 176 (Park Avenue), Winchester Road/County Highway 69, Virginia Avenue/St. William Drive, and the intersection of Butterfield Square entrance on IL Route 137 (Buckley Road/Peterson Road).

This attachment documents the scope of services that will be provided by AECOM to the Lake County Division of Transportation (LCDOT) as part of this project.

Task 1 – Systems Engineering

Through this task, AECOM will use existing traffic data to evaluate and recommend an adaptive traffic signal system for the project corridor, including the manner in which it will operate and function. This process will be carried out according to the FHWA Report “Model Systems Engineering Documents for Adaptive Signal Control Technology (ASCT) Systems”, August, 2012.

1.1. Traffic data collection

LCDOT will provide available traffic data (including ADT, turning movement counts with pedestrian, truck, and bus percentages, travel times, traffic volume projections, traffic reports), access to live PTZ video of the corridor, signal asset data (including signal inventory, ownership, and operational/maintenance jurisdiction), and Synchro models for the project area. AECOM will review the traffic data provided by LCDOT and will conduct observations of the project area to assess existing operations, but will not conduct traffic counts or travel time runs.

1.2. Traffic signal control system evaluation

AECOM will research advanced traffic signal systems for application in the project corridor. This will involve coordination with up to six (6) vendors of Adaptive signal control technology (ASCT). We will then compare them to the following types of signal systems already in place in Lake County:

- Non-adaptive centralized system using the existing Econolite CENTRACS system
- Actuated-coordinated, i.e., “no build” systems

AECOM will meet with County, Illinois Department of Transportation (IDOT), and other project stakeholders to present the advanced traffic signal systems and discuss the positive and negative factors of each. AECOM will develop a *Traffic Signal Control Evaluation* technical memorandum that provides a recommendation for advanced signal control in the project corridor.

1.3. Concept of Operations

AECOM will prepare a *Concept of Operations* document for the corridor. This document will record the needs and objectives of the stakeholders involved in the project and will describe how the recommended advanced traffic signal system will be used. This task includes coordination with FHWA.

1.4. System Requirements

Upon approval of the *Concept of Operations* document, AECOM will identify the County’s requirements for the functional, performance, non-functional, enabling, constraint, interface, and data requirements of the advanced traffic signal system. AECOM will record these items in a *System Requirements* document. This task includes coordination with FHWA.

1.5. Deliverables

- *Traffic Signal Control Evaluation* technical memorandum (draft and final)
- *Concept of Operations* document (draft and final)
- *System Requirements* document (draft and final)

1.6. Meetings

- Project kick-off meeting with LCDOT
- Field site review meetings
- Traffic signal control evaluation meeting with County, IDOT, and other project stakeholders

- Review meeting for the draft *Traffic Signal Control Evaluation* technical memorandum
- Concept of operations meeting with County, IDOT, and other project stakeholders
- Review meeting for the draft *Concept of Operations* document
- System requirements meeting with County, IDOT, and other project stakeholders
- Review meeting for the draft *System Requirements* document

Task 2 – Procurement Support

Through this task, AECOM will assist LCDOT to identify, evaluate, and select a vendor for the advanced traffic signal system. As with Task 1, this process will be carried out according to the FHWA Systems Engineering Report.

2.1. Project notice letter

AECOM will develop a project notice letter for distribution to ASCT system vendors. The letter will inform the vendors of the project overview and objectives, the anticipated schedule, where to obtain more information, key points of contact at the County and AECOM.

2.2. Investigation of ASCT systems

AECOM will leverage our knowledge of ASCT systems to compile a summary of technical specifications of up to ten (10) different vendor's products. This document will serve as a technical reference throughout this and future LCDOT adaptive traffic signal procurements.

2.3. Develop Request for Qualifications (RFQ) and Evaluation Criteria

AECOM will lead development of the RFQ and evaluation criteria, based upon the results of Task 2.2 and feedback from the County regarding the minimum qualifications necessary. We will form an Evaluation Committee consisting of County and IDOT staff (and other project stakeholders identified by LCDOT) and conduct a meeting with the committee to discuss the following:

- Provide an overview of the ASCT system investigation results
- Present and review the draft RFQ requirements and recommended levels of qualification, including the potential impacts relative to acceptance of lesser or greater qualifications than those recommended
- Conduct an evaluation of a sample submittal to demonstrate how criteria should be considered with regard to each RFQ requirement and the range of submissions that may occur

After the meeting AECOM will finalize the RFQ and evaluation criteria for submission to LCDOT, who will advertise the RFQ through normal processes.

2.4. Evaluation of RFQ Responses

AECOM will conduct three (3) independent technical reviews of all RFQ submissions received. It is anticipated that LCDOT and potentially IDOT will perform a similar evaluation of submissions. We will compile the results of all reviews and prepare a technical memorandum summarizing the results and present that information to the Evaluation Committee. Once the qualification results are finalized, the Committee will identify selected firms to proceed to the proposal stage. AECOM will prepare a letter of notice to advise those who have submitted an RFQ of their status of meeting or failing to meet the minimum qualifications. We expect to receive between 6 and 8 responses to the RFQ for evaluation.

2.5. Develop Request for Proposals (RFP) and evaluation criteria

AECOM will lead development of the RFP and the corresponding evaluation and scoring criteria. The RFP will be focused upon solicitation of detailed responses from ASCT system vendors regarding how their solutions meet the project needs stated in the *Concept of Operations* and *System Requirements* documents. The RFP will provide guidance on how information is organized and presented to facilitate a more timely and organized review by the Evaluation Committee.

It is anticipated that the RFP scoring system will include the following evaluation categories:

- Project understanding
- Technical system capability
- Qualifications of key staff
- Quality assurance and control

AECOM will facilitate a meeting of the proposal Evaluation Committee to review the scoring criteria and its application before proposals are received.

2.6. Requests for information (RFIs)

AECOM will document, track, and develop responses to up to ten (10) RFIs submitted by vendors as they prepare their submissions.

2.7. Proposal evaluation and vendor presentations

AECOM will conduct four (4) independent technical reviews of the RFP submissions keeping input/opinion of others isolated during these reviews. It is anticipated that LCDOT and potentially IDOT will perform a similar evaluation of proposal submittals. AECOM will collect and prepare a technical memorandum which summarizes all RFP reviews and the results that will be presented to the Evaluation Committee in a project meeting. We anticipate that up to five (5) proposals will be submitted for evaluation.

AECOM will organize and jointly conduct interviews with the three (3) highest-scoring ASCT vendors from the proposal evaluations. It is possible that presentations may not be warranted, that fewer than three may be necessary, or that presentations may be conducted in advance of final proposal response scoring. If presentations occur after the proposal submissions are evaluated, a summary of the evaluation results may be provided to the vendor, allowing them to prepare for the interviews where they can present their solutions, provide insight as to how their systems will benefit the corridor, and respond to those areas of potential weakness from the evaluation. AECOM will develop a scoring sheet that will be used to evaluate presentations and develop a brief technical memorandum summarizing the overall evaluation results to determine the preferred vendor and system along with an alternate.

2.8. Empirical evaluation and selection

AECOM will complete a series of empirical evaluations the details of which will need to be further defined once proposals are received and/or presentations are conducted. The focus of these evaluations will be to investigate, document and validate that the preferred vendor/system identified will lead to a successful project deployment in this corridor. It is important to note that it is likely that no one vendor/system will meet all system requirements of project needs. The evaluations will review the proposed solution, its applicability to the project corridor, ability to address system needs and impact to LCDOT operations/maintenance. It is plausible that evaluations may include a review of references, a tour of a facility that uses the system, the evaluation of user interfaces, customizability, system responsiveness to changing operational demands, performance metrics and data outputs, and existing user feedback.

Upon completion of the interviews we will conduct a meeting with LCDOT, IDOT, and other project stakeholders to discuss the overall evaluation process and final selection. We will provide our recommendations to the collective project team regarding which ASCT system vendor is most suitable for the project. In the event that the final selection results in one ASCT system and vendor, we will compile the necessary supporting documentation for submission to FHWA for approval in compliance with Title 23 Code of Federal Regulations 635.411 Requirements.

2.9. Deliverables

- Project notice letter
- ASCT system investigation documentation
- Request for qualifications including evaluation criteria (draft and final)
- Summary of RFQ submittals
- Response letters to RFQ submitters (up to eight (8) letters)
- Request for proposals (draft and final)
- RFI log
- Proposal evaluation technical memorandum
- Proposal presentation scoring sheet
- Proposal presentation evaluation technical memorandum
- FHWA selection documentation

2.10. Meetings

- Four (4) Evaluation Committee meetings to 1) review RFQ evaluation criteria; 2) review RFP scoring criteria; 3) review proposals received; 4) review of evaluation process and selection
- Vendor presentations (up to three (3) individual vendor presentations)

Task 3 – Phase II Design

Through this task, AECOM will create a design package consisting of construction plans, specifications, and estimates (PSE) to implement the advanced traffic signal system and associated elements.

3.1. Site data collection/survey

LCDOT will provide as-built roadway, utility, and traffic signal CADD/survey files for use in developing construction plans. AECOM will conduct additional survey to record elevation points related to the sidewalk ramps at the intersections of Butterfield Road and Allanson Road/Greggs Parkway, Huntington Drive, Golf Road, Crane Boulevard for use in subtask 3.3. AECOM will work with the County to schedule a field site visit of the corridor to inspect existing traffic signal equipment. No geotechnical or utility investigations will be performed as part of this scope of work.

3.2. Environmental assessment (not included)

3.3. Plans, specifications, and estimates

AECOM will develop plans, specifications/special provisions, and an engineer's estimate of cost for the advanced traffic signal system and associated elements according to IDOT Bureau of Local Roads and Streets requirements for CMAQ projects, which is expected to include the following:

- Traffic signal upgrades, including the replacement of traffic signal controllers (5) and cabinets (3), cabinet modifications (8), grounding upgrades, and the installation of illuminated street name signs (4), a datalink switch (1), electric service upgrades (6), a remote video control system (1), a travel time measurement system, additional detection, and the advanced traffic signal system
- System validation study
- ADA sidewalk improvements at four (4) intersections (eight (8) ramps per intersection)
- Traffic control and protection

The PSE will consist of the following plan sheets (estimated 42 sheets total):

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| • Cover sheet | • Sidewalk removal plans |
| • Index of sheets | • Sidewalk modification plans |
| • General notes | • Sidewalk modification details |
| • Summary of quantities | • Traffic signal modification plans |
| • Survey control points | • Traffic signal cable plans |
| • System schematics (including network diagrams – to be developed for insertion by the County's Network Integrator) | • Traffic signal detail sheets |

PSE submittals will occur at the preliminary (60%), pre-final (90%), and final (100%) stages.

3.4. Construction support

AECOM will provide a limited number of hours to support the County with requests for information (RFIs) generated by the contractor.

3.5. Deliverables

- Survey data files
- Up to ten (10) hard copies of plans, specifications, and estimates package for each submittal (preliminary, pre-final, and final)
- RFI responses

3.6. Meetings

- Field site visit
- Preliminary PSE review meeting
- Pre-final PSE review meeting
- Construction meetings (up to two (2) meetings)

Task 4 – Project Management, Administration, and QA/QC

Through this task, AECOM will provide day-to-day management of the project, as well as monthly invoices with progress reports.

AECOM will apply appropriate quality assurance/quality control measures for all deliverables, consistent with our Integrated Quality Management System.

Project Schedule

The following is an anticipated schedule of events and milestones for the project:

Task	Event/Milestone	Date
-	Notice to proceed/project kick-off meeting	February 28, 2017
1.1	Data collection	March, 2017
1.2	Traffic signal control evaluation	March-April, 2017
1.3	Concept of Operations	April-May, 2017
1.4	System Requirements meeting	June-July, 2017
2.1	Project notice letter	July, 2017
2.2	ASCT system investigation documentation	July, 2017
2.3	Request for Qualifications	August, 2017
2.4	RFQ response evaluation	October, 2017
2.5	Draft Request for Proposals	November-December, 2017
2.6	RFI log	January, 2018
2.7	Proposal evaluation	February-March, 2018
2.8	FHWA selection documentation/vendor selection	March, 2018
3.1	Site data collection/survey	March, 2018
3.3	PSE development	March-June, 2018
3.4	Project Letting	September, 2018