

**REQUEST FOR PROPOSAL FOR THE CITY OF CONWAY'S
ADAPTIVE SIGNAL CONTROL TECHNOLOGY (ASCT)
VENDOR SERVICES
CITY OF CONWAY CONTRACT
NO. 13116**

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NOTICE TO RECEIVE REQUESTS FOR PROPOSALS

NOTICE IS HEREBY GIVEN that the City of Conway, Arkansas will receive proposals in the Office of the Mayor, City Hall (1201 W. Oak St., Conway AR 72032) until 10:00 a.m. (Local Time), November 1, 2016 for the following: Request for Proposals for ASCT Vendor Services for the City of Conway's (the City) Adaptive Signal Control Technology Implementation - COC Contract No 13116. Documents referenced herein and not specifically included in this RFP are on file and available for examination at Conway City Hall located at 1201 W. Oak Street, Conway AR 72032.

The envelope containing the proposal must be sealed and contain the words "Request for Proposals for ASCT Vendor Services - The City of Conway's Adaptive Signal Control Technology Implementation - Contract No 13116".

Proposals received more than ninety-six (96) hours, excluding Saturdays, Sundays and holidays before the time set for submittal of qualification statements, as well as proposals received immediately after the time set for submittal of qualifications, shall not be considered and will be returned unopened.

The City reserves the right to reject any and all proposals if the City deems it necessary in the best interest of the citizens of Conway, Arkansas. Additional information may be obtained by contacting Mr. Finley Vinson; City Engineer; (501) 513-3565; Finley.Vinson@cityofconway.org

EQUAL OPPORTUNITY IN EMPLOYMENT: The City of Conway complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, the City of Conway does not discriminate on the basis of race, color, religion, sex, national origin, marital or veteran status, political status, disability status or other legally protected status.

NOTICE TO PROPOSERS

In addition to invitations issued to prospective Respondents, a Public Notice will be published in the Sunday edition of the Arkansas Democrat-Gazette Newspaper and posted on the City's Website to solicit additional responses from any other interested qualified ASCT Vendors.

There may be one or more amendments to this proposal solicitation. If your company desires to receive copies or notices of any such amendments, you must provide the information requested below to the Engineering Department. Please send this information to Mr. Finley Vinson; City Engineer; (501) 513-3565; Finley.Vinson@cityofconway.org

The Engineering Department will send amendments only to those firms that complete and return this form by October 25, 2016. **The return of this requested information form may be made by e-mail only.**

RFP Reference **The City of Conway's Adaptive Signal Control
Technology Implementation - Contract No 13116**

Company Name _____

Mailing Address _____

_____ (City) (State) (Zip)

Telephone Number _____

Fax Number _____

Contact Person _____

E-mail Address _____

Amendments will be issued via email only. Any alteration to the documents by the proposer may be grounds for rejection of the proposal or cancellation of any subsequent award.

PROPOSED TIMETABLE

The following proposed timetable is for planning purposes only. The City of Conway will make every attempt to comply with the times and dates set forth in this table, but reserves the right to adjust this timetable as required during the course of the RFP process.

RFP Advertised	October 4, 2016
Pre-Proposal Meeting	October 18, 2016
Written Questions Due	October 25, 2016
Final Amendments Issued	October 27, 2016
Receive Final RFP's	November 1, 2016
Short List Qualified Firms (if necessary)	November 11, 2016
Interview Short Listed Firms	November 18, 2016
Present a Final Recommendation to the City Council	November 29, 2016

The Request For Proposals must be received by the City of Conway before 10:00 AM (local time), November 1, 2016 at the Conway City Hall. Proposals must be responsive to the requirements of the Request for Proposal. Failure to do so will render the submittals as nonresponsive.

Five (5) hard copies of the Proposal and one electronic copy (PDF copy on a CD) must be submitted to:

**Mr. Finley Vinson at the Office of the Mayor
Conway City Hall
1201 W. Oak Street
Conway, AR 72032**

Proposals must be submitted in strict compliance to the instructions included in the ***NOTICE TO RECEIVE REQUESTS FOR PROPOSALS***. Upon receipt, the Proposals shall become the property of the City, without compensation to the responding ASCT Vendors for disposition or usage by the City at its discretion.

INQUIRIES

Any and all questions clarification, or revision to any items, requirements or specifications contained in this RFP must be addressed in writing to Mr. Finley Vinson, City Engineer, and sent to this email address; Finley.Vinson@cityofconway.org. All questions must be received prior to 10:00 AM (local time), October 25, 2016. Any official clarifications, answers or positions given by the City will be issued in the form of a written Amendment and distributed to all proposers at least three days prior to submittal deadline.

Attachment A

AFFIDAVIT

I, _____, being an authorized representative of the firm of, _____, located in the City of _____, State of _____, Zip Code _____, Phone, (____)_____, have read and understand the contents of the formal proposal and hereby submit our proposal as of this date, _____.

By Submission of this proposal, each ASCT Vendor certified, and in the case of a joint bid, each party thereto certifies as to his/ her own organization, that this bid had been arrived at independently, without consultation, communication or agreement as to any matters relating to this bid with any other bidder or with any other competitor.

Signature of Authorized Representative

Date

Subscribed and sworn to before me this _____ Day of _____, A.D., 20__.

(Notary Public _____, County _____,
State _____.)

My commission expires: _____.

DATE: October 4, 2016

**Request for Proposal
Technical Special Provision for City of Conway ASCT
AHTD JOB No. 080519, City of Conway Contract 13116**

SUBJECT: Technical Special Provision for City of Conway ASCT RFP

PROJECT: AHTD JOB No: 080519, City of Conway Contract 13116

The Adaptive Signal Control Technology (ASCT) project has gone through a rigorous Systems Engineering Analysis (SEA) process with City of Conway (City) stakeholders to identify needs and objectives of the various corridors within the City, and in particular, the corridor identified in this Request for Proposal (RFP). Those needs and objectives identified in the Concept of Operations portion of the SEA document have been included in the System Requirements of the ASCT for this project.

The interested ASCT vendors proposing on this system are required to give true responses to how their adaptive algorithm complies, does not comply, or is in development/testing for each system requirement stated within this RFP Technical Special Provision (TSP) and Requirements Matrix attached to this document. If the ASCT Vendor algorithm is in development or testing for any particular requirement, the ASCT Vendor shall state timeframes for full deployment of the particular function to meet the requirement.

The ASCT Vendor shall adhere to all Arkansas State Highway and Transportation Department (AHTD) standards and specifications, and all City Supplemental specifications and standards, as applicable.

ADAPTIVE SIGNAL CONTROL SOFTWARE

Description This work consists of furnishing, installing, testing and assisting in the maintenance of ASCT. The ASCT shall consist of a full adaptive signal control software that operates at the City Traffic Engineering building in accordance with requirements set forth in these specifications.

Vehicle detection for ASCT will be furnished and installed by a signal installation contractor through low bid construction plans. The ASCT Vendor shall also assist in finalizing vehicle detection construction plans currently being developed by the existing ASCT Consultant under contract with Metroplan. The ASCT Vendor assistance will consist of guiding the final placement and detection technology that adheres to the SEA system requirements while addressing all other requirements needed for the adaptive signal algorithm to operate optimally. These vehicle detection construction plans will be the basis for a low-bid signal installation contractor to furnish and install any additional vehicle detection devices that are required by the selected ASCT Vendor. It is envisioned that the detection installation work shall require no more than 90 - 120 days to complete once construction begins and after contractor procurement periods are met.

The ASCT Vendor will be required to start the configuration of the ASCT at various intersections while the detection installation contractor is completing their work. The ASCT Vendor will be required to coordinate with the vehicle detection low bid contractor for any detection zone configuration and field placement needed during their installation of the vehicle detection devices and communication media.

Adaptive Signal Control Software. The adaptive signal control software shall be a commercially

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available, off-the-shelf, previously installed, tested and proven adaptive signal control software. The software shall be designed to monitor traffic flows and automatically adjust traffic signal timings on a second-by-second basis to significantly reduce travel time, minimize environmental impact, and provide economic benefits by reducing vehicle stops, and the wasted fuel and time associated with extended stopping. The software shall provide a rapid response to changes in traffic conditions and shall vary signal timing on a cycle-by-cycle basis. The software shall be a "real-time" adaptive control system that can change timing strategies with changes in traffic conditions. Changes to splits, offsets, and cycle lengths shall be made in response to traffic currently approaching or departing an intersection as measured in real-time by vehicle detection that is acceptable to the City and as outlined in the requirements.

The software shall be configured as a centralized system, and controlled from the City traffic operations/engineering building. As such, if required, the software system shall require its own Microsoft Windows® based central server for control of the adaptive functions and communications. The ASCT Vendor shall be responsible for providing the appropriate servers and SQL Server database software and licensing needed for the adaptive software.

This work also includes integration of the ASCT, training and the maintenance of the system for a period set forth in the requirements. The ASCT Vendor shall provide design guidance in any additional detection needed for optimizing the ASCT algorithm within parameters set forth by the City. Acceptable detection types can be found in the System Requirements matrix, but the ASCT Vendor shall verify the detection technology with the City to ensure their software solution will work as required.

The System shall be integrated with the current central signal control software. The existing central software shall recognize that the signal controller is under Adaptive Signal Control, and shall not be able to send commands to the controller while under adaptive control. The existing central software shall be able to provide a screen that allows the user to upload/download the Adaptive stage-to-phase mapping table to the SEPAC controller. Any variation of this operation and integration to the existing central signal system shall be approved by the City.

Selection Criteria. Each response of conformance to the system requirements shall be evaluated by the City and their stakeholder selection panel. Responses shall be thorough, and shall clearly state whether the requirement is met in the columns provided. If needed, a document with those responses can be submitted by the ASCT Vendor that clearly states each requirement and the response to meeting the requirement in its entirety.

A second phase of selection may occur in the form of a short-list of ASCT Vendors to present a quick overview of the ASCT Vendor's adaptive signal software and their compatibility with the existing system, along with a question and answer session from the selection panel. If needed, the City shall notify the short-listed ASCT Vendors after submittals are evaluated, no longer than 21 calendar days after proposal due date. Dates and times for presentations will be coordinated with the ASCT Vendor and the City, but shall be no less than 14 days after short-list notification to arrange travel to the City.

Existing System. The Engineering Department currently has a central signal system called Siemens TACTICS that is accessed by City personnel for the operation and maintenance of the signal system. The ASCT shall not affect the operation of TACTICS and shall not inhibit upload/download of signal timing parameters, signal controller status or any controller logs currently logged by TACTICS.

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The signal controllers consists of Siemens/Eagle M34, M42, M52 EPAC controllers of various firmware versions. The new ASCT system must be able to integrate with the existing signal controllers. No other controllers for ASCT operation shall be installed in the field cabinet without prior approval of the City. If controller firmware needs to be updated, the ASCT Vendor shall be responsible for providing that firmware and man power to update the firmware versions in the field and any other configuration needs of the ASCT. Any firmware upgrade that is needed shall be compatible with the City's TACTICS system, or the ASCT Vendor shall supply TACTICS upgrades at no additional charge to the project. Should a certain controller type listed in the requirements not be able to work with the ASCT, the ASCT Vendor shall present a plan to the City to ensure the existing controller network remains intact, and that no new controller manufacturers are presented that would place a burden on the maintenance of the existing signal system.

The current signal system communicates over a coaxial broadband IP Ethernet system. The ASCT software installed under this Contract must be capable of performing all required functions using IP Ethernet communication protocols on the existing signal controller equipment and through the existing field Ethernet switches and/or terminal servers located within the cabinet.

ADAPTIVE CENTRAL OPERATION & MANAGEMENT SOFTWARE.

The software shall be centrally housed and under control of the City for operation and maintenance. The software shall consist of server application and database software installed on ASCT Vendor provided servers, as necessary for proper operation of the adaptive signal control software. If a separate communications server is required by the ASCT software provider, it must be connected via a high-speed LAN (10/100/1000 Mbps or faster) to the City traffic network, and any communications components shall be provided by the ASCT Vendor as part of the ASCT installation.

The client interface software shall be installed on Traffic Engineering Department PC computers, as designated by the City. The client adaptive operations software shall be installed on a minimum of four (4) PC's designated by the Engineering Department. If server and database applications are not required for the ASCT, the ASCT Vendor shall describe all components of the system, where data is logged, stored and archived for the maintenance of the system and retrieval of archives.

The System Requirements matrix attached to this TSP shall be the primary document outlining the ASCT system requirements. The ASCT Vendor shall answer how they meet each requirement in the space provided, or through a document that they attach that clearly states each requirement and their response to meeting the requirement. This requirements matrix closely follows the needs and objectives identified by the City stakeholders. In addition, the following statements further describe the system requirements of the ASCT central operation.

System Computing Architecture. The System shall be a highly customizable traffic management application based on the 64-bit/Windows™ 7 and Windows™ Server 2012 R2 client/server environment. The System may be able to be configured for multiple agencies or Departments with varying levels of access privileges for a large-scale Integrated Transportation Management System. The system shall be able to operate in a VMware ESX virtual environment.

Operating Systems and Platforms. The operating system for the Central Adaptive server shall be Microsoft™ Windows 2012 R2 Server, submitted by the ASCT Vendor and approved by the City. Servers of appropriate requirements for the adaptive software shall be supplied, integrated

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and tested by the ASCT Vendor and included in the integration cost of the ASCT software. ASCT system clients shall be run on Microsoft™ Windows 64-bit Windows 7 PC's.

Local Area Network and Remote Access. Any physical networking technology supported by Windows 7 that supports the TCP/IP protocol shall be utilized. The System shall provide for multiple simultaneous client Users (including remote Users) of the traffic control system application. These Users can connect via a LAN/WAN connection or through a firewalled VPN to the ASCT Central Server. Users, subject to the City security privileges, shall have access to the same ASCT system operations regardless of the type of network connection being used for remote access.

NTCIP Standards Compliance. The National Transportation Communications for ITS Protocol (NTCIP) standards shall comply as required in the Concept of Operations portion of the SEA. The System shall employ any NTCIP requirements listed in the ITS Regional Architecture, as necessary. While it is not a direct requirement for the ASCT software to interface, the existing system and signal controller using NTCIP, the ASCT Vendor shall describe any and all work currently being done to employ NTCIP standards within their software or components therein.

Communications with On-Street Equipment. The ASCT System shall provide a flexible control equipment interface with the following capabilities:

- Communicate with all equipment periodically to monitor status.
- Allow handling of extended monitoring and upload/download requests concurrently while in adaptive mode.

The System shall provide for local backup operation to reload ASCT configurations in case of failure of the System file server, communications server, or the communication system. Whenever communication is absent for a User-specified number of consecutive attempts, the local controllers shall revert to a 'standby' mode where each controller runs according to its local time-based control (TBC) settings, and as outlined in the requirements.

System Startup and Shutdown. Upon the initial start-up of the ASCT Central server, the System shall begin normal operation with no prior state information or controls. The ASCT system shall be able to accommodate a User-initiated shutdown. All data shall be saved and all processes properly closed automatically upon a proper shutdown. The system shall also allow for Emergency Shutdown. Three types of emergencies shall be accommodated by the System with no failure of the ASCT database and operations software:

- a.) Power failure
- b.) Unplanned stoppage of program execution
- c.) Operator observation of improper operation

The central ASCT system shall be successfully tested for these types of failures. Should any of these tests fail, the ASCT Vendor shall correct the failure by submitting a software problem change request testing form for acceptance by the Engineer prior to completing any needed changes to the central system operation.

System Failure and Recovery. If the ASCT System detects a non-fatal error within one or more of its processes, either in the field or centrally, it shall alert the operator via an alarm on the operator workstations and make an entry in the System Log. The System shall continue to operate when a

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non-fatal failure occurs. If the System detects a fatal error within one or more of its processes, it shall attempt to alert the operator via an alarm on the operator workstations and make an entry in the System Log. The System shall then attempt an orderly shutdown of the System followed by an automatic restart.

System Access and Security. The System shall allow multiple Users to access the System simultaneously from client workstations in the traffic engineering building, from remote locations, and from multiple agencies as outlined in the system requirements. The System shall include built-in security features such as unique passwords and privilege levels for different Users, and privileges assigned based on affiliation with a particular jurisdiction or agency.

The System shall support clients that can run on any Windows 7 workstations. Multiple Users with different access privileges can simultaneously log in to the System.

Remote access shall be supported via a WAN, either high-speed or a dial-up. Both types of connections require properly configured and functioning Windows 7 User authentication. Once connected and authenticated, the user can use the System as if locally connected.

The System shall allow multiple agencies to simultaneously utilize the System without interfering with each other's operations. It may be desirable to restrict access to an entity to members of its owning agency. The application shall achieve this functionality by defining multiple jurisdictional agencies to which Users and entities may be assigned. This allows a User's access privileges to be assigned based on his affiliation with a particular agency.

ADAPTIVE SYSTEM SOFTWARE

General Requirements of the Adaptive System Software. The Full Traffic Adaptive Signal Control Software shall adhere to the following requirements, in addition to the requirements matrix attached to this document. The ASCT Vendor shall answer how they meet each requirement in the space provided, or through a document that they attach that clearly states each requirement and their response to meeting the requirement. The ASCT Vendor shall respond to all requirements in the System Requirements matrix and summarize their adherence to the requirements contained within this TSP, and the following:

- a.) The adaptive system shall have the capability to work with video detection and wireless magneto-resistive in-pavement sensors, and per all technologies listed in the System Requirements matrix.
- b.) The adaptive system must work with the appropriate, direct IP version of SEPAC intersection signal control software currently used by the signal control agency. All necessary upgrades to the SEPAC software in the field for proper IP communications with the adaptive operation shall be the responsibility of the ASCT Vendor in conjunction with City IT and Traffic staff and shall be paid for in the ASCT integration pay item. Any upgrade to TACTICS for this firmware update shall also be included in the cost.
- c.) The system shall have the capability for a detector to communicate with the intersection connected to the system in the closest geographic proximity while supplying data for a different intersections' adaptive control. (For example, it must be possible to use a detector connected to one intersection as an input to an adjacent intersection, either upstream or downstream.)
- d.) The adaptive system must have the capability to turn on and off by an internal scheduler.

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- e.) The adaptive system shall be fully integrated with the Central Signal Control System, such that when the adaptive system is activated, adaptive status is shown for graphical representation of the intersections under adaptive control.
- f.) The adaptive system shall be integrated with the Central Signal Control System such that when the adaptive system is activated, a special status is shown for the reports generated that include the intersections under adaptive control.
- g.) The adaptive system shall be integrated with the Central Signal Control System such that when the adaptive system is activated, the Central Signal Control System recognizes that intersections are under adaptive control and does not attempt to send commands to the intersections which are under adaptive control.
- h.) The adaptive system shall develop a profile of traffic approaching the intersection and change the signal timing of that phase in real time. Should the system detection be placed after the stop bar, or configured as a departure detector due to ROW ownership or other constraints, the adaptive system shall have the ability to increase green time of that phase on the next cycle and shall adhere to that placement as necessary and required by ownership.
- i.) The adaptive control system shall have been deployed in at least five (5) different municipalities of thirty or more intersections in North America successfully.
- j.) The adaptive traffic system shall maintain a network wide Traffic Model that is continuously updated with real time data. This model data shall be able to be viewed by the system operators and all parameters of the model shall be identified by the ASCT Vendor to the satisfaction of the City.
- k.) The system shall have the capability to modify the ASCT timing parameters as opposed to being limited to fixed timing plans (such as in a traffic responsive operation).
- l.) The adaptive control system shall allow the traffic engineer to use weighting factors and various strategies to provide a primary arterial the ability to have more green time to allow optimized offsets, or allow side roads to run at a higher saturation.
- m.) The adaptive algorithm shall include optimizers for splits, offsets and cycle calculations. The ASCT Vendor shall describe how each optimizer functions and the incremental change of those optimizers
- n.) The system shall be capable of running cycle times of up to 240 seconds.
- o.) The adaptive system shall have been proven to operate successfully and improve overall efficiency in grid, corridor and crossing arterial applications. References will be required for each type of corridor operation and deployment.
- p.) Only systems that offer full adaptive control will be considered. The centrally located traffic control server or servers must continually adjust Split, Offset and Cycle length, unless otherwise approved by the City. Systems that call pre-defined timing plans in response to changing traffic patterns or do not fully control these parameters in local controllers will not be considered as true full adaptive system for this project.
- q.) The system offered shall be of an "off the shelf" system of proven design and operation. Results and case studies from the installed systems should be in the public domain, and completed by independent reviewers. The ASCT Vendor shall identify those reports or studies for each of their five identified deployments.
- r.) All Software System training must be offered by an accredited training representative of the ASCT Vendor.

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Adaptive Detection Requirements. The adaptive system shall utilize advance, upstream detection, or detection placed after the stop bar in order to effectively collect the real-time data needed for the adaptive calculations for split, offset and cycle length. Should that general detection placement not adhere to the ASCT Vendor's applicable algorithm detection placement, the ASCT Vendor shall describe the detection placement necessary for the adaptive algorithm to function to the satisfaction of the City. It is anticipated that upstream detection shall be used to collect flow profile data by the adaptive system, and existing stop bar detection shall be used for actuated control and phase calling. Departure detection shall be used only in unique situations where upstream profiles cannot be collected due to ROW ownership (i.e. mall or retail business). While not desirable, in those instances, it shall be allowable for that departure detection to provide information to the adaptive algorithm for adjustment of green splits of those phases on the following cycle.

All adaptive detection shall be 'dual reporting' detection, meaning that the detection shall be connected and configured in the Controller and reporting to the existing TACTICS system as well as the adaptive algorithm. All data from the detector, such as volume, occupancy and speed, shall be able to be logged in the controller and to the TACTICS system.

The acceptable scenarios for the detection for the adaptive system are as described in the System Requirements and as below:

- a.) One detector is required per lane, for data collection and archiving purposes
- b.) Existing detection shall be used when feasible
- c.) Video detection shall only be allowed at the stop bar. It is desired to use the existing video detection to keep costs down.
- d.) Detectors shall be situated at the upstream end of a link, or as shown in the plans.
- e.) Links with significant turning volumes should have a separate turn lane upstream detector. If during final design it is determined that the detection that is shown on the plans is not adequate for the volumes of a left turn or side street movement, the ASCT Vendor shall notify the City as such, along with recommended changes to the placement of the detection.
Detector information is collected in the controller, and sent to the central computer or adaptive processor once per second. Detectors are integrated into the adaptive algorithm directly. The ASCT Vendor shall describe the detection make, model and firmware versions that are acceptable to the algorithm for direct connection

Data Collection Module. Certain validations are required for the ASCT. The adaptive system shall include a module that allows the archiving of all traffic data collected by the system detectors, making it available for off-line analysis and validation of the ASCT. The system can also act as a reference against which to compare current traffic conditions, as well as before/after data for when Adaptive is on or off.

The data shall be derived from a special format of output from the adaptive system, which produces compressed data every minute. The data displayed by the module shall be either collected directly from the adaptive system in real-time, or calculated from stored information.

It is desired that the following data shall be collected directly from the adaptive software messages and stored in the module's database. Should 3rd party software or central software be needed for collection of this data, the ASCT Vendor shall describe what are acceptable means to collect the following data and get approval from the City:

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- a.) Flow - The flow in vehicles per hour arriving at a stop line, as modeled by the adaptive system.
- b.) Delay - The total delay in vehicle hours per hour, which is equivalent to the average queue length in vehicles on a link, as modeled by the adaptive system
- c.) Congestion - The percentage of four second intervals during a green period when a detector is occupied by traffic. This value shall be independent of the adaptive system model.
- d.) Detector Flow - The flow recorded as vehicles cross a system detector.
- e.) Detector Occupancy - A value for the occupancy of a detector calculated by taking the total number of quarter-seconds for which the detector is operating as a percentage of the whole period.

Computer Hardware. The ASCT Vendor shall provide all necessary hardware, servers, and peripherals including power and communications cables (Cat 6 cables) necessary for a full and complete adaptive software system. Combining virtual servers for the TACTICS software and Full Adaptive Control software shall be approved by the City Engineering Department. It shall be the ASCT Vendor's responsibility for providing the operating system, SQL Server database, and the appropriate server hardware and cable lengths, necessary for the Full Traffic Adaptive Signal Control Software.

PC workstations shall not be provided by the ASCT Vendor, however, the ASCT Vendor shall be responsible for full testing and integration of the ASCT software interface on the Traffic Engineering Department provided workstations. The ASCT Vendor shall notify the Traffic Engineering Department of any necessary hardware or operating system requirements for the PC workstations prior to integration of the system.

Integration Requirements.

General Requirements. The ASCT Vendor shall be responsible for all configurations, integration, testing, and operational training of the Full Traffic Adaptive Signal Control Software and any Central system components related to the system. Onsite installation and integration shall occur both in the field and at the traffic engineering building at the City. The installation requirements include onsite support for all deployment phases of the adaptive software. The ASCT Vendor will be required to submit an installation and integration plan prior to deploying the adaptive software. The plan shall outline the steps for the cut-over, including any necessary system or communications down time, intersection down time, system turn-on, and back up plans should the adaptive software encounter issues with communications to the existing field devices. All configurations in the database and application software shall be completed and tested prior to system cut-over.

Integration & Configuration. The ASCT Vendor shall be responsible for the full onsite installation and configuration of the adaptive software and associated equipment, at the traffic engineering building, as well as in the field at each signal cabinet. This integration includes both pre-installation as well as onsite work, including inputting the necessary timing parameters and detection configuration into each signal controller, as necessary, for a full and complete adaptive operation.

Although the system can be set up in a bench area and tested prior to delivery, it is the ASCT Vendor's responsibility to be onsite at all times during the installation, configuration, and turn-on of the system. Remote access to the system for the installation, configuration, and turn-on shall not be allowed; however, remote tweaking of non-critical components of the adaptive system shall be acceptable. The City or their designated representative shall determine which components

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require the ASCT Vendor to be onsite and which can be worked on remotely.

The ASCT Vendor shall observe traffic operation and conditions both before and after adaptive turn on and make the appropriate adjustments. The ASCT Vendor shall make the necessary adjustments at all periods of the day, including AM Peak, AM Off-peak, PM Off-peak, and PM peak. The ASCT Vendor shall also be responsible for the weekend operation of the adaptive system after turn-on. This will require onsite weekend work. Since portions of the corridor produce high weekend traffic variations, due to businesses in the area, it is required that technicians are onsite during weekend turn-on to make the appropriate adjustments for weekend traffic.

Installation and the subsequent adjustments of adaptive parameters shall be during fully loaded, daily traffic conditions of the corridor. This period is defined as during the K-12 school year, dry weather conditions, and typical work week conditions. Weekend conditions for onsite adaptive parameter adjustments shall be during a typical, non-holiday weekend with dry weather conditions.

Testing. The ASCT Vendor shall be responsible for verification testing of all components, servers and software system requirements for each system requirement outlined in the system requirements matrix. The ASCT Vendor shall submit a verification testing document, or Acceptance Test Plan (ATP), to the City, prior to configuration and implementation of the system. This testing document shall be reviewed and approved by the City or their designated representative prior to system installation. The ATP shall address every system requirement and label the method in which the system requirement will be tested.

The ATP shall state each system requirement and expected outcome of the test, so it can be verified that the software is working as specified. The ATP is meant to exercise the entire adaptive system, including any provided hardware necessary for operation.

The outcome of each verification shall be recorded as one of the following:

- Complied
- Partially complied, with a statement of acceptable supplementary testing
- Failed, verification procedure to be repeated

The ATP shall use one or more of the following methods. Each ATP testing procedure shall clearly state which method(s) are to be used on the testing document.

- **Demonstration:** *used for a requirement that the system can demonstrate without external test equipment.*
- **Test:** *used for a requirement that requires some external piece of test equipment (such as logic analyzer and volt meter). The test and required equipment shall be clearly documented in the procedure.*
- **Analyze:** *used for a requirement that is met indirectly through a logical conclusion or mathematical analysis of a result. For example, algorithms for calculation of headway; setting of "late" flag; generation of priority request*
- **Inspection** *is used for verification through a visual comparison. For example, quality of welding may be done through a visual comparison against an in-house standard.*

The ATP shall be conducted in the presence of the City Traffic Engineer or their designated

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representative in the City's traffic engineering building. Each test requirement shall be acknowledged by signature of the Traffic Engineer as 'pass', 'fail' or 'incomplete'. All failed or incomplete tests shall either be retested, or submitted in a written summary explaining why the testing requirement could not be completed as written in the ATP. Upon receipt of the final ATP and explanation summary, the City shall determine if the ATP was satisfactorily completed, or if some of the requirements will need to be retested prior to system acceptance.

Full documentation and print of the final ATP will be prepared by the ASCT Vendor to the satisfaction of the ASCT Consultant and shall include all system requirements and additional requirements stated herein. A record shall be maintained of each verification in the ATP, the outcome of the verification recorded, and the record signed by the verifier and City or engineering representative.

Upon a successful and approved acceptance testing, the project shall be deemed 'Conditionally Approved', and a 30-day burn-in period shall start.

Burn-In. The 30 day burn-in period applies to all software provided under this ASCT Contract. Once tested and accepted, the City shall take over operation of the software system and run it for 30 days. Should any system requirement not work to the City's satisfaction during this burn-in period, it is the ASCT Vendor's responsibility to correct or address the software to bring it into compliance with the software specification and ASCT system requirements. This burn-in period shall start once the system is 100% in place and all parts have passed conditional acceptance testing. Once successfully passed, the maintenance period shall start.

Training. The ASCT Vendor shall conduct onsite training sessions for the Full Traffic Adaptive Signal Control Software. For each training session type, the ASCT Vendor shall submit a syllabus to the ASCT Consultant for approval, prior to scheduling the meeting. These training sessions shall consist of:

- a.) Manager's Operation and Configuration Training – This training shall review the PC client-based operation and configuration parameters of the Full Adaptive Signal Control Software. All Graphic User Interfaces (GUI's) of the client interface shall be reviewed in this training, with special attention to the adaptive configuration and parameters (timing data) and database modifications. The trainer shall discuss all parameters in the timing and configuration data sheets/GUI's, which data is acceptable to change, and by what increment it should be changed. At the end of this training, operations staff shall be able to understand the different operating modes of the adaptive software, how to turn the modes on/off, and which operational parameters can be adjusted, as well as the increments they should be adjusted for appropriate operational changes to the system and database. The detailed operation of the software shall also be shared with the managers, with specific attention to detailed reporting features, and troubleshooting techniques. The intended audience for this training is traffic signal engineers and advanced (high level) system operators/technicians. This training shall adhere to the System Requirements length of training, and as approved by the City.
- b.) Operators Monitoring, Reporting and Troubleshooting Training – This training shall review the PC/Server/Controller relationship, the general GUI and screen outputs of the system, general troubleshooting and reporting techniques, and what information should be logged and monitored on a day to day basis. Reporting and monitoring features of the adaptive software shall be reviewed with "hands-on" training by the attendees. Each attendee shall be able to pull reports from the system and be able to monitor necessary functioning of the adaptive

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software, and identify errors or issues for the Manager or Timing Engineer to address. Training shall provide guidance related to, and examples of, appropriate record keeping for the ASCT system operation. Forms and Reporting features should be specifically discussed, as well as frequency of reporting. If there are problems with the adaptive system, the attendees shall know general troubleshooting tips, including how to start, stop and restart the system and the server/client interface. This training shall adhere to the System Requirements, and as approved by the City.

- c.) Theory of Adaptive Operation Training – This training shall review the specific operational theory behind the adaptive software and algorithms principles. The training shall be specific as to the inputs needed for the algorithm to function, including detection data collected, controller data used, etc. and the resulting output values used for the adaptive function. The intended audience for the training is traffic signal engineers and signal engineering technicians that have been through either the Operators or Managers training. This training shall adhere to the System Requirements length of training and as approved by the City. This training can be combined with one of the two trainings above.

The ASCT Vendor shall provide all training materials, including manuals, ‘quick tips’ sheets, and written instructions for the attendees for each training module. These materials shall be in a neat, bound and tabbed format for easy and quick identification of the necessary sections. All training courses shall be coordinated with the City prior to scheduling. Each course or session shall be on successive days, but shall not run concurrent to each other. Each type of training shall be scheduled with the appropriate personnel, as determined by the City. Training shall be Monday through Thursday only, and shall not be scheduled on a day that is recognized by the City as a holiday.

Support. After the successful and accepted 30-day burn-in period, the ASCT Vendor shall provide a support period on the Full Traffic Adaptive Signal Control Software from the date of final acceptance and successful burn-in of the Acceptance Test Plan (ATP), and as outlined in the system requirements. The support shall include two (2) one-week long onsite visits, to be used by the Traffic Engineering Department at any time during a warranty year, as well as unlimited phone, email and remote support of the adaptive software and related components. Telephone and email support shall be available 24 hours per day, seven days a week. Remote Access Support shall be available during normal business hours, Monday through Friday from 8 am to 5 pm Central Time (CT), excluding recognized City holidays.

Method of Measurement.

Full Traffic Adaptive Signal Control Software. The full Adaptive Traffic Signal Control Software shall be measured on a per intersection basis (each). The per intersection cost shall include all man hours associated with the setup, pre-configuration of adaptive parameters, onsite controller upgrades, onsite deployment, fine tuning, and testing of the intersection adaptive signal control operational parameters. The cost of each intersection shall also include adding it to the central database (if necessary). This work includes central system intersection graphics, full communication configuration, detector setup and monitoring capability of the intersection. The configuration and implementation of each intersection of adaptive control shall be measured by each intersection fully completed, deployed and tested. Each adaptive intersection shall not be measured as complete until each intersection on an adaptive section, or corridor, has been completed and with the adaptive software functioning for the corridor or section-wide adaptive signal system. The measurement will be for the quantity of intersections indicated in the plans.

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The City reserves the right to add or delete intersections. The additional quantity of intersections that may be added shall not exceed ten (10) additional intersections.

ASCT integration shall be measured on a lump sum basis. This pay item shall be for the installation and configuration of the central components of the ASCT, and cover items such as the:

- client workstation software,
- central servers,
- SQL Server database and associated licensing for SQL Server, and
- all other operating systems and software needed for the ASCT to function as specified for a full, complete central operating system for adaptive signal control.

This pay item shall include assistance from the ASCT Vendor to provide guidance and acceptance on the final placement of the vehicle detection design plans being developed by the existing ASCT Consultant. This pay item also includes all training activities outlined in the requirements matrix and in this special provision, as well as the testing components of the central servers and software, as required.

The ASCT Vendor shall submit a schedule of software implementation that includes onsite installation and integration tasks. The schedule shall show significant software deployment timelines and milestones, including delivery, turn-on, testing, and training for a full and complete system deployment. The schedule shall show a date for Conditional Acceptance, which shall be the date at which all intersections have been configured, integrated and running full adaptive signal control at all intersections to the approval of the City. Conditional Acceptance testing shall not commence until all adjustments to the adaptive operation have been made by the ASCT Vendor to the satisfaction of the City. The schedule shall be reviewed and approved by the City or their Engineering representative. The schedule shall estimate and incorporate the vehicle detection installation, and all ASCT Vendor activities that will be needed and coordinated during that detection installation.

Basis of Payment.

The pricing for each pay item, as described herein and only provided for reference, shall be negotiated with the City after selection of the ASCT Vendor has been determined. Pricing of these pay items shall not be required nor submitted with the proposal documents provided by the ASCT vendor, and is not a determinant in selection of the ASCT system. The ASCT Vendor will be required to negotiate costs of these items with the City. An estimate of these pay items will be required after selection has been made in order to begin negotiations of these costs. Should price negotiations fail, the City reserves the right to award the contract to the next ranked ASCT Vendor, or discontinue the contract altogether.

Adaptive signal control intersection software, measured as prescribed above, will be paid for at the contract unit price bid per each intersection, and for full deployment and configuration of all central system software, modules and necessary companion hardware and software for the intersection; which price shall be full compensation for integration, configuration, testing and training, and all other materials, equipment, labor, tools and incidentals necessary to complete the work in accordance with the contract documents.

ASCT integration, measured as prescribed above, will be paid for at the contract unit price bid per lump sum, and for full deployment and configuration of all central system software, modules and necessary companion hardware and software for the central control and operation; which price

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shall be full compensation for integration, configuration, testing and training, and all other materials, equipment, labor, tools and incidentals necessary to complete the work in accordance with the contract documents.

Payment will be made under:

ASCT Integration - lump sum

Intersection Adaptive Traffic Signal Control Software - per each

Awarding.

Each technical proposal shall be assigned a number. The proposal shall be submitted to each member of the Selection Committee (Committee) with only the assigned number to identify the bidder (it is intended that the Committee members not know the identity of the bidder during the review and scoring of the technical and schedule aspects of the packages). The Committee members shall review the compliance documentation and technical data submitted by each company. Prior to issuing their ratings, the Committee members may consult with each other and with the Consultant to assist with the procurement process. The Committee members shall then independently rate each company's proposal based upon criteria established by the Committee for the project.

The criteria of selection is as follows:

- | | |
|------------------------------|--------------------------|
| 1. Qualification Criteria | Maximum Score: 40 |
| 2. Design and Technical | Maximum Score: 40 |
| 3. Project Schedule Criteria | Maximum Score: 20 |
| | Total Maximum Score: 100 |

The Committee may adjust and refine all of the above criteria and the points assigned to each based on the project type and LPA experience. The Committee may reduce the weight of firm qualification criteria or omit it entirely if it is sufficiently determinative in selection of the most qualified interested bidders. The Committee may omit schedule as criteria when it is a fixed requirement in the RFP.

The Committee members shall, without conferring with one another, submit their criteria scores for each interested bidder to the Committee Chair. The Committee Chair will average the scores of the Committee members for each interested bidder to arrive at a single score.

Once the Technical Qualifications scores are compiled, the City's Procurement Official, shall set a date for negotiating price proposals, and shall notify the highest technical scored company for an invitation to enter into negotiations. The notification shall include the date, time, and place of the price negotiation. Should negotiation fail, the City has the option to rebid the project, or conversely enter into price negotiations with the next highest rated vendor by Technical Score.

The City reserves the right to reject all proposals. The City's Procurement Official will notify all proposers in writing of the City's intent to enter into a contract with the highest rated technical score company or the rejection of all proposals. The City shall enter into a contract

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with the company selected as provided above. At the time of the award, the City may negotiate minor changes for the purpose of clarifying the design criteria and work to be done, provided that the negotiated changes do not affect the ranking of the proposals based on their adjusted score.

ASCT System Requirements Matrix

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
1	1 Network Characteristics			
1.0-1	The ASCT shall control a minimum of 99 signals concurrently			
1.0-2	The ASCT shall support groups of signals.			
1.0-2.0-2	The ASCT shall control a minimum of 16 groups of signals per corridor.			
1.0-2.0-3	The size of a group shall range from 1 to 20 signals.			
1.0-2.0-4	Each group shall operate independently			
1.0-2.0-1	The boundaries surrounding signal controllers that operate in a coordinated fashion shall be altered by the ASCT system according to configured parameters.			
1.0-2.0-5.0-1	The boundaries surrounding signal controllers that operate in a coordinated fashion shall be altered by the system according to a time of day schedule. (For example: this may be achieved by assigning signals to different groups or by combining groups.)			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
1.0-2.0-5.0-2	The boundaries surrounding signal controllers that operate in a coordinated fashion shall be altered by the system according to traffic conditions. (For example: this may be achieved by assigning signals to different groups or by combining groups.)			
1.0-2.0-5	The boundaries surrounding signal controllers that operate in a coordinated fashion shall be altered by the ASCT system according to configured parameters			
1.0-2.0-5.0-3	The boundaries surrounding signal controllers that operate in a coordinated fashion shall be altered by the system when commanded by the user.			
2	2 Type of Operation			
2.1	2.1 General			
2.1.1	2.1.1 Mode of Operation			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.1.0-1	The ASCT shall operate non-adaptively during the presence of a defined condition. Those defined conditions shall be stated by the ASCT Vendor during the request for proposal and shall at a minimum conform to these requirements			
2.1.1.0-2	The ASCT shall operate non-adaptively when adaptive control equipment/server fails.			
2.1.1.0-2.0-1	The ASCT shall operate non-adaptively when a user-specified detector fails.			
2.1.1.0-2.0-2	The ASCT shall operate non-adaptively when the number of failed detectors connected to a signal controller exceeds a user-defined value.			
2.1.1.0-2.0-3	The ASCT shall operate non-adaptively when the number of failed detectors in a group exceeds a user-defined value.			
2.1.1.0-2.0-4	The ASCT shall operate non-adaptively when a user-defined communications link fails.			
2.1.1.0-3	The ASCT shall operate non-adaptively when a user manually commands the ASCT to cease adaptively controlling a group of signals.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.1.0-4	The ASCT shall operate non-adaptively when a user manually commands the ASCT to cease adaptive operation system wide.			
2.1.1.0-5	The ASCT shall operate non-adaptively in accordance with a user-defined time-of-day schedule.			
2.1.1.0-7	The ASCT shall alter the adaptive operation to achieve required objectives in user-specified conditions. (The required objectives are specified in Needs Statement 4.1.0-1. Responding to this requirement demonstrates how the proposed system allows the user to define the conditions at which the objectives shift and their associated requirements are fulfilled.) (The alteration may be made by adjusting parameters or by directly controlling the state of signal controllers.)			
2.1.1.0-7.0-1	When current measured traffic conditions meet user-specified criteria, the ASCT shall alter the state of the signal controllers, maximizing the throughput of the coordinated route.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.1.0-7.0-2	When current measured traffic conditions meet user-specified criteria, the ASCT shall alter the state of signal controllers, preventing queues from exceeding the storage capacity at user-specified locations.			
2.1.1.0-7.0-3	When current measured traffic conditions meet user-specified criteria, the ASCT shall alter the state of signal controllers providing equitable distribution of green times.			
2.1.1.0-7.0-4	When current measured traffic conditions meet user-defined criteria, the ASCT shall alter the state of signal controllers providing two-way progression on a coordinated route.			
2.1.1.0-8	The ASCT shall provide maximum and minimum phase times.			
2.1.1.0-8.0-1	The ASCT shall provide a user-specified maximum value for each phase at each signal controller.			
2.1.1.0-8.0-1.0-1	The ASCT shall not provide/induce a phase length longer than the maximum value.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.1.0-8.0-2	The ASCT shall provide a user-specified minimum value for each phase at each signal controller.			
2.1.1.0-8.0-2.0-1	The ASCT shall not provide/induce a phase length shorter than the minimum value.			
2.1.1.0-9	The ASCT shall detect repeated phases that do not serve all waiting vehicles. (These phase failures may be inferred, such as by detecting repeated max-out.)			
2.1.1.0-9.0-1	The ASCT shall alter operations, to minimize repeated phase failures.			
2.1.1.0-10	The ASCT shall determine the order of phases at a user-specified intersection. (The calculation will be based on the optimization function.)			
2.1.1.0-11	The ASCT shall provide coordination along a route.			
2.1.1.0-11.0-1	The ASCT shall coordinate along a user-defined route.			
2.1.1.0-11.0-2	The ASCT shall determine the coordinated route based on traffic conditions.			
2.1.1.0-11.0-3	The ASCT shall determine the coordinated route based on a user-defined schedule.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.1.0-11.0-4	The ASCT shall store 10 user-defined coordination routes.			
2.1.1.0-11.0-4.0-1	The ASCT shall implement a stored coordinated route by operator command.			
2.1.1.0-11.0-4.0-2	The ASCT shall implement a stored coordinated route based on traffic conditions.			
2.1.1.0-11.0-4.0-3	The ASCT shall implement a stored coordinated route based on a user-defined schedule.			
2.1.1.0-12	The ASCT shall not prevent the use of phase timings in the local controller set by agency policy.			
2.1.2	2.1.2 Allowable Phases			
2.1.2.0-1	The ASCT shall not prevent protected/permissive left turn phase operation.			
2.1.2.0-2	The ASCT shall not prevent the protected left turn phase to lead or lag the opposing through phase based upon user-specified conditions.			
2.1.2.0-3	The ASCT shall prevent skipping a user-specified phase when the user-specified phase sequence is operating.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.2.0-4	The ASCT shall prevent skipping a user-specified phase based on the state of a user-specified external input.			
2.1.2.0-5	The ASCT shall prevent skipping a user-specified phase according to a time of day schedule.			
2.1.2.0-6	The ASCT shall omit a user-specified phase when the cycle length is below a user-specified value.			
2.1.2.0-7	The ASCT shall omit a user-specified phase based on measured traffic conditions.			
2.1.2.0-9	The ASCT shall omit a user-specified phase according to a time of day schedule.			
2.1.2.0-10	<p>The ASCT shall assign unused time from a preceding phase that terminates early to a user-specified phase as follows:</p> <ul style="list-style-type: none"> • next phase; • next coordinated phase; • user-specified phase. 			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.2.0-11	The ASCT shall assign unused time from a preceding phase that is skipped to a user-specified phase as follows: <ul style="list-style-type: none"> • previous phase; • next phase; • next coordinated phase; • user-specified phase. 			
2.1.2.0-12	The ASCT shall not alter the order of phases at a user-specified intersection.			
2.1.3	2.1.3 Oversaturation			
2.1.3.0-1	The ASCT shall detect the presence of queues at pre-configured locations.			
2.1.3.0-2	When queues are detected at user-specified locations, the ASCT shall execute user-specified timing plan/operational modes, specifically during potential spill out onto freeway and queuing at closely spaced signals.			
2.1.3.0-3	When queues are detected at user-specified locations, the ASCT shall execute user-specified adaptive operation strategy.			
2.1.3.0-4	When queues are detected at user-specified locations, the ASCT shall omit a user-specified phase at a user-specified signal controller.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.1.3.0-5	The ASCT shall meter traffic into user-specified bottlenecks by storing queues at user-specified locations.			
2.1.3.0-6	The ASCT shall store queues at user-specified locations.			
2.1.3.0-7	The ASCT shall maintain capacity flow through user-specified bottlenecks.			
2.1.3.0-8	When queues are detected at user-specified locations, the ASCT shall limit the cycle length of the group to a user-specified value.			
2.2	2.2 Sequence-based Adaptive Coordination			
2.2.0-2	(Sequence-based only) The ASCT shall select cycle length based on a time of day schedule.			
2.2.0-3	(Sequence-based only) The ASCT shall calculate phase lengths for all phases at each signal controller to suit the current coordination strategy.			
2.2.0-4	(Sequence-based only) The ASCT shall calculate offsets to suit the current coordination strategy for the user-specified reference point for each signal controller along a coordinated route within a group.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.2.0-4.0-1	(Sequence-based only) The ASCT shall apply offsets for the user-specified reference point of each signal controller along a coordinated route.			
2.2.0-5.0-2	(Sequence-based only) The ASCT shall limit cycle lengths to a user-specified range that is acceptable to the City.			
2.2.0-5.0-3	(Sequence-based only) The ASCT shall calculate optimum cycle length according to the user-specified coordination strategy.			
2.2.0-5.0-4	(Sequence-based only) The ASCT shall limit changes in cycle length to not exceed +/- 16 seconds per cycle			
2.2.0-5.0-4.0-1	(Sequence-based only) The ASCT shall increase the limit for the following 3 cycles based on a change in conditions.			
2.2.0-5.0-4.0-1.0-1	(Sequence-based only) The change in conditions shall be defined by 3 successive adaptive increases in cycle length at the maximum rate.			
2.2.0-5.0-4.0-1.0-2	(Sequence-based only) The increased limit shall be user-defined.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.2.0-5.0-5	(Sequence-based only) The ASCT shall adjust offsets to minimize the chance of stopping vehicles approaching a signal that have been served by a user-specified phase at an upstream signal.			
2.3	2.3 Non-sequence-based adaptive coordination			
2.3.0-2	(Non-sequence-based only) Data shall be passed between controllers by peer to peer exchange. The ASCT shall calculate the appropriate state of the signal to suit the current coordination strategy at the critical signal controller. (A critical signal controller is defined by the user.)			
2.3.0-3	(Non-sequence-based only) At non-critical intersections within a group, the ASCT shall calculate the time at which a user-specified phase shall be green, relative to a reference point at the critical intersection, to suit the current coordination strategy.			
2.3.0-4	(Non-sequence-based only) When demand is present, the ASCT shall implement a user-specified maximum time between successive displays of each phase at each intersection.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.4	2.4 Single intersection adaptive operation			
2.4.0-2	The ASCT shall calculate a cycle length of a single intersection, based on current measured traffic conditions. (The calculation is based on the optimization objectives.)			
2.4.0-3.0-1	The ASCT shall limit the difference between the length of a given phase and the length of the same phase during its next service to a user-specified value.			
2.4.0-3.0-2	When queues are detected at user-specified locations, the ASCT shall execute user-specified timing plan/operational mode.			
2.4.0-3	The ASCT shall calculate optimum phase lengths, based on current measured traffic conditions. (The calculation is based on the optimization objectives.)			
2.5	2.5 Phase-based adaptive coordination			
2.5.0-2	(Phase-based only) The ASCT shall alter the state of the signal controller for all phases at the user-specified intersection.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.5.0-3	(Phase-based only) The ASCT shall calculate the time at which a user-specified phase shall be green at an intersection.			
2.5.0-4	(Phase-based only) When demand is present, the ASCT shall implement a user-specified maximum time between successive displays of each phase at each intersection.			
2.5.0-5	(Phase-based only) The ASCT shall alter the operation of the non-critical intersections to minimize stopping of traffic arriving at user-specified phases at the user-specified critical intersection.			
2.5.0-6	(Phase-based only) The ASCT shall alter the operation of the non-critical intersections to minimize stopping of traffic arriving at user-specified phases at the user-specified critical intersection.			
2.5.0-7	(Phase-based only) The ASCT shall adjust the state of the signal controller so that vehicles approaching a signal that have been served during a user-specified phase at an upstream signal do not stop.			
2.6	2.6 Responsiveness			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
2.6.0-1	The ASCT shall limit the change in consecutive cycle lengths to be less than a user-specified value, and is based on the rapidness of increasing/decreasing traffic data.			
2.6.0-2	The ASCT shall limit the change in phase times between consecutive cycles to be less than +/- 5 seconds. (This does not apply to early gap-out or actuated phase skipping.)			
2.6.0-3	The ASCT shall limit the changes in the direction of primary coordination to a user-specified frequency.			
2.6.0-4	When a large change in traffic demand is detected, the ASCT shall respond and make large changes in cycle/offsets/splits in less than 5 minutes			
2.6.0-5	The ASCT shall select cycle length from a list of user-defined cycle lengths.			
3	3 External/Internal Interfaces			
3.0-1.0-1	The ASCT shall send operational status data to the city's TACTICS system			
3.0-1.0-3	The ASCT shall not prevent TACTICS from monitoring signal status			
4	4 Crossing Arterials and Boundaries			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
4.0-1	The ASCT shall conform its operation to an external system's operation in that commands from TACTICS shall be allowed by the ASCT.			
4.0-1.0-1	The ASCT shall alter its operation to minimize interruption of traffic entering the system. (This may be achieved via detection, with no direct connection to the other system.)			
4.0-1.0-2	The ASCT shall be able to operate a fixed cycle length to match the cycle length of an adjacent system.			
4.0-1.0-4	The ASCT shall support adaptive coordination on crossing routes.			
5	5 Access and Security			
5.0-1	The ASCT shall be implemented with a security policy that addresses the following selected elements:			
5.0-1.0-1	<ul style="list-style-type: none"> • Local access to the ASCT. 			
5.0-1.0-2	<ul style="list-style-type: none"> • Remote access to the ASCT. 			
5.0-1.0-3	<ul style="list-style-type: none"> • System monitoring. 			
5.0-1.0-4	<ul style="list-style-type: none"> • System manual override. 			
5.0-1.0-5	<ul style="list-style-type: none"> • Development 			
5.0-1.0-6	<ul style="list-style-type: none"> • Operations 			
5.0-1.0-7	<ul style="list-style-type: none"> • User login 			
5.0-1.0-8	<ul style="list-style-type: none"> • User password 			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
5.0-1.0-9	• Administration of the system			
5.0-1.0-10	• Signal controller group access			
5.0-1.0-11	• Access to classes of equipment			
5.0-1.0-12	• Access to equipment by jurisdiction			
5.0-1.0-13	• Output activation			
5.0-1.0-14	• System parameters			
5.0-1.0-15	• Report generation			
5.0-1.0-16	• Configuration			
5.0-1.0-17	• Security alerts			
5.0-1.0-18	• Security logging			
5.0-1.0-19	• Security reporting			
5.0-1.0-20	• Database			
5.0-1.0-21	• Signal controller			
5.0-2	The ASCT shall provide monitoring and control access at the following locations:			
5.0-2.0-1	• Agency Transportation Management Center (TMC)			
5.0-2.0-3	• Agency LAN or WAN			
5.0-2.0-5	• Local controller cabinets			
5.0-2.0-7	• Remote locations via VPN			
5.0-3	The ASCT shall comply with the City's IT security policy and as outlined in this document and the Concept of Operations.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
5.0-4	The ASCT shall not prevent access to the local signal controller database, monitoring or reporting functions by any installed signal management system.			
6	6 Data Log			
6.0-1	The ASCT shall log the following events:			
6.0-1.0-1	Time-stamped vehicle phase calls			
6.0-1.0-2	Time-stamped pedestrian phase calls			
6.0-1.0-3	Time-stamped emergency vehicle preemption calls			
6.0-1.0-4	Time-stamped transit priority calls			
6.0-1.0-5	Time-stamped railroad preemption calls			
6.0-1.0-6	Time-stamped start and end of each phase			
6.0-1.0-7	Time-stamped controller interval changes			
6.0-1.0-8	Time-stamped start and end of each transition to a new timing plan			
6.0-2	The ASCT shall export its systems log in the following formats: <ul style="list-style-type: none"> • MS Excel • Text • CSV • Open source SQL database 			
6.0-3	The ASCT shall store the event log for a minimum of 60 days			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
6.0-4	The ASCT shall store results of all signal timing parameter calculations for a minimum of 30 days.			
6.0-5	The ASCT shall store the following measured data in the form used as input to the adaptive algorithm for a minimum of 30 days: <ul style="list-style-type: none"> • volume • occupancy • queue length • phase utilization • arrivals in green • green band efficiency 			
6.0-6	The ASCT system shall archive all data automatically after a user-specified period not less than 60 days.			
6.0-7	The ASCT shall provide data storage for a system size of 99 signal controllers. The data to be stored shall include the following: <ul style="list-style-type: none"> • Controller state data • Reports • Log data • Security data • ASCT parameters • Detector status data 			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
6.0-8	The ASCT shall calculate and report relative data quality including: <ul style="list-style-type: none"> • The extent data is affected by detector faults • Other applicable items 			
6.0-9	The ASCT shall report comparisons of logged data when requested by the user: <ul style="list-style-type: none"> • Day to day, • Hour to hour • Hour of day to hour of day • Hour of week to hour of week • Day of week to day of week • Day of year to day of year 			
6.0-10	The ASCT shall store data logs in a standard database export to be readable in MS Excel (CSV or XLS file)			
6.0-11	The ASCT shall report stored data in a form suitable to provide explanations of system behavior to public and politicians and to troubleshoot the system, such as graphs, HTML, etc.			
7	7 Advanced Controller Operation			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
7.0-1	When specified by the user, the ASCT shall serve a vehicle phase more than once for each time the coordinated phase is served.			
7.0-2	The ASCT shall provide a minimum of 4 phase overlaps. It is preferred that overlaps do not affect ASCT operation and are handled in the controller.			
7.0-3	The ASCT shall accommodate a minimum of 16 phases at each signal			
7.0-4	The ASCT shall accommodate a minimum of 4 rings at each signal.			
7.0-5	The ASCT shall accommodate a minimum of 4 phases per ring			
7.0-6.0-1	Each permissible phase sequence shall be user-assignable to any signal timing plan.			
7.0-6.0-2	Each permissible phase sequence shall be executable by a time of day schedule.			
7.0-6.0-3	Each permissible phase sequence shall be executable based on measured traffic conditions			
7.0-7	The ASCT shall not prevent a phase/overlap output by time-of-day.			
7.0-8	The ASCT shall not prevent a phase/overlap output based on an external input.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
7.0-9	The ASCT shall not prevent the following phases to be designated as coordinated phases. (Phases 1 – 8)			
7.0-10	The ASCT shall have the option for a coordinated phase to be terminated early based on a user-definable point in the phase or cycle. (User select phase or cycle.)			
7.0-11	The ASCT shall not prevent the controller from displaying flashing yellow arrow left turn or right turn.			
7.0-12	The ASCT shall not prevent the local signal controller from performing actuated phase control using 4 extension/passage timers as assigned to user-specified vehicle detector input channels in the local controller.			
7.0-12.0-1	The ASCT shall operate adaptively using existing detector channels available within the controller.			
7.0-13	When adaptive operation is used in conjunction with normal coordination, the ASCT shall not prevent a controller serving a cycle length different from the cycles used at adjacent intersections.			
8	8 Pedestrians			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
8.0-1	When a pedestrian phase is called, the ASCT shall execute/honor leading pedestrian walk phases up to 5 seconds before the vehicle green of the related vehicle phase.			
8.0-2	When a pedestrian phase is called, the ASCT shall accommodate pedestrian crossing times during adaptive operations.			
8.0-3	When a pedestrian phase is called, the ASCT shall accommodate pedestrian crossing times then resume adaptive operation. Preference shall be given to ASCT that can accommodate pedestrian crossing times within/during adaptive operations.			
8.0-5	The ASCT shall execute pedestrian recall on user-defined phases in accordance with a time of day schedule.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
8.0-6	<p>The ASCT shall begin a non-coordinated phase later than its normal starting point within the cycle when all of the following conditions exist:</p> <ul style="list-style-type: none"> • The user enables this feature • Sufficient time in the cycle remains to serve the minimum green times for the phase and the subsequent non-coordinated phases before the beginning of the coordinated phase • The phase is called after its normal start time • The associated pedestrian phase is not called 			
8.0-7	<p>When specified by the user, the ASCT shall execute pedestrian recall on pedestrian phase adjacent to coordinated phases.</p>			
8.0-8	<p>When the pedestrian phases are on recall, the ASCT shall accommodate pedestrian timing during adaptive operation.</p>			
8.0-9	<p>The ASCT shall not inhibit negative vehicle and pedestrian phase timing.</p>			
9	<p>9 Special Functions</p>			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
9.0-1	The ASCT shall set a specific state for each special function output based on the occupancy on a user-specified detector.			
9.0-2	The ASCT shall set a specific state for each special function output based on the current cycle length.			
9.0-3	The ASCT shall set a specific state for each special function output based on a time-of-day schedule.			
10	10 Detection			
10.0-1	The ASCT shall be compatible with the following detector technologies <ul style="list-style-type: none"> • Detector type A Iteris Video Detection • Detector type B Inductive Loops • Detector type C Microwave Radar • Detector type D Sensys Magnetometers 			
11	11 Railroad and EV Preemption			
11.0-1	The ASCT shall maintain adaptive operation at non-preempted intersections during railroad preemption.			
11.0-2	The ASCT shall maintain adaptive operation at non-preempted intersections during emergency vehicle preemption.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
11.0-3	The ASCT shall maintain adaptive operation at non-preempted intersections during Light Rail Transit preemption.			
11.0-4	The ASCT shall resume adaptive control of signal controllers when preemptions are released. Preference shall be given to ASCT that can accommodate preemption within/during adaptive operations.			
11.0-5	The ASCT shall execute user-specified actions at non-preempted signal controllers during preemption. (E.g., inhibit a phase, activate a sign, display a message on a Dynamic Message Sign)			
11.0-6	The ASCT shall operate normally at non-preempted signal controllers when special functions are engaged by a preemption event. (Examples of such special functions are a phase omit, a phase maximum recall or a fire route.)			
11.0-7	The ASCT shall release user-specified signal controllers to local control when one signal in a group is preempted.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
11.0-8	The ASCT shall not prevent the local signal controller from operating in normally detected limited-service actuated mode during preemption.			
12	12 Transit Priority			
12.0-1	The ASCT shall continue adaptive operations of a group when one of its signal controllers has a transit priority call.			
12.0-2	The ASCT shall advance the start of a user-specified green phase in response to a transit priority call.			
12.0-2.0-1	The advance of start of green phase shall be user-defined.			
12.0-2.0-2	Adaptive operations shall continue during the advance of the start of green phase.			
12.0-3	The ASCT shall delay the end of a green phase, in response to a priority call.			
12.0-3.0-1	The delay of end of green phase shall be user-defined.			
12.0-3.0-2	Adaptive operations shall continue during the delay of the end of green phase.			
12.0-4	The ASCT shall permit at least 2 exclusive transit phases.			
12.0-4.0-1	Adaptive operations shall continue when there is an exclusive transit phase call.			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
12.0-5	The ASCT shall control vehicle phases independently of the following:			
12.0-5.0-1	<ul style="list-style-type: none"> • (Left/Right/Thru) LRT only phases 			
12.0-5.0-2	<ul style="list-style-type: none"> • Bus only phases 			
12.0-6	The ASCT shall list acceptable external bus transit priority systems			
12.0-7	The ASCT shall list acceptable external light rail transit priority systems.			
12.0-8	The ASCT shall accept a transit priority call from: <ul style="list-style-type: none"> • A signal controller/transit vehicle detector as listed by ASCT Vendor; • An external system, listed by ASCT Vendor. 			
13	13 Failure Events and Fallback			
13.1	13.1 Detector Failure			
13.1.0-1	The ASCT shall take user-specified action in the absence of valid detector data:			
13.1.0-1.0-1	<ul style="list-style-type: none"> • The ASCT shall release control to central system control. 			
13.1.0-1.0-2	<ul style="list-style-type: none"> • The ASCT shall release control to local operations to operate under its own time-of-day schedule. 			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
13.1.0-2	The ASCT shall use the following alternate data sources for operations in the absence of the real-time data from a detector:			
13.1.0-2.0-1	<ul style="list-style-type: none"> • Data from a user-specified alternate detector. 			
13.1.0-2.0-2	<ul style="list-style-type: none"> • Stored historical data from the failed detector. 			
13.1.0-2.0-3	<ul style="list-style-type: none"> • The ASCT shall switch to the alternate source in real time without operator intervention. 			
13.1.0-3	In the event of a detector failure, the ASCT shall issue an alarm to user-specified recipients. (This requirement may be fulfilled by sending the alarm to a designated list of recipients by a designated means, or by using an external maintenance management system.)			
13.1.0-4	In the event of a failure, the ASCT shall log details of the failure in a permanent log.			
13.1.0-5	The permanent failure log shall be searchable, archival and exportable.			
13.2	13.2 Communications Failure			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
13.2-1	The ASCT shall execute user-specified actions when communications to one or more signal controllers fails within a group.			
13.2-1.0-1	<ul style="list-style-type: none"> In the event of loss of communication to a user-specified signal controller, the ASCT shall release control of all signal controllers within a user-specified group to local control. 			
13.2-1.0-2	<ul style="list-style-type: none"> The ASCT shall switch to the alternate operation in real time without operator intervention. 			
13.2-2	In the event of communications failure, the ASCT shall issue an alarm to user-specified recipients. (This requirement may be fulfilled by sending the alarm to a designated list of recipients by a designated means, or by using an external maintenance management system.			
13.2-3	The ASCT shall issue an alarm within 2 minutes of detection of a failure.			
13.2-4	In the event of a communications failure, the ASCT shall log details of the failure in a permanent log.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
13.2-5	The permanent failure log shall be searchable, archival and exportable.			
13.3	13.3 Adaptive Processor Failure			
13.3-1	The ASCT shall execute user-specified actions when adaptive control fails:			
13.3-1.0-1	The ASCT shall release control to central system control.			
13.3-1.0-2	The ASCT shall release control to local operations to operate under its own time-of-day schedule.			
13.3-2	In the event of adaptive processor failure, the ASCT shall issue an alarm to user-specified recipients. (This requirement may be fulfilled by sending the alarm to a designated list of recipients by a designated means, or by using an external maintenance management system.)			
13.3-3	The permanent failure log shall be searchable, archival and exportable.			
13.3-4	During adaptive processor failure, the ASCT shall provide all local detector inputs to the local controller.			
14	14 Software			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
14.0-1	<p>The ASCT Vendor's adaptive software shall be fully operational within the following platform:</p> <ul style="list-style-type: none"> • Windows-PC 64 bit Windows 7 • Mac-OS (ASCT Vendor to explain interface) 			
14.0-2	<p>The ASCT shall fully satisfy all requirements when connected with detectors from manufacturer Iteris video, microwave radar, Sensys magnetometers.</p>			
14.0-3	<p>The ASCT shall fully satisfy all requirements when connected with Eagle M50 series controllers.</p>			
14.0-4	<p>The ASCT shall fully satisfy all requirements when connected with the following cabinet types:</p>			
14.0-4.0-1	<ul style="list-style-type: none"> • NEMA TS1 and/or 			
14.0-4.0-2	<ul style="list-style-type: none"> • NEMA TS2 - Type 2 			
14.0-5	<p>The ASCT shall fully satisfy all requirements when connected to an Ethernet over fiber communications system.</p>			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
14.0-6	The ASCT shall fully satisfy all requirements without inhibiting any feature of Siemens TACTICS central system and its controller communications.			
15	15 Training			
15.0-1	<i>The ASCT Vendor shall provide the following training.</i>			
15.0-1.0-1	The vendor shall provide training on the operations of the adaptive system			
15.0-1.0-2	The vendor shall provide training on the troubleshooting the system			
15.0-1.0-3	The vendor shall provide training on the preventive maintenance and repair of equipment			
15.0-1.0-4	The vendor shall provide training on the system configuration			
15.0-1.0-5	The vendor shall provide training on the administration of the system			
15.0-1.0-6	The vendor shall provide training on the system calibration			
15.0-1.0-7	The ASCT Vendor's training delivery shall include: printed course materials and references, electronic copies of presentations.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
15.0-1.0-8	The ASCT Vendor's training shall be delivered at the City of Conway Public Works building.			
15.0-1.0-9	The ASCT Vendor shall provide a minimum of 40 hours training to a minimum of 5 staff.			
15.0-1.0-10	The ASCT Vendor shall provide a minimum of 2 training sessions over 3 months. These training sessions include an initial training and after 3 months ASCT usage training tailored to further proficiency of operations staff.			
16	16 Maintenance, Support and Warranty			
16.0-1	After the first 2 years of maintenance included in the bid, the Maintenance Vendor shall provide maintenance according to a separate maintenance contract with the City. That contract should identify repairs necessary to preserve these requirements, the responsiveness in effecting those repairs, and all performance measurements on the maintenance provider while performing the repairs.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
16.0-2	The ASCT Vendor shall provide routine updates to the software and software environment necessary to fulfill these system requirements for a period of 2 years following final acceptance.			
16.0-3	The ASCT Vendor shall warrant the system to be free of defects in materials and workmanship for a period of 2 years following final acceptance. Warranty is defined as correcting defects in materials and workmanship (subject to other language included in the purchase documents). Defect is defined as any circumstance in which the material does not perform according to its specification.			
16.0-4	All equipment and other elements of the ASCT shall be located and installed in a fashion that will permit City staff to access it for maintenance and support activities in the field, at the TMC and at other locations within the City using standard equipment available to the signal technicians.			
17	17 Schedule			

Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
17.0-1	The ASCT shall set the state of external input/output according to a time-of-day schedule.			
17.0-2	The ASCT output states shall be set according to a time-of-day schedule			
18	18 Performance Measurement, Monitoring and Reporting			
18.0-1	The ASCT shall report measures of current traffic conditions on which it bases signal state alterations.			
18.0-2	The ASCT shall report all intermediate calculated values that are affected by calibration parameters.			
18.0-3	The ASCT shall maintain a log of all signal state alterations directed by the ASCT.			
18.0-3.0-1	The ASCT log shall include all events directed by the external inputs.			
18.0-3.0-2	The ASCT log shall include all external output state changes.			
18.0-3.0-3	The ASCT log shall include all actual parameter values that are subject to user-specified values.			
18.0-3.0-4	The ASCT shall maintain the records in this ASCT log for 60 days.			

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Requirements Reference Number	System Requirements	Comply	ASCT Vendor Response	Verification Method
18.0-3.0-5	The ASCT shall archive the ASCT log in the following manner: readable in an MS Excel format (CSV, XLS, etc.)			

RFP PROCESS INFORMATION

Methodology

Selection for the award of this ASCT Vendor services contract is expected to be done in a two-step process. The first step will be to review and evaluate the proposals based on how well the ASCT Vendor complies with the specifications, system requirements, and the ASCT Vendor's explanation of how their ASCT meets those requirements in the system requirements matrix. Past deployments and success of ASCT within the United States and similar in nature, magnitude and complexity to the Conway area will also be taken into account in the selection criteria. The second step will involve short-listing ASCT Vendors based on the above criteria and a formal presentation and Question & Answer process, if necessary.

All proposal requirements must be met, or capable of being met by the responding ASCT Vendor, or its proposal will be disqualified as being nonresponsive.

Proposal Format

In order to standardize and simplify the qualification statements for comparison and evaluation of the responding ASCT Vendors, all submittals must be organized in the manner set forth herein. All information and materials for stating adherence to the specifications and requirements shall be provided under a single cover. The proposal hardcopy shall be submitted on 8 ½" x 11" paper, and via electronic PDF copy.

Section 1 (2 pages max): Title Page, Letter of Interest. The Title Page should identify the project, the name of the ASCT Vendor, name of the ASCT software, and the primary contact including address, telephone number and email address for correspondence.

Section II (5 pages max): This section will state adherence to the technical specifications with specific descriptions and statements for the ASCT and the ASCT Vendor compliance with the technical specifications. The description of the ASCT and ASCT Vendor statements shall be numbered and referenced to the specific sections of the technical specification of this RFP.

Section III (System Requirements Matrix Form): This section shall state Conformance of the ASCT to each system requirement per the System Requirements Matrix found in this RFP.

'Comply' column: The ASCT Vendor shall state if the ASCT complies with each requirement in the following manner:

Y = Fully Compliant with Requirement

N = Not Compliant with Requirement

D = Requirement Under Development & Testing – not currently deployed

‘ASCT Vendor Response’; column: A brief response statement shall follow the Compliance “Y, N, D letter” to describe the ASCT compliance, non-compliance, or current development including a date that the requirement will be fully tested and offered with the ASCT software if not currently offered.

‘Verification Method’ column: The ASCT Vendor shall state the verification or testing method that shall be used to test each requirement for compliance. The following verification methods shall be stated, with a description of those methods below:

- **Demonstration:** *used for a requirement that the system can demonstrate without external test equipment.*
- **Test:** *used for a requirement that requires some external piece of test equipment (such as logic analyzer and volt meter). The test and required equipment shall be clearly documented in the procedure.*
- **Analyze:** *used for a requirement that is met indirectly through a logical conclusion or mathematical analysis of a result. For example, algorithms for calculation of headway; setting of “late” flag; generation of priority request*
- **Inspection** *is used for verification through a visual comparison. For example, quality of welding may be done through a visual comparison against an in-house standard.*

Additional information for the System Requirements, including the concept of ASCT operations for the requirements in the full System Engineering Analysis are available on request from Felicia Rogers at the Office of the Mayor, Conway City Hall.

Section IV (2 pages max): Include a project deployment plan that describes the proposed schedule for implementing the ASCT after all necessary vehicle detection has been fully constructed and accepted. The project plan shall include any concurrent activities that can be started during detection installation to lessen the time of ASCT deployment.

Section V (3 pages max): Provide a minimum of three (3) case histories or recently completed projects of the deployed ASCT software, including direct client/government reference information. The case histories shall include a summary of the before/after studies that were performed including the measurements of effectiveness (MOEs) that were used to measure the performance of the ASCT (for example: travel time, number of stops, total intersection delay, etc.).

The RFP shall be evaluated based on responses and compliance to these sections and the content of this RFP. The RFP evaluation shall result in a short-list of ASCT software, as necessary, to move to the next step in the ASCT selection. The short list shall be responsible for a presentation on their software and a Question & Answer session following the presentation. The presentation/interview process shall be no longer than 30 minutes.