



**REQUEST FOR PROPOSAL (RFP)**  
**Video Detection System Procurement**

City of San Rafael Public Works Department  
111 Morphew St, San Rafael, CA 94901  
February 13, 2020

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# 1 INTRODUCTION

The City of San Rafael (City) is seeking proposals from responsible, qualified firms to provide Video Detection System (VDS) at traffic signal intersections within the City’s downtown area. This VDS shall monitor vehicles on a roadway through video analytics and provide detector outputs to a traffic controller or similar device. Proposals shall be submitted by firms that have a capable and demonstrable product that meet the requirements and specifications described in this RFP. In addition, all interested firms shall have sufficient, readily available resources in the form of trained personnel, support services, specialized staff and financial resources to carry out the work without delay or shortcomings.

The City intends to award a contract being awarded as soon as practicable following the evaluation of proposals.

## 1.1 City Contact

Prospective proposers may contact Lauren Davini, Traffic Engineer, for further information regarding this Request for Proposal (RFP). Deadline for inquiries is 4:00 p.m. on Friday, February 21, 2020. Inquires will be responded no later than 4:00 p.m. on Friday, February 28, 2020. All requests for interpretation or questions must be sent by email and must clearly include the subject line “RFP: Inquiries for VIDEO DETECTION SYSTEM PROCUREMENT”.

Inquiries and written correspondence may be directed to:

Lauren Davini, Traffic Engineer  
111 Morphew Street  
San Rafael, CA 94901  
Email: [lauren.davini@cityofsanrafael.org](mailto:lauren.davini@cityofsanrafael.org)

## 1.2 Project Description

The City is seeking to procure a commercially available, off-the-shelf Video Detection System at 34 signalized intersections within the City’s downtown area. It is expected that camera mounting system, at least 100 ft of Cat5e/6 cable and other equipment needed in the controller cabinet for a fully functional video detection is provided at each intersection. The proposed VDS will need to be a single camera system compatible with the City’s existing camera system and City’s future Automated Traffic Signal Performance Measures (ATSPM), Centrac’s SPM from Econolite.

Table 1 includes the list of traffic signal intersections and existing controller and cabinet infrastructure.

**TABLE 1: LIST OF TRAFFIC SIGNAL INTERSECTIONS**

Intersection No.	Location	Controller	Cabinet
1	4th & HETHERTON	COBALT	O
2	3rd & IRWIN	COBALT	O
3	4th & IRWIN	COBALT	O
4	MISSION & IRWIN	COBALT	O
5	3rd & GRAND	COBALT	O
6	4th & GRAND	COBALT	O
7	4th & LINCOLN	COBALT	O
8	MISSION & LINCOLN	COBALT	O
9	2nd & B	COBALT	M
10	3rd & B	ASC/3	O
11	4th & B	CBD6000	G
12	2nd & A	COBALT	M
13	3rd & A	COBALT	O
14	4th & A	COBALT	O
15	2nd & C	ASC/3	M
16	3rd & C	ASC/3	O
17	4th & C	CBD6000	G
18	4th & D	CBD6000	G
19	2nd & E	COBALT	M
20	3rd & E	COBALT	O
21	4th & E	COBALT	O
22	2nd & TAMALPAIS	COBALT	O
23	3rd & TAMALPAIS	COBALT	O
24	2nd & LINDARO	COBALT	M
25	3rd & LINDARO	ASC/3	M
26	4th & CIJOS	CBD6000	G
27	4th & LOOTENS	CBD6000	G
28	4th & COURT	CBD6000	G
29	2nd & SHAVER	ASC3	O
30	3rd & SHAVER	ASC3	O
31	2nd & G	ASC3	P
32	4th & H	ASC/2S	M
33	Mission/Tamalpais	COBALT	O
34	4th & Tamalpais	COBALT	O

## 2 PROPOSAL REQUIREMENTS

### 2.1 Submittal of Proposal

Sealed proposals will be received by the City of San Rafael Public Work's office until:

4:00 pm on March 06, 2020

Proposals must be received by the time specified to the e-mail address below. Any proposals received after the deadline will not be considered. Proposals shall be clearly labeled as:

City of San Rafael Request for Proposal (RFP) – VIDEO DETECTION SYSTEM

One (1) electronic PDF copy of the proposal package must be submitted via e-mail to:

[lauren.davini@cityofsanrafael.org](mailto:lauren.davini@cityofsanrafael.org)

### 2.2 Proposal Submission Requirements

The proposal shall not exceed 10 pages (10 pages printed single-sided, or 5-pages printed double-sided) including specifications of the proposed system and cost proposal. Excluded from the page count are covers, dividers and table of content.

#### 2.2.1 Title Page

Include a title page indicating the RFP subject, official name of the firm, mailing address, telephone number, date, name of primary contact person, and contact person's phone number and email address.

#### 2.2.2 Transmittal Letter

The letter must be signed by an official authorized to solicit business and enter into contracts for the firm. Provide contact name with phone number and email if different from the person signing the letter. Indicate that the proposal is a firm offer to enter into a contract for a period of 120 days from the proposal due date.

#### 2.2.3 Statement of Qualifications

Provide a statement of qualifications and functionality of the product that addresses the evaluation criteria listed in section 3.2. Provide a list of similar work (three projects minimum) to include dollar amount, project description, and owner/client/reference contacts including phone numbers and addresses.

#### 2.2.4 Cost Proposal

Provide a complete cost proposal for providing video detection system for 34 intersections. Show breakdown of the cost proposal to show cost per intersection. Proposers are encouraged to provide detailed cost breakdown for the VDS components. Include the required warranty terms and price and details for extended maintenance. The cost proposal should also include all ongoing maintenance fees for the first three years.

## 3 SELECTION PROCEDURES

### 3.1 Minimum Qualifications

Minimum qualifications of the Proposer and Product is to ensure that the City implements a time-tested and quality video detection system. To be considered qualified, the Proposer must demonstrate that the following minimum qualifications, including compliance with instructions governing the proposal submission requirements, are met as part of the proposal:

- Proposer shall have at least three years of experience providing VDS systems.
- The proposed VDS must comply with the specifications and requirements in this RFP (Section 4).
- The proposed VDS software must be off-the-shelf with a minimum of three successful deployments of similar scope.
- Proposer shall have existing customer service support office and personnel.

Proposers failing to meet the minimum qualifications will not be considered.

### 3.2 Evaluation Criteria

The selection process will involve evaluating all qualified proposals received by an evaluation panel and based on the following evaluation criteria.

CRITERIA	MAX POINTS
1. Quality and Functionality– This is an assessment of the proposed product that best addresses the City’s needs for VDS and the features (design, compatibility, capability and functionality) as included in this RFP, and vendor’s process for providing upgrades to the system.	50
2. Pricing/Cost – This is an assessment of the Proposer’s cost of the proposed products to include shipping, training, on-going support, required warranty, extended warranties, and maintenance.	40
3. Experience and Resources – This is an assessment of the level of service and responsiveness that the vendor commits to its clients; the amount and extent of user and technical support training and level of assistance the vendor provides during the implementation process.	10
<b>TOTAL</b>	<b>100</b>

The evaluation panel will score each proposal based on the evaluation criteria. The City might choose to ask the proposers to clarify and expand on information submitted in the written proposal. Based on the review of the proposals submitted, the City will award the contract to the highest-ranked Proposer.

### 3.3 Estimated Schedule for Selection

Activity	Date/Time
1. Request for Proposal (RFP) Released	February 13, 2020
2. Deadline to Submit Questions	February 21, 2020 at 4:00pm
3. Response to Questions	February 28, 2020
4. Proposal Due	March 06, 2020 at 4:00pm by e-mail
5. Selection of Recommended Proposer	March 13, 2020
7. Contract Award	April 2020

## 4 SPECIFICATIONS/REQUIREMENTS

### 4.1 General

This specification sets forth the minimum requirements for the Video Detection System (VDS) that monitors vehicles on a roadway via processing of video images and provides detector outputs to a traffic controller or similar device. The VDS shall be a single camera system compatible with different controller units and cabinets at the locations of installation and shall be able to integrate with the City's existing camera system and shall be able to integrate with City's future cloud based ATSPM system, Centracs SPM from Econolite.

### 4.2 Performance Requirements

- The system shall be reliable, consistent, and perform under all weather, lighting, and traffic congestion levels.
- The system shall be able to detect vehicle presence with 98% accuracy under normal day and night conditions, and 96% accuracy under inclement weather (fog, rain, and snow) conditions.
- The VDS should be capable of providing all detection information needed for a fully functional Centracs SPM, including arrival and departure information.

### 4.3 Environmental Requirements

- The VDS shall meet the environmental requirements defined by the National Electrical Manufacturers Association (NEMA) TS1 and TS2 specifications. Operating temperatures shall be from -20 degrees F to +140 degrees F at 10% to 90% relative humidity, non-condensing.

### 4.4 Communications Requirements

1. The system shall communicate with an NTCIP compliant controller over ethernet providing auto-negotiation to 10/100 Mbps, half or full duplex
2. VDS shall provide an ethernet cable for interfacing with NEMA TS2 type A1N, A2N, P1N, or P2N controllers.
3. The ethernet cable shall meet NEMA operating temperature specification -34 °C to 74 °C (-29 °F to 165 °F)
4. The ethernet cable shall be shielded with stranded conductor and jacket meeting UL 2556d
5. Shall communicate to the controller over TCP/IP
6. Shall support communication over SNMP v1, v2c, and v3 protocols
7. Shall support communication over STMP NTCIP protocols reading all objects defined in NTCIP 1201 and 1202 supported by the controller

### 4.5 Camera

The VDS shall consist of a camera that provides 360 degrees of visibility from the point of installation supporting both spherical and quad view configurations. The camera shall be NEMA 4X compliant and shall operate in various weather conditions. The camera shall be powered via Power over Ethernet. The camera shall support at least 9-megapixel capture.



## 4.6 Video Detection

The video detection shall support real-time detection of vehicles, bicycles and pedestrian occupancy in configurable detection zones. Detection accuracy is dependent upon site geometry, sensor placement, camera image quality and detection zone location, and these accuracy levels do not include allowances for occlusion or poor video due to sensor location or quality. Detection zone setup shall not require site specific information such as latitude and longitude to be entered into the system.

### Controller Interface Hardware (SDLC)

1. Shall provide all necessary cabling to connect to a cabinet's existing Port 1/SDLC bus
2. No other cabinet equipment should need to be configured. (e.g. the controller should not need to be reconfigured.) except if the customer wants the device to be able to place detector calls
3. Shall support reading terminal and facility input & outputs at a frequency of at least 10 times per second
4. Shall support reading channel state at a frequency of at least 10 times per second
5. Shall support acquisition of mmu fault status including conflict, red failure and clearance failure
6. Shall support reading information from all detectors wired into the cabinet supporting up to one (1) ms resolution between detection events
7. Shall detect failure of a detector in either always high, or always low, mode.
8. Shall support placing a detector call if a different detector is in fault

## 4.7 System Software

With use of software the system shall discriminately detects the presence of individual vehicles and bicycles in a single or multiple lane using only the video image and sends vehicle and bicycles calls out to the controller via separate outputs. The system software shall also utilize artificial intelligence and deep learning to automatically count and detect pedestrian movement in the crosswalk, count turning movement counts and learn the background to count and distinguish left, through and right turn movements. The system software shall be able to work simultaneously with City's future ATSPM system, Centracs SPM from Econolite. A minimum of 32 video detection zones per approach shall be available.

## 4.8 Installation Support and Training

The supplier of the video camera shall supervise the installation and testing of VDS. If requested, a factory certified representative from the supplier shall be on site during installation. The supplier shall also provide installation and training material on their website.

## 4.9 Warranty, Maintenance and Support

The Video detection system must be warranted to be free of defects in material and workmanship for a period of 3 years from date supplied to the City. During the warranty period, the supplier must repair with new or refurbished materials, or replace at no charge to the City. Product repair or replaced under warranty by the supplier will be returned with transportation prepaid.

During the warranty period, technical support shall be available from the supplier via telephone within four (4) hours of the time a call is made by a user, and this support shall be available from factory certifies personnel or factory certified installers.

Ongoing software support by the supplier must include providing updates to the software free of charge during the warranty period. The supplier must maintain a program for technical support and software updates following expiration of the warranty period. Vendor shall provide a price for extended maintenance and support for additional seven (7) years after the initial three (3) year warranty period.

The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the cameras.