

February 9, 2021

Mr. WooJae Kim, P.E.  
Town Engineer  
Town of Los Gatos  
41 Miles Avenue  
Los Gatos, California 95030

**Subject: Scope of Services to Provide Automated Traffic Signal Performance Measures and Virtual Bike Detection/Bike Priority System for the Los Gatos Smart Signal Project**

Mr. Kim:

Econolite Systems, Inc. (Econolite) is pleased to submit this Scope of Services to the Town of Los Gatos to procure an Automated Traffic Signal Performance Measurement (ATSPM) system, and a Virtual Bicycle Detection/Bicycle Signal Prioritization (VBD/BPS) system. These systems would be used collectively to improve traffic operations, travel time, and safety for vehicles, bicycles, and pedestrians.

In response to the RFP, and to meet the Town's goals, we are proposing the most technologically advanced, and industry-leading signal performance measures software in the market today, Econolite's Centracs® Signal Performance Measures (SPM), in conjunction with Applied Information's Glance and TravelSafely VBD/BPS system. This integrated solution is highly compliant with the Town's requirements and will immediately provide the Town's traveling public with benefits today and into the Smart City future.

Econolite has assembled a robust team to accomplish this important project, and with this team, we are committed to ensuring adequate resources to meet the Town's quality and schedule expectations:

- **Applied Information** (AI) and their local distributor **JAM Services** will be responsible for supply and integration of the VBD/BPS system.
- **TJKM Transportation Consultants** (TJKM), a certified DBE, will provide field inventory, intersection data mapping, and QA/QC services.

This is the same team (with the addition of AI) currently assigned to Project 1 (ATMS/ATCS) and will provide continuity between the two projects. In addition, since we are deploying the Econolite Adaptive Traffic Control System, Edaptive, in Project 1, SPM functionality is already included in the cost for those intersections. This equates to an immediate reduction in costs (both set up and service) to the Town and taxpayers for this project.

The system requirements as submitted with our VBD/BPS proposal submitted on October 12, 2020 and ATSPM proposal submitted on December 4, 2020 are incorporated by reference. Please feel free to contact me at 310-418-1663 / [mporter@econolite.com](mailto:mporter@econolite.com), or our proposed Project Manager Mark Case 657-274-4036 / [mcase@econolite.com](mailto:mcase@econolite.com), with any questions regarding our proposal. Sincerely,

Econolite Systems, Inc.



Marc A. Porter  
Vice President

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### 5. Scope of Services

#### 5.1 Proposed Solution

To meet the needs of the Town of Los Gatos, we are proposing a solution based on Econolite's industry-leading Centrac Mobility SPM (Signal Performance Measures) for the ATSPM element, with AI's Glance and TravelSafely app providing the VBD/BPS element. Given Econolite's extensive experience deploying traffic signal management systems, there could be no better team to help the Town manage the challenges of its Smart Signals project. A detailed description of our solution is presented in the following sections.

##### 5.1.1 ATSPM Element

Centrac Mobility is a powerful, easy-to-use, cloud-based solution that provides state-of-the-art analytic tools enabling transportation agencies, planning organizations, and other transportation stakeholders to have a more efficient and cost-effective view of signal performance. At the top level (Figure 1), users can quickly identify potential problem areas and quickly drill down into the details (Figure 2) to identify root cause and target actions to resolve (Figure 3).

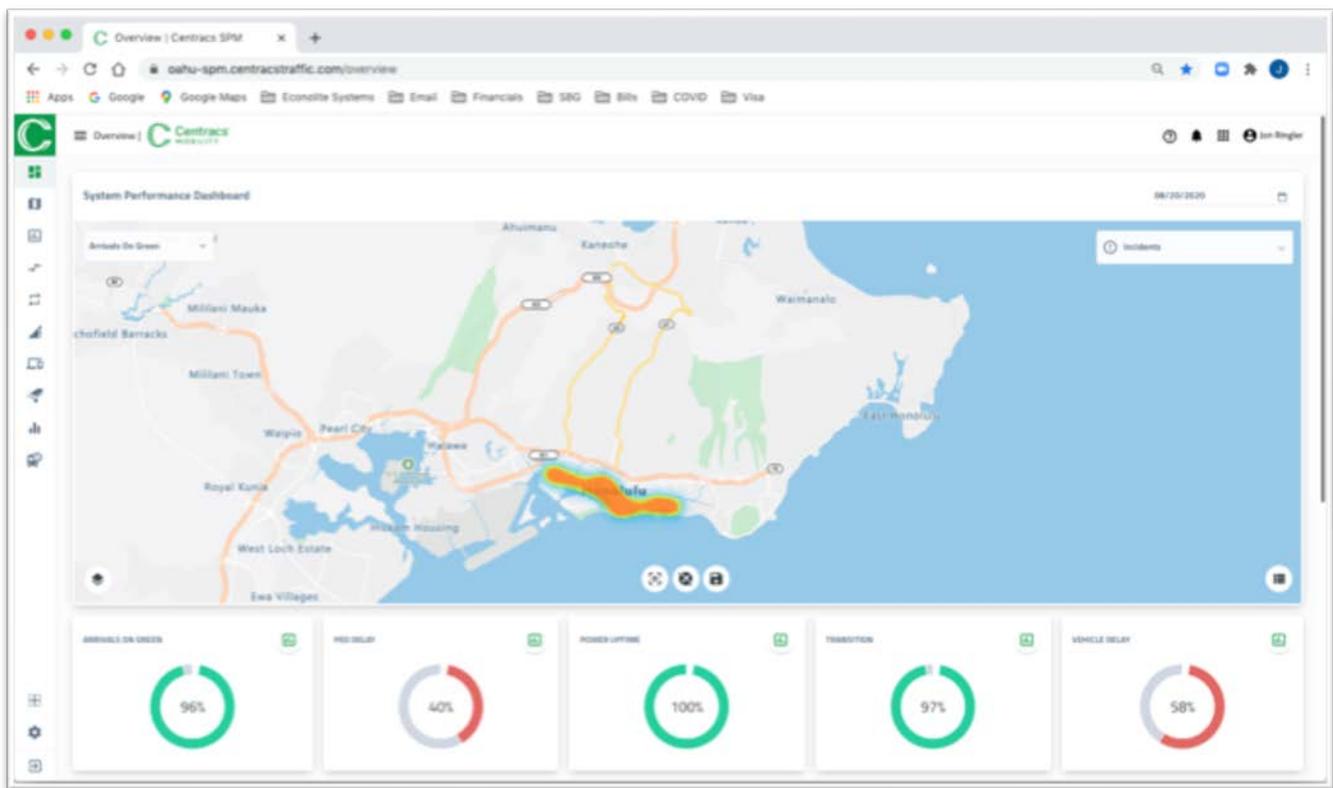


Figure 1 - High Level System Dashboard

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California

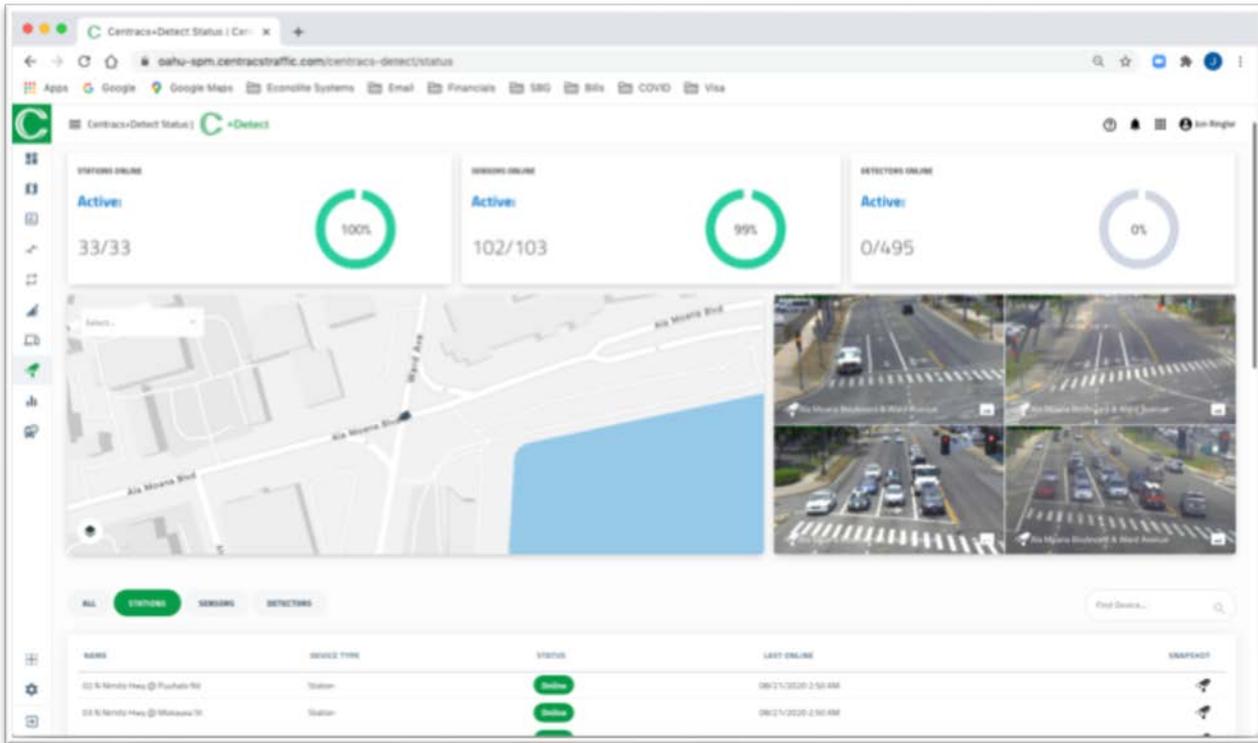


Figure 2 - Detailed View

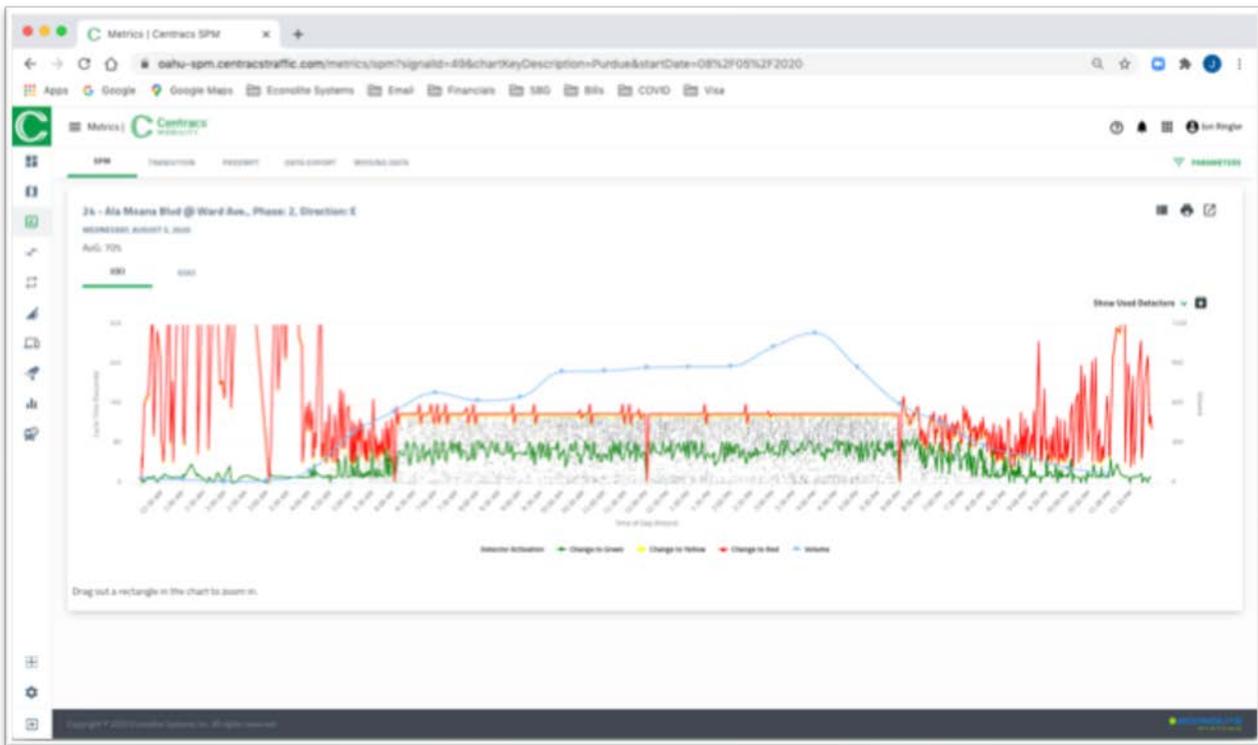


Figure 3 - Root Causes and Target Actions

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



Additionally, based on initial research performed by Purdue University and the Indiana Department of Transportation under the National Cooperative Highway Research Program (NCHRP) project 3-79a, Automated Traffic Signal Performance Measure (ATSPM) data has been extended to provide tool sets that leverage the high resolution data to create new background optimized signal timings with a human in the loop via Mobility's SPM service. Moreover, because the system is measuring data in real time, the system tells the engineer how the system is currently performing, how the system might perform based on the most recent optimization run, and, should the engineer "Apply" the new timings, the system will then report how it actually performed as a result of the new timing parameters. In this way, the system elevates the role of the engineer, who is able to hold themselves accountable to measurable improvements in traffic, and dramatically lowers the cost of optimization.

Figure 4 provides an example of how the user views the current measured travel times (before conditions), predicted improvements, and finally actual performance. Actual timing changes are shown in Figure 5, representing the actual timing changes and how the green band overlays on top of the platoon profile.

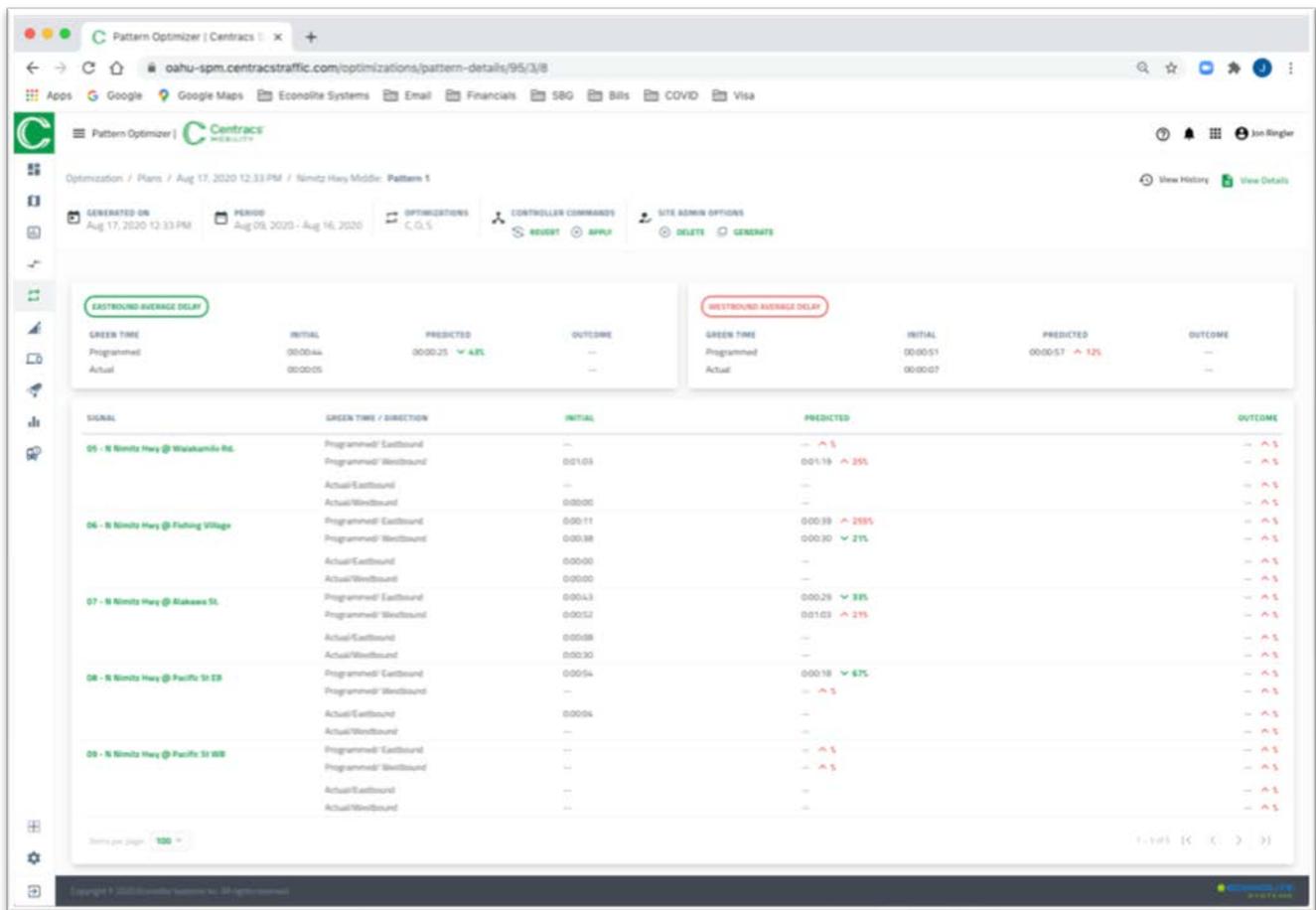


Figure 4 – Before Conditions

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California

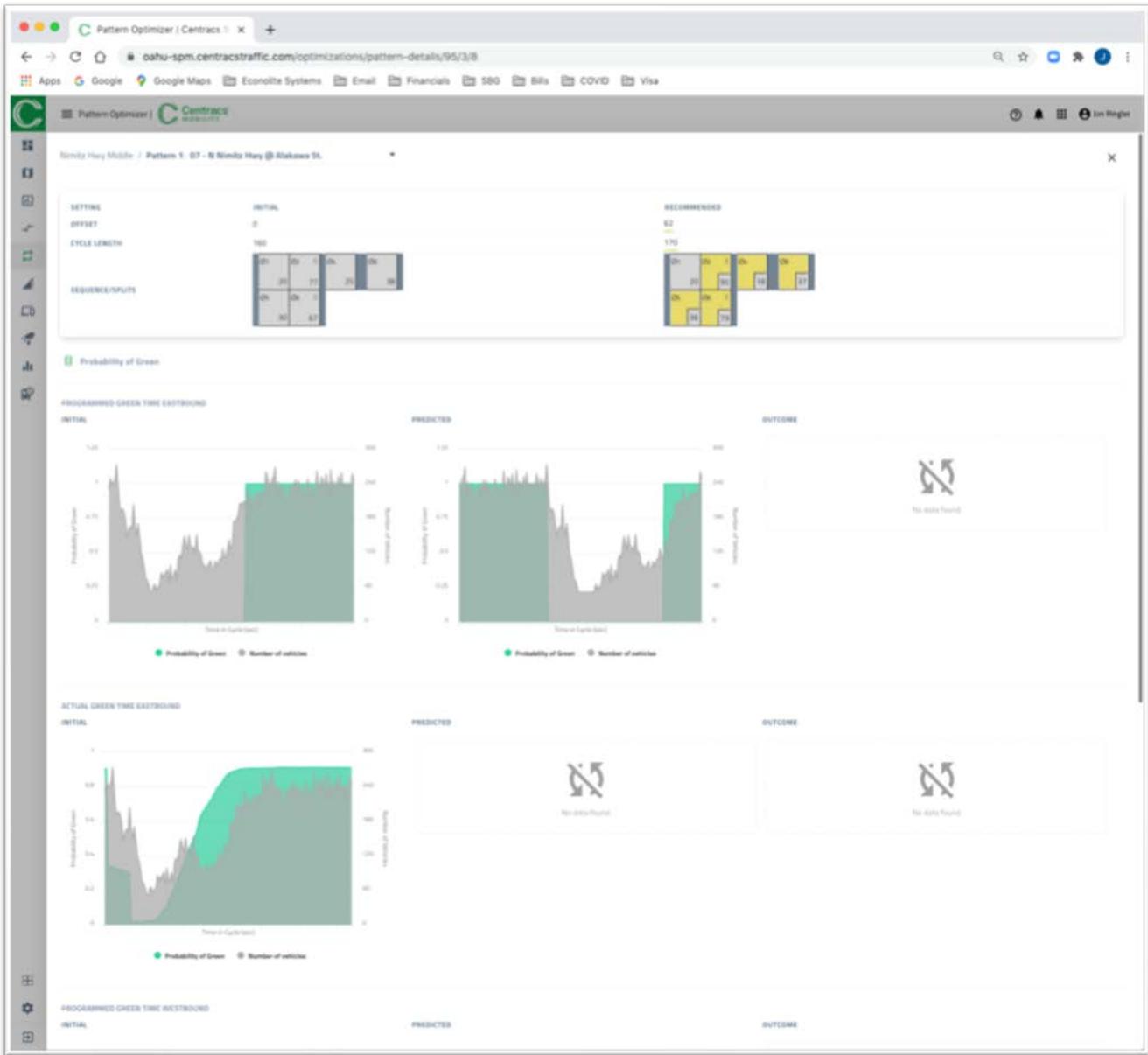


Figure 5 – Actual Timing Changes

Agencies can also make the most out of existing detection. With advanced algorithms, stop bar detectors are used to drive split optimization and set cycle length, while advanced detection is necessary to derive offsets.

### 5.1.2 VBD/BPS Element

Applied Information has developed a Smart City solution which provides Virtual Bicycle Detection / Bicycle Signal Priority, with the aim of increasing bicycle user safety, while simultaneously providing convenience for cyclists at signalized intersections.

This solution enables bicycle detection at signalized intersections, where cyclists are able to place a priority call to the traffic signal to request service or maintain a request for service. What this means is that, dependent on the number of cyclists detected, a priority call will either request a green light (if the light is red), or maintain a green light (if the light is already green) allowing sufficient time for the cyclist to pass through the intersection safely. Please view an overview at <https://youtu.be/LjX1LPiXOQ>.



### System Overview

Applied Information's VBD/BPS system works as illustrated in the following figure:

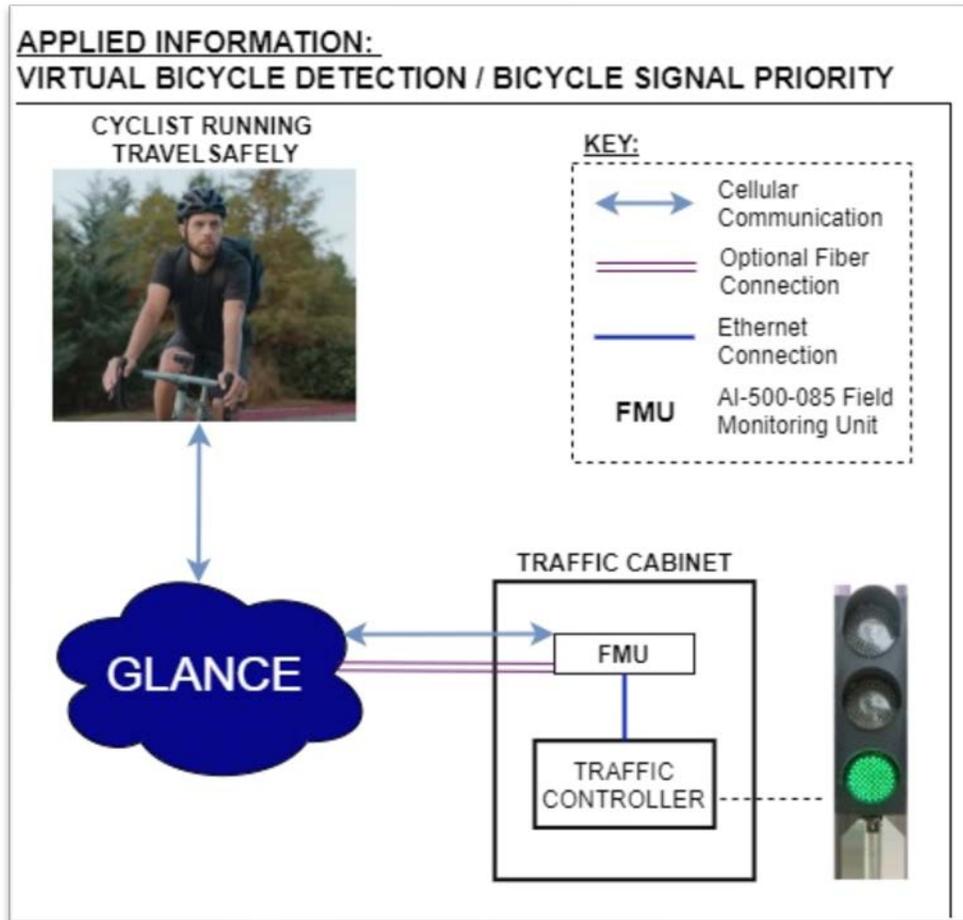


Figure 6 - The VBD/BPS System

Applied Information's smartphone application, TravelSafely sends the detector call through Glance (Applied Information's cloud-based application) to the in-field hardware, the AI Field Monitoring Unit (FMU). The FMU is installed in the intersection cabinet and is connected to the traffic intersection signal controller via an Ethernet connection. Priority calls received by the FMU are sent via the Ethernet connection using the NTCIP1211 standard, to the signal controller. With this setup, it is possible to place or hold a bicycle signal priority request. Additional detail on each system element is provided in the following sections.

### In-Field Hardware – Field Monitoring Unit

Intersections are equipped with the AI FMU. The FMU works in conjunction with the already existing traffic controllers, monitors all aspects of the traffic signal cabinet, and provides a number of connected vehicle applications. Each unit is equipped with a built-in cellular modem and GPS for self-locating. The cellular modem allows for cellular communication to the Glance platform and TravelSafely smartphone application.

All hardware is proven, off-the-shelf hardware and is easily deployable and maintainable. The 1U 19" Rack Mountable units are readily available and are retrofitted into existing traffic intersection cabinets. The FMUs provide connectivity, security, and "over-the-air" software update capability. Additional features and improvements can therefore be deployed to solve problems that are only identified once in practice. All communication between vehicles, and infrastructure, is routed over the cellular network, meaning that full functionality and testing can be carried out from day one.

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



The operation of the cabinet unit is separate to the make/model of the traffic signal controller, which makes the FMU hardware compatible with all major traffic signal controller suppliers, including Los Gatos' Econolite Cobalt controllers. All units come with multiple digital and analog IO as well as 8 relay contacts to trigger preemption/priority commands to the traffic signal controller.



Figure 7 - The AI-500-085-02 FMU

### Smartphone App - TravelSafely

TravelSafely is an easy-to-use smartphone application, designed to provide a connected vehicle V2X (vehicle-to-everything) platform. The application is capable of connecting citizens to infrastructure and to one another, offering a number of connected vehicle applications to drivers and other road users. Through the purchase and installation of the aforementioned in-field hardware, the TravelSafely application will be accessible to road users in the Town of Los Gatos, along the designated nine-intersection project corridor. The app is available on both Android and iOS operating systems and can be downloaded for free from the respective App Stores. This means that comprehensive V2X capabilities can be implemented and utilized en masse, at no cost to the everyday citizen.

The application can be used as a detector device for Virtual Bicycle Detection/Bicycle Signal Priority and eliminates the need to purchase expensive new hardware. TravelSafely provides advanced detection utilizing the ubiquitous smartphone (running TravelSafely) as the detector.

The application works in conjunction with the Glance cloud-based application, and the field monitoring unit. All communication for TravelSafely are routed over the cellular network. For communications with the in-field infrastructure and other persons using TravelSafely, information is sent using the standard SAE J2735 format.

TravelSafely is used as a platform for a number of connected vehicle applications, including:

- Virtual Advanced Detection
- Bicycle Signal Priority
- SPaT (Signal Phase and Timing) and MAP information
  - With "Get Ready for Green" alert
- Red light running warning
- Bus/transit priority
- Intelligent school beacons
- Where is the emergency vehicle coming from?

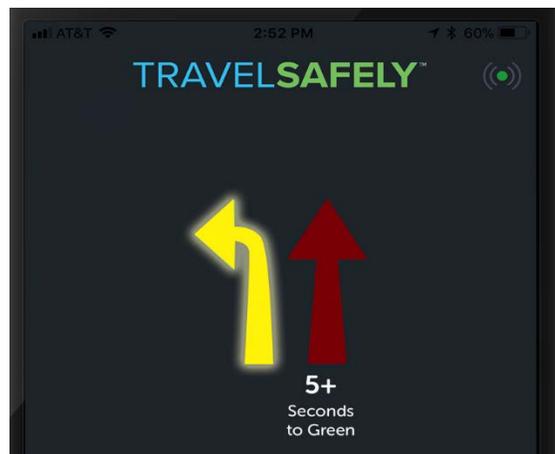


Figure 8 - The TravelSafely App

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



- Motorist – Cyclist communication
- Motorist – Pedestrian communication
- Work Zone warnings
- Curve warning/reduce speed
- Rear-end collision warning
- Virtual/advance traffic detectors to make signals work better

The connected vehicle message flow for the TravelSafely smartphone application is shown in the following figure.

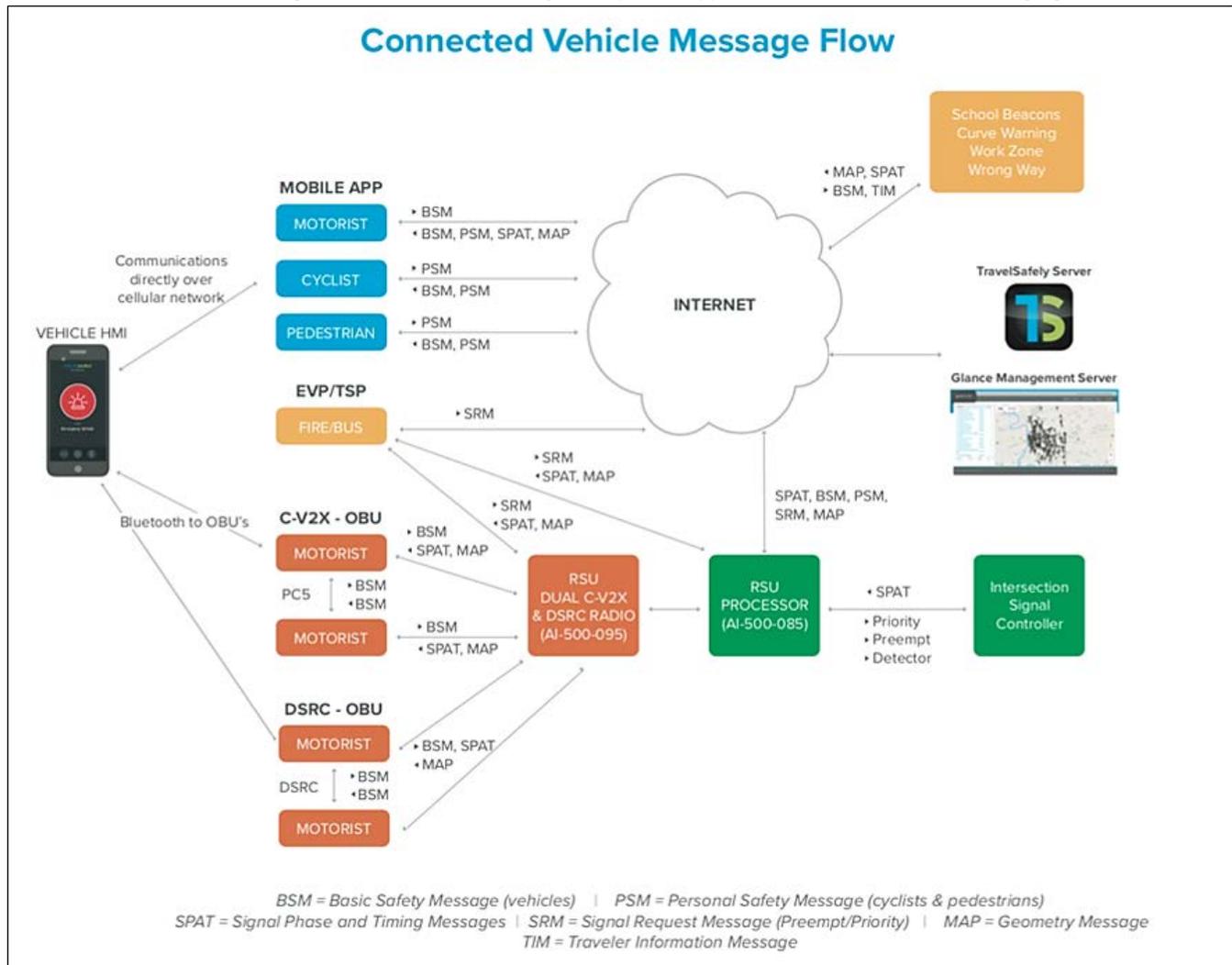


Figure 9 - Connected Vehicle Message Flow

### Software - Glance

Glance is a cloud-based application that all of Applied Information's in-field hardware is connected to. The platform will connect the FMUs installed along the IDEA project corridor into a single, easy-to-use application. This will allow for complete connection, control and remote monitoring of the system by the Town of Los Gatos. All communication between the in-field devices and the Glance platform is routed over the cellular network. Each device sends/receives data to/from Glance via the existing 4G LTE cellular network.

This supervisory system will allow the Town of Los Gatos to manage their ITS assets under one web-based application. With the system being a cloud-hosted software solution, operators will be able to log in to Glance via any internet connected device.



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Glance provides the user with remote viewing of the overview of each installed device and is able to monitor, collect and store data. This data is stored and readily available for view, analysis and complete system evaluation. The Glance Smart City Supervisory System makes for easy managing of traffic systems and includes many innovative features such as:



- Cloud and web-based software
- No servers needed, and no special software required, only a browser
- No maintenance costs. One-time license fee



- Devices self-locate themselves by Utilizing build in GPS & Cell Modem
- Always know where faults are as devices always report position
- Time Synch with GPS time for traffic controllers



- Automatic configuration of IP address (no static IP's needed)
- Synchronization with Glance server
- "Over-The-Air" OTA software updates



- Automated Alerts via Text and Email when cabinet faults are detected
- AC failure, Battery failure, Flash, Red Monitor, etc.



- Control and Configure devices remotely utilizing build in Cell modem
- Know the problem before the technician leaves



- Key Performance Indicator (KPI) reports showcasing device uptime
- Automated weekly and monthly reports

An example of the Glance home screen that can be accessed from any browser platform can be seen in the following figure.

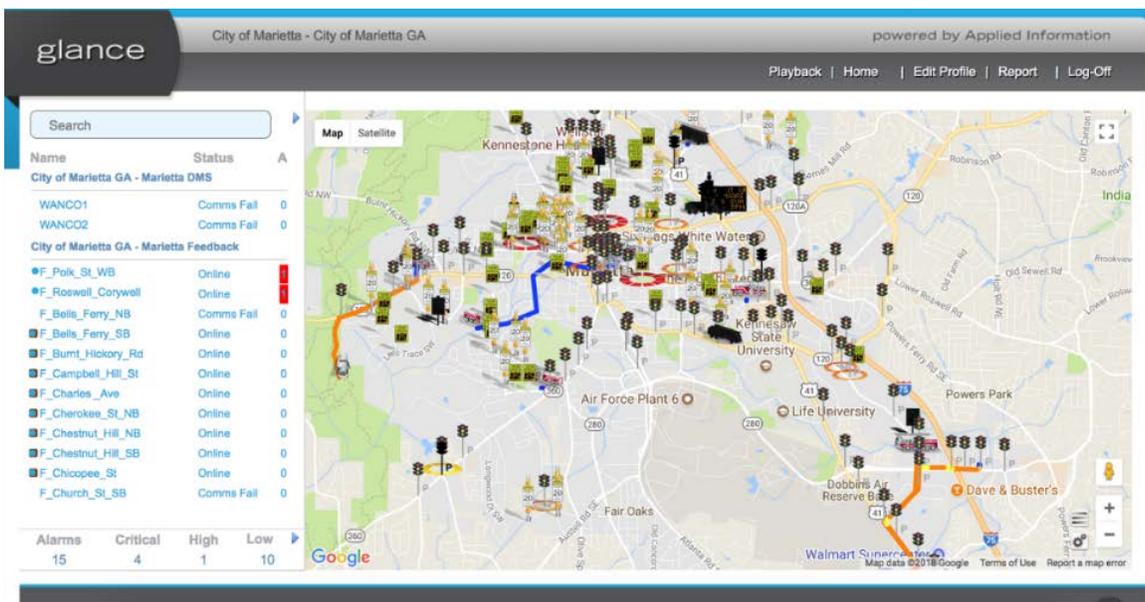


Figure 10 - The Glance Home Screen



### How a VBD/BPS Priority Call is Placed

TravelSafely is used as the platform for virtual bicycle detection and bicycle signal priority. After having downloaded and registered to use TravelSafely, all the cyclist will need to do is ride with their smartphone. The phone can be clipped to the handlebars of the bike (where the screen is visible) or kept in the rider's pocket or backpack. TravelSafely is mainly used as a background application, where no user input is required. The app will automatically detect whether the user is a pedestrian, cyclist, or motorist. As soon as the TravelSafely user (detected as being a cyclist) approaches an intersection equipped with the AI-500-085-02 device and configured with VBD/BPS capability, a priority call will be sent via TravelSafely to the Glance cloud (Figure 11).



Figure 11 - The TravelSafely App as a Detector

Detection zones for bicycle signal preemption are configured using the Glance platform. Using the configuration utility, detection zones can be drawn a few hundred feet ahead of the of the intersection. When a cyclist using the TravelSafely smartphone application enters the detection zone, the app will place a wireless message to the Glance cloud-based application, where the priority call will be registered. This call is then communicated to the AI-500-085-02 FMU which is situated in the traffic signal cabinet. The FMU passes this request to the traffic signal controller via an Ethernet connection using a NTCIP 1211 priority call.

Detection is GPS-based, using the location services of the smartphone, and uses the cyclist's real-time position to track whether or not they have entered a pre-defined detection zone for bicycle signal priority. All communication is based over the 4G LTE cellular network, allowing for completely wireless communication via TravelSafely, Glance, and the FMU. Each of the intersections equipped with the FMU will be configured such that VBD / BPS can be provided to cyclists using the TravelSafely app. There is no limit to the number of intersections that can be equipped with this technology.

Video of VBD/BPS system in action, using the TravelSafely smartphone application can be seen in the following video: <https://youtu.be/nczvMcAtbEY>.

### Working with GPS Inaccuracies

TravelSafely has been designed to work with current smartphone inaccuracies. The GPS on smartphones are generally not the most accurate, which is why the app has been designed to work within the bounds of these smartphone GPS inaccuracies. With the latest generation of smartphones using dual GNSS GPS, the inaccuracies have been found to be less than 3ft.

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TravelSafely's latency has been determined to be between 250-400ms for communication, and GPS polling occurs every second. TravelSafely communicates the GPS position of the smartphone device to the Glance servers every second, so that real-time communication is received. In addition to this, Applied Information has implemented various methods for both mobile phone battery optimization and the latest GPS accuracy in smartphones (including dual GNSS GPS technology).

The TravelSafely application has 16 different applications that utilize MAP / SPaT and TIMS messages, all of which rely on this real-time communication. Through prior experience and feedback from TravelSafely users, it has been established that latency and GPS polling frequency is not an issue. This can be seen from many demonstrations using the smartphone application and information received from TravelSafely users. An example of the TravelSafely smartphone application in use, which showcases a number of the TravelSafely applications, can be seen by visiting the following link: <https://youtu.be/WxEnX11qATs>.

### Detection Zones

Both a preemption/ priority configuration tool and TravelSafely Mapping tool are used to draw and define the preempt zones and the lanes defined for SPaT and MAP data used for the TravelSafely smartphone application.

The zones designed around the intersections identify the direction and approach of the TravelSafely user (for example a cyclist). An example of the zones configured for preemption/priority can be seen in Figure 12.

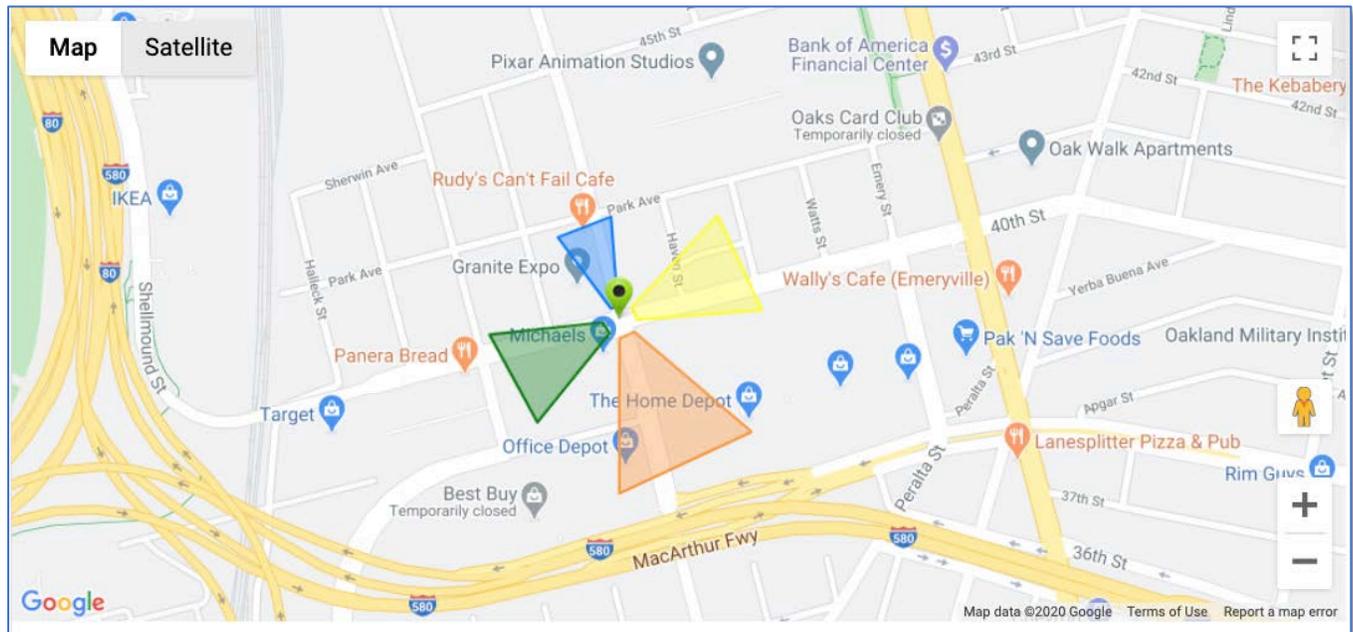


Figure 12 – Priority Detection Zones

The TravelSafely configuration tool is used to define the various lanes and the geometry of the roadway. Figure 13 shows further details on the available configuration tool.

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## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California

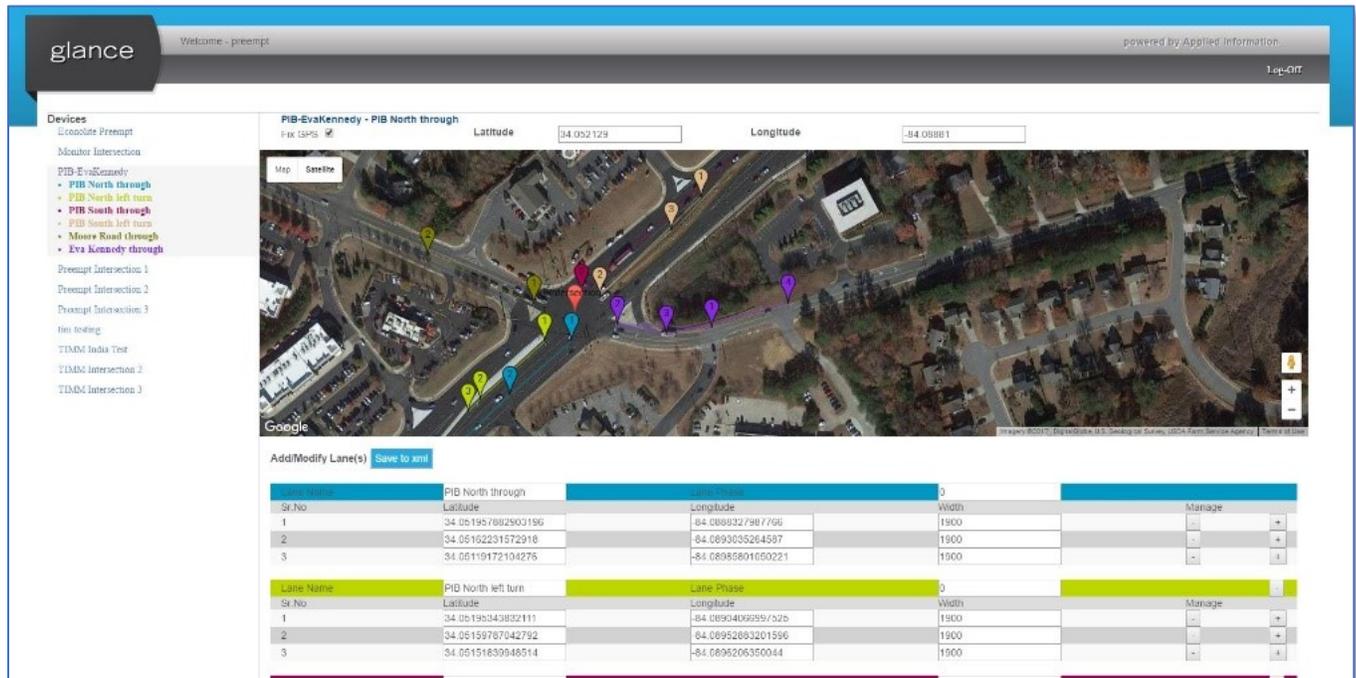


Figure 13 - Zone Configuration

### Differentiating between a Bicyclist in the Bike Lane and Same Direction Left Turn Lane

The TravelSafely MAP files configured in the configuration tool (as seen above) have specific lanes drawn / defined for straight or left turns. The smartphone running the TravelSafely app will determine whether or not the bicycle is in a bike lane, straight lane, or left turn lane. Bicycle detection or priority for straight or turn lanes will be dependent on the given geometry of the roadway.

### Detecting Single or Multiple Cyclists

The VBD / BPS system is able to detect whether one or more cyclists have entered the defined area. For single-user cases, the application provides virtual detection. Alternatively, for groups of cyclists (2+), a priority call can be sent to the traffic signal controller. For each instance, the times at which priority for bicyclists is available can be configured in Glance. For example, bicyclists may be given greater priority between x and y hours of the day and priority can be given when a certain amount of cyclists approach the intersection.

As an optional extra, Applied Information is able to provide priority calls at the intersection, using NTCIP1202 standard communication. Use cases for this may include when cyclist groups are travelling along the corridor (i.e. 6+ cyclists). The Town would be able to set the time and days in which preemption calls could take place, for example on the weekends during a specific time period where cyclist groups/clubs may be travelling along the corridor.

### User Anonymity

Glance TravelSafely system anonymizes each user with a different ID each time they log in. This ensures that no one can be tracked and provides a safe and secure environment for each user. Every 15 minutes the app re-anonymizes the ID to ensure no one can be tracked from one location to another.

### Differentiating between a Bicyclist and Slow-Moving Vehicles

TravelSafely utilizes the smartphone application to determine whether or not the user is in a vehicle. Having multiple means of detection improves accuracy of the system. This is done by looking at the Bluetooth connections of the phone and the speed it is detected to be travelling at.

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For example, if the application detects that the speed of the user is above a certain threshold, it will automatically determine that the user is in a vehicle. Should the vehicle slow down to a walking / cycling speed (for example – stuck in traffic or at a red light) – the app will not automatically categorize the user as a pedestrian or cyclist. The travel mode will only change should the device move at a slow speed for a specific, extended period of time.

In addition, the user has the ability to manually select the mode of transport as a motorist, bicyclist or pedestrian. This mode then remains active for the duration of the trip.

### VBD/BPS in Los Gatos

Applied Information will be providing the Virtual Bicyclist Detection / Bicycle Signal Priority element of the IDEA project. The VBD/BPS system will be installed at 9 locations along the dedicated corridor in the Town of Los Gatos. Applied Information, with the assistance of their local distributor, JAM Services, will be responsible for furnishing, installing, configuring, implementing, testing, maintaining, supporting, and providing training documentation for the proposed VBD/BPS system.

Following deployment of the VBD / BPS capability, the Town will experience the condition where cyclists using the instrumented roadway maybe unaware of the TravelSafely app. This condition will diminish as the Town's awareness campaign builds. Further, there will be a proportion of cyclists who decline to download and activate TravelSafely. In both of these cases, the Econolite Team's solution can continue to provide value to the Town. First, intersections instrumented with Iteris Vantage Edge 2 detection and SmartCycle will be able to detect and differentiate cyclists approaching the signal. The detection will then send the appropriate output to the Cobalt controller. In turn, the Econolite controller can respond in several ways. For example, the controller can invoke the Bike Min Green at the start of the green interval for the called phase. The detection and ATC controller can be configured with separate extension timers (Extend2) for configured bike detectors. Thus, the Econolite solution achieves the project's objectives not only for cyclists equipped with the smart phone app, but also provides value for ALL cyclists using the roadway.

## 5.2 Detailed Scope of Services

### 5.2.1 Task 1 - Project Management

Project management is a critical part of the deployment of any technology project. To emphasize its importance, we propose a dedicated project management task to ensure that the Econolite Team and the Town share common goals and expectations of the project, manage changes needed throughout the course of the project, and execute the project to meet those goals and expectations. The Econolite Team will perform proactive project management throughout the course of the project and provide periodic invoices and progress reports to summarize the project status.

We are proposing a highly experienced Project Manager for this project, Mr. Marc Case. Resume has been sent to the Town.

A key to the Econolite Team's Project Management approach is to develop a Project Plan as detailed below.

#### Project Plan

The Project Plan will document the following elements:

- **Project Scope** – This document and any modifications that may be required over the term of the contract.
- **Major Deliverables** – This document and any modifications that may be required over the term of the contract.
- **Risk Assessment** – Identifies major risk elements and mitigation actions.
- **Resource Requirements** – Includes team organization and responsibilities of stakeholders.
- **Project Schedule** – Gantt chart periodically updated to reflect project progress.

#### Project Kickoff Meeting

Upon notice to proceed, Econolite will conduct a project kickoff meeting that will include the following agenda:

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- Introduce Econolite's implementation team.
- Review project schedule and deliverables, including Town review periods.
- Develop consensus on the overall project approach.
- Clarify areas of responsibilities of Econolite and Town for the implementation.
- Identify implementation risks and propose mitigation factors.
- Discuss change control procedures.

### Quality Control/Quality Assurance Plan

During the kickoff meeting, Econolite's Project Manager will provide the Town with a quality control/quality assurance plan in-line with our Software Maintenance Agreement (SMA), detailing our product quality process during the course of the project. This will include continuous technical support to the staff on the use, configuration, management, and troubleshooting of Centracs SPM as well as providing software upgrades addressing defects and/or enhancements and new features. To ensure that product quality assurance will be carried out in every step of the project, we have included Mr. Studer as the lead for the project Support Team. Mr. Studer is managing Econolite Systems QA/QC team at the Colorado Springs' office, and is responsible for the development, implementation and coordination of product assurance program.

### Project Schedule

Our proposed schedule, including major milestones and deliverables, is included in **Section 6**. Econolite's Project Manager will provide an updated and detailed version of the schedule at the project kickoff meeting.

### Bi-Weekly Progress Meetings

The Econolite Team will establish bi-weekly project meetings via teleconference to keep the Town informed of project progress and upcoming activities. These meetings are structured as "status only" and are intended to last not more than 30-minutes. This time frame ensures regular stakeholder attendance and insists that more in-depth discussion to be taken offline. The agenda for these meetings will form two purposes: to guide the discussion and function as a Status Report. These meetings will be limited to the following discussion points:

- Estimates of progress
- Work performed during the prior period
- Work anticipated for the current/following period
- Any deviations from the project plan along with their current issues, status, and how they are to be remedied

For each bi-weekly progress meeting, the Econolite Team will provide the meeting agenda and notes. The notes will include a "rolling" Action Item list that identifies and summarizes the Action Item (what needs to be done), Responsible Parties (who needs to do it), Resolution Dates (when will it get done), and End Result (how was it accomplished).

Weekly scheduled discussions between the Econolite Team and Town project managers will be held to work through any schedule or task needs and to keep each informed of any changes or modifications that may be needed.

### Assumptions:

- The Econolite Team will participate in the bi-weekly progress meetings either in person or via teleconference.

### Deliverables:

- Kick-Off Meeting
- Project Plan
- QA/QC Plan
- Bi-Weekly Progress Meetings
- Periodic Invoices



### 5.2.2 Task 2 – Furnish & Install ATSPM and VBD/BPS Software and Hardware

#### ATSPM

The Econolite Team will expand the Town's cloud-based Centracis SPM and configure remaining intersections so that all thirty-one (31) intersections are providing high-resolution SPM data. The following steps will be required for the successful deployment and operation of the system.

- Provide the Town with detection zone configuration diagrams to assist the Town in setting up its Iiteris video detection systems to provide the best possible SPM inputs.
- Acquire as-built detector layouts from the Town (Task 2).
- Review existing intersection and detector layouts, taking notes on what detector is assigned to what input in the controller, the location of the detector on the street, and what function the detector is serving (e.g., stop bar, advance, departure, left turn).
- Site setup & configuration.
- Configure Intersection Data Maps (IDMs) for each intersection based on detection and controller configuration information.
  - Phase assignments and detector assignments are mandatory.
  - Speed limits are required. It is also useful to have volume estimates to better establish a saturation flow rate value that is more accurate and localized than the standard 1800-1900 vehicles per hour per lane (vphp).
  - Perform Quality Assurance/Quality Control on all IDMs.
- Setup corridors in SPM, including grouping and defining corridors and operational parameters in consultation with the Town Project Manager.
- Run SPM for two weeks to ensure SPM graph data is valid. Review data and modify settings as necessary.

#### VBD/BPS

As a first step, the Econolite Team will install, demonstrate and test the VBD/BPS System at one signalized intersection. Once installed, Applied Information will work with the Town to compile testing procedures and prepare a technical memorandum documenting the testing details and observed results. Upon acceptance of the initial testing results, Econolite team member Applied Information (with the assistance of JAM Services) will install, configure and integrate the VBS/BPS System into the remaining 8 project intersections, as per the final system requirements followed by acceptance testing of all VBS/BPS locations.

Once the system is performing to the Town's expectations, the Econolite Team will coordinate with the Los Gatos-Monte Sereno Safe Routes to School program and the Town to provide outreach and education on the new system, and facilitate distribution of the TravelSafely smartphone application to students at the Fisher Middle School. Currently we show this outreach upon system implementation. These dates are flexible, and the Econolite Team proposes to work with the Town and determine the most appropriate time to conduct this task.

All real-time monitoring is done using Applied Information's Glance platform. This is a browser-based platform and accessible via any modern browser (such as Firefox, Safari, Chrome, etc.). No storage device or special servers are required. Applied Information will supply information on their security information/protocols for the VBD/BPS system, upon request by the Town.

Applied Information will configure five administrative user accounts in Glance once the system is installed, configured and ready to hand over to the Town. Customized user privileges will be given to each account holder, as desired by the Town

Applied Information will work with Econolite and Town staff in integrating the VBD/BPS system into the Town's ATMS and ATCS solutions. Applied Information uses recognized standards, including NTCIP1211, for the bicycle priority calls. All data is identified by individual approach and can be mapped to a traffic signal controller input.

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



### Assumptions:

- The Town will provide current phase diagrams and timing/coordination sheets for the thirty-one (31) ATSPM intersections.
- The Town will provide all detection necessary for proper SPM operation.
- System will be deployed with intersections equipped with Econolite Cobalt traffic signal controllers.
- The Town will provide technical staff available for assistance during installation.
- The Town will assist in development and compilation of test procedures and test results.
- Testing of the VBD/BPS will be done using smartphones equipped with latest versions of iOS or Android operating systems.

### Deliverables:

- Los Gatos Centracs SPM website
- SPM operational with thirty-one (31) intersections
- Proof of Concept for VBD/BPS system at one intersection
- Outreach activities with the Los Gatos-Monte Sereno Safe Routes to School program and Fisher Middle School.
- Testing procedures for the VBD/BPS system
- Technical memorandum documenting testing details and observed results
- Required Hardware for VBD/BPS system (per intersection):
  - AI-500-085-02 Field Monitoring Unit (and associated cabling)
- TravelSafely smartphone application
- 5 administrator accounts for Glance users
- Documentation of security protocols
- Completely integrated VBD/BPS system at 9 project intersections

## 5.2.3 Task 3 – System Verification, Testing, and Acceptance

### Acceptance Testing

Once all thirty-one (31) controllers are brought online in the ATSPM, the System Acceptance Test will be conducted in accordance with the Verification and Acceptance Test Procedures ("Test Plan"). The Test Plan will be based on Econolite's existing Standard Centracs SPM Test Procedures modified to incorporate the Town's requirements contained in the RFP. The Test Plan will include details on test setup, test scripts, test oversight and witnessing, test reports, pass/fail criteria, and test dependencies.

Econolite will provide a Draft Test Plan to the Town for approval 30-days before the acceptance test is to begin. The Town shall review the Draft Test Plan and provide review comments within 14-days. The Test Plan will not be final until accepted by the Town.

This initial phase of testing includes a step-by-step walk-through of every procedure documented in the Test Plan. This phase of testing ensures that the Standard Centracs Test Procedures and the specific additional functional and performance requirements of the Town are observed and proven to successfully function.

If, during performance of the System Acceptance Test, an item is marked as "failed," Econolite and Town staff will agree to a course of action.

This test is incredibly thorough and painstakingly detailed. Econolite will conduct, document, and record all test results. The Town's Project Manager (or their designee) will witness all tests and sign-off on each procedure as it is completed. At the conclusion of the System Test, Econolite will prepare a test report summarizing the results of the test, documenting any areas of the test that need to be corrected. As necessary, Econolite will resolve any issues that were identified during the System Test, demonstrate the proper operation to Town personnel, and document the corrections.



# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California

Similarly, Applied Information will provide the Town with the Acceptance Test Procedures 30 days prior to the proposed acceptance testing start-date. Applied Information will then set up a testing version of TravelSafely, which will be available for user groups to test the application

Applied Information will document and record all information via the Glance cloud-based application, which will automatically collate data into useable reports. Should the VBD/BPS system not meet a specific functional requirement, Applied Information will prepare a variance report with recommended actions to take in order to rectify the problem(s).

Applied Information will address feedback/problems that arise during citizen and Town staff testing

### Burn-in and Acceptance

Upon successful completion of the System Acceptance Test, as well as 30-days of error free operation during the subsequent burn-in period, the Town will grant "System Acceptance" and the Warranty period will commence.

### Assumptions:

- The Town will communicate intended start dates providing sufficient time for the Verification and Acceptance Test Procedures to be compiled.
- The Town will be responsible for setting up citizen user-groups to test the TravelSafely smartphone application.
- Each TravelSafely user will have a smartphone running the latest versions of Android or iOS operating systems.
- Town will review the Draft Test Plan & provide review comments within 14-days.
- System Acceptance Test will be performed over a 1-day period and the Town's designated representative will be available to witness/participate.

### Deliverables:

- Verification and Acceptance Test Procedures (Draft and Final)
- TravelSafely smartphone application for public testing
- Final Acceptance Testing
- Documented record of test results
- Variance reports, as/when required
- Successful completion of 30-day burn-in period

## 5.2.4 Task 4 – Training and Documentation

### Training

Econolite will provide all training necessary for the Town to successfully operate and manage the ATSPM and VBD/BPS systems. Our proposed training will be detailed in a Training Plan that identifies the lesson plan for each course, along with the literature, standard operating procedures, manuals, and test materials that will be used. The training plan will describe the Econolite Team's roles and responsibilities for each course and will include a training schedule listing each period of instruction and the time required for each period. The Econolite Team will submit the Training Plan to the Town for review and approval 30-days prior to the scheduled start of any training.

The Econolite Team will provide training as detailed in the following table:

Table 1 - Proposed Trainings

Training Session	Expected Duration
1. ATSPM System Operations (two sessions)	Up to 8-hours
2. ATSPM System Administration and Maintenance (one session)	Up to 8-hours
3. VBD/BPS Operations (two sessions)	Up to 8-hours
4. VBD/BPS Administration and Maintenance (one session)	Up to 8-hours

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



The Econolite Team will provide all training materials, and each training will be designed for up to five (5) people. Training will include both classroom-style instruction on system functionality and use as well as “hands-on” training and will be suitable for both traffic systems engineers and traffic signal technician staff. We understand that some areas may require more in-depth training than others and will adjust the curriculum according to the Town’s needs. Training will be conducted either remotely or at Town facilities with access to the system for optimal understanding of the system.

In addition to formal, on-site training, we are also able to provide at no cost to the Town On-Demand training via the Econolite Learning Center (<http://learn.econolite.com/>).

### Documentation

Econolite will provide the Town with a complete systems documentation package that includes the following:

- User/operator manuals
- Software programming manuals & procedures

The documentation package will address all software and hardware provided under this contract and will be subject to review and approval by the Town before final system acceptance. Econolite will submit all documentation for review and approval by the Town.

### Assumptions:

- A majority of the training will be remote/web-based using virtual meeting platforms, such as Zoom, dependent upon COVID-19 regulations and company/state travel and meeting restrictions.
- The Town will provide a suitable training location, should there be in-person training.

### Deliverables:

- Detailed training plan for each training course
- Up to six (6) days of training for up to five (5) Town staff members
- Training manuals and system documentation (2 copies)

## 5.2.5 Task 5 – System License, Warranty, and Support

### ATSPM

#### Licensing

In addition to the 13 intersections with Centrac’s SPM service provided under the Town’s ATSC project, Centrac’s SPM service will be provided for 18 additional intersections. Service will be provided to all thirty-one (31) intersections for a period of three (3) years from system acceptance, and subject to the Econolite Cloud Services Agreement contained in the *Appendix*.

#### Warranty & Support Terms

Econolite will provide a 3-year warranty following successful completion of the System Acceptance Test. The warranty covers all defects and bugs in the central system software and entitles the Town to free software updates. Third party hardware and software warranties will be transferred to the Town.

In addition, we provide unlimited remote technical support via phone and Internet and, of course, our local support team is nearby to answer any questions, solve virtually any problem, and provide assistance to help the Town get the most productivity out of its new Centrac’s system.

Regular support is available during normal business hours, from 8am to 5pm Mountain Time. For emergencies, Econolite also has a toll-free 24x7 maintenance hotline that can log trouble tickets and generate appropriate responses after hours.

For issues requiring a deeper level of technical support, Econolite has a dedicated staff of maintenance professionals and support group to supplement the local team. These professionals together make a team unmatched in the industry, dedicated

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



exclusively to supporting deployed Centrac systems. Our Centrac system support engineers provide a managed process that responds quickly to any customer questions and problems as they arise.

To facilitate access by these individuals, we propose utilizing a VPN connection to remotely access the system and assist in diagnostics and troubleshooting. This is a very effective approach that enhances efficiency and reduces Town staff time for troubleshooting. In addition, software updates can also be loaded remotely through this connection. We will work with the Town's IT group to establish access which is compatible with the Town's IT policy.

In addition to the 3-year Warranty/System Service, our proposal includes additional years of System Service and support coverage under our Basic Software Maintenance Agreement (SMA). A copy of this agreement has been included in the **Appendix**. During the warranty and any subsequent support period, Econolite will provide the following support services:

- **Technical Support** – Assist Town staff with routine questions about the use, configuration, management, and troubleshooting of Centrac.
- **Software Upgrades** – Econolite will provide all released upgrades to the Town. Software upgrades include those to address errors, defects, security flaws, etc. and those that provide enhancements, new features, new functions, etc. Centrac will retain all system, user configuration, and preferences when applying software upgrades. If requested by the Town, Econolite will provide technical support to install software upgrades.

So long as the system is under warranty or SMA, all Centrac updates are available at no additional charge. New feature releases are also included in the support and we typically release one upgrade per year, further assuring the Town will remain on the leading edge of technology well into the future.

### Assumptions:

- Per the resultant contract, the Town does not perform any acts that void the Warranty.
- The Town will provide VPN access that allows Econolite to remote into Centrac so that we can provide support, warranty, and maintenance services from our Colorado Springs Technical Center.

### Deliverables:

- Centrac SPM – 3-Years of Warranty/System Service for 31 intersections, from final system acceptance.
- Centrac SPM – Optional future System Service/Basic Software Maintenance Agreement coverage following the Warranty.

### VBD/BPS

Applied Information will provide the Town with all the necessary software licenses for the VBD/BPS system. A three-year warranty will be provided for all hardware and software. Technical support will be provided to the Town throughout the period of warranty.

The connectivity and support plan for in-field hardware includes:

- **Cellular Connectivity** - All devices are equipped with a built-in cellular modem, allowing for cellular communication between the in-field device, Glance, and TravelSafely.
- **Upgrade of Cellular Modem** - Currently all in-field devices operate on the 4G LTE network. If/when this is no longer supported, AI will upgrade the cellular modems.
- **Telephone and Email Support** - AI is able to provide support via telephone and email: 678.830.2170, support@appinfoinc.com.
- **No Cellular Overage Charges** - With this connectivity plan in place, there will be no overage charges regardless of the amount of data used.
- **Extended Warranty of Hardware** - For the period of the implemented Connectivity and Service Plan, an extended warranty on the hardware is provided with a "no questions asked" policy.
- **Over-The-Air Software Updates** - All in-field hardware supports over-the-air software updates. Software updates are sent to the cabinet unit or mobile device via the cellular network. Devices can consistently be kept up-to-date with the new releases/versions of software.



# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California

- **Over-The-Air Security Updates** - All in-field hardware supports over-the-air security updates. Software updates are sent to the cabinet unit or mobile device via the cellular network. Devices can consistently be kept up-to-date with the latest security available.
- **Future Connected Vehicle Service** - This is included as standard for all units installed. There is an extensive list of additional features offered by the AI-500-085-02 FMU, which the Town of Los Gatos will have access to once these units are installed.

### Warranty Information

For as long as the AI-500-085-02 FMU Applied Information branded equipment is part of an active connectivity and support plan, the system components are fully covered for warranty repair, software and firmware updates, and telephone support at no additional cost. The period of warranty and purchased connectivity and support plan begins from the date of purchase from Applied Information or its authorized distributor. In the event of a need for repair, Applied Information will repair or replace the product and return it to the customer free of charge (excl. shipping fees). This includes all material causes whether it be severe weather damage, impact from a vehicle, or in the rare event of defective materials used in the unit construction or faulty workmanship. Repairs to damaged or faulty units occur at Applied Information's manufacturing office in Suwanee, Georgia. There is a short turnaround time for repairs, but repair time may depend on the number of units which are sent in for repair.

### Assumptions:

- Warranty period of three years

### Deliverables:

- Glance license (per device)
- Connectivity and support plan (per device)
- Three-year system warranty (per device)
- Technical support for contract period

## 5.2.6 Task 6 – Support Services (Signals as a Service)

### Signals as a Service

Currently, the Town has approximately 31 signalized intersections town-wide on an existing IP-based communications network. Econolite Signals as a Service® described herein will monitor the Town's Centrac's ATMS and Centrac's SPM remotely from Econolite Headquarters' TMC in Anaheim. Monitoring the Town's Centrac's® ATMS will require credentials to the Town's VPN to ensure secure access. Econolite assumes the Town will update and provide login information to Econolite for Centrac's ATMS and Centrac's SPM, should anything change.

# Scope of Work

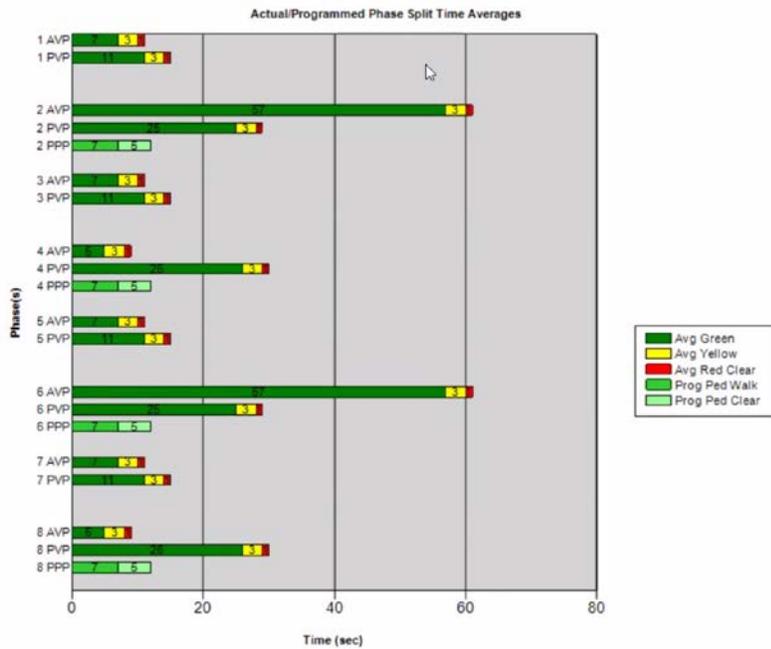
## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



### Daily Tasks

#### Split Monitoring

Signals as a Service Operator will run a Split Monitor report from the last 24 hours to show the programmed split time as compared to the actual average split time to summarize the average run time for each phase movement.



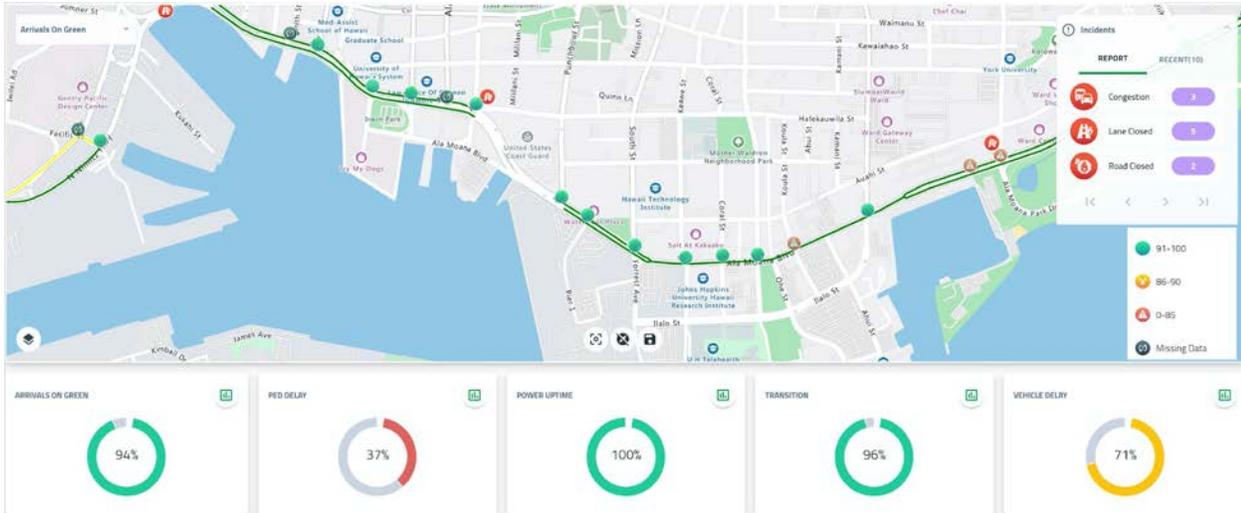


# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California

### SPM Monitoring

Signals as a Service operator will provide a report of the last 24 hours for selected Signal Performance Measures and provide high-level detail of performance for each day of the week.



### Edaptive Refinement

Signals as a Service operator will provide a before and after detail for Edaptive refinement. The operator will recommend adjustments to the Town Engineer and will apply adjustments upon approval from the Town Engineer.

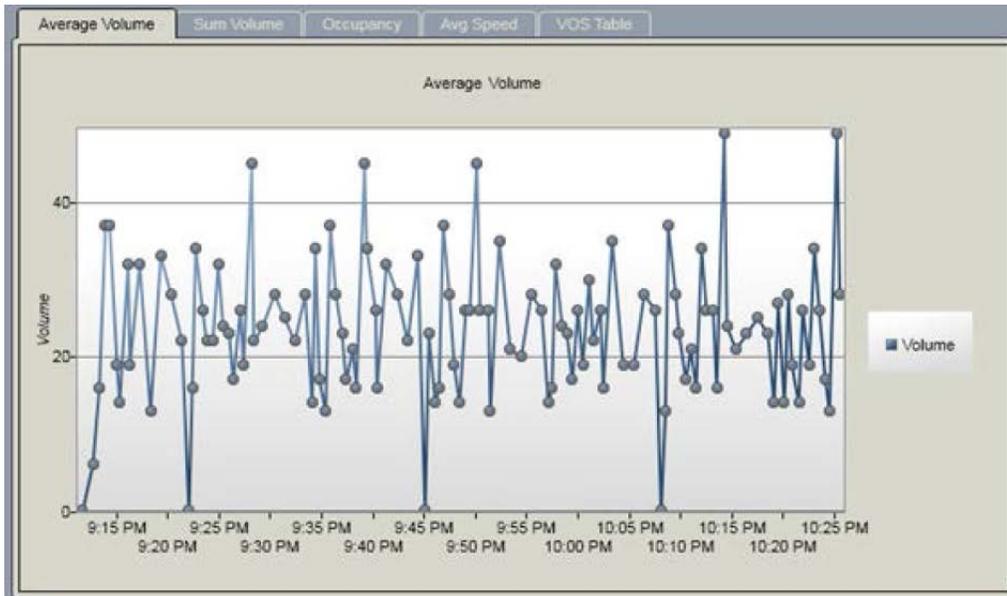


### Detection Monitoring

Signals as Service Operator will review Detector Faults in Centrac and report detector malfunctions to the Town's designated representatives.

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



### Bi-Weekly, Monthly, Yearly Comprehensive Reports

The comprehensive reports provide a summary of the status and health of the Town's ATMS and SPM systems. The reports will include the following information:

- High-level summary of system health and traffic operations
- Details of tasks completed by the system Operator (Bi-Weekly Reports).
- Copies of reports to include: Summary of daily task reports
- Monthly and yearly reports to include summary of benefits to recommendations for Edpative
- Detail and status of notifications sent to the Town's designated representative

Each of these reports will be sent electronically via Email or, at the Town's request, a hardcopy will be mailed.

Task	Delivered
Bi-Weekly Comprehensive Report	Every other Monday 9am (Excluding Holidays)
Monthly Comprehensive Report	1st Monday of the Month (Excluding Holidays)
Yearly Comprehensive Report	1st Monday of the Year (Excluding Holidays)

### Monitoring Hours

#### IDEA Intersections (13)

Up to 800 hours per year to monitor the Town's 13 IDEA intersections.

#### Town Intersections (18)

Up to 200 hours per year to monitor the Town's remaining 18 intersections.

### Response Time

Econolite will respond to Town questions and/or directives within 2 hours during normal business hours and within 8 hours outside of normal business hours. Directives would apply to the tasks defined as part of the daily tasks list. The Town can reach Econolite Signals as a Service® Operations staff by email [Support@econolite.com](mailto:Support@econolite.com), or phone 714.630.3700.

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



### System Coordination

Econolite requires that signalized intersections be online in Centrac® ATMS and Centrac SPM to perform Daily Tasks. If a signalized intersection loses communication, Econolite will notify the designated Town representative for Field Maintenance.

Econolite will monitor the Town's Centrac® ATMS for alarms and notify the Town and parties designated by the Town of any occurrence. Econolite will provide notification within 2 hours during normal business hours and within 8 hours outside of normal business hours. Town staff and appropriate parties will be notified by telephone call or text message, followed by a confirming email of alarms from both the Centrac® ATMS and Signalized Intersections. Town staff will communicate to Econolite staff which issues require notification, such as:

- Signal in Flash
- Comm Failure
- Detector Failure
- Server Performance

### Weekly Status Meetings

Econolite will conduct a weekly status meeting via Zoom with Town staff at 9am every Monday. The purpose of this meeting is to coordinate with Town staff to ensure the Town and Econolite Operators are aware of any issues and operations for the upcoming week.

### Options

Should the Town require operational assistance outside of designated AM/PM Peak hours, Econolite can provide these services at an additional cost.

## 5.3 Cost Controls & Budgeting

Econolite's approach to cost control and budgeting for all of our projects involves the following four processes:

1. Plan Cost Management
2. Estimate Costs
3. Determine Budget
4. Control Costs

We describe each of these processes in the following sections.

### 5.3.1 Plan Cost Management

Plan cost management is the initial process of project cost management where we define how the costs of the project are estimated, budgeted, managed, monitored, and controlled. We typically use WBS (Work Breakdown Structures) or historical data for similar projects to define the cost resource requirements, which include time, material, labor, equipment, etc. This process gives a rough outline of the number of resources involved and shows the optimum path to manage the project costs throughout the project lifecycle.

### 5.3.2 Estimate Costs

The second step in our project cost management planning helps in estimating the cost of the resources required for project completion. Since cost is an important variable that ensures project success, we are very careful while producing the estimated amount of the total project cost. Throughout the project lifecycle, this process is performed at periodical intervals. Our Project Manager uses various methods to estimate costs depending on the amount of information available.

### 5.3.3 Determine Budget

# Scope of Work

## ATSPM & VBD/BPS for the Los Gatos Smart Signals Project Town of Los Gatos, California



Determining the budget is the third step in our cost management process where the estimated cost of individual activities or tasks is summed up to draw the cost baseline. The cost baseline of the budget includes all authorized funds that are essential for project execution. This budget includes various reserves of contingency while keeping the management reserves far at the bay. Cost baseline is an authorized time-phased budget that is used as the initial point for monitoring and calculating the project performance and progress. This process is executed at specific points in a project which are generally predefined.

### 5.3.4 Control Costs

Controlling costs is the final step in our project cost management process, on that is primarily concerned with the measurement of variances of the actual costs from the proposed baseline. Various methods and procedures are implemented here to track the project performance and expenses against its progress rate. Meanwhile, all these variances are recorded and compared with the actual cost baseline. The control costs process is responsible for explaining the reason for a variance and further assists our Project Manager in taking corrective actions to incur minimal costs and control the entire project's expenses to close it within the agreed budget.

### 5.4 Minimizing Cost & Schedule

The Econolite Team's approach to ATSPM deployment is based on expanding the Town's Centracs Edaptive ATCS, currently being deployed by Econolite via the current ATMS/ATCS project. Centracs Edaptive builds on Centracs SPM, and as such, thirteen of the Town's thirty-one intersections will already have Centracs SPM operational at that the time when this project commences. As such, bringing the remaining eighteen intersections on-line in Centracs SPM as part of this project will be a straightforward process, with all of the front-end setup and configuration work for the base Centracs SPM already completed. The Town's ATSPM element project, as a result, will benefit both from a cost and schedule perspective.

### 5.5 Potential System Deployment Issues

Although we do not foresee any issues preventing a successful project completion, it behooves us to mention the risk in not receiving all the information needed for intersection device configuration up front. This would include all the information about the intersections, and importantly the Signal Phasing and Timing of each project intersection. In order to mitigate this risk, a clear timeline of what is expected (from whom and when) will be created, in order to avoid confusion or delay in the project timeline. This technique is currently being used on the project previously described in *Section 3.2.1*, where Econolite and Applied Information have partnered to provide a connected corridor in Honolulu, HI.

## 6. Schedule of Work

The Econolite Team's project schedule is contained on the following page and shows the expected Notice-to-Proceed date of March 1, 2021. Econolite expects to be complete with both the ATSPM and VBD/BPS project elements within 5 ½ months. However, this is predicated on a couple elements. First, the communications system is designed, constructed, and operational. Second, that Centracs traffic signal control system is installed, and operational, as Cobalt controller installation are a part of that project.

ID	Task Name	Duration	Start	Finish	March 2021	April 2021	May 2021	June 2021	July 2021	August 2021	September 2021	October 2021
1	<b>ATSPM and Virtual Bike Detection/Bike Priority System</b>											
2	<b>TASK 1: PROJECT MANAGEMENT</b>	<b>141 days</b>	<b>Mon 3/1/21</b>	<b>Tue 9/14/21</b>	[Gantt bar for Task 1: PROJECT MANAGEMENT]							
3	Kick-Off Meeting	0 days	Mon 3/1/21	Mon 3/1/21	[Gantt bar for Kick-Off Meeting]							
4	<b>Bi-Weekly Meetings</b>	<b>140 days</b>	<b>Tue 3/2/21</b>	<b>Tue 9/14/21</b>	[Gantt bar for Bi-Weekly Meetings]							
20	<b>TASK A2.0 Furnish &amp; Install ATSPM</b>	<b>130 days</b>	<b>Mon 2/1/21</b>	<b>Fri 7/30/21</b>	[Gantt bar for Task A2.0 Furnish & Install ATSPM]							
21	2.1 Detection zone configuration diagrams to City	3 days	Tue 3/2/21	Thu 3/4/21	[Gantt bar for 2.1]							
22	2.2: Acquire As-Built Detector Layouts	6 days	Tue 3/2/21	Tue 3/9/21	[Gantt bar for 2.2]							
23	2.3 Review detector layouts	5 days	Wed 3/10/21	Tue 3/16/21	[Gantt bar for 2.3]							
24	2.4 Site setup and configuration	3 days	Wed 3/17/21	Fri 3/19/21	[Gantt bar for 2.4]							
25	2.5 Configure IDM	30 days	Mon 3/22/21	Fri 4/30/21	[Gantt bar for 2.5]							
26	2.6 Setup corridors in SPM	18 days	Mon 5/3/21	Wed 5/26/21	[Gantt bar for 2.6]							
27	2.7 Review SPM Settings	5 days	Thu 5/27/21	Wed 6/2/21	[Gantt bar for 2.7]							
28	TMC Construction (by others)	66 days	Mon 2/1/21	Sat 5/1/21	[Gantt bar for TMC Construction]							
29	Install Servers at TMC (by others)	22 days	Mon 6/14/21	Tue 7/13/21	[Gantt bar for Install Servers at TMC]							
30	Construction (by others)	115 days	Mon 2/22/21	Fri 7/30/21	[Gantt bar for Construction]							
31	<b>TASK B2.0 Furnish &amp; Install VBD/BSP Software/Hardware</b>	<b>80 days</b>	<b>Mon 3/22/21</b>	<b>Fri 7/9/21</b>	[Gantt bar for Task B2.0 Furnish & Install VBD/BSP Software/Hardware]							
32	2.1 Set up test intersection	10 days	Mon 3/22/21	Fri 4/2/21	[Gantt bar for 2.1]							
33	2.2 Acquire phase diagrams and signal timing.	5 days	Mon 3/22/21	Fri 3/26/21	[Gantt bar for 2.2]							
34	2.3 Furnish and install VBD/BSP software/hardware	30 days	Mon 4/5/21	Fri 5/14/21	[Gantt bar for 2.3]							
35	2.4 Outreach	15 days	Mon 6/21/21	Fri 7/9/21	[Gantt bar for 2.4]							
36	<b>TASK 3: Verification, Testing Acceptance</b>	<b>123 days</b>	<b>Mon 4/5/21</b>	<b>Wed 9/22/21</b>	[Gantt bar for Task 3: Verification, Testing Acceptance]							
37	3.1 Develop Test Plan - ATSPM	8 days	Mon 4/5/21	Wed 4/14/21	[Gantt bar for 3.1]							
38	3.2 Develop Test Plan - VBD/BSP	8 days	Mon 4/12/21	Wed 4/21/21	[Gantt bar for 3.2]							
39	3.3 Acceptance Test - ATSPM	15 days	Mon 8/2/21	Fri 8/20/21	[Gantt bar for 3.3]							
40	3.4 ATSPM 30-day burn-in	23 days	Mon 8/23/21	Wed 9/22/21	[Gantt bar for 3.4]							
41	3.5 Acceptance Test - VBD/BSP	2 days	Mon 8/9/21	Tue 8/10/21	[Gantt bar for 3.5]							
42	3.6 VBD/BSP 30-day burn-in	23 days	Wed 8/11/21	Fri 9/10/21	[Gantt bar for 3.6]							
43	<b>TASK 4: Training</b>	<b>81 days</b>	<b>Mon 6/7/21</b>	<b>Mon 9/27/21</b>	[Gantt bar for Task 4: Training]							
44	4.1 Develop Training Plans	10 days	Mon 6/7/21	Fri 6/18/21	[Gantt bar for 4.1]							
45	4.2 ATSPM operations training	2 days	Thu 9/23/21	Fri 9/24/21	[Gantt bar for 4.2]							
46	4.3 ATSPM admin & maintenance training	1 day	Mon 9/27/21	Mon 9/27/21	[Gantt bar for 4.3]							
47	4.4 VBD/BSP operations training	2 days	Mon 9/13/21	Tue 9/14/21	[Gantt bar for 4.4]							
48	4.5 VBD/BSP admin & maintenance training	1 day	Wed 9/15/21	Wed 9/15/21	[Gantt bar for 4.5]							
49	<b>TASK 5: Warranty and Support</b>	<b>1053 days</b>	<b>Mon 9/13/21</b>	<b>Wed 9/24/25</b>	[Gantt bar for Task 5: Warranty and Support]							
50	5.1 ATSPM Year 1-3	784 days	Thu 9/23/21	Tue 9/24/24	[Gantt bar for 5.1 ATSPM Year 1-3]							
51	5.1 ATSPM Year 4+ (optional)	261 days	Wed 9/25/24	Wed 9/24/25	[Gantt bar for 5.1 ATSPM Year 4+ (optional)]							
52	5.2 VBD/BSP Year 1-3	784 days	Mon 9/13/21	Thu 9/12/24	[Gantt bar for 5.2 VBD/BSP Year 1-3]							
53	<b>Task 6: Software as a Service</b>	<b>261 days</b>	<b>Thu 9/23/21</b>	<b>Thu 9/22/22</b>	[Gantt bar for Task 6: Software as a Service]							
54	6.1 IDEA Intersection (13) Monitoring	261 days	Thu 9/23/21	Thu 9/22/22	[Gantt bar for 6.1 IDEA Intersection (13) Monitoring]							
55	6.2 Town Intersection (18) Monitoring	261 days	Thu 9/23/21	Thu 9/22/22	[Gantt bar for 6.2 Town Intersection (18) Monitoring]							



### 7. Conflict of Interest Statement

Econolite Systems, Inc. certifies the following:

- Econolite Systems does not have any financial, business or other relationship with the Town of Los Gatos that may have an impact upon the outcome of the contract resulting from this RFP. While Econolite Systems is the current system vendor for the Town's ATMS/ATCS, the Town has determined that this involvement does not constitute a conflict of interest for the ATSPM or VBD/BPS project elements.
- Econolite Systems does not have any current clients who may have a financial interest in the outcome of this contract or the construction project that will follow.

### 8. Litigation

Econolite Systems has not been involved in any litigation in connection with prior, similar projects within the last five years.

### 9. Contract Agreement

Econolite affirms that the terms contained in our proposal shall remain in effect for one-hundred twenty (120) days following the date proposal submittals are due (December 4, 2020).

Econolite is not requesting any changes to the Town's agreement contained in Attachment 4 of the RFP.

### 10. Federal-Aid Provisions

Federal-aid provision forms are provided on the following pages.

Attachment 5 – Required Local Assistance Procedures Manual Exhibits

**Signature Page**

The signature below certifies the Proposer understands the Federal Requirements for this project and that the following Caltrans Local Assistance Procedures Manual Exhibits have been completed as required and included in the proposal or will be completed and submitted with the agreement as required:

Exhibit 10-I: Notice to Proposers DBE Information

Exhibit 10-O1: Consultant Proposal DBE Commitment

Exhibit 10-O2: Consultant Contract DBE Commitment (to be completed after award)

Exhibit 10-Q: Disclosure of Lobbying Activities

Exhibit 15-H: Proposer/Contractor DBE Information —Good Faith Efforts

Statement Signature:  \_\_\_\_\_

Title: Vice President

Firm Name: Econolite Systems, Inc.

Date: December 2, 2020

The above exhibits are attached and the proposers should use the up-to-date exhibits provided on the Caltrans Local Assistance Procedures Manual:

<http://www.dot.ca.gov/hq/LocalPrograms/lam/lapm.htm>

Reset Form

**EXHIBIT 10-01 CONSULTANT PROPOSAL DBE COMMITMENT**

1. Local Agency: Town of Los Gatos 2. Contract DBE Goal: 3%  
 3. Project Description: AUTOMATED TRAFFIC SIGNAL PERFORMANCE MEASURES ELEMENT  
 4. Project Location: Los Gatos, California  
 5. Consultant's Name: Econolite Systems, Inc. 6. Prime Certified DBE:

7. Description of Work, Service, or Materials Supplied	8. DBE Certification Number	9. DBE Contact Information	10. DBE %
Detection inventory, QA/QC, Data Mapping	DBE#40772	TJKM Consultants, Nayan Amin, 925-463-0611	3%
<b>Local Agency to Complete this Section</b>			11. TOTAL CLAIMED DBE PARTICIPATION  3 %
17. Local Agency Contract Number: _____ 18. Federal-Aid Project Number: _____ 19. Proposed Contract Execution Date: _____ 20. Consultant's Ranking after Evaluation: _____	IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Written confirmation of each listed DBE is required.   12. Preparer's Signature _____ 13. Date <u>12/2/20</u> Marc A. Porter 14. Preparer's Name _____ 15. Phone <u>310-418-1663</u> Vice President 16. Preparer's Title _____		
Local Agency certifies that all DBE certifications are valid and information on this form is complete and accurate.  _____ _____ _____			

DISTRIBUTION: Original – Included with consultant's proposal to local agency.

**ADA Notice:** For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

**EXHIBIT 10-01 CONSULTANT PROPOSAL DBE COMMITMENT**

1. Local Agency: Town of Los Gatos 2. Contract DBE Goal: 2%  
 3. Project Description: VIRTUAL BICYCLE DETECTION/BICYCLE PRIORITY SYSTEM ELEMENT  
 4. Project Location: Los Gatos, California  
 5. Consultant's Name: Econolite Systems, Inc. 6. Prime Certified DBE:

7. Description of Work, Service, or Materials Supplied	8. DBE Certification Number	9. DBE Contact Information	10. DBE %
Detection inventory, QA/QC, Data Mapping	DBE#40772	TJKM Consultants, Nayan Amin, 925-463-0611	2%
<b>Local Agency to Complete this Section</b>			2 %
17. Local Agency Contract Number: _____ 18. Federal-Aid Project Number: _____ 19. Proposed Contract Execution Date: _____ 20. Consultant's Ranking after Evaluation: _____	<b>11. TOTAL CLAIMED DBE PARTICIPATION</b>		
Local Agency certifies that all DBE certifications are valid and information on this form is complete and accurate.  _____ _____ _____			IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Written confirmation of each listed DBE is required.   12/2/20 12. Preparer's Signature _____ 13. Date _____ Marc A. Porter 310-418-1663 14. Preparer's Name _____ 15. Phone _____ Vice President 16. Preparer's Title _____

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EXHIBIT 10-Q DISCLOSURE OF LOBBYING ACTIVITIES

COMPLETE THIS FORM TO DISCLOSE LOBBYING ACTIVITIES PURSUANT TO 31 U.S.C. 1352

<b>1. Type of Federal Action:</b> <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	<b>2. Status of Federal Action:</b> <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	<b>3. Report Type:</b> <input type="checkbox"/> a. initial <input type="checkbox"/> b. material change  <b>For Material Change Only:</b> year _____ quarter _____ date of last report _____
<b>4. Name and Address of Reporting Entity</b>  <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, if known  Congressional District, if known _____	<b>5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:</b>  Congressional District, if known _____	
<b>6. Federal Department/Agency:</b> _____	<b>7. Federal Program Name/Description:</b>  CFDA Number, if applicable _____	
<b>8. Federal Action Number, if known:</b> _____	<b>9. Award Amount, if known:</b> _____	
<b>10. Name and Address of Lobby Entity</b> (If individual, last name, first name, MI)  (attach Continuation Sheet(s) if necessary)	<b>11. Individuals Performing Services</b> (including address if different from No. 10) (last name, first name, MI)	
<b>12. Amount of Payment (check all that apply)</b> \$ _____ <input type="checkbox"/> actual <input type="checkbox"/> planned	<b>14. Type of Payment (check all that apply)</b> <input type="checkbox"/> a. retainer <input type="checkbox"/> b. one-time fee <input type="checkbox"/> c. commission <input type="checkbox"/> d. contingent fee <input type="checkbox"/> e. deferred <input type="checkbox"/> f. other, specify _____	
<b>13. Form of Payment (check all that apply):</b> <input checked="" type="checkbox"/> a. cash <input type="checkbox"/> b. in-kind; specify: nature _____ Value _____		
<b>15. Brief Description of Services Performed or to be performed and Date(s) of Service, including officer(s), employee(s), or member(s) contacted, for Payment Indicated in Item 12:</b>  (attach Continuation Sheet(s) if necessary)	<b>NOT APPLICABLE</b>	
<b>16. Continuation Sheet(s) attached:</b> Yes <input type="checkbox"/> No <input type="checkbox"/>	<b>Signature:</b> _____ <b>Print Name:</b> Jason Mamahay <b>Title:</b> Estimator <b>Telephone No.:</b> (975) 455-5267 <b>Date:</b> 9/30/20	
<b>17. Information requested through this form is authorized by Title 31 U.S.C. Section 1352. This disclosure of lobbying reliance was placed by the tier above when his transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semiannually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</b>	Authorized for Local Reproduction Standard Form - LLL	

Standard Form LLL Rev. 04-28-06

Distribution: Orig- Local Agency Project Files



# Scope of Work

ATSPM & VBD/BPS for the Los Gatos Smart Signals Project  
Town of Los Gatos, California



## 11. Cost Proposal

Town of Los Gatos					
ATSPM and VBD/BPS					
Federal Number: STPLN1 6084(227)					
PRICE PROPOSAL FORM					
Task	Description	Quantity	Unit <sup>3</sup>	Unit Price	Row Price
Automated Traffic Signal Performance Measures					
	Project Mobilization (up to 5% of project total.)	1	LS	\$3,830	\$3,830
SPM 2.0	Furnish and Install ATSPM software and hardware	1	LS		\$55,520
SPM 3.0	Verification and Acceptance Test Procedures <sup>1</sup>	1	LS	\$5,544	
SPM 3.0	Fully configured, tested and verified ATSPM system	1	LS	\$30,049	
SPM 3.0	Verification and Acceptance Test Report	1	LS	\$11,437	
SPM 4.0	Training Program	1	LS	\$8,490	
SPM 5.0	Maintenance and Support Services (years 1-3)	3	Annual LS	\$6,242	\$18,726
SPM 5.0	Maintenance and Support Services (years 4-5)	2	Annual LS	\$10,749	\$21,498
SPM 6.0	Support - Signal Operations (13 IDEA Intersections)	1	LS	\$100,000	\$100,000
SPM 6.0	Support - Signal Operations (18 Town Intersections)	1	LS	\$25,000	\$25,000
ATSPM SUBTOTAL					\$ 224,574
Virtual Bicycle Detection/Bicycle Priority System					
	Project Mobilization (up to 5% of project total.)	1	LS	\$3,000	\$3,000
VBD 2.0	Furnish and Install VBD/BSP software and hardware	1	LS		\$86,977
VBD 3.0	Verification and Acceptance Test Procedures <sup>1</sup>	1	LS	\$7,047	
VBD 3.0	Proof of Concept Report	1	LS	\$4,048	
VBD 3.0	Fully configured, tested and verified VBD/BPS system	1	LS	\$65,768	
VBD 3.0	Verification and Acceptance Test Report	1	LS	\$7,114	
VBD 4.0	Training Program	1	LS	\$3,000	
VBD 5.0	Maintenance and Support Services (years 1-3)	3	Annual LS	\$1,966	\$5,898
VBD/BPS SUBTOTAL					\$95,875
<b>GRAND TOTAL</b>					<b>\$320,449</b>

Vendor Name: Econolite Systems Inc.  
 Contact Name: Marc Porter  
 Contact Email: [mporter@econolite.com](mailto:mporter@econolite.com)  
 Contact Phone: 310-418-1663