

System Requirement ID	Description	Mandatory (M)/ Critical (C)/ Desirable (D)	Provided?	Verification Method
1 Los Gatos System Requirements				
1.2 Los Gatos ATSPM Requirements				
1.2.1 Access Control				
Los Gatos System Requirements-1	The system shall provide monitoring and control access from the following locations.	M		Demonstration of software
	Los Gatos TMC	M		Demonstration of software
	Los Gatos LAN or WAN	M		Demonstration of software
Los Gatos System Requirements-2	The system shall allow remote access using a secure Virtual Private Network (VPN).	M		Demonstration of software
Los Gatos System Requirements-3	The ATSPM system shall be accessible from a Windows-based desktop or laptop.	M		Demonstration of software
Los Gatos System Requirements-4	The ATSPM system shall be accessible from a Mac-based desktop or laptop.	D		Demonstration of software
Los Gatos System Requirements-5	The ATSPM system shall be accessible from a tablet using Apple IOS, Google Android or Windows for mobile devices.	D		Demonstration of software
Los Gatos System Requirements-6	The ATSPM system shall be accessible from a mobile phone using Apple IOS, Google Android or Windows for mobile devices.	D		Demonstration of software
Los Gatos System Requirements-7	The ATSPM system shall be accessible using the Internet Explorer, Safari, Chrome and Firefox web browsers.	D		Demonstration of software
1.2.2 Security				
Los Gatos System Requirements-8	The system shall provide the ability to control and limit user access via user privileges (allowing for different levels of user access to system features and functions).	M		Demonstration of software
	Local access to the system	M		Demonstration of software
	Remote access to the system	M		Demonstration of software
	System monitoring	M		Demonstration of software
	Database	M		Demonstration of software
	Administration of the system	M		Demonstration of software
	System parameters	M		Demonstration of software
	Report generation	M		Demonstration of software
	Configuration	M		Demonstration of software
	Security alerts	M		Demonstration of software
Los Gatos System Requirements-9	The ATSPM system shall support authentication of individual users via individual user names and passwords.	M		Demonstration of software
Los Gatos System Requirements-10	The ATSPM system shall not limit the number of user accounts that can be created to allow and grant access.	M		Demonstration of software
Los Gatos System Requirements-11	The ATSPM shall provide varied levels of data access and analytic functionality that are tiered by multiple user types.	M		Demonstration of software
Los Gatos System Requirements-12	The system shall provide full access to the administrator.	M		Demonstration of software
Los Gatos System Requirements-13	The ATSPM system shall allow user types to be tied to user log ins.	M		Demonstration of software
Los Gatos System Requirements-14	The ATSPM system shall restrict access to specific performance measures based on user type.	D		Demonstration of software
Los Gatos System Requirements-15	The system shall show operators/administrator who is logged in to the system at a given time.	D		Demonstration of software
Los Gatos System Requirements-16	The ATSPM shall provide access at the following locations:	M		Demonstration of software
	Los Gatos TMC	M		Demonstration of software
	Los Gatos LAN or WAN	C		Demonstration of software
	Remote locations via internet	C		Demonstration of software
Los Gatos System Requirements-17	The ATSPM system's server hosting locations shall have geographic redundancy and automatic failover in the event of an outage.	M		Demonstration of software

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Los Gatos System Requirements-18	The ATSPM system shall utilize industry standard security methods for data storage and access.	M		Demonstration of software
Los Gatos System Requirements-19	The ATSPM system shall employ industry standard encryption to ensure user login names and passwords are secure.	M		Demonstration of software
Los Gatos System Requirements-20	The system shall allow the system admin to implement password rules and password change requirements.	M		Demonstration of software
1.2.3 System Configuration				
Los Gatos System Requirements-21	The system shall monitor a minimum of 50 signal controllers.	M		Demonstration of software
Los Gatos System Requirements-22	The Performance Measurement Server shall configure how the high-resolution data is handled from local traffic signal controllers.	M		Demonstration of software
Los Gatos System Requirements-23	High-resolution data shall include all enumerated events as described in Sturdevant, et. al., "Indiana High Resolution Data Logger Enumerations" November, 2012, or later document as developed under Pooled Fund Study TPF-5(377).	M		Demonstration of software
Los Gatos System Requirements-24	The ATSPM system shall provide all services and software necessary for retrieving high-resolution controller data.	M		Demonstration of software
Los Gatos System Requirements-25	The ATSPM system shall capture high-resolution data on a user-defined basis as frequently as a tenth of a second.	M		Demonstration of software
Los Gatos System Requirements-26	The high-resolution data shall be date and time-stamped.	M		Demonstration of software
Los Gatos System Requirements-27	The high-resolution data shall include its associated event parameter.	M		Demonstration of software
Los Gatos System Requirements-28	The event parameters shall contain data used to identify the source or nature of the event.	M		Demonstration of software
Los Gatos System Requirements-29	The ATSPM system shall be able to generate reports of high-resolution data for the performance measures.	M		Demonstration of software
Los Gatos System Requirements-30	The high-resolution data shall be able to be pushed to the cloud host for storage, processing and retrieval.	M		Demonstration of software
Los Gatos System Requirements-31	The high-resolution data shall be owned exclusively by the Town of Los Gatos.	M		Demonstration of software
Los Gatos System Requirements-32	The Performance Measurement Server shall be a separate server, independent of from any Time-of-Day or Adaptive Traffic Control System servers.	M		Demonstration of software
Los Gatos System Requirements-33	The system shall fully satisfy all requirements when connected to a minimum of 50 ATSPM-capable local controllers.	M		Demonstration of software
Los Gatos System Requirements-34	The system shall fulfill all requirements when connected to the local controller firmware.	M		Demonstration of software
Los Gatos System Requirements-35	The system shall fully satisfy all requirements when connected to an Ethernet communications network	M		Demonstration of software
Los Gatos System Requirements-36	The system shall fulfill requirements within a minimum communications bandwidth of 2 Mbps.	M		Demonstration of software
Los Gatos System Requirements-37	The system shall work with the Ethernet-based communications architecture designed and deployed through ATMS Project.	M		Demonstration of software
Los Gatos System Requirements-38	The system shall operate on a stand alone server located at the Town of Los Gatos TMC or as a cloud-based solution.	M		Demonstration of software
Los Gatos System Requirements-39	The ATSPM system shall integrate with the Town's ATCS system in a manner that allows the user to access all three systems through a single application.	D		Demonstration of software
Los Gatos System Requirements-40	The ATSPM system shall not require any communication access that transmits inbound communication from the ATSPM system to the controller.	M		Demonstration of software
1.2.4 Monitoring				
Los Gatos System Requirements-41	The system shall support the bulk download of event data and other system data to support external data processing.	M		Demonstration of software
Los Gatos System Requirements-42	The system shall update the status of all traffic signal controller connected to the system every (30) seconds.	M		Demonstration of software
Los Gatos System Requirements-43	The system shall update the status of all traffic signal controllers connected to the system 24 hours a day, 7 days a week.	M		Demonstration of software
	The system shall provide a map that displays different levels of information:	M		Demonstration of software

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Los Gatos System Requirements-44	Area-wide	D		Demonstration of software
	Corridor	D		Demonstration of software
	Intersection	D		Demonstration of software
Los Gatos System Requirements-45	The ATSPM system shall display a map view of the entire system upon initially opening the application.	D		Demonstration of software
Los Gatos System Requirements-46	The map view shall display user-defined performance measures.	D		Demonstration of software
Los Gatos System Requirements-47	The map shall allow a user to zoom and click and drag to identify specific intersections in more detail.	D		Demonstration of software
Los Gatos System Requirements-48	The user shall be able to click on an intersection to access a variety of SPM charts relating to the intersection.	M		Demonstration of software
Los Gatos System Requirements-49	The ATSPM system shall be capable of showing locations for degraded performance measures on a map.	D		Demonstration of software
Los Gatos System Requirements-50	The map view shall display performance measures using user-defined threshold values for each performance measure.	M		Demonstration of software
Los Gatos System Requirements-51	The system shall provide a library of symbols for inputs and outputs to help construct the intersection display.	D		Demonstration of software
Los Gatos System Requirements-52	The system shall allow the user to import customized graphical icons to the map icon library.	D		Demonstration of software
Los Gatos System Requirements-53	The system shall display multiple individual intersection-level views simultaneously as separate displays or tiled windows.	D		Demonstration of software
Los Gatos System Requirements-54	The system shall open the intersection display when the intersection on the main map is clicked on.	D		Demonstration of software
Los Gatos System Requirements-55	The system shall show the current phase status of an intersection upon operator selection of the associated intersection icon on the map display.	M		Demonstration of software
Los Gatos System Requirements-56	The system shall display the following traffic signal controller information:	M		Demonstration of software
	Intersection name/number	M		Demonstration of software
	Controller type	D		Demonstration of software
	Firmware and version	D		Demonstration of software
	IP address	D		Demonstration of software
Los Gatos System Requirements-57	The system shall have the capability to display all controller outputs in real-time, including:	M		Demonstration of software
	Vehicle phases (including overlaps)	M		Demonstration of software
	Pedestrian phases	M		Demonstration of software
	Bicycle phases	M		Demonstration of software
	Signs controller by the signal controller	D		Demonstration of software
Los Gatos System Requirements-58	The system shall have the capability to display all controller inputs in real time, including:	M		Demonstration of software
	Vehicle detector actuations	M		Demonstration of software
	Pedestrian detector actuations	M		Demonstration of software
	Bicycle detector actuations	M		Demonstration of software
	Transit signal priority	M		Demonstration of software
	Railroad preemption	M		Demonstration of software
	Emergency vehicle preemption	M		Demonstration of software
1.2.5 Performance Measurements				
Los Gatos System Requirements-59	The ATSPM system shall generate user-defined performance measure reports at user-defined intervals using data that has been updated within 15 minutes of the user-defined interval.	M		Demonstration of software
Los Gatos System Requirements-60	Signal Performance Measure charts shall allow the user to select the time period of data displayed.	M		Demonstration of software
Los Gatos System Requirements-61	Signal Performance Measurement tables shall allow the user to select the time period of data displayed.	M		Demonstration of software

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Los Gatos System Requirements-62	The ATSPM system shall provide the means to compare various performance metrics over user definable date ranges.	M		Demonstration of software
Los Gatos System Requirements-63	The ATSPM system shall provide a tabular comparison of SPMs with indications of improvement or degradation of the performance scores.	M		Demonstration of software
Los Gatos System Requirements-64	The Performance Measurement Server shall retrieve and store high-resolution data from local traffic signal controllers.	M		Demonstration of software
Los Gatos System Requirements-65	The system shall support performance report analytics that can be exported to MS Word, Excel and Adobe PDF.	M		Demonstration of software
Los Gatos System Requirements-66	High-resolution data shall be stored and retrievable for up to 3 years.	M		Demonstration of software
Los Gatos System Requirements-67	The Performance Measurement Server shall provide the following reports in a manner that is consistent with ATSPM version 4.0 (or later) documentation.	M		Demonstration of software
Los Gatos System Requirements-68	The ATSPM system shall produce the following Signal Measurement Charts:	M		Demonstration of software
	Approach Delay	M		Demonstration of software
	Approach Speed	M		Demonstration of software
	Approach Volume	M		Demonstration of software
	Arrivals on Red	M		Demonstration of software
	Pedestrian Events	M		Demonstration of software
	Preemption Events	M		Demonstration of software
	Coordination Diagram	M		Demonstration of software
	Phase Termination	M		Demonstration of software
	Turning Movement Counts	M		Demonstration of software
	Split Failures	M		Demonstration of software
	Split Monitor	M		Demonstration of software
Yellow and Red Actuations Report	M		Demonstration of software	
Los Gatos System Requirements-69	The ATSPM system shall track and report metrics relating to the volumes of traffic arriving at an intersection on a lane-by-lane basis during a user-specified time period.	M		Demonstration of software
Los Gatos System Requirements-70	The ATSPM system shall provide the approach volumes for each phase of a signal that meets detection requirements.	M		Demonstration of software
Los Gatos System Requirements-71	The ATSPM system shall provide approach volumes at an intersection level.	M		Demonstration of software
Los Gatos System Requirements-72	The ATSPM system shall provide approach volumes at a corridor level.	D		Demonstration of software
Los Gatos System Requirements-73	The ATSPM system shall provide approach volumes at all intersections in the system.	M		Demonstration of software
Los Gatos System Requirements-74	The ATSPM system shall track and report metrics relating to the volumes of traffic arriving at an intersection during the red interval	M		Demonstration of software
Los Gatos System Requirements-75	The ATSPM system shall provide an arrival on red chart that shows the volume of vehicles arriving at the intersection on green and the percent of vehicles arriving on red for each cycle during a 1-day/24-hour period.	M		Demonstration of software
Los Gatos System Requirements-76	The ATSPM system shall provide the arrivals on red chart for each phase of a signal that meets detection requirements.	M		Demonstration of software
Los Gatos System Requirements-77	The ATSPM system shall provide arrivals on red at an intersection level.	M		Demonstration of software
Los Gatos System Requirements-78	The ATSPM system shall provide arrivals on red at a corridor level.	D		Demonstration of software
Los Gatos System Requirements-79	The ATSPM system shall provide arrivals on red at a system level.	D		Demonstration of software
Los Gatos System Requirements-80	The ATSPM system shall provide a pedestrian delays chart that displays the amount of delay introduced by the pedestrian actuation.	M		Demonstration of software

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Los Gatos System Requirements-81	The ATSPM system shall provide the pedestrian delays chart for individual approaches of a signal.	M		Demonstration of software
Los Gatos System Requirements-82	The ATSPM system shall provide the pedestrian delays chart as a combined report for all approaches of a signal.	M		Demonstration of software
Los Gatos System Requirements-83	The ATSPM system shall provide pedestrian delay at an intersection level.	M		Demonstration of software
Los Gatos System Requirements-84	The ATSPM system shall provide pedestrian delay at a corridor level.	D		Demonstration of software
Los Gatos System Requirements-85	The ATSPM system shall provide pedestrian delay at a system level.	M		Demonstration of software
Los Gatos System Requirements-86	The ATSPM system shall track and report metrics relating to preemption.	M		Demonstration of software
Los Gatos System Requirements-87	The ATSPM system shall provide a summary of each preemption event for a selected intersection.	M		Demonstration of software
Los Gatos System Requirements-88	The summary shall indicate each preemption event's start time for a selected intersection.	M		Demonstration of software
Los Gatos System Requirements-89	The summary shall indicate each preemption event's duration for a selected intersection.	M		Demonstration of software
Los Gatos System Requirements-90	The ATSPM system shall provide a summary of preemption information (number of calls, number of granted calls) on user-selected intersections.	M		Demonstration of software
Los Gatos System Requirements-91	The ATSPM system shall provide a coordination diagram that shows the volume (vehicles per hour) during each cycle.	M		Demonstration of software
Los Gatos System Requirements-92	The ATSPM system shall provide a coordination diagram that shows start of green during each cycle.	M		Demonstration of software
Los Gatos System Requirements-93	The ATSPM system shall provide a coordination diagram that shows the start of yellow during each cycle.	M		Demonstration of software
Los Gatos System Requirements-94	The ATSPM system shall provide a coordination diagram that shows the start of red during each cycle.	M		Demonstration of software
Los Gatos System Requirements-95	The ATSPM system shall provide the coordination diagram chart for each coordinated phase of a signal that meets detection requirements.	M		Demonstration of software
Los Gatos System Requirements-96	The ATSPM system shall provide a phase termination diagram that shows the number of phase terminations by type (force off or gap out).	M		Demonstration of software
Los Gatos System Requirements-97	The ATSPM shall provide a phase termination diagram that shows the number of phase terminations by type (force off or gap out) displayed according to actual time duration of each phase.	M		Demonstration of software
Los Gatos System Requirements-98	The ATSPM shall calculate and display the percentage of gap outs and force offs for each phase.	M		Demonstration of software
Los Gatos System Requirements-99	The ATSPM system shall provide a diagram showing the turning movement counts for each phase.	M		Demonstration of software
Los Gatos System Requirements-100	The ATSPM system shall provide a diagram showing the turning movement counts for each lane.	M		Demonstration of software
Los Gatos System Requirements-101	The ATSPM system shall provide a diagram showing the turning movement counts on a per cycle basis.	M		Demonstration of software
Los Gatos System Requirements-102	The ATSPM system shall provide a diagram showing the turning movement counts for a user-defined time period.	M		Demonstration of software
Los Gatos System Requirements-103	The ATSPM system shall provide historical turning movement counts in user-defined format as input to the ATCS in the event of detector failure. User-defined format may include Typical Weekday Count, or Previous Same-Day-of-Week Count, for example	D		Demonstration of software
Los Gatos System Requirements-104	The ATSPM system shall track and report metrics relating to split failures.	M		Demonstration of software
Los Gatos System Requirements-105	The ATSPM system shall provide a Split Failures Report for each phase that plots Red Occupancy Ratio for each cycle.	M		Demonstration of software
Los Gatos System Requirements-106	The ATSPM system shall provide a Split Failures Report that plots Green Occupancy Ratio phase terminations for each cycle.	M		Demonstration of software
Los Gatos System Requirements-107	The ATSPM system shall provide the Split Failures Report for each phase of a signal that meets detection requirements.	M		Demonstration of software
Los Gatos System Requirements-108	The ATSPM system shall provide the Split Failures at an intersection level.	M		Demonstration of software
Los Gatos System Requirements-109	The ATSPM system shall provide the Split Failures on a corridor level.	D		Demonstration of software
Los Gatos System Requirements-110	The ATSPM system shall provide the Split Failures for the system.	M		Demonstration of software

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Los Gatos System Requirements-111	The ATSPM system shall provide a Split Monitor chart that plots by phase, the phase termination reason summarizing all cycles throughout the day (e.g. force off or gap out)	M		Demonstration of software
Los Gatos System Requirements-112	The ATSPM system shall provide the Split Monitor chart for each phase of a signal that meets detection requirements	M		Demonstration of software
Los Gatos System Requirements-113	The ATSPM system shall provide the Split Monitor chart by intersection.	M		Demonstration of software
Los Gatos System Requirements-114	The ATSPM system shall provide the Split Monitor chart by corridor.	D		Demonstration of software
Los Gatos System Requirements-115	The ATSPM system shall provide the Split Monitor chart for the system.	M		Demonstration of software
Los Gatos System Requirements-116	The ATSPM system shall provide Yellow and Red Actuations chart at signals that meet detection requirements.	M		Demonstration of software
Los Gatos System Requirements-117	The ATSPM system shall display real-time status of all active SPM alerts.	M		Demonstration of software
Los Gatos System Requirements-118	The ATSPM system shall provide historic and real time alerts with alert time.	M		Demonstration of software
Los Gatos System Requirements-119	The ATSPM system shall provide historic and real time alert notifications.	M		Demonstration of software
Los Gatos System Requirements-120	The ATSPM system shall provide historic and real time alert resolution.	M		Demonstration of software
Los Gatos System Requirements-121	The ATSPM system shall support user-defined pushed email and SMS alerts.	M		Demonstration of software
Los Gatos System Requirements-122	The ATSPM system shall support user-defined alerts based on performance thresholds.	M		Demonstration of software
1.2.6 External Interfaces				
Los Gatos System Requirements-123	The ATSPM shall interface with the Town's ATCS and ATMS systems.	D		Demonstration of software
1.2.7 Software				
Los Gatos System Requirements-124	The vendor's ATSPM software shall be fully operational within the Windows operating system, Apple iOS and Android operating system.	D		Demonstration of software
Los Gatos System Requirements-125	The ATSPM shall allow at least 10 simultaneous users to have full and complete control and access to the ATCS system regardless of the user's location.	M		Demonstration of software
Los Gatos System Requirements-126	The ATSPM shall display, with the user interface, a list of users that are currently logged into the ATCS that shall be available to be viewed by a user-defined set of users and/or administrator.	D		Demonstration of software
Los Gatos System Requirements-127	The ATSPM software shall operate in an environment with PC-based servers and clients.	M		Demonstration of software
Los Gatos System Requirements-128	The ATSPM shall communicate with field controllers over an Ethernet network in a Layer 2 and 3 environment.	M		Demonstration of software
Los Gatos System Requirements-129	The ATSPM shall communicate with field controllers, computer workstations, and servers that reside on various different VLANs within the network.	M		Demonstration of software
Los Gatos System Requirements-130	The ATSPM shall support remote workstation access over a wired and wireless network.	M		Demonstration of software
Los Gatos System Requirements-131	The ATSPM shall support remote workstation access over the Internet or private network via secured VPN connection.	D		Demonstration of software
Los Gatos System Requirements-132	The ATSPM shall utilize a standard database platform to establish user access, rights, and privileges to the ATSPM software.	M		Demonstration of software
Los Gatos System Requirements-133	The ATSPM shall be capable of being installed on a standalone Windows-based server and in a virtual server environment.	D		Demonstration of software
Los Gatos System Requirements-134	For a locally-hosted solution, in the event of an ATSPM system failure, the ATSPM system 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 such as email and/or SMS, or by using an external maintenance management system.	M		Demonstration of software
1.2.8 Training				
Los Gatos System Requirements-135	The vendor shall provide training on all operations of the system.	M		Staff training
Los Gatos System Requirements-136	The vendor shall provide training on troubleshooting the system.	M		Staff training
Los Gatos System Requirements-137	The vendor shall provide training on system configuration.	M		Staff training

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Los Gatos System Requirements-138	The vendor shall provide training on administration of the system.	M		Staff training
Los Gatos System Requirements-139	The vendor shall provide training on the operations of the ATSPM system.	M		Staff training
Los Gatos System Requirements-140	The vendor's training delivery shall include: printed and electronic copies of course materials, presentations and references.	M		Staff training
Los Gatos System Requirements-141	The vendor's training shall be delivered on-site at Town of Los Gatos's TMC.	M		Staff training
Los Gatos System Requirements-142	The vendor shall provide a minimum of 3 days training to a minimum of 10 staff.	M		Staff training
Los Gatos System Requirements-143	The vendor shall provide a minimum of 3, 1-day training sessions.	M		Staff training
Los Gatos System Requirements-144	The vendor shall provide all hardcopy and electronic copies of manuals for the ATSPM software and all other hardware equipment and software program(s) provided as part of the ATSPM system	M		Staff training
1.2.9 Maintenance Support and Warranty				
Los Gatos System Requirements-145	The vendor shall provide maintenance according to a separate maintenance contract. That contract should identify repairs necessary to preserve requirements fulfillment, responsiveness in effecting those repairs, and all requirements on the maintenance provider while performing the repairs.	M		Contract requirement
Los Gatos System Requirements-146	The vendor shall provide routine updates to the software and software environment necessary to preserve the fulfillment of requirements for a period of 3 years. Preservation of requirements fulfillment especially includes all IT management requirements as previously identified.	M		Contract requirement
Los Gatos System Requirements-147	The vendor shall warrant the system to be free of defects in materials and workmanship for a period of 3 years. 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.	M		Contract requirement
Los Gatos System Requirements-148	The vendor shall provide training to up to 5 Town staff members.	M		Contract requirement
Los Gatos System Requirements-149	The vendor shall provide "bug" fixes for the life of the contract.	M		Contract requirement
Los Gatos System Requirements-150	The vendor shall provide a warranty for all hardware components.	M		Contract requirement
Los Gatos System Requirements-151	The vendor shall provide software updates including new features for the life of the contract.	M		Contract requirement
Los Gatos System Requirements-152	The vendor shall demonstrate that a minimum of 5 ATSPM systems have been installed and are currently operating in the United States.	M		Contract requirement
1.3 Los Gatos VBD-BSP Requirements				
1.3.1 Functional Requirements				
Los Gatos System Requirements-153	The VBD/BSP system shall detect bicycle traffic within a corridor.	M		Demonstration of software
Los Gatos System Requirements-154	The VBD/BSP system shall support up to 50 traffic signals.	D		Review of product cut sheet/shop drawing
Los Gatos System Requirements-155	The VBD/BSP system shall detect bicycle traffic within a corridor in a manner similar to automobiles.	D		Demonstration of software
Los Gatos System Requirements-156	The VBD/BSP system shall use a smartphone or other common mobile technology to locate individual bicycle users in real-time.	M		Demonstration of software
Los Gatos System Requirements-157	The VBD/BSP Central application shall send the virtual detector call to the traffic signal controller for the purpose of then issuing a command to the traffic controller for the appropriate approach at the traffic signal to either place a call request or continue an existing request (hold request so the associated phase does not "gap out").	M		Visual inspection/ Demonstration of software
Los Gatos System Requirements-158	The VBD/BSP Central application shall support priority requests sent to the traffic signal controller.	D		Demonstration of software
Los Gatos System Requirements-159	The VBD/BSP Central application shall support time based prioritization (only grants prioritization during specified hours, otherwise place a simple call).	D		Demonstration of software

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Los Gatos System Requirements-160	The VBD/BSP smartphone application shall send a message to the Central application when the bicycle reaches a predetermined trigger point (i.e. the geo-fenced area) upstream of a traffic signal.	D		Demonstration of software
Los Gatos System Requirements-161	The VBD/BSP system shall be capable of suggesting routes to bicyclists.	D		Demonstration of software
Los Gatos System Requirements-162	The VBD/BSP Central application shall be able to distinguish, based on approach speed, whether or not a user is bicycling, driving or walking.	M		Demonstration of software
Los Gatos System Requirements-163	The VBD/BSP Central application shall provide a priority request when multiple bicyclists are detected and an actuation when a single bicyclist is detected.	D		Demonstration of software
Los Gatos System Requirements-164	The VBD/BSP system shall allow operator-adjusted detection zones approaching signalized intersections such as half street, block, by lane, and/or by distance.	M		Demonstration of software
Los Gatos System Requirements-165	The VBD/BSP system shall provide analysis of the experience of bicyclist users of the VBD/BSP system using location, motion, central application and/or controller data.	D		Demonstration of software
Los Gatos System Requirements-166	The VBD/BSP system shall display bicycle paths crossing intersections on aerial photos along with bicycle volumes categorized by time and day.	D		Demonstration of software
Los Gatos System Requirements-167	The VBD/BSP Central application shall allow operator-defined bicycle user groups and routes.	M		Demonstration of software
Los Gatos System Requirements-168	The VBD/BSP Central application shall send an alarm to the system operator when the number of bicycles detected on a school day are less than a user-defined threshold.	M		Demonstration of software
Los Gatos System Requirements-169	The VBD/BSP system shall display to the user the time of each activation and the system response.	M		Demonstration of software
Los Gatos System Requirements-170	The VBD/BSP system shall support operations from workstations at the desks of transportation and support staff.	M		Demonstration of software
Los Gatos System Requirements-171	The VBD/BSP system shall support operations on mobile computing devices in various Town buildings.	M		Demonstration of software
Los Gatos System Requirements-172	The VBD/BSP system shall support operations on mobile computing devices in the field and from remote locations.	M		Demonstration of software
Los Gatos System Requirements-173	The VBD/BSP central server equipment will operate in a cloud-based architecture and administered by the system vendor.	M		Demonstration of software
Los Gatos System Requirements-174	The VBD/BSP system shall fully function in a computer network environment with various system devices and components potentially residing on different networks, different Virtual Local Area Networks (VLANs) and between network security devices (i.e., firewalls).	M		Demonstration of software
Los Gatos System Requirements-175	The VBD/BSP system shall be capable of operating in a virtual server environment.	M		Demonstration of software
Los Gatos System Requirements-176	The VBD/BSP system shall support Town transportation staff logging into the system from remote locations over the Internet and have full functionality consistent with their access rights.	M		Demonstration of software
1.3.2 Security				
Los Gatos System Requirements-177	The ATSPM system shall utilize industry standard security methods for data storage and access.	M		Demonstration of software
Los Gatos System Requirements-178	The ATSPM system shall employ industry standard encryption to ensure user login names and passwords are secure.	M		Demonstration of software
Los Gatos System Requirements-179	The system shall allow the system admin to implement password rules and password change requirements.	M		Demonstration of software
1.3.2 Performance Requirements				
Los Gatos System Requirements-180	The VBD/BSP system shall provide alerts on all system failures through an interface with the ATCS system.	D		Demonstration of software
Los Gatos System Requirements-181	The VBD/BSP system shall process bicycle activity through a cloud-based central system that sends a detection message to the signal within 2 seconds.	M		Demonstration of software
1.3.3 Interface Requirements				
Los Gatos System Requirements-182	The VBD/BSP system shall have a smartphone mobile app that collects detection data.	M		Demonstration of software
Los Gatos System Requirements-183	The VBD/BSP system shall have a user interface that aggregates detection data.	M		Demonstration of software

System Requirement ID	Description	Mandatory (M)/ Critical (C)/ Desirable (D)	Provided?	Verification Method
Los Gatos System Requirements-184	The VBD/BSP system shall have a user interface that analyzes detection data.	M		Demonstration of software
Los Gatos System Requirements-185	The VBD/BSP Central application shall transmit remote detector calls using a NTCIP 1202 OID message set or IP based detector protocol.	M		Demonstration of software
Los Gatos System Requirements-186	The VBD/BSP system shall interface with the ATCS system managing the project intersections by providing real-time detection input.	M		Demonstration of software
Los Gatos System Requirements-187	The VBD/BSP smartphone application shall be designed in a manner that appeals to school age children and provides an incentive for them to use the application.	M		Demonstration of software
Los Gatos System Requirements-188	The VBD/BSP Central application shall transmit the detection data to the traffic signal controller in a compatible format.	M		Demonstration of software
1.3.4 Data Requirements				
Los Gatos System Requirements-189	The smartphone app shall provide telemetry information to the central system. Telemetry information includes the bicycle's location, speed and heading with a time stamp.	M		Demonstration of software
Los Gatos System Requirements-190	The VBD/BSP system shall provide bicycle counts to Town staff for use in further analysis.	M		Demonstration of software
Los Gatos System Requirements-191	The VBD/BSP Central application shall remove or anonymize any personally identifiable information.	M		Demonstration of software
Los Gatos System Requirements-192	The ATCS shall export its systems log in the following formats: MS Excel, text, CSV, and Open Source SQL database.	M		Demonstration of software
Los Gatos System Requirements-193	The VBD/BSP system shall store event log data for a minimum of 365 days.	M		Demonstration of software
Los Gatos System Requirements-194	The VBD/BSP system shall archive all data automatically after a user-specified period not less than 365 days.	M		Demonstration of software
Los Gatos System Requirements-195	The VBD/BSP shall store data logs in a standard relational database management system.	M		Demonstration of software
1.3.5 Non-Functional Requirements				
Los Gatos System Requirements-196	Vendor shall complete an initial Proof of Concept (POC) demonstration at the Los Gatos Boulevard/Shannon Drive intersection. The POC will prove the VBD/BPS functions with Town-owned traffic signal equipment as outlined in the System Requirements and Scope of Work/Attachment 1. Vendor may work on additional intersections before the POC work is complete, but work at other intersections will be "at risk" until the Proof of Concept & Verification Report is approved by the Town.	M		Visual inspection/ Demonstration of software
1.3.6 Training				
Los Gatos System Requirements-197	The vendor shall provide training on all interfaces of the system.	M		Staff training
Los Gatos System Requirements-198	The vendor shall provide training on the operations of the VBD/BSP system.	M		Staff training
Los Gatos System Requirements-199	The vendor shall provide training on troubleshooting the VBD/BSP system.	M		Staff training
Los Gatos System Requirements-200	The vendor shall provide training on system configuration.	M		Staff training
Los Gatos System Requirements-201	The vendor shall provide typical detection layout drawings for Los Gatos intersections, showing recommended detection zone locations and dimensions. A sufficient number of drawings shall be provided to cover all lane configurations at the project intersections.	M		Review of drawings
Los Gatos System Requirements-202	The vendor shall provide training on administration of the system.	M		Staff training
Los Gatos System Requirements-203	The vendor's training delivery shall include: printed course materials and references, electronic copies of presentations and references.	M		Staff training
Los Gatos System Requirements-204	The vendor's training shall be delivered on-site at Town of Los Gatos's TMC.	M		Staff training
Los Gatos System Requirements-205	The vendor shall provide a minimum of 3 days training to a minimum of 10 staff.	M		Staff training
Los Gatos System Requirements-206	The vendor shall provide a minimum of 3, 1-day training sessions.	M		Staff training
Los Gatos System Requirements-207	The vendor shall provide hardcopy and electronic copies of manuals for the VBD/BSP system.	M		Staff training
Los Gatos System Requirements-208	The vendor shall provide electronic copies of annual updates to manuals for the VBD/BSP system for three years after system acceptance.	M		Contract requirement

System Requirement ID	Description	Mandatory (M)/ Critical (C)/ Desirable (D)	Provided?	Verification Method
1.3.7 Maintenance, Support and Warranty				
Los Gatos System Requirements-209	The vendor shall provide maintenance according to a separate maintenance contract. That contract should identify repairs necessary to preserve requirements fulfillment, responsiveness in effecting those repairs, and all requirements on the maintenance provider while performing the repairs.	M		Contract requirement
Los Gatos System Requirements-210	The vendor shall provide routine updates to the software and software environment necessary to preserve the fulfillment of requirements for a period of 3 years. Preservation of requirements fulfillment especially includes all IT management requirements as previously identified.	M		Contract requirement
Los Gatos System Requirements-211	The vendor shall warrant the system to be free of defects in materials and workmanship for a period of 3 years. 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.	M		Contract requirement
Los Gatos System Requirements-212	The vendor shall provide maintenance training to up to 10 Town staff members.	M		Contract requirement