DATE: May 14, 2019
TO: Mayor and Council Members
FROM: Public Works Department
SUBJECT: Signal Synchronization Design and Engineering Services

RECOMMENDATION:
It is recommended that the Mayor and City Council award a contract and approve an agreement with KOA Corporation to provide design and construction engineering services for signal synchronization and timing improvements along Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard, and Florence Avenue corridors in the total amount of $352,520 (includes a twenty-five percent (25%) contingency in the amount of $70,504).

BACKGROUND:
On May 23, 2018, the Los Angeles County Metropolitan Transportation Authority (LACMTA) granted funds to the City of Inglewood (City) to improve the coordination of traffic signals and traffic progression along arterial roads.

On October 2, 2018, the City Council approved four (4) funding agreements LACMTA. These agreements provide funding for traffic signal synchronization projects along Arbor Vitae Street, La Cienega Boulevard, Florence Avenue and Prairie Avenue corridors.

On April 30, 2019, the City Council approved an amendment to the Fiscal Year 2018-19 Annual Capital Improvement Program (CIP) Budget. This amendment provided an appropriation of $670,000 for the Signal Synchronization & Timing Program (Project P690). This appropriation will be used for design, equipment and programming services. Funding for Project P690 is sourced 100% from LACMTA grant funds in City Fund 071 Measure R Streets & Highways.

Proposed projects under Project P690 will enhance safety, facilitate traffic circulation and simultaneously modernize and refine the capabilities of existing signal systems. The projects will result in improvements to mobility and traffic signal coordination, thereby increasing efficiency, reducing traffic congestion, and decreasing vehicle idle time at signalized locations. Signal timing will be updated to comply with the most current guidelines outlined in the California Manual of Uniform Traffic Control Devices (CA-MUTCD). Traffic controller units will be updated for adaptive signalization and to allow for remote accessibility.

The City desires to obtain professional design and engineering services from a consultant to provide design and construction support of synchronization and timing projects for Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard, and Florence Avenue.
DISCUSSION:
On December 6, 2018, the City of Inglewood issued a Request for Proposals to provide design and engineering services for signal synchronization and timing improvements along Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard, and Florence Avenue corridors.

On January 9, 2019, City staff and potential consultants had a pre-proposal meeting. On January 30, 2019, proposals were due. Four (4) proposals were received as shown below:

<table>
<thead>
<tr>
<th>Item</th>
<th>Consultant</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KOA Corporation</td>
<td>Orange, CA</td>
</tr>
<tr>
<td>2</td>
<td>AET &amp; Associates / DKS Associates</td>
<td>Anaheim, CA</td>
</tr>
<tr>
<td>3</td>
<td>Iteris, Inc.</td>
<td>Santa Ana, CA</td>
</tr>
<tr>
<td>4</td>
<td>Kimley Horn &amp; Associates</td>
<td>Los Angeles, CA</td>
</tr>
</tbody>
</table>

The proposals were evaluated for the following rating criteria:

<table>
<thead>
<tr>
<th>Criteria Description</th>
<th>Maximum Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience of the Consulting Firm</td>
<td>10 pts</td>
</tr>
<tr>
<td>Experience of Project Team</td>
<td>10 pts</td>
</tr>
<tr>
<td>Project Understanding / Schedule</td>
<td>20 pts</td>
</tr>
<tr>
<td>Past Relevant Projects / references</td>
<td>15 pts</td>
</tr>
<tr>
<td>Response to Scope of Services</td>
<td>30 pts</td>
</tr>
<tr>
<td>The depth of Resources to perform work</td>
<td>10 pts</td>
</tr>
<tr>
<td>Familiarity with the City and Location of Consultant</td>
<td>5 pts</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

After a thorough review by staff based on the above criteria, KOA Corporation (Consultant) was selected as the most qualified consultant to perform the desired services. Engineering services will commence in May 2019 with substantial completion by the end of current fiscal year, and completion by December 2019. The Consultant will also provide and perform construction management services through project construction completion and close out.

The Consultant provided engineering services cost estimates for each project corridor. The fee breakdown for each corridor is shown in the following table:

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Total Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prairie Avenue Signal Synchronization</td>
<td>$ 71,731.00</td>
</tr>
<tr>
<td>La Cienega Boulevard Signal Synchronization</td>
<td>$ 35,164.00</td>
</tr>
<tr>
<td>Arbor Vitae Street Signal Synchronization</td>
<td>$ 50,909.00</td>
</tr>
<tr>
<td>Florence Avenue Signal Synchronization</td>
<td>$ 124,212.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$ 282,016.00</strong></td>
</tr>
</tbody>
</table>
FINANCIAL/FUNDING ISSUES AND SOURCES:
LACMTA and the City have entered into four (4) separate funding agreements to complete signal synchronization projects along the Prairie Avenue, Arbor Vitae Street, La Cienega Boulevard and Florence Avenue corridors. A summary of funding available is shown in the following table:

<table>
<thead>
<tr>
<th>Project Name</th>
<th>LACMTA Project Number</th>
<th>Agreement No.</th>
<th>Approved Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prairie Avenue Signal Synchronization</td>
<td>MR312.70</td>
<td>19-006</td>
<td>205,000</td>
</tr>
<tr>
<td>LaCienega Boulevard Signal Synchronization</td>
<td>MR312.71</td>
<td>19-005</td>
<td>80,000</td>
</tr>
<tr>
<td>Arbor Vitae Street Signal Synchronization</td>
<td>MR312.72</td>
<td>19-003</td>
<td>130,000</td>
</tr>
<tr>
<td>Florence Avenue Synchronization</td>
<td>MR312.73</td>
<td>19-004</td>
<td>255,000</td>
</tr>
</tbody>
</table>

**TOTAL** $670,000

Consultant design services will commence immediately upon approval of the proposed agreement. Design and engineering services for all four LACMTA funded projects will be performed under the CIP project code P660 Signal Synchronization & Timing Program. The P690 project code will be used for all program expenditures including Consultant professional services and future equipment and programming services to be completed under separate agreements.

To track expenditures of the four (4) LACMTA funded projects, staff will request the issuance of four (4) separate purchase orders. Fund 071 expenditure account code 071.100.P690.44860 will be used for encumbrance of each purchase orders as shown in the following table:

<table>
<thead>
<tr>
<th>Purchase Order Description</th>
<th>Account No.</th>
<th>Encumbrance Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prairie Avenue Signal Synchronization</td>
<td>071.100.P690.44860</td>
<td>71,731</td>
</tr>
<tr>
<td>LaCienega Boulevard Signal Synchronization</td>
<td>071.100.P690.44860</td>
<td>35,164</td>
</tr>
<tr>
<td>Arbor Vitae Street Signal Synchronization</td>
<td>071.100.P690.44860</td>
<td>50,909</td>
</tr>
<tr>
<td>Florence Avenue Synchronization</td>
<td>071.100.P690.44860</td>
<td>124,212</td>
</tr>
</tbody>
</table>

**Total – All Purchase Orders** $282,016

Due to the nature of work, the proposed projects have inherent risks for unknown conditions or field variances. Therefore, staff recommends a project contingency of twenty-five percent (25%) in a total amount not to exceed $70,504. To track contingency expenditures, staff will request the issuance of four (4) separate purchase orders as shown in the following table:

<table>
<thead>
<tr>
<th>Purchase Order Description</th>
<th>Account No.</th>
<th>Encumbrance Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prairie Avenue Signal Synch - Contingency</td>
<td>071.100.P690.44860</td>
<td>17,933</td>
</tr>
<tr>
<td>LaCienega Boulevard Signal Synch - Contingency</td>
<td>071.100.P690.44860</td>
<td>8,791</td>
</tr>
<tr>
<td>Arbor Vitae Street Signal Synch - Contingency</td>
<td>071.100.P690.44860</td>
<td>12,727</td>
</tr>
<tr>
<td>Florence Avenue Synch - Contingency</td>
<td>071.100.P690.44860</td>
<td>31,053</td>
</tr>
</tbody>
</table>

**Total – All Contingency Purchase Orders** $70,504
LEGAL REVIEW VERIFICATION:
The administrative staff has verified that the legal documents accompanying this report have been submitted, reviewed and approved by, the Office of the City Attorney.

FINANCE REVIEW VERIFICATION:
The administrative staff has verified that this report in its entirety, has been submitted, reviewed and approved by, the Finance Department.

DESCRIPTION OF THE ATTACHMENTS:
Attachment No. 1 - City of Inglewood Request for Proposal
Attachment No. 2 - KOA Corporation Proposal
Attachment No. 3 - KOA Corporation Fee Proposal
Attachment No. 4 - Agreement
APPROVAL VERIFICATION SHEET

PREPARED BY:
Peter Puglese, P.E., T.E., City Traffic Engineer
Raquel Mendez, Associate Engineer, Transportation
Robert M. Braden, Management Consultant
Joi L. Aldridge, Management Assistant to the Director

COUNCIL PRESENTER:
Louis A. Atwell, P.E., Assistant City Manager/Public Works Director

DEPARTMENT HEAD/
ASSISTANT CITY MANAGER APPROVAL: 
Louis A. Atwell, Asst. City Mgr./PW Director

CITY MANAGER APPROVAL: 
Artie Fields, City Manager
ATTACHMENT NO. 1
REQUEST FOR PROPOSAL (RFP)

For

Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard and Florence Avenue Traffic Signal Synchronization Project

Prepared On
December 6, 2018

Prepared By
City of Inglewood
Public Works Department
One West Manchester Boulevard, 3rd Floor, Inglewood, CA 90301
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I. Invitation to Submit Proposal

The City of Inglewood invites and will receive proposals duly filed as provided herein for the: Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard and Florence Avenue Traffic Signal Synchronization Project (from hereon called "Project") as specified in this document.

The following conditions and terms apply:

1. The City Council reserves the right to waive any irregularities in any proposal, and to take proposals under advisement for a period not to exceed sixty (60) days from and after the date proposals were received.

2. The City reserves the right to reject any or all proposals.

3. The detailed scope of services and conditions for the proposal submission are attached.

4. The Consultant must execute a contract within ten (10) days after the City mails the contract to the consultant. If the contract is not executed within ten (10) days after the mailing period, the City reserves the unilateral right to award the proposal to another consulting firm.

5. If any provisions of the contract are violated, the City, after suitable notice, may cancel the contract and make arrangements to have the services performed by others. All cost sustained by the city for breach of contract will be paid by the proposer.

6. Request for Proposals may be obtained from City of Inglewood - Public Works Department located on the 3th floor of the City Hall, or call (310) 412-5333.

7. All proposals must be for specific amounts. Any attempt to qualify prices with an 'escalation clause' or any other method of making a price variable, is unacceptable. Proposal shall be valid for ninety (90) calendar days from the date of the receipt of proposal.

8. Please provide the fee proposal in a separate sealed envelope.


Louis Atwell, Director of Public Works
City of Inglewood, California

Dated at Inglewood, California

This December 6, 2018
II. Checklist to Proposers

Before submitting your proposal, have you properly completed the following?

Please Check Here

i. Proposal
   a. Have you responded to the scope of services
   b. Is proposal properly signed and dated?
   c. Have you submitted all requirements per this Proposal

ii. Contract Compliance
   a. Have you completed the non-collusion declaration?
   b. Is the non-collusion declaration properly signed by a Company Officer?
   c. Have you examined the requirements/submittals to be furnished?
   d. Do you understand the requirements and submittals to be furnished?

iii. Business Certificate
   a. Are you aware of Section 3 of this Request for Proposal Entitled, Inglewood Business Tax Certificate?

iv. Insurance
   a. Commercial General Liability
   b. Automobile Liability
   c. Professional Liability or Errors and Omissions
   d. Workers’ Compensation and Employer’s Liability

v. Department of Industrial Relations (DIR)
   a. Registered (including any sub-consultants) with the DIR
PAGE INTENTIONALLY LEFT BLANK
III. Introduction

A. Background

The City of Inglewood is located in the central portion of the Los Angeles County, California and encompasses an area of approximately 9.2 square miles. The City of Inglewood is bordered by the City of Los Angeles on the East, North and West sides and the County of Los Angeles and the City of Hawthorne on the South side.

This traffic signal synchronization project will improve signal coordination and traffic progression to alleviate arterial congestion. The project is an eligible highway operational improvement which will enhance safety, traffic circulation and simultaneously modernize and refine the capabilities of the existing signal systems to improve mobility within the region. Traffic signal synchronization will be implemented on Arbor Vitae Street, La Cienega Boulevard, Florence Avenue and Prairie Avenue.

(i) Arbor Vitae Street

Arbor Vitae Street is a major east-west arterial within the City of Inglewood, which serves as a connector to and from the I-405 freeway. Arbor Vitae Street is a 2-lane major arterial that includes a two-way left turn lane which helps prevent left-turning vehicles from blocking through traffic. This major corridor has a daily traffic volume of 23,000 vehicle per day.

Future demand is expected to increase on Arbor Vitae Street due to its proximity to I-405 and access to the Los Angeles World Airports (LAWA), LAWA Consolidated Rent-A-Car (ConRAC) Facility, the Forum, National Football League (NFL) Stadium and Hollywood Park Casino. Currently, there is no synchronization along Arbor Vitae Street and each signal is running in free operation. This results in long delays, unnecessary stops along the corridor, increased idling and congestion.

(ii) La Cienega Boulevard

La Cienega Boulevard is a major north-south arterial within the City of Inglewood, with a daily traffic volume of 85,000 vehicles per day. The arterial starts as 4-lane from Arbor Vitae Street to Manchester Boulevard and becomes 5-lane from Manchester Boulevard to Hill Street. La Cienega Boulevard, which runs adjacent to the Interstate 405 Freeway, acts as an alternate route (bypass) when congestion occurs on the freeway.

Future demands is expected to increase on La Cienega Boulevard due to its proximity to Los Angeles World Airport, LAWA Consolidated Rent-A-Car (ConRAC) Facility, three (3) Interstate 405 Freeway on and off Ramps and Interstate 105 Freeway. Currently, there is no synchronization along La Cienega Boulevard and each signal is running in free operation. This results in long delays, unnecessary stops along the corridor, increased idling and congestion. Providing coordination at traffic signals will increase efficiency and reduce congestion.

(iii) Florence Avenue

Florence Avenue acts as a connector to the region’s major north-south arterials, such as La Cienega Boulevard, La Brea Avenue, Prairie Avenue, Aviation Boulevard and Sepulveda Boulevard. It serves as an alternative route to the high
congested interstate 405 Freeway. It is a 4-lane major east-west arterial with a daily traffic volume of 35,000 vehicles per day.

Future demand is expected to increase on Florence Avenue due to its proximity to Interstate 405 Freeway and access to the Crenshaw Line Stations, LAWA ConRAC Facility, the Forum and NFL Stadium. Currently, there is no synchronization along Florence Avenue, resulting in long delays, unnecessary stops, and congestion along the corridor. Signal coordination will reduce congestion during peak hours, improving traffic circulation and decreasing the amount of time vehicles idle at signalized locations.

(iv) Prairie Avenue

Prairie Avenue is a major 6-lane north-south arterial in the City of Inglewood. The arterial serves as a bypass route to the Interstate 405 Freeway during congested peak hours and operates as a connection for commuters to Los Angeles International Airport, Crenshaw Line Stations, Westchester and the west-side of Inglewood.

Prairie Avenue is also the main corridor used to access the Hollywood Casino Park, the Forum and NFL Stadium from Interstate 105 Freeway. The current average daily traffic (ADT) on Prairie Avenue is 40,500 vehicles per day. Providing coordination along this corridor will increase efficiency, reduce congestion during peak hours and benefits the I-105 and I-405 Freeways.
IV. Qualifications

A. General Request for Proposal (RFP) Submittal Information

The City of Inglewood's designated staff will evaluate proposals received. During the review process, the City of Inglewood reserves the right, where it may serve the City's best interest, to request additional information or clarification from those that submit proposals, or allow corrections of errors or omissions. Any and all changes in the RFP will be made by written addendum, which shall be issued by the City of Inglewood to all prospective bidders who have been issued or obtained copies of the RFP from the City.

The City of Inglewood reserves the right to retain all proposals submitted. Submission of a proposal indicates the firm’s acceptance of the conditions contained in this request for proposals, unless clearly and specifically noted in the proposal submitted and confirmed in the contract between the City of Inglewood and the Consultant selected.

The preparation of the RFP will be at the total expense of the Proposer. There is no expressed or implied obligation for the City of Inglewood to reimburse responding Proposers for any expense incurred in the preparation of proposals in response to this request. All proposals submitted to the City shall become properties of the City of Inglewood and will not be returned.

The City of Inglewood reserves the right to reject any or all proposals, in whole or part, to waive any informality in any proposal, and to accept the proposal which, in its discretion, is in the best interest of the City of Inglewood.

To be considered, proposers must submit three (3) copies of their Proposal in a sealed envelope with the name of the company submitting the proposal and the title of “Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard and Florence Avenue Traffic Signal Synchronization Project” by January 30th, 2019 at 3pm to:

City of Inglewood
Public Works Department
One West Manchester Boulevard
3rd Floor, Inglewood, CA 90312

Attention: Raquel Mendez
Associate Engineer

Late proposals will not be accepted. The proposal must be submitted in accordance with the form prescribed by the City of Inglewood in Section VI (Proposal Outlined to be Submitted) of this RFP. Failure to respond in this matter may render the proposal ineligible for further consideration. For a complete list of the City’s RFP terms and conditions, legal statements, and insurance requirements, please refer to General Provisions Section.

B. Request for Proposal Questions

Questions and all correspondence and communications regarding this RFP should be submitted by e-mail to Raquel Mendez, at rmendez@cityofinglewood.org by January 16th, 2019. The City of Inglewood will issue responses to all received questions by January 23rd, 2019.
C. Pre-Proposal Meeting (Optional)
   An optional pre-proposal meeting will be held at the City of Inglewood Public Works
   Department located on the 3rd Floor at One Manchester Blvd., Inglewood, CA 90312 on
   January 9th, 2019 at 10:00 AM (PST).

D. Schedule
   The City reserves the right to make changes to the below schedule, but plans to adhere
   to the implementation of this bid process as follows:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP Released</td>
<td>12/06/2018</td>
</tr>
<tr>
<td>Pre-proposal Meeting (Optional)</td>
<td>01/09/2019</td>
</tr>
<tr>
<td>Deadline for Receiving Questions</td>
<td>01/16/2019</td>
</tr>
<tr>
<td>Response to Questions</td>
<td>01/23/2019</td>
</tr>
<tr>
<td>Proposals Due</td>
<td>01/30/2019</td>
</tr>
<tr>
<td>Proposal Evaluation Completed</td>
<td>02/20/2019</td>
</tr>
<tr>
<td>Finalists Selected</td>
<td>02/20/2019</td>
</tr>
<tr>
<td>Interviews (if determined to be necessary)</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

   The proposer shall offer remaining project timelines based upon their knowledge of the
   project requirements. The City of Inglewood anticipates that the Project will be completed
   by the end of March 2020.

V. Project Scope of Work and Deliverables
   The project will modify the signal timing to the latest California Manual on Uniform Traffic
   Control Devices (MUTCD) guidelines and provide synchronization along Arbor Vitae Street,
   La Cienega Boulevard, Florence Avenue and Prairie Avenue.

A. Arbor Vitae Street
   The project will modify signal timing to the latest California Manual on Uniform Traffic
   Control Devices (MUTCD) guidelines and synchronize ten (10) intersections along Arbor
   Vitae Street. The ten (10) intersections are the following.
   1. Arbor Vitae Street and Prairie Avenue;
   2. Arbor Vitae Street and Myrtle Avenue;
   3. Arbor Vitae Street and La Brea Avenue;
   4. Arbor Vitae Street and Grevillea Avenue;
   5. Arbor Vitae Street and Walnut Street;
   6. Arbor Vitae Street and Eucalyptus Avenue;
   7. Arbor Vitae Street and Inglewood Avenue;
   8. Arbor Vitae Street and Oak Street;
   9. Arbor Vitae Street and La Cienega Boulevard and;
   10. Arbor Vitae Street and Aviation Boulevard (City of Los Angeles)

   The project deliverables include, but not limited to, the following:
   A. Field measurements and inventory at each intersection
B. Volume collection to establish phase splits (if necessary)
C. Update and provide timing sheets to current MUTCD Guidelines
D. Develop ante meridiem (AM), mid-day, post meridiem (PM) peak coordination plans for each intersection
E. Create and provide a time space diagram for each peak period in Auto CAD (or equivalent) to determine offsets for coordination
F. Create as-built traffic signal plans

B. La Cienega Boulevard

The project will modify signal timing to the latest California Manual on Uniform Traffic Control Devices (MUTCD) guidelines and synchronize six (6) intersections along La Cienega Boulevard. The six (6) intersections are the following.

1. La Cienega Boulevard and Hill Street
2. La Cienega Boulevard and Florence Avenue
3. La Cienega Boulevard and Manchester Boulevard
4. La Cienega Boulevard and Olive Street
5. La Cienega Boulevard and Hillcrest Boulevard
6. La Cienega Boulevard and Arbor Vitae Street

The project deliverables include, but not limited to, the following:
A. Field measurements and inventory at each intersection
B. Volume collection to establish phase splits (if necessary)
C. Update and provide timing sheets to current MUTCD Guidelines
D. Develop ante meridiem (AM), mid-day, post meridiem (PM) peak coordination plans for each intersection
E. Create and provide a time space diagram for each peak period in Auto CAD (or equivalent) to determine offsets for coordination
F. Create as-built traffic signal plans

C. Florence Avenue

The project will modify signal timing to the latest California Manual on Uniform Traffic Control Devices (MUTCD) guidelines and synchronize fourteen (14) intersections along Florence Avenue. They are the following.

1. Florence Avenue and Aviation Boulevard
2. Florence Avenue and Hindry Boulevard
3. Florence Avenue and La Cienega Boulevard
4. Florence Avenue and Oak Street
5. Florence Avenue and Cedar Avenue
6. Florence Avenue and Inglewood Avenue
7. Florence Avenue and Eucalyptus Avenue
8. Florence Avenue and Ivy Avenue
9. Florence Avenue and La Brea Avenue
10. Florence Avenue and Market Street
11. Florence Avenue and Hillcrest Boulevard
12. Florence Avenue and Centinela Avenue
13. Florence Avenue and Prairie Avenue
14. Florence Avenue and High Street

The project deliverables include, but not limited to, the following:
A. Field measurements and inventory at each intersection
B. Volume collection to establish phase splits (if necessary)
C. Develop ante meridiem (AM), mid-day, post meridiem (PM) peak coordination plans for each intersection
D. Update and provide timing sheets to current MUTCD Guidelines
E. Create and provide a time space diagram for each peak period in Auto CAD (or equivalent) to determine offsets for coordination
F. Create as-built traffic signal plans
G. Purchase five (5) Closed Circuit Television (CCTV) cameras
H. Purchase fourteen (14) 2070 Controllers with software

D. Prairie Avenue
The project will modify signal timing to the latest California Manual on Uniform Traffic Control Devices (MUTCD) and synchronize sixteen (16) intersections along Prairie Avenue from Florence Avenue to Imperial Highway. The intersections are the following,
   1. Prairie Avenue and Florence Avenue
   2. Prairie Avenue and Grace Avenue
   3. Prairie Avenue and Carondelet
   4. Prairie Avenue and Regent Street
   5. Prairie Avenue and Manchester Boulevard
   6. Prairie Avenue and Kelso Street
   7. Prairie Avenue and Arbor Vitae Street
   8. Prairie Avenue and Hardy Street
   9. Prairie Avenue and 97th Street
  10. Prairie Avenue and Century Boulevard
  11. Prairie Avenue and 102nd Street
  12. Prairie Avenue and 104th Street
  13. Prairie Avenue and Lennox Boulevard/West 108th Street
  14. Prairie Avenue and 111th Street
  15. Prairie Avenue and 112th Street
  16. Prairie Avenue and Imperial Highway

The project deliverables include, but not limited to, the following:
A. Field measurements and inventory at each intersection
B. Volume collection to establish phase splits (if necessary)
C. Develop ante meridiem (AM), mid-day, post meridiem (PM) peak coordination plans for each intersection
D. Update and provide timing sheets to current MUTCD Guidelines
E. Create and provide a time space diagram for each peak period in Auto CAD (or equivalent) to determine offsets for coordination
F. Create as-built traffic signal plans

VI. Proposal Outlined to Be Submitted

The proposal shall be organized and submitted with the following elements:

1. Cover Page
2. Table of Contents
3. Executive Summary: This summary should be brief and concise to apprise the reader of the basic services offered, experienced and qualifications of the bidder, staff, subcontractors, and/or suppliers. Provide a brief summary that describes the followings:
   • Proposer’s goal and objective for the project in questioned,
   • History of similar project scope, background and experience and any other information of the proposer.
   • The qualifications of the proponent’s personnel, including the subcontractor, the sub-consultants and / or the suppliers that will be assigned to this project,
4. Questionnaire/Response to Scope of Work: Proposer shall provide responses and information to fully satisfy each item in the Questionnaire in Section VII. Each question should be presented before the proposer’s response.
5. Attachments (if any)

VII. Questionnaire

If your firm is qualified and would like to be considered, please submit a formal proposal addressing the following items:

1. Company and General Information
   • Company Name
   • Letter of Transmittal sign by and individual authorized to bind the respondent, stating that the respondent has read and will comply with all terms and conditions of the RFP
   • General information about the primary contact who would be able to answer questions about the proposal. Include name, title, telephone number, and email address of the individual.

2. Qualifications and Experience of the Firm
   • Which office(s) of your organization will have primary responsibility for managing this project?
   • What is your firm’s experience conducting the services requested?
   • Describe comparable projects, scope of services, and status of projects.
   • Comment on other areas that may make your firm different from your competitors.
   • Provide the requested forms
3. Qualifications and Experience of Proposed Project Team
   - Describe the qualifications of staff proposed for the assignment, position(s) in the firm, and types and amount of equivalent experience.
   - Be sure to include any municipal agencies they have worked with in the past three years and their level of involvement. A description of how overall supervision will be provided should be included.

4. Questions/Response to Scope of Services
   - Describe the methods by which your firm will fulfill the services requested in the Scope of Work and subsequent sections.
   - Provide a statement of the service(s) that differentiate your firm from other respondents.
   - Although the specifications in the requirements section represent the City's anticipated needs, there may be instances in which it is in the City's best interest to permit exceptions to specifications and accept alternatives.
   - It is extremely important that Firms make very clear where an exception is taken to the specifications and how alternatives will be provided. Therefore, exceptions, conditions, or qualifications to the provisions of the City's specifications must be clearly identified as such, together with the reasons, and inserted in this section of the proposal. If the Firm does not make it clear that an exception is taken, the City will assume the proposal is responding to and will meet the specification as written.

5. Fees
   - Provide your fees for the proposed work in a separate sealed envelope. Break down the fees per corridor with a total for each one. In addition, provide a project total for all the corridors. This shall include a task list with an estimate of the number of hours and assigned staff in order to complete each task.
   - Outline billing and payment expectations, including timing and method of payment.
   - Describe any remaining fees not previously detailed in the above.

6. References
   - List the name, address and telephone number of references from at least three (3) recent similar projects. Include a brief description of the work provided for each reference. California municipal or county projects are preferred. You may offer more than three recent similar projects if desired. The references should include the start date of the project and the date of completion for each project.

7. Implementation Schedule
   - Include a detailed implementation schedule with an estimated project start date of March 2019 and note key project milestones and timelines for deliverables. Identify assumptions used in developing the schedule.

8. Certificate(s) of Insurance
   - The City will require the successful proposer(s) to provide Certificates of Insurance evidencing required coverage types and minimum limits.
   - See General Provisions (attached) for more information on City's insurance policy.
   - The City of Inglewood business tax certificate is not required to respond to this RFP. However, any successful proposer will be required to acquire a City of Inglewood Business Tax Certificate during the contracting process.
   - The certificate will have to be renewed each year during the contract. See the General Provisions Section for more information on the City's Business Tax Certificate policy.

VIII. Evaluation of Proposals

All Proposals will be evaluated on the basis of professional experience, qualifications and services to be performed. The City of Inglewood reserves the right to judge, appraise and reject all proposals, or to otherwise cancel the RFP process.

The proposals will be evaluated for the following rating criteria:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience of the Consulting Firm</td>
<td>10 pts</td>
</tr>
<tr>
<td>Experience of Project Team</td>
<td>10 pts</td>
</tr>
<tr>
<td>Project Understanding / Schedule</td>
<td>20 pts</td>
</tr>
<tr>
<td>Past Relevant Projects / references</td>
<td>15 pts</td>
</tr>
<tr>
<td>Response to Scope of Services</td>
<td>30 pts</td>
</tr>
<tr>
<td>Depth of Resources to perform work</td>
<td>10 pts</td>
</tr>
<tr>
<td>Familiarity with the City and Location of Consultant</td>
<td>5 pts</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 pts</strong></td>
</tr>
</tbody>
</table>

The City has the option to invite short listed consultants for presentation and interview.

IX. Waiver and Rights of the City

There is no guarantee that the City of Inglewood will decide to move forward with any proposer based on the RFP submittals. The City of Inglewood reserves the right to reject any or all submittals and proposals. The Consultant waives all rights to seek compensation and/or legal remedies regarding any aspects of the RFP and the City's selection process, upon the submittal of a response to the RFP.

The City of Inglewood reserves the right, at its discretion, to pursue any or all of the following actions related to this request for proposal (RFP).

- Issue addenda to the RFP
- Addendum or addenda will be e-mailed and/or faxed to the prospective consultant(s).
- Request additional information and/or clarification of the proposal.
- Negotiate an agreement solely on the basis of the original proposal.
- Negotiate an agreement on the basis of additional information supplied.
- Issue subsequent RFP(s) based on refinement of concepts proposed in response to this RFP.
X. Exhibit A

Map illustrating the Location of the Intersections

Legends:
- Arbor Vitae Street Signal Synchronization
- La Cienega Boulevard Signal Synchronization
- Florence Avenue Signal Synchronization
- Prairie Avenue Signal Synchronization
XI. General Provisions

The City of Inglewood, California, hereby extends an invitation to submit a proposal, in accordance with this Request for Proposal (RFP), to provide labor and/or materials for the designated service. Furthermore the City makes no representation that any agreement will be awarded to any firm responding to this request. There are no expressed or implied obligations for the City to reimburse responding firms for any expense incurred in preparing a proposal in response to this request. All information submitted to the City of Inglewood shall become property of the City and will be returned to the proposer at the City’s option.

Section 1. Prices
The proposal shall state the total cost for the service as specified in this document.

Section 2. Payment Terms
Standard payment shall be made by City check.

Section 3. Inglewood Business Tax Certificate
The consultant agrees to at all times during the performance of the agreement, obtain and maintain an Inglewood City Business Tax Certificate. The purchase of said Certificate must be made prior to the purchase of product or rendering services and a copy of said Certificate must be forwarded to the Inglewood Public Works Department.

Section 4. Insurance Requirements
When a consultant does work under a City purchase order, the managing Department must have on file valid certificates of insurance and the required endorsements. The Department must submit the required certificates and endorsements to the City Clerk, who will then forward the documents to the City Attorney’s Office for review.

1. Required Insurance Coverages
   The consultant shall obtain and maintain at its expense, until completion of performance and acceptance by City, the following insurance placed with an insurer admitted to write insurance in the state of California or a non-admitted insurer on State of California’s List of Eligible Surplus Lines Insurers (LESLI) and the non-admitted insurer must have a rating of, or equivalent to, A: VIII by A.M. Best Company:
   
   i. Commercial General Liability
      Commercial General Liability (equivalent in coverage scope to Insurance Services Office, Inc. (ISO) form CG 00 01 11 85 or 11 88) in an amount not less than $1,500,000 per occurrence and $2,000,000 general aggregate. Such insurance shall include products and completed operations liability, independent consultant’s liability, broad form contractual liability, and cross liability protection. The “City of Inglewood, its officials, employees, and agents” must be separately endorsed to the policy as additional insureds on an endorsement equivalent to insurance Services Office, Inc. (ISO) forms CG 20 10 11 85 of CG 20 26 11 85.

   ii. Automobile Liability
       Automobile Liability (equivalent in coverage scope to ISO form CA 00 01 060 82) in an amount not less than $1,500,000 combined single limit per accident for bodily injury and property damage covering Auto Symbol 1 (Any Auto). If an
automobile is not used in connection with the services provided by the consultant, the consultant should provide you with a written request for a waiver of this requirement.

iii. Professional Liability or Errors and Omissions
Depending on the work or services to be performed, professional liability or errors and omissions liability insurance may be required. The City will require the consultant to provide professional liability or errors and omissions liability insurance in an amount not less than $1,500,000 per claim.

iv. Workers’ Compensation and Employer’s Liability
Worker’s Compensation as required by the California Labor Code and Employer’s Liability in an amount not less than $1,000,000 per accident.

2. Required Insurance Documentation
   i. Certificate of Insurance
      The consultant must provide you with a Certificate of Insurance evidencing the required insurance set forth above. The Certificate Holder must be the “City of Inglewood,” and the Certificate Holder’s address must be the address of the City of Inglewood.

   ii. Endorsements
      In addition to the Certificate of Insurance, the consultant must provide the following endorsements:
      - Cancellation Notice Endorsements:
        Each policy must be endorsed to provide that the policy shall not be cancelled or non-renewed by either party or reduced in coverage or limits (except by paid claims) unless the insurer has provided the City with written notice thirty (30) days prior to cancellation or ten (10) days written notice for cancellation due to nonpayment of premium.
      - Primary and Non-contributory Coverage Endorsements:
        The general liability and (if required) professional liability policies must be endorsed to provide that each policy shall apply on a primary and non-contributing basis in relation to any insurance or self-insurance, primary or excess, maintained by or available to the City or its officials, employees and agents.
      - Waiver or Modification of the Insurance Requirements:
        Any waiver or modification of the insurance requirements can only be made by the City Attorney. All waivers or modifications request are reviewed on a case-by-case basis.

Section 5, Indemnification
Consultant shall indemnify and hold harmless the City and its officers, employees, and volunteers from and against all claims, damages, losses and expenses including attorney fees arising out of the performance of the work described herein, caused in whole or in part by any negligent act or omission of the consultant, anyone directly or indirectly employed by any of them or anyone for whose acts may be liable, except where caused by the active, sole negligence, or willful misconduct of the City.

Firm shall obtain and cause to remain in full force and effect for the term of the agreement
and for six (6) months thereafter Professional/Negligent Acts, Errors, and Omissions Insurance for five hundred thousand dollars ($500,000), as well as Automobile Liability in the minimum amount of $500,000 and Workers' Compensation Insurance in the statutory required amounts.

All insurance must be written by a surety, licensed to do business in the state of California, and rated 'A' or better by A.M. Best Company's rating guide. The City is to be named (where appropriate) as an additional insured on the endorsement forms.

If any action or proceeding is brought against Indemnities by reason of any act of the matters against which consultant has agreed to indemnify Indemnities as provided above, consultant, upon notice from City, shall defend Indemnities at consultant's expense by counsel acceptable to City, such acceptance not to be unreasonably withheld.

Section 6, Non-Discrimination
California State Labor Code §1735: Discrimination in Employment Because of Race, Color, etc. No discrimination shall be made in the employment of persons working on behalf of or as an agent for the City of Inglewood because of the race, religious creed, color, national origin, or ancestry, physical disability, medical condition, marital status, or sex of such persons except as provided in Section 12940 of the Government Code, and every consultant for the City of Inglewood violating this section is subject to all the penalties imposed for a violation of this chapter.

Section 7, Award of Contract
Evaluations will be based on the criteria listed on page 17 of this document under Section VIII, "Evaluation of Proposals". The City of Inglewood may select a limited number of consultants for in-person interviews before awarding a contract to the successful proposer.

Section 8, Execution of Agreement
A proposer to whom award is made shall furnish all goods and/or services in accordance with the provisions hereof and within the time stated in the proposal. If a proposer to whom an award is made fails or refuses to enter into the contract as herein provided or to conform to any of the stipulated requirements in connection therewith, an award may be made to the proposer whose proposal is next most acceptable to the City. Such proposer shall fulfill every stipulation embraced herein as if he/she were the party to whom the first award was made. A corporation to which an award is made will be required, before the contract is finally executed, to furnish evidence of its corporate existence and of its rights to conduct business in the state of California.

Section 9, Termination of Agreement
The City may terminate the contract at its own discretion or when conditions encountered make it impossible or impracticable to proceed, or when the City is prevented from proceeding with the contract by law, or by official action of a public authority.

Section 10, Right of City to Withhold Payment
The City of Inglewood may withhold or nullify the whole or any part of any payment due the consultant to such extent as may reasonably be necessary to protect the City from loss as a result of:

- Defective materials not remedied in accordance with provisions of specifications;
• Claims or liens filed or reasonable evidence indicating probable filing of claims or liens;
• Whenever the City of Inglewood shall, in accordance herewith, withhold any monies otherwise due the consultant, written notice of the amount withheld and the reasons therefore shall be given the consultant, and, when the consultant shall remove the grounds for such withholding, the City of Inglewood will pay to the consultant, within thirty five (35) calendar days, the amount so withheld.

Section 11, Cost of Proposal
The proposer must present a concise list of the scope of services and the work products that your firm proposes to provide. Given your proposed scope of services and work products, discuss your proposed fee arrangement based on the hourly rate compensation. Expenses such as travel, postage, reproduction and related costs necessarily incurred by proposer are to be reflected. Such expenses will not be eligible for reimbursement unless approved by the City in advance. Any costs incurred by Consultant which is not specifically provided for herein shall be the sole expense of the Consultant. Any omissions or ambiguities will be construed most favorable to the City.

Section 12, Duration of Agreement
This agreement is for one (1) year with the City’s option to renew for an additional year.

Section 13, Choice of Law/Venue
This agreement shall be interpreted, construed and governed according to the laws of the State of California. In the event of litigation between the parties, venue in state trial courts shall lie exclusively in the County of Los Angeles, Superior Court Southwest District, located at 825 Maple Avenue, Torrance California 90503-5058. In the event of litigation in the United States District Court, venue shall lie exclusively in the Central District of California, in Los Angeles, California.
REQUEST FOR PROPOSAL (RFP)

XII. Declaration for the Proposer

I declare that I am an authorized agent or officer of the entity submitting this proposal and in such capacity I am empowered to submit this proposal on behalf of (entity):

________________________________________

I also verify that all information submitted and contained herein is true and correct to the best of my knowledge and belief.

By: ____________________________________

Signature __________________________________

Printed Name ________________________________

Position/Title ________________________________

Date of Execution ____________________________
REQUEST FOR PROPOSAL (RFP)

XIII. Extension of Contract to Other Public Agencies

The prices, terms and conditions of this proposal may be extended to other governmental agencies at the mutual agreement of both the City and the consultant. All requirements of the specifications, purchase orders, invoices, and payments with other agencies would be directly with the successful proposer.

The City of Inglewood does not warrant any additional use of the contract by such agencies. The proposer’s response as requested below will no way affect the City of Inglewood’s consideration of this quote.

Please indicate if this quote will be extended to other public agencies, and the length of time it will remain in effect from the opening date of this quote.

Yes ________ No ________ Length of Time ___________________ Days/Months
XIV. Non-Collusion Declaration

The undersigned hereby declares and says:
That he has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive proposal offered in connection with the contract described below.

(Full description of proposal):

_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________
_________________________________________________________________________________

I declare under penalty that the foregoing is true and correct to the best of my knowledge.

Executed at _____________________________, California, on _______________________.

(Month & Date)

Signature of Officer or Authorized Agent
XV. 

No Proposal Form

To All Proposers,

If you do not intend to submit a proposal for this project, please indicate below which option apply to you and return this form to the Public Works Department of the City of Inglewood.

OPTION A
The firm below cannot supply the services as specified. Please change the classification of our firm to the following:

__________________________________________________________________________

__________________________________________________________________________

OPTION B
The firm below cannot supply a proposal at this time because of the following:

__________________________________________________________________________

__________________________________________________________________________

OPTION C
The firm below is not interested in being on the City of Inglewood Consultant List, please remove our name.

<table>
<thead>
<tr>
<th>RFP Number</th>
<th>Name of Firm</th>
<th>Address</th>
<th>Phone</th>
<th>Name of Individual</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
</table>


ATTACHMENT NO. 2
PROPOSAL FOR
ARBOR VITAE STREET, PRAIRIE AVENUE, LA CIENEGA
BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL
SYNCHRONIZATION PROJECT
CITY OF INGLEWOOD | JAN 30, 2019

Prepared for
Attn: Raquel Mendez
Associate Engineer
City of Inglewood
One Manchester Blvd
Inglewood, CA 90312

Submitted by
Mr. Ryan Calad, PE
Project Manager
rcalad@koacorp.com
T: 714.573.0317
TO
Raquel Mendez
Associate Engineer
Public Works Department
City of Inglewood
One Manchester Blvd.
Inglewood, CA 90312

FROM
Mr. Stephen Bise, PE
Principal In Charge
sbise@koacorp.com
T: 714.573.0317

RFP/RFQ
Arbor Vitae St, Prairie Ave, La Cienega Blvd, and Florence Ave Traffic Signal Synchronization

DATE
January 30, 2018

PROPOSAL VALIDATION
KOA's proposal shall be valid for ninety (90) calendar days from the date of the receipt of this proposal

Dear Mrs. Mendez:

KOA is pleased to submit this proposal to describe our experience and capabilities to provide the City of Inglewood with professional engineering services for the Arbor Vitae St, Prairie Ave, La Cienega Blvd, and Florence Ave Traffic Signal Synchronization Project. We believe our firm's 31-year history in traffic engineering, as well as the skills and experience that we bring from having worked on a wide variety of projects over the years, will be very beneficial to the City.

The success of signal synchronization projects will depend on the skills and experiences of the team members managing the project; understanding key challenges; and providing value, quality work, and responsive service. KOA's recent portfolio of completed signal timing and ITS improvements highlights our ability to deliver successful projects with premium service provided by our 108 staff members; including California registered traffic and civil engineers.

Leading this project will be Mr. Ryan Calad, PE, a senior engineer with nearly 15 years of valuable signal timing, operations, and ITS experience who will serve as the project manager. He has managed multiple traffic signal synchronization projects for KOA that total more than 500 signals and 100 miles of roadway since joining in 2014. Mr. Calad will be supported by the experienced engineering staff from both our Monterey Park and Orange offices, who have had similar roles on our recent timing projects.

Mr. Walter Okitsu, CE, TE, PTOE, PTP, will serve as the QA/QC manager. He has 37 years of experience in traffic design, including signals of all kinds. He has timed well over a thousand signals, which includes work in the City of Inglewood. I, Stephen Bise, PE, will serve the project as the Principal-in-Charge, ensuring we provide the City with an exceptional final product.

We look forward to having an opportunity to meet with you to discuss how KOA can serve the City of Inglewood on this project. Please contact our Project Manager, Mr. Ryan Calad, PE at 714.573.0317 or via email at rcalad@koacorp.com if you have questions regarding our submittal. Please note that I am an individual authorized to bind KOA. We have read and will comply with all terms and conditions of the City of Inglewood's RFP.

Sincerely,

KOA

[Signature]

Stephen Bise, PE
Principal In Charge/OC Office Manager
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               - Qualifications and Experience of the Proposed Project Team
               - Questions/Response to Scope of Services
               - Fees - Provided in a separate sealed envelope, as requested
               - References
               - Implementation Schedule
               - Certificate of Insurance
               - Business Tax Certificate
SECTION 5   ATTACHMENTS/APPENDIX
EXECUTIVE SUMMARY

The success of this project will depend on the skills and experiences of the team members managing the project; understanding key challenges; and providing value, quality work, and responsive service. KOA's recent portfolio of completed signal timing and ITS improvements highlights our ability to deliver successful projects with premium service. Our team has the knowledge and experience working with the systems and operations needed to deliver a successful project. Our project focus and approach will be to leverage our past project skills that apply directly to the City needs and outlined deliverables: KOA has prepared the scope of work shown below recommended to provide all outlined deliverables A-H from the RFP.

Task 1 – Field Reviews & As-Built Plans
The field review will include our KOA staff working in groups to review controller programming and operation, perform field measurements needed to update “Phase timings”, and work for preparing As-built plans. We will document our findings with photos taken as part of our field review.

Task 2 – DATA COLLECTION & ANALYSIS
Task 2A Collection of Corridor Traffic Volume Data
For this proposal, we have collected quotes from several firms. If necessary, we will use up to two data collection firms, in which case the division of work will expedite the schedule and cost efficiency. New traffic counts will be collected for 15 proposed critical intersection locations on each corridor where the cross street traffic demand and intersection phasing are anticipated to control the cycle lengths of the corridor. In these quotes, we have assumed a total of eight (8) hours of turning movement counts (TMC’s) inclusive of vehicles, bicycles, and pedestrians for the AM (3 hours), Midday (2 hours), and PM (3 hours) peak hours.

Task 2B CA MUTCD Timing Audit
The goal of the timing audit is to ensure that the timing used at these intersections are up to the latest standards per the California Manual on Uniform Traffic Control devices (CA MUTCD). "Phase" timing conformance with CA MUTCD for pedestrian clearance (Walk + Flash Don’t Walk), Yellow time, Red time, and bike minimum green for each intersection are based equations with the primary controlling criteria of distance and speed. The distance used for each assessment will be the crossing/clearance measurements for vehicles, bicycles, and pedestrians obtained from the Field Review’s and As-Built Plan preparation. The critical controlling element for this audit will be the determination of design vehicle speed and other factors related to utilized in the “phase” timings calculations Once the determination of the appropriate vehicle approach speed has been identified, the project will provide calculations for each intersection’s “Phase” timings per the CA MUTCD guidelines and standards. These calculations will be provided in an excel spread sheet along with determination findings summarized in a brief technical memo with appendices data signed and stamped by a licensed California Traffic Engineer. Once approved by the City, these phase timings will be implemented in the revised controller timing sheets for each project intersection.

TASK 3– SIGNAL SYSTEM OPTIMIZATION & NEW TIMING SHEETS
Task 3A Network Modeling
The corridor intersections will be modeled in Synchro network model files. KOA will use the existing timing sheets, traffic volumes, and field reviewed data in the construction of Existing Conditions network models using Synchro 10 software. These network files will be created to model the inventoried and agreed-upon input. Additional Synchro calibration will include comparison with observed existing operation from initial travel runs using Tru-Traffic and dash cam video to ensure it is accurately replicated. These existing Synchro models will be submitted for Agency review along with our “Model construction” technical memorandum. The final performance statistics generated by Synchro and Tru-Traffic for existing conditions will be used as the benchmark for the evaluation of coordinated plans. Existing intersection operational parameters will be summarized to highlight applicable Synchro network model coding to include base assumptions for detectors, cycle lengths, sync phases, offsets, and force-offs.
EXECUTIVE SUMMARY

Task 3B Network Optimizations
Corridor synchronization of the Synchro network files will be completed in conjunction with TruTraffic software. KOA’s optimization plan will focus on reducing stops, managing queues, and maintaining vehicle platoons on project corridors. Our process works big to small using Synchro and TruTraffic software programs. Our optimizations method will be compared to the baseline condition and the results of prior approaches until a true optimum plan is found. The final optimized networks will be submitted to the City for review, accompanied by a tech memo summary outlining the various proposed coordination plan inputs, including cycle lengths; offsets; sync points; free, isolated or coordinated operation; and force-offs or splits assumed.

Task 3C Final Timing Sheets & Fine Tuning
Upon approval of the optimized signal timings by the City, KOA will prepare final timing charts that indicate proposed timing plans and coordination data for new and existing 2070E controllers with the 2033 program. This will include the conversion of any intersections with Type 170 controllers and the 233 program to McCain 2070E controllers running the 2033 program per the City directive.

Controller Programming Considerations
KOA is well versed in the operations and functions of the McCain 2070E and 2033 program. KOA will ensure that the proposed timing sheets will be programmed accordingly with considerations for both improved functionality and safe operations. As an example, there are a lot of protective-permissive left turn along the corridors, which we will ensure that programming will not result in “yellow trap”. Along Florence Avenue there are a lot of Metro crossings, which light rail per-emptions which KOA is already greatly experienced with having worked on the timing of these intersections as part of the Metro Crenshaw-LAX Light Rail Transit Line project. Other considerations may also include advanced logic programming, setting permissives/periods, and other improved cross-corridor operations.

Implementation (Extra Value Task)
Per discussions with the City, the implementation of signal timing will be completed by City of Inglewood staff to support the selected consultant. In our experience, the implementation of timing by the consultant firm staff provides the most ideal conditions for both schedule and the fine tuning. As such, as an extra value service, the KOA team is proposing to implement the coordinated timings for each intersection either in the field at the controllers or in directly in the Transpoality central system. Our staff will implement timings during off-peak hours, with our schedule, to complete one corridor per day and all corridors in one week. At each intersection we will review the operation of each timing plan to ensure proper operation. At intersections with new controllers, KOA will assist staff with the controller deployments as well. This will include programming for all IP address/network configurations and integration into the City Transpoality system. KOA will, if not already completed, bring these controllers online within the system and draw background intersection graphics.

TASK 4 - CONDUCT “BEFORE”/”AFTER” TRAVEL TIME STUDY (OPTIONAL)
Conduct “Before” Travel Time Study
Observation of the existing travel conditions of the project corridors will be done with a before study, using the floating car method paired with GPS tracking software (Tru-Traffic) and dash-mounted video recordings. Key measures of effectiveness (MOEs) will be tracked, with emphasis on average travel time and speed, number of stops, and consistency between travel runs and traffic flow. Travel time runs will be conducted for each corridor for the AM, midday, and PM peak periods with a minimum of four (4) travel time runs conducted in each direction. After initial implementation of new optimized timing plans, the public will need approximately 2 weeks’ time to adjust to the coordinated timing plans before “After” travel runs can be conducted. After study travel time surveys will be conducted in the same manner and method as the before travel time surveys. The MOEs utilized in the before study will be compared to the same MOEs from the optimized models and travel time runs. KOA will prepare a final performance report and present a comparison of the before and after studies.
QUESTIONNAIRE - 1. COMPANY AND GENERAL INFORMATION

1. COMPANY AND GENERAL INFORMATION
1-A. COMPANY NAME

KOAC CORPORATION

1-B LETTER OF TRANSMITTAL SIGN BY AND INDIVIDUAL AUTHORIZED TO BIND THE RESPONDENT, STATING THAT THE RESPONDENT HAS READ AND WILL COMPLY WITH ALL TERMS AND CONDITIONS OF THE RFP

OUR TRANSMITTAL LETTER MAY BE FOUND ON PAGE 3.

1-C. GENERAL INFORMATION ABOUT THE PRIMARY CONTACT WHO WOULD BE ABLE TO ANSWER QUESTIONS ABOUT THE PROPOSAL. INCLUDE NAME, TITLE, TELEPHONE NUMBER, AND EMAIL ADDRESS OF THE INDIVIDUAL.

OUR PRIMARY CONTACT IS:
RYAN CALAD, PE SENIOR ENGINEER/PROJECT MANAGER
714.573.0317
RCALAD@KOACORP.COM
2. QUALIFICATIONS AND EXPERIENCE OF THE FIRM

2-A. WHICH OFFICE(S) OF YOUR ORGANIZATION WILL HAVE PRIMARY RESPONSIBILITY FOR MANAGING THIS ACCOUNT?

KOA’s Orange Office
2141 W. Orangewood Avenue
Orange, CA 92780
Tel: 714.573.0317

2-B. WHAT IS YOUR FIRM’S EXPERIENCE CONDUCTING THE SERVICES REQUESTED?

Traffic signal & ITS System design
KOA has state of the art knowledge in traffic signal design. The firm has been responsible for designing signals for over 2,500 intersections in California, including many Traffic Light Synchronization Program (TLSP) corridors, City-wide ITS projects and TMC Designs. Our emphasis is to collect accurate “as-built” information, by means of meticulous field investigations.

Signal System Inventories
Since 2016, our KOA project team from the Orange office has performed similar inventories for over 700 signals. This prior experience will be beneficial for the project as our field team members follow a streamlined working process in the field review, with meticulous procedures, file structure, and formatting.

Signal Timing, Operations, and Coordination
Since joining KOA in 2014, our proposed Project Manager Ryan Calad and staff from the KOA Orange office have led numerous traffic signal synchronization projects (TSSPs) totaling more than 500 signals and 125 miles worth of arterial roadway networks provided with optimized timing coordination to agencies within southern California. KOA has successfully coordinated traffic signal systems composed of various controllers and various central systems. KOA has successfully designed and coordinated traffic signal systems from legacy NEMA and Type 170, to new advanced Type 2070 and ATC, which this knowledge allows us to work with any budget and system to provide optimized signal operations. KOA has extensive experience in traffic signal timing and working with the City’s existing/proposed 2070E controllers with 2033 program and Transparency central system as our project experience shows.
QUESTIONNAIRE - 2. QUALIFICATIONS AND EXPERIENCE OF THE FIRM

2-C DESCRIBE COMPARABLE PROJECTS, SCOPE OF SERVICES, AND STATUS OF PROJECTS.
Outlined below is a matrix of recent and relevant (within the last 5 years) KOA projects with comparable project scopes with the focus on the keys of signal inventory, As-built plans, and overall signal timing optimizations tasks as outlined in the RFP.

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<td>&quot;Metro Blueline&quot; &amp; Atlantic Ave TSSP - 2016-2019 (108 Signals)</td>
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<tr>
<td>City of Diamond Bar ITS &amp; TMC On Call - 2013 to 2016 (60 Signals)</td>
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<tr>
<td>Barstow HSSIP Signal Improvements - 2017 to Ongoing (13 Signals)</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>City of Coachella ST-68 TSSP - 2015 to 2017 (15 Signals)</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>City of Azusa Metro ATMS - 2017 to Ongoing (52 Signals)</td>
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<td>X</td>
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<tr>
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<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Metro Crenshaw/LAX Rail Transit Project - 2015-Ongoing (14 Signals)</td>
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<td>Beverly Hills Traffic Signal &amp; ITS Master Plan - 2018 to Ongoing (86 Signals)</td>
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<tr>
<td>San Bernardino SSARP - 2017 to 2018 (300 Signals)</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>El Monte SSARP - 2018 to 2019 (77 Signals)</td>
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</tbody>
</table>

Outlined below is the list of our key staff we have proposed on this project and their involvement with these relevant projects.

<table>
<thead>
<tr>
<th>KOA TEAM KEY STAFF</th>
<th>Ryan Cielo, PE Project Manager</th>
<th>Stephen Bute, PE Principal in Charge</th>
<th>Walter Oktus, PE, TE QA/QC Manager</th>
<th>Wyatt Sing, ET Assistant Engineer</th>
<th>Kevin Kelly, ET Assistant Engineer</th>
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<tr>
<td>Barstow HSSIP Signal Improvements - 2017 to Ongoing (13 Signals)</td>
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<tr>
<td>City of Coachella ST-68 TSSP - 2015 to 2017 (15 Signals)</td>
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<tr>
<td>City of Azusa Metro ATMS - 2017 to Ongoing (52 Signals)</td>
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<tr>
<td>South Pasadena Fair Oaks Ave HSSIP/METRO ATMS - 2017 to 2018 (36 Signals)</td>
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<tr>
<td>Various Culver Citywide Signal Synchronization Projects - 2018 to 2016 (100+)</td>
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<td>Beverly Hills Traffic Signal &amp; ITS Master Plan - 2018 to Ongoing (86 Signals)</td>
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<td>San Bernardino SSARP - 2017 to 2018 (300 Signals)</td>
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<td>El Monte SSARP - 2018 to 2019 (77 Signals)</td>
<td>X</td>
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</tbody>
</table>

For further examples of our project experience, please also refer to the detailed descriptions which begin on page 13.
QUESTIONNAIRE - 2. QUALIFICATIONS AND EXPERIENCE OF THE FIRM

2-D. COMMENT ON OTHER AREAS THAT MAY MAKE YOUR FIRM DIFFERENT FROM YOUR COMPETITORS.

ADVANCED CONTROLLER PROGRAMMING KNOWLEDGE OF TEAM
The KOA team has the local insight of the area and expertise with the McCain products from similar projects to provide synchronization plans comprehensive of the City's needs and project intent. Through different projects in Southern California and beyond, our KOA team is well experienced with conversions of Type 170-233 timing charts to the newer Type 2070-2033 timing charts. KOA currently owns both a Type 170 controller with 233 programming and Type 2070 controller with 2033 programming, which our staff has been trained to program timing directly to controllers in the field. This in depth familiarity with the preferred City controller program allows us the ability to test, model, and program advanced controller functions in order to provide the best timing options for the City. We also have in house at our Orange office a tester box our knowledgeable staff has used to set up and test these controllers in a virtual network. [Figure: KOA's in-house Type 170 and 2070 controllers].

ADVANCED SYSTEM KNOWLEDGE OF TEAM
Mr. Calad and the KOA Orange office staff has similar project experience with the Transparity system having been the ITS/TMC task leader on two recent projects for the City of Coachella and Azusa which KOA installed the McCain TMS. For these projects Mr. Calad managed the PS&E for the TMC and ITS elements including brining the signals online, provided fine tuning of optimized timings, along with Transparity System training for City staff. KOA also owns a demo version of Transparity TMS software and an 2070 ATC Omni eX controller which our KOA staff has gained additional experience and capabilities. Combined, our team is more than capable to provide the any needed timing implementation, and system integration and network configurations to provide deployment support for new controllers that we have offered as an extra value task performed by our team.

Maximizing Team Strength And Guaranteed Responsiveness
In addition to those listed in the Organization Chart, KOA's resource-pooling approach will take advantage of support from staff in the other KOA offices to ensure adequate resources to handle unanticipated issues arisen during the project. Having worked with local agencies for over 30 years, KOA truly understands that the key step toward project success is to be responsive.

2-E. PROVIDE THE REQUESTED FORMS
Please find the requested forms in the following pages:
1. Declaration for the Proposer
2. Extension of Contract to Other Public Agencies
3. Non-Collusion Declaration
REQUEST FOR PROPOSAL

DECLARATION FOR THE PROPOSER

I declare that I am an authorized agent or officer of the entity submitting this proposal and in such capacity I am empowered to submit this proposal on behalf of (entity):

KOA Corporation

I also verify that all information submitted and contained herein is true and correct to the best of my knowledge and belief.

BY: ____________________________

Signature: _________________________

Printed Name: Stephen Bise, PE

Position/Title: Vice President and Director, Los Angeles Operations

Date of Execution: September 12, 2018

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REQUEST FOR PROPOSAL

EXTENSION OF CONTRACT TO OTHER PUBLIC AGENCIES

The prices, terms and conditions of this proposal may be extended to other governmental agencies at the mutual agreement of both the City and the consultant. All requirements of the specifications, purchase orders, invoices, and payments with other agencies would be directly with the successful proposer. The City of Inglewood does not warrant any additional use of the contract by such agencies. The proposer’s response as requested below will in no way affect the City of Inglewood’s consideration of this quote.

Please indicate if this quote will be extended to other public agencies, and the length of time it will remain in effect from the opening date of this quote.

Yes: ______ No: X ______ Length of Time: 90 days from 9/12/18 Days / Months

The balance of this page is intentionally left blank.
REQUEST FOR PROPOSAL

NON-COLLUSION DECLARATION

The undersigned hereby declares and says:

That he has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive proposal offered in connection with the contract described below.

(Full description of proposal):

Proposal for Engineering Services for Stadium Alternative Mitigation Measure:
Intelligent Transportation Systems (ITS) Improvements

I declare under penalty that the foregoing is true and correct to the best of my knowledge.

Executed at Monterey Park, California, on
(Month & Date) September 12, 2016

Signature of Officer or Authorized Agent
CITY OF LONG BEACH CITYWIDE MULTI-CORRIDOR TRAFFIC SIGNAL SYNCHRONIZATION PROJECTS LONG BEACH, CA

Since July 2015, KOA has managed and completed multiple traffic signal synchronization projects (TSSP) for the City of Long Beach. These TSSPs provide corridors with updated CA MUTCD-compliant phase timing and optimized coordination plans during the AM, Noon, and PM peak periods. Additional project tasks included count and data collection; field reviews; “before” and “after” studies; revising controller timing charts, and submittal of the final report. All projects utilized Synchro and Tru-Traffic software.

**Ocean Boulevard TSSP (2015-2016)**
The project corridor with 29 signals and 3.67 miles of the City’s main beach front and Downtown arterial. **Implementation of the project’s optimized signal timing resulted in an average increase of 20% in average travel speed and a 20% decrease in travel time for the morning and evening peak periods.**

**Six-Corridor TSSP (2015-2017)**
The project included cross-corridor signal synchronization for Spring St, Willow Ave, Carson St Cherry Ave, Lakewood Blvd, and Bellflower Blvd. It included 118 signals along the six crossing corridors, that each exceeded five miles in length. Project management included multi-agency coordination with Caltrans District 7, City of Signal Hill, Carson, Bellflower and Lakewood. **After Studies are awaiting to be performed after CIP roadway construction completion in 2019.**
“METRO BLUE LINE” & ATLANTIC AVENUE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT
LONG BEACH, CA

KOA served as the prime consultant of the project that provided improved signal and transit priority timing optimization for a total of 108 City intersections. The project included the north-south corridors for the “Metro Blue Line” light rail intersections along for Long Beach Boulevard (32 signalized intersections, 3.7 miles), Atlantic Avenue (52 signalized intersections, 7.7 miles) corridors, and re-timing of four critical one-way east-west downtown cross corridors (24 signalized intersections, 4.0 miles total). Metro “Blue Line” intersections were upgraded with 2070 LX controllers with D4 program and transit priority programming. Of the 52 Atlantic Avenue intersections, a total of 29 intersections were upgraded with 2070 LX controllers with McCain’s Omni eX (20) and D4 (D4) programming. As the prime consultant, KOA provided the Traffic Signal Synchronization services, multimodal travel time runs and for before and after studies, implementing new timing for existing controllers, controller timing sheet conversions, programming, and deployment for new controller locations, bringing controllers online, and TOD plan fine tuning.

Construction is complete for the Metro Blueline corridor signals which an average improvement in Blueline light rail decreased travel time and stops that ranged from by -17% to -35% for both inbound/outbound travel for the AM and PM peak hours. On average, vehicle travel time and stops was also decreased by -15% to 31% for both northbound and southbound travel in the AM and PM peak hours.
CITY OF DIAMOND BAR ON-CALL FOR ITS-RELATED SERVICES FOR THE CITY’S TMC
DIAMOND BAR, CA

KOA provided technical support to the City staff for managing the City’s Traffic Network, TransSuite ATMS, and other ITS-related services. On-call support scope tasks included troubleshooting potential problems between the local controller and its internal circuitry within the cabinet and determining problems during loss of communications between local controllers and the TMC. KOA performed diagnostic testing on components inside the cabinet and the communication system in the TMC. KOA checked for the proper connection and “punch-down” of the interconnect system and for the conditions of cables and their shields. KOA troubleshoots issues related to the CCTV camera and video detection system, such as loss of pan-tilt-zoom (PTZ) control and poor images displayed on the monitors in the City’s TMC. As part of these services, KOA provided the integration and expansion of additional signals into the City’s TMC. Additional extra contract Task Order work included:

- Support TMC Video Wall System upgrades for eight (8) Samsung 46” displays and work stations (2012)
- 2070 ATC Controller testing for McCain Omni eX and D4 Programs (2015).
CITY OF BARSTOW PROFESSIONAL TRAFFIC ENGINEERING, DESIGN, AND ENVIRONMENTAL SERVICES FOR VARIOUS SIGNALIZED INTERSECTION IMPROVEMENTS ALONG MAIN STREET AND BARSTOW ROAD
BARSTOW, CA

KOA is providing to the City of Barstow a complete PS&E package with traffic engineering, signal coordination and environmental services for their HSIP (Cycle 6) funded 13-signal improvement project along the corridors of Main Street and Barstow Road. The City received a total of $892,200 from the grant to provide upgrades to the signal system with new vehicle heads, pedestrian countdown heads/ped push buttons, and signal timing improvements. After our review of the existing project signal system and cost estimates, the final PS&E improvements were able to provide new vehicle heads, count down ped heads, APS system, 2070 controllers, video detection, emergency vehicle preemption (EVP), and GPS time clocks at all 13 project intersections.

KOA is providing environmental clearance support and coordination with Caltrans which the project is currently awaiting E-76 authorization approval for construction. We will also are providing signal timing coordination and controller deployment of new 2070 controllers with McCain 2033 program once construction has finished.

CITY OF BARSTOW
220 E. Mountain View Street, Suite A
Barstow, CA 92311

REFERENCE
Domingo D. Gonzales
Engineering Services Administrator
(760) 255-5121
dgonzales@barstowca.org

YEAR
2017 - Ongoing

STAFF
Ryan Calad, PE
Walter Okitsu, PE, TE, PTOE
Wyatt Sing, EIT
Kevin Kelley, EIT

PROJECT FEATURES
- PS&E Signal Modification
- Controller Conversions
- 2070/2033 Controller Deployment
- Timing Optimization
- Before/After Studies
- Synchro/SimTraffic
- Caltrans Coordination (PES and E-76)
- NEPA/CEQA Clearances
CITY OF COACHELLA ST-68 TRAFFIC SIGNAL SYNCHRONIZATION PROJECT
COACHELLA, CA

KOA completed ITS and signal design services for the Traffic Signal Synchronization and ITS Infrastructure Phase 1 Deployment of the City’s ITS Master Plan. Work included complete PS&E and construction management for controller upgrades, ITS hardware/software implementation, new 72 single mode fiber optic interconnect for all City intersections, redundant wireless interconnect, and PS&E to construct a new Traffic Management Center (TMC), featuring a 3x2 47” live video wall for monitoring and controlling signal operation via CCTV cameras. The project migrated the City to McCain 2070ATC controllers running the Omni Ex program and Transparity central system software.

Synchronization and timing implementation for 16 intersections was included. KOA staff provided TMC operation training to City staff. The project provided Citywide signal timing updates with updated CA MUTCD-compliant phase timing and optimized coordination plans during the AM, Noon, and PM peak periods. Additional project tasks included count and data collection; field reviews; “before” and “after” studies; revising controller timing charts, and submittal of the final report. All projects utilized Synchro and Tru-Traffic software for timing efforts. The overall improvements with coordinated timings resulted in an average of a 25% decrease in vehicle travel time, a 30% increase in travel speed, and 74% decrease in stops for all peak periods.
The City of Azusa hired KOA to provide traffic signal design, centralized traffic control system and monitoring upgrade, construction management and inspection services for their ATMS. The funding sources for this project are mainly through a Los Angeles County Metropolitan Transportation Authority (LACMTA) Proposition C Grant and other City available funds. The project budget is approximately $6.8 million to provide traffic improvement at total of 52 project intersections that includes installation of intersection signal equipment, detection systems, a centralized traffic control and monitoring system, signal timing, improve street layout at Foothill Boulevard and Alosta Avenue, and upgrade curb ramps at project intersections.

The project will also replace antiquated controllers with new 2070 LX controllers with Omni eX program, new cabinets, video detection, CCTV’s, new fiber and wireless interconnect, local, aggregate, and network switches and routers enabling communication between local field elements and the TMC. The project provided controller conversions, before” and “after” studies using Tru-Traffic, and implementation of optimized coordination plans produced with Synchro during the AM, Noon, and PM peak periods. Additional project tasks included performing Citywide field review inventories, which were submitted with “ITS Assessment Opportunities” and “Traffic Signal System” Master Plan documents.
CITY OF SOUTH PASADENA FAIR OAKS AVENUE HSIP SIGNAL/METRO ATMS IMPROVEMENT PROJECT
SOUTH PASADENA, CA

KOA was selected by the City of South Pasadena to provide engineering design services for signal and interconnect improvements for 20 of the City's signalized intersections funded through a combination of HSIP and Metro grants. The HSIP improvements included new Opticom GPS Emergency vehicle Preemption (EVP), 2070 LX Controllers, and Advanced Dilemma Zone Detection to nine intersections along Fair Oaks Avenue. The METRO funded project was a collaboration to interconnect the City of South Pasadena Signals directly to LA County Department of Public Works (LACO) to provide signal monitoring at their TMC, as well as provide a direct fiber link to LACO IEN network for the City of Pasadena. For this effort KOA performed and exploratory investigation of existing SIC inclusive of 36 signals and four miles of fiber, conduit, and pull boxes to produce Alternatives designs and cost estimates. For the selected Alternative, KOA produced PS&E’s for both the HSIP and Metro projects with signal improvements, 3.5 miles worth of 48 and 96 SMFO, wireless Ethernet radios, and redundant gigabit ring network with new hardened node/aggregate switches. For cost savings, KOA is coordinating direct procurement for the new controllers, signal monitors, and Proxim wireless radios for installation by LACO as a soft match. Signal timing is also included with KOA providing coordinated timing, Before/After studies, and controller conversions for the City of South Pasadena signals.
CLAREMONT FOOTHILL BOULEVARD MASTER PLAN
PS&E
CLAREMONT, CA

KOA was retained by the City to prepare plans, specifications and estimates (PS&E) to implement the Foothill Boulevard Master Plan in the City of Claremont. The project is contained to a two mile stretch along Foothill Boulevard between Town Avenue and The City Boundary. The project includes roadway improvements, bio-swales, storm drains, bicycle lanes, separated bicycle lanes, intersection bulb-outs, median and parkway landscaping, traffic signal modification, ITS, sidewalk improvements, and street/pedestrian lighting. The goal is to translate the approved Master Plan improvements into complete construction documents. KOA will lead the team of consultants throughout the design phase and will be on-call to the City for bid and construction support.

With construction currently underway, the KOA team from the Orange office has provided signal timing construction support for modifying timing in existing 2070 TSCP controllers for the various phase construction stages to adjust signal operations to account various for detection issues, lane reductions, and queuing. Upon construction completion, new 2070 controllers with Mccain 2033 program will be deployed by KOA staff with new optimized TOD coordination plans.
PROFESSIONAL ENGINEERING SERVICES FOR 3 SIGNAL MODIFICATIONS | ARCADIA, CA
KOA will prepared timing charts for 3 new project new 2070LX controllers with D4 program. Controller timing sheets included CA MUTCD Phase timing input and other advanced operational programming features will be loaded to controllers directly to the controllers during construction. Coordinated time of day plans we're also included as well to synchronize timing to neighboring signals for uninterrupted platoon progression along the major corridor legs. Upon construction completion, KOA will conduct "before" and "after" studies using the floating car method with Tru-Traffic TS/PP software and dash cam video for the limits of Sunset Boulevard - between Huntington Drive to Duarte Rd, Duarte Road - between Baldwin Avenue to Santa Anita Avenue, and Huntington Drive - between Santa Anita Avenue to 5th Avenue. Reference: Kevin Merrill, PE, 240 West Huntington Drive, Arcadia, CA 91006-6021, (626) 574-548, kmerrill@ArcadiaCA.gov

METRO CRENSHAW/LAX RAIL TRANSIT PROJECT | INGLEWOOD, CA
For Metro's Crenshaw/LAX Rail Transit Project, KOA Corporation is a member of the design-build team that is currently constructing the new light rail transit line. KOA's work includes guiding the design of traffic signal modifications at 14 intersections, recommending grade crossing parameters for preempting the traffic signals at seven grade crossings along Florence Avenue, and preparing the traffic signal timing charts for the McCain 2033 software in 2070E controllers. Reference: Mark Van Gessel, Senior Director of Construction Management - Engineering, LACMTA-Crenshaw Project, (310) 431-3354, vangesselM@metro.net

BEVERLY HILLS CITYWIDE TRAFFIC SIGNAL SYSTEM & TMC MASTER PLAN | BEVERLY HILLS, CA
KOA is assisting the City to provide traffic engineering services for developing the City-Wide Traffic Signal System Planning Document and preparing plans, specifications and estimates (PS&E) to upgrade the Traffic management System (TMS) and Traffic Management Center (TMC). The project scope of work consists of performing traffic signal system infrastructure field inventory for the City's 106 traffic signals with signal and controller cabinet inventories, review of traffic signal operation, ITS and monitoring systems, detection, and network communication, preparation of a needs assessment document and implementation plan, and design of TMS & TMC upgrade and re-configuration. Reference: Kevin Riley, 455 North Rexford Drive, Beverly Hills, CA 90210, (310) 285-2467, kriley@beverlyhills.org
CITY OF SAN BERNARDINO SYSTEMATIC SAFETY ANALYSIS REPORT PROGRAM (SSARP) | SAN BERNARDINO, CA

In 2017, KOA was awarded the consultant contract to complete the Caltrans Systemic Safety and Analysis Report Program (SSARP) project. The SSARP included evaluation and inventory of Citywide traffic signals and safety lighting, and signage near the public schools. As part of the SSARP signal evaluation and inventory of over 300 traffic signals, controller cabinets, intersection safety lighting, along with flashers and mid-block crossings. The existing signal system review was used to provide a foundation for potential signal system upgrades or replacements based on age, application, and identified deficiency, pertaining to existing standards and safety.

Reference: Hernando Cotangco, 300 North D St, San Bernardino, CA 92418, (909) 384-7521, cotangco_he@sbcity.org

CITY OF EL MONTE SYSTEMATIC SAFETY ANALYSIS REPORT PROGRAM (SSARP) | EL MONTE, CA

In 2018, KOA was awarded the consultant contract to complete the Caltrans Systemic Safety and Analysis Report Program (SSARP) project for the City of El Monte. As part of the SSARP signal evaluation and inventory of 77 Citywide traffic signals, controller cabinets, and intersection safety lighting. The existing signal system review was used to provide a foundation for potential signal system upgrades or replacements based on age, application, and identified deficiency, pertaining to existing standards and safety.

Reference: Jimmy Chung 11333 Valley Boulevard, El Monte, CA 91731, (626) 580-2056, jchung@elmonteca.gov

COUNTY OF LOS ANGELES TSSP | LOS ANGELES COUNTY, CA

KOA has provided Traffic Engineering On-Call Services to L.A. County since 2002, including work on several LACDPW Traffic Signal Synchronization Projects. The County is administering a LACMTA grant-funded program to improve traffic flow and reduce congestion on numerous arterial streets, as part of their Countywide Traffic Improvement Program. One part of the program involves designing and implementing traffic signal synchronization improvements on multi-jurisdictional routes of regional significance. KOA has been involved in several of these projects: Bellflower Boulevard Traffic Signal Synchronization Project (47 signalized intersections), Artesia Boulevard Traffic Signal Synchronization Project (26 traffic signals), Fair Oaks Avenue Traffic Signal Synchronization Project (10 intersections), Garvey Avenue Traffic Signal Synchronization Project (12 intersections), Garfield Avenue Traffic Signal Synchronization Project (13 intersections), Foothill Boulevard Traffic Signal Synchronization Project (14 intersections), Beverly Boulevard (35 intersections).

Reference: Martin Amundson, PE Los Angeles County DPW, 900 S. Fremont Ave, Alhambra, CA 91803, (626) 300-4774, mamund@dpw.lacounty.gov
3-A. Describe the qualifications of staff proposed for the assignment, position(s) in the firm, and types and amount of equivalent experience. Be sure to include any municipal agencies they have worked with in the past three years and their level of involvement. A description of how overall supervision will be provided should be included.

Brief biographies for the five key personnel who will be the primary contacts to the City are provided on below. In addition to these five KOA personnel staff members in the proposal, we have assigned to this project additional staff for drafting production and other support needs based on their skills and availability. Our pool of staffing resources encompasses all four KOA offices. The organization matrix is also shown on the following page and shows the KOA staff member name, project title, and task involvement/responsibility for the project.

PERSONS PRINCIPALLY RESPONSIBLE FOR WORKING WITH THE CITY

**Ryan Calad, PE**, will be the assigned project manager in charge of all management, project tasks, and the primary contact for the City. He has served as Project Manager/Task Leader on various traffic signal design, synchronization, and ITS projects. His main experience is with signal system operations and has conducted extensive work in the development of optimized timing plans for nearly 1,000 signals, along with implementing, troubleshooting, and operation controllers and central systems. Mr. Calad will be supported by the experienced engineering staff from both our Monterey Park and Orange offices, who have had similar roles on our recent timing and design projects.

**Stephen Bise, PE** will serve the project as the principal-in-charge (PIC), ensuring we provide the City with an exceptional final product. Mr. Bise has numerous years of civil and traffic engineering experience and has managed and prepared numerous projects involving the design of traffic signals as well other transportation and traffic engineering projects. In addition to serving as PIC, Mr. Bise will also serve a key supervising role for the completion of the As-built plan deliverables.

**Mr. Walter Okitsu, PE, PTOE, PTP**, has been designated as the QA/QC manager for this contract. He is a principal engineer and founder of KOA and has over 37 years of experience in transportation planning and engineering, with expertise in traffic signal phasing and timing. To ensure adherence to the budget and schedule, Mr. Okitsu will conduct and be responsible for the quality control of the project, from inception to the completion. Mr. Okitsu will also serve a key supervising role for the operational review for all intersections to ensure all special considerations, like rail road and protected-permissive left turns are appropriately configured.

**Mr. Wyatt Sing, EIT** will serve the role of Project Engineer with involvement in all tasks from initial field reviews to final timing implementation. He will be responsible for the Synchro modeling process, establishing the existing conditions, data collection, and optimized timing plans via Synchro. He has experience converting timing information and creating converted timing sheets for various controllers and programs. He is very knowledgeable with the complete signal and communication system from the cabinet to the TMC, and is well versed with many central management systems.

**Mr. Kevin Kelley, EIT** will serve the role of Project Engineer with involvement in all tasks from initial field reviews to final timing implementation. He will be responsible for the Tru-Traffic modeling process, modeling existing and optimized conditions and preparing the “before/After” Study report and videos. He has completed 100’s of field/cabinet inventories and has extensive work experience from recent projects where he installed and implemented timings, programmed controllers, and deployed them in the field. He has also experience with various central systems and direct network IP connections. Mr. Kelley has worked on various signal in interconnect improvement projects.

Full Resumes of our Key Staff follow on Page 25. These resumes show the roles of each staff along with recent relevant project experience.
### TEAM MEMBER & PROPOSED ROLE

<table>
<thead>
<tr>
<th>Member</th>
<th>Project Planning</th>
<th>QAQC Efforts</th>
<th>Before and After Study (Traffic)</th>
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 QUESTIONNAIRE - 3. QUALIFICATIONS AND EXPERIENCE OF PROPOSED PROJECT TEAM

RYAN CALAD, PE
SENIOR ENGINEER/PROJECT MANAGER

Mr. Ryan Calad is a motivated and innovative traffic engineer who has served as Project Manager/Task Leader on various traffic signal design, synchronization and engineering projects. His expertise is with signal system operations. He has conducted extensive work in the development of optimized timing plans for nearly 1,000 signals, along with implementing, troubleshooting, and operation controllers and central systems. In addition, Mr. Calad has been serving as an Expert Consultant to the Board of Professional Engineers, Land Surveyors, and Geologists (BPELAG), assisting the Board on traffic engineering related tasks since 2016.

RELEVANT EXPERIENCE
Multiple Corridor TSSP’s, Long Beach, CA
Project Manager. KOA has completed seven TSSPs under our on-call contract with the City, including the recently completed Ocean Boulevard project (30 signals). Mr. Calad managed tasks and submittals that included field reviews, before and after studies, Synchro/Tru-Traffic networks, final coordinated timing plans, and the final report. The remaining corridors, which are being timed concurrently for cross-corridor optimization, include Spring Street, Willow Street, Cherry Avenue, Carson Street, Bellflower Boulevard, and Lakewood Boulevard. These corridors are part of a large north-south and east-west grid, comprising of 118 intersections spanning nearly 32 miles.

Metro Blue Line and Atlantic Avenue TSSP, Long Beach, CA
Project Manager. KOA served as the prime consultant of the project that provided improved signal and transit priority timing optimization for a total of 108 City intersections. The project included the north-south corridors for the “Metro Blue Line” light rail intersections along for Long Beach Boulevard (32 signalized intersections, 3.7 miles), Atlantic Avenue (52 signalized intersections, 7.7 miles) corridors, and re-timing of four critical one-way east-west downtown cross corridors (24 signalized intersections, 4.0 miles total). Metro “Blue Line” intersections were upgraded with 2070 LX controllers with D4 program and transit priority programming. Of the 52 Atlantic Avenue intersections, a total of 29 intersections were upgraded with 2070 LX controllers with McCain’s Omni eX (20) and D4 (D4) programming. As the prime consultant, KOA provided the Traffic Signal Synchronization services, multimodal travel time runs and for before and after studies, implementing new timing for existing controllers, controller timing sheet conversions, programming, and deployment for new controller locations, bringing controllers online, and TOD plan fine tuning.

Fair Oaks Avenue HSIP Signal/Metro ATMS Improvement Project, South Pasadena, CA
Project Manager. KOA was selected to provide engineering design services for traffic signal improvements, signal timing, fiber optic interconnect, and a new centralized advanced traffic management system (ATMS). The project is funded through a combination of HSIP and LA Metro grants. The HSIP grant funded improvements will provide new EVP’s, 2070 ATC Controllers, conflict

EDUCATION
Cert, Type 2070 Traffic Signal Controllers, UC Berkeley Technology Transfer Program (Course TE-09)

BA, Social Ecology (Urban Planning Focus), University of California, Irvine, CA

REGISTRATIONS
Professional Engineer (Traffic), CA #2692

Professional Engineer (Civil), AZ #63514

PROFESSIONAL AFFILIATIONS
Orange County Traffic Engineering Council

Institute of Transportation Engineers

Intelligent Transportation Society (ITS) of California

RELEVANT PROFESSIONAL ATTRIBUTES
Controller Installation and Implementation:
• 2070: D4, Omni eX, TSCP, 2033, Maxtime, ASC/3
• 170: 200, 233, LACO 4E, 172.3

Central System Experience
• Transparity, Transuite, ATCS, Quicnet, Centracs, Maxview

Software Knowledge:
• Synchro
• Tru-Traffic
• AutoCAD
• Microstation

25

ARBOR VITAE STREET, PRAIRIE AVENUE, LA CIENEGA BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT
CITY OF INGLEWOOD
monitors, and Advanced Dilemma Zone Detection to intersections along Fair Oaks Avenue. Mr. Calad served as the project manager for this work, in charge of all PS&E and coordinated signal timing efforts.

**HSIP Intersection Improvements for Main Street and Barstow Road, Barstow, CA**

Project Manager. KOA provided a complete PS&E package with traffic engineering, signal coordination and environmental services for the HSIP (Cycle 6) funded 13-signal improvement project along the corridors of Main Street and Barstow Road. The final PS&E improvements were able to provide new vehicle heads, count down red heads, APS system, 2070 controllers with 2033 program, Gridsmart video detection, emergency vehicle preemption (EVP), and GPS time clocks at all 13 project intersections. KOA provided Caltrans coordination for environmental clearance and RFA submittals and will implement the new coordinated timing once construction has finished. Mr. Calad served as the project manager for this work, in charge of all PS&E coordinated signal timing, and controller deployment efforts.

**ST-68 Traffic Signal Synchronization Project, Coachella, CA**

Task Manager for Signal Timing & TMC PS&E. KOA provided comprehensive design, bid, and build services for the City TSS project for the City’s Traffic Signal Systems which include construction documents (PS&E) for controller upgrades, ITS hardware & software upgrades, fiber optic interconnect of all City intersections, and the PS&E to build a traffic management center (TMC). Additionally, the project includes signal timing analysis, coordination and timing implementation for 16 City traffic signals. Mr. Calad managed the signal timing, coordination and implementation and the PS&E for the TMC and ITS elements.

**City of Azusa Traffic Management System Professional Engineering Services, Azusa, CA**

Task Manager for Signal Timing & TMC PS&E. KOA provided traffic signal design, centralized traffic control system and monitoring upgrade, construction management and inspection services for their ATMS. The project budget is approximately $6.8 million, funded through a L.A. County Metropolitan Transportation Authority (Metro) Proposition C Grant, to provide traffic improvement at total of 52 project intersections that includes installation of intersection signal equipment, detection systems, a centralized traffic control and monitoring system, and signal timing. The project replaced antiquated controllers and cabinets, installed network switches and routers enabling communication between local field elements and the Traffic Management Center (TMC). The design will provide a new TMC work station, as well as connection to the County IEN network. Additionally the project includes signal timing analysis conducted with Synchro, count and data collection; field reviews; “before” and “after” studies; revising controller timing charts, submittal of the final report and timing implementation. Mr. Calad managed the signal timing coordination, ITS Master Plan and inventory, and PS&E for the TMC and ITS elements.

**City of Diamond Bar ITS/TMC On-Call Traffic Engineering Services, Diamond Bar, CA**

Contract Support Staff. Mr. Calad served as technical support to the City staff for managing the City’s Traffic Network, TransSuite ATMS, and other ITS-related services. On-call support scope tasks included the integration and expansion of additional signals into the City’s TMC along with the additional extra contract Task Orders work for the Traffic Signal Maintenance and Operation Master Plan (TSMOMP) 2014 & TSMOMP update in 2016; Implementation and Monitoring of Traffic Responsive System (2014-2016); 2070 Controller testing for McCain Omni eX and D4 Programs (2015).

**Multiple OCTA Traffic Signal Synchronization Projects (TSSP), Orange County, CA**

Project Manager/Task Leader. Prior to joining KOA, Mr. Calad served as Task Lead for Data Collection and Field Reviews, “Before” and “After” studies, Signal Timing Optimization and Implementation, and Final Report for the MacArthurBlvd/Talbert Ave (7.4 miles and 26 signals) and Santa Margarita Pkwy (5.2 miles and 22 signals) OCTA TSSP. This included the MacArthur/Talbert 7.4 mile long corridor with 26 intersections passing through the cities of Santa Ana, Fountain Valley, and Huntington Beach. Another was for the Santa Margarita Pkwy 5.3 mile long corridor with 22 intersections passing through the cities of Rancho Santa Margarita, Mission Viejo, and Lake Forrest. Additionally, Mr. Calad served as the KOA project manager for the OCTA Harbor Blvd TSSP while under contract with the prime consultant KOA performed GPS-based floating car travel time “before”/“After” studies with Tru-Traffic software for the travel runs. Corridor Synchronization Performance Index (CSPi) methodology defined by OCTA, was used for performance tracking and was originally developed through KOA’s work for OCTA’s Countywide Signal Synchronization Master Plan project.
QUESTIONNAIRE - 3. QUALIFICATIONS AND EXPERIENCE OF PROPOSED PROJECT TEAM

WALTER OKITSU, PE, TE, PTOE, PTP
QA-QC MANAGER / TRAFFIC SIGNAL SYSTEM ANALYSIS & INTEGRATION TEAM

Mr. Okitsu is a Founder and a Principal of KOA Corporation. Mr. Okitsu has extensive experience in transportation planning and traffic design over a wide variety of highway, transit way, and bikeway projects. This includes designs for traffic signals, street lighting, signing & striping, and worksite traffic control. He has field and managerial experience on traffic impact, feasibility analysis, and circulation projects.

RELEVANT EXPERIENCE

City of Azusa Traffic Management System Signal & Interconnect PS&E, Azusa, CA
QA/QC Manager. The City of Azusa hired KOA to provide traffic signal design, centralized traffic control system and monitoring upgrade, construction management and inspection services for their ATMS. The funding sources for this project are mainly through a Los Angeles County Metropolitan Transportation Authority (LACMTA) Proposition C Grant and other City available funds. The project budget is approximately $6.8 million to provide traffic improvement at total of fifty-two (52) project intersections that includes installation of intersection signal equipment, detection systems, a centralized traffic control and monitoring system, signal timing, improve street layout at Foothill Boulevard and Alosta Avenue, and upgrade curb ramps at project intersections. The project will also replace antiquated controllers and cabinets, install network switches and routers enabling communication between local field elements and the Traffic Management Center (TMC). The design will provide a new TMC work station, as well as connection to the County IEN network.

ST-68 Traffic Signal Synchronization Project, Coachella, CA
QA/QC Manager. The KOA team provided comprehensive design, bid, and build services for the City TSS project for the City's Traffic Signal Systems which include construction documents (PS&E) for controller upgrades, ITS hardware & software upgrades, fiber optic interconnect of all City intersections, and the PS&E to build a traffic management center (TMC). Additionally the project includes signal timing analysis, coordination and timing implementation for 16 City traffic signals. Mr. Okitsu provided QA/QC for project deliverables.

Traffic Signal Upgrade and Left Turn Phasing, Culver City, CA
Project Manager. Mr. Okitsu led the KOA team in design traffic signal upgrades to modify the left turn phasing at seven signalized intersections for the City of Culver City. The upgrades also involved installation of wheelchair ramps, bicycle detection, and the City's first radar detectors. Alternatives such as split phasing, protected-permitted left turns, flashing yellow arrow phases, and crosswalk removals were compared using microsimulation. KOA also designed one of the first Class II left turn bike lanes in Southern California to provide bicycle-only access to the Ballona Creek bike path. KOA's work scope also included assistance during construction.

EDUCATION
MS, Transportation Engineering, University of California, Berkeley, CA
BS, Civil Engineering, California State University, Los Angeles, CA
BS, Math-Computer Science, University of California, Los Angeles, CA

REGISTRATIONS
Professional Engineer (Traffic), CA #1406
Professional Engineer (Civil), CA #52655
Professional Traffic Operations Engineer (PTOE)
Professional Transportation Planner (PTP)

PROFESSIONAL AFFILIATIONS
Institute of Transportation Engineers, International Director
Registered Traffic Engineers of America, Founder and President California Legislative Council for Professional Engineers, Director
UCLA School of Engineering and Applied Sciences, Instructor for undergraduate transportation engineering courses
Atlantic Boulevard Corridor Signal Synchronization, Monterey Park, CA
QA/QC Manager. KOA designed traffic signal improvements along a six-tenths of a mile stretch, encompassing six signalized intersections, of Atlantic Boulevard from Newmark Avenue to Hellman Avenue. Improvements included signal wireless interconnect, APS push buttons, countdown pedestrian signals, and signal phase changes. KOA’s scope was to provide all engineering and surveying services for the preparation of project plans (traffic signal, civil, signing, and striping), specifications, estimates, bid documents, and traffic signal timing plans. Mr. Okitsu provided QA/QC for the project deliverables.

Various Traffic Signal Synchronization Projects, Culver City, CA
Principal-in-Charge. KOA has provided services to the City of Culver City for traffic signal timing on many occasions. This Westside Los Angeles city has very challenging traffic problems relating to high traffic and congestion levels, severely congested freeways that travel through or near the City, and unique roadway configurations in much of the City. In 2008, 12 intersections in the Fox Hills area were changed from a Multisomics VMS 220 signal system to the City of Los Angeles ATSAC system. KOA converted the existing timing plans to Type 170 ATSAC format. KOA also developed optimized timing plans for an additional two intersections to serve the Fox Hills Mall expansion, for the new West Los Angeles College access road at its intersection with Jefferson Boulevard, and for an overhead pedestrian flasher. KOA also provided design services for the original conversion of the Culver City signal system from Multisomics to City of Los Angeles Automated Traffic Surveillance and Control (ATSAC) System. This approach was undertaken prior to 2000, and the joint-agency program was effective for regional traffic signal operation following implementation. Culver City has recently concluded that this arrangement was no longer effective due to Los Angeles conversion from ATSAC to ATSC (adaptive) software and related issues. Culver City changed their signal timing software from ATSAC to BITran. Mr. Okitsu led the design on some of the project phases and QA/QC for others.

Honolulu Signal Retiming Project Phases I, 2, and 4, Honolulu, Hawaii
Project Engineer. KOA was retained to conduct traffic signal timing studies for three different phases of the City and County of Honolulu Traffic Signal Retiming program. The program included all signalized intersections in the City of Honolulu and on the island of Oahu. The projects were largely funded by FHWA who concurred in the award of each project to KOA. Phase 1 analyzed the potential benefits of retiming for 300 intersections throughout Oahu. Phase 2, included the downtown high-rise office area and many important suburban arterial, and Phase 3 (formerly 3A) developed and implemented optimized timing along Kapiolani Boulevard and Ala Moana Boulevard through central Honolulu. Phase 4 also included retiming of Kalanianaole Highway toward Hawaii Kai, Nimitz Highway near the airport, Farrington Highway in Kapolei, Nanakuli, and Makaha, and Fort Weaver Road in the Lower Ewa neighborhood. The SYNCHRO/SIMTRAFFIC signal optimization program was used to develop the signal timing. Walter Okitsu oversaw the implementation and fine-tuning of the timing, installed either through the City’s QuicNet system from the traffic management center or directly into Type 170 controllers in the field.

Metro Crenshaw-LAX Light Rail Transit Line Signal Timing, Inglewood, CA
The Los Angeles County Metropolitan Transportation Authority constructed a new light rail line through the cities of Los Angeles and Inglewood by means of a design-build contract. KOA assisted with the design of traffic signals and railroad grade crossings within the City of Inglewood, including calculation of the advance preemption times as well as railroad gate and traffic signal parameters. KOA prepared timing charts for Type 2033 controllers for implementation at the signalized intersections. Mr. Okitsu performed the calculations and developed the signal timing for the project.

La Palma Avenue Traffic Light Synchronization Project, Orange County, CA
Project Engineer. KOA contracted with the Orange County Transportation Authority (OCTA) to provide engineering services for signal hardware upgrades and signal timing improvements along La Palma Avenue, covering a distance of 18 miles and involving the cities of La Palma, Buena Park, and Anaheim. There were 62 intersections within the project limits. The services included field surveying and the assessment of the current inventory of signal equipment and hardware; the recommendation of hardware upgrades and traffic management system updates; and signal timing optimization. The project goals were to upgrade antiquated signal hardware and to coordinate multi-jurisdictional signal synchronization to improve traffic flows countywide.
Mr. Bise has managed a number of civil and traffic engineering projects. His recent projects involve roadway improvements, drainage modifications, low impact development (LID) implementation, traffic signal design, signing and striping, and planning for future development. Mr. Bise has managed the preparation of encroachment permit application packages and final PS&E packages for several Southern California cities (such as Arcadia, Culver City, Carson, Glendale, Calabasas, Thousand Oaks, Simi Valley and Moreno Valley). He also has experience in providing survey, hydraulic and hydrology studies; roadway and drainage engineering design; traffic engineering design; and final plans, specifications and estimates for various street improvement projects.

RELEVANT EXPERIENCE

Foothill Blvd Master Plan Improvements, Claremont, CA
KOA was retained by the City of Claremont to prepare plans, specifications and estimates (PS&E) to implement the Foothill Boulevard Master Plan. The project is contained within a two (2) mile stretch along Foothill Boulevard between Town Avenue and The City Boundary. The project includes roadway improvements, bio-swales, storm drains, bicycle lanes, separated bicycle lanes, intersection bulb-outs, median and parkway landscaping, traffic signal modification, sidewalk improvements, and street/pedestrian lighting. The goal is to translate the approved Master Plan improvements into complete construction documents. KOA will lead the team of consultants throughout the design phase and will be on-call to the City for bid and construction support.

Whittier Lambert Road TSSP, Whittier, CA
KOA was retained by the City of Whittier to provide traffic engineering services for the Traffic Signal Synchronization Program (TSSP) along Lambert Road from Washington Boulevard to Grayling Avenue within the City. The project included improvements at 17 intersections, 7 of which are located adjacent to Union Pacific Rail Road (UPRR) at-grade crossings. The project also required coordination and approval from the Los Angeles County of Public Works (LACDPW). The TSSP improvements involved providing for full-traffic actuated operations, such as controller/cabinet upgrades, an appropriate vehicle detection system, interconnect and/or time-based coordination (using GPS UTB units).

Citywide Traffic Signal Safety Improvements, Pico Rivera, CA
Project Manager. The City of Pico Rivera retained KOA to provide civil and traffic engineering services for a citywide traffic safety improvement project. The project was federally funded through Caltrans Highway Safety Improvements Program (HSIP). The project consisted of four traffic signal modifications, curb ramp upgrades, new driveways, and approximately 6,600 square feet of sidewalk improvements. All improvements were designed to comply with ADA standards and general funding requirements. KOA included CWE and Avant-Garde on the project team to provide assistance with environmental compliance and funding documentation.
WYATT R. SING, EIT
ASSISTANT ENGINEER/PROJECT ENGINEER

Mr. Sing is a versatile assistant engineer with experience with signal timing synchronization and/or improvement projects. He has been involved with the entire synchronization project process, from establishing the existing conditions, data collection and field inventory, and optimized timing plans via Synchro. He has experience converting timing information and creating converted timing sheets for various controllers and programs. He is very knowledgeable with the complete signal and communication system from the cabinet to the TMC, and is well versed with many central management systems.

RELEVANT EXPERIENCE
Metro Blue Line and Atlantic Avenue TSSP, Long Beach, CA
Assistant Engineer. Mr. Sing helped optimize signal timing for all peak periods along all project corridors and create timing plans compatible with D4, OmniEX, and Caltrans/LADOT TSCP controller softwares. These timing conversions were then implemented into new McCain 2070 controllers or at the City's TMC via various central systems – ATCS, Quinet, and D4 PuTTY Telnet software. During new controller installation, Mr. Sing established network communication via VLAN's with direct IP addressing for remote access to newly deployed controllers from the TMC.

City of Coachella Traffic Signal Synchronization Project (TSSP), Coachella, CA
Assistant Engineer. Mr. Sing created an optimized network with coordinated timing plans and phasing for ten intersections via Synchro 9. Mr. Sing then assisted with timing implementation, which was completed in the field at the newly installed OmniEX controllers, or at the City's newly constructed TMC via the Transparity central system. At the conclusion of the project, Mr. Sing completed the floating car travel time runs as part of the after study.

City of Beverly Hills Citywide ITS Master Plan, Beverly Hills, CA
Assistant Engineer. Mr. Sing performed a traffic signal system infrastructure field inventory for over 80 signalized intersections. The field inventory includes identifying various ITS elements, including controllers, communication, Ethernet switches, fiber distribution units, and conflict monitors.

City of Barstow Main Street and Barstow Road HSIP 13 Intersection Signal Improvement Project, Barstow, CA
Assistant Engineer. Mr. Sing was tasked with analyzing existing conditions field inventories, and Synchro modeling analysis for existing and proposed timing plans. He also completed traffic signal modification plans as well as the RFA for Construction (E-76) submittal package on behalf of the City.

City of San Bernardino SSARP, San Bernardino, CA
Assistant Engineer. Mr. Sing was responsible for inventorying over 50 signalized intersections in the City's northern region. Inventory items included safety lighting, controller location and type, communication infrastructure (fiber optic or copper), Ethernet switches, and emergency vehicle preemption (EVP).

EDUCATION
BS, Civil Engineering, University of California, Irvine

REGISTRATIONS
Engineer in Training, CA #156047

RELEVANT PROFESSIONAL ATTRIBUTES
Controller Installation and Implementation:
- 2070: D4, Omni eX, TSCP, 2033, Maxtime
- 170: 200, 233, LACO 4E, 172.3
Central System Experience
- Transparity, Transuite, ATCS, Quinet, Maxview
Software Knowledge:
- Synchro
- PTV Vistro
- Tru-Traffic
- AutoCAD
- GIS
- Microstation
KEVIN KELLEY, EIT
ASSISTANT ENGINEER/PROJECT ENGINEER

Mr. Kelley while working with KOA, he has been involved with various signal synchronization and design projects. He has completed 100's of field/cabinet inventories. Mr. Kelley has extensive work experience from recent projects where he installed and implemented timings, programmed controllers, and deployed them in the field. He has also experience with various central systems and direct network IP connections. Mr. Kelley has worked on various signal in interconnect improvement projects. He has utilized Tru-Traffic and completed Tru-Traffic Runs in before and after studies as well as Synchro networks and optimizing timing.

RELEVANT EXPERIENCE
City of South Pasadena Fair Oaks Avenue Improvement Project, South Pasadena, CA
Assistant Engineer. Mr. Kelley participated in the field work by recording existing fiber connections, utilities, and existing cabinet inventory at intersections along Fair Oaks Avenue. He worked on the traffic signal plans, signal interconnect plans, and figures.

“Metro Blue line” & Atlantic Ave TSSP, Long Beach, CA
Assistant Engineer. Mr. Kelley helped implement new controllers and new signal timing in the field for OmniEx, D4, and TSCP. He helped convert timing sheets from both 233 and 2033 to new timing sheets. He also helped implement signal timing sheets at the City TMC from their ATSC and quicnet systems. He then helped perform the after-study travel runs for both the vehicles and Metro’s Blueline.

City of Beverly Hills Traffic Signal and ITS Plan, Beverly Hills, CA
Assistant Engineer. Mr. Kelley inventoried over 50 signals in Beverly Hills to help complete the ITS master plan. He inventoried ITS elements including ethernet switches, fiber distribution units, fiber and copper communication network, IP addresses, controllers, preemption, and more.

City of San Bernardino SSARP, San Bernardino, CA
Assistant Engineer. Mr. Kelley inventoried over 50 signals in the city of San Bernardino to help complete the SSARP. He inventoried ITS elements including controllers, preemption, existing fiber and copper communication network, controllers, and more.

City of Barstow Main Street and Barstow Road Improvement Project, Barstow, CA
Assistant Engineer. Mr. Kelley worked on the traffic signal modification plans and specifications from the beginning stages of the project. He created the Synchro network and initial 2033 timing sheets as part of KOA’s services.

EDUCATION
BS, Civil Engineering, California State Polytechnic University, Pomona, CA

REGISTRATIONS
Engineer in Training, CA #160650

RELEVANT PROFESSIONAL ATTRIBUTES
Controller Installation and Implementation:
- 2070: D4, Omni eX, TSCP, 2033, Maxtime
- 170: 200, 233, LACO 4E, 172.3
Central System Experience
- Transparity, ATCS, Quicnet, Maxview
Program Knowledge:
- Synchro
- PTV Vistro
- Tru-Traffic
- AutoCAD
- GIS
- Microstation
4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

4-A. Describe the methods by which your firm will fulfill the services requested in the Scope of Work and subsequent sections.

The success of this project will depend on the skills and experiences of the team members managing the project; understanding key challenges; and providing value, quality work, and responsive service. KOA’s recent portfolio of completed signal timing and ITS improvements highlights our ability to deliver successful projects with premium service.

Our team has the knowledge and experience working with the systems and operations needed to deliver a successful project. Our project focus and approach will be to leverage our past project skills that apply directly to the City needs and outlined deliverables:

A. Field Measurements and Inventory at Each Intersection:

This deliverable will be covered under **Task 1-A Signalized Intersection Field Review**. Since 2016, our KOA project team from the Orange office has performed similar inventories for over 700 signals. This prior experience will be beneficial for the project as our field team members follow a streamlined working process in the field review, with meticulous procedures, file structure, and formatting.

B. Volume Collection to establish phase splits:

This deliverable will be covered under **Task 2-A Collection of Corridor Traffic Volume Data**. For this proposal, we have collected quotes from several firms. If necessary, we will use up to two data collection firms, in which case the division of work will expedite the schedule and cost efficiency. New traffic counts will be collected for critical intersection locations on each corridor where the cross street traffic demand and intersection phasing (protected left turns) are anticipated to control the cycle lengths of the corridor.

C. Update and provide timing sheets to current MUTCD Guidelines:

This deliverable will be addressed under **Task 2B CA MUTCD Timing Audit** of our scope of work. The timing audit will ensure that the timing used at these intersections are up to the latest standards per the California Manual on Uniform Traffic Control devices (CA MUTCD). These calculations will be provided in an excel spread sheet along with determination findings summarized in a brief technical memo with appendices data signed and stamped by a licensed California Traffic Engineer. Once approved by the City, these phase timings will be implemented in the revised controller timing sheets for each project intersection.

D. Develop ante meridiem (AM), mid-day, post meridiem (PM) peak coordination plans for each intersection:

This deliverable will be addressed primarily through **Task 3- Signal System Optimization & New Timing Sheets**. Though, portions of all Task’s will lend to the ultimate development and culmination of the final optimized AM, Mid-day, and PM peak hours coordination plans.

E. Create and provide a time space diagram for each peak period in AutoCAD (or equivalent) to determine offsets for coordination:

KOA will provide the City with the referenced AutoCAD formatted time-space diagrams. KOA will also supplement this deliverable with other software time-space diagrams from other programs like Tru-Traffic. These deliverables will be covered under our scope of work for **Task 3- Signal System Optimization & new Timing Sheets**.
QUESTIONNAIRE - 4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

F. Create as-built signal timing plans:
This deliverable will be covered under Task 1-B As-Built Signal record Files. For this Task, the KOA team will produce in AutoCAD the As-built traffic signal plans drawn at 20-scale over an aerial base on the City standard border. The plan will include all collected data from City provided files, field inventory notes, and other information. This work comprises of the highest number of staff and hours for production. As these plans are not tied to any project signal modifications, it will not delay subsequent task projects tasks.

G. Purchase five (5) Closed Circuit televison (CCTV) cameras (Florence Avenue Corridor Only);
H. Purchase fourteen (14) 2070 Controllers with softwares (Florence Avenue Corridor Only)

This deliverable will be covered under Task 1-B As-Built Signal Record Files along with other task implementation details. Florence Avenue is the only proposed project corridor which new signal upgrades of 14 new controllers and 5 CCTV cameras are proposed. As part of the project, our fee includes the direct procurement of these items with City of Inglewood Staff proving the final implantation. We have not included any mark-up to the cost of this procurement. Instead, we have listed a nominal amount of hours for invoice processing to our Task 0 – Project Management for team staff and our corporate administration. Per coordination with the City, the preferred controller are McCain 2070E with McCain’s 2033 program, and the CCTV’s are Bosch Autodome 7000 Series CCTV cameras. We have included in the Attachments/Appendix have the acquired vendor quotes for these items direct procurement.

4-B. Provide a statement of services that differentiates your firm from other respondents.

The hallmark of our success is our dedication to each and every project and our desire to leave a legacy of extraordinary contributions to our communities. Our staff includes certified transportation planners, registered civil and traffic engineers. Additionally, our company includes a Construction Management Division with project/construction managers, and construction inspectors. With four offices located in Southern California, KOA has provided engineering services for some of the largest public works and transportation planning projects throughout California.

4-D. Although the specifications in the requirements section represent the City’s anticipated needs, there may be instances in which it is in the City’s best interest to permit exceptions to specifications and accept alternatives. It is extremely important that Firms make very clear where an exception is taken to the specifications and how alternatives will be provided. Therefore, exceptions, conditions, or qualifications to the provisions of the City’s specifications must be clearly identified as such, together with reasons, and inserted in this section of the proposal. If the Firm does not make it clear that an exception is taken, the City will assume the proposal is responding to and will meet the specification as written.

No exceptions to the Scope of Work are taken. Our proposal does include additional extra value and optional tasks that we’re not included in the RFP deliverables. This includes Implementation (Extra Value Added) to Task 3. Per discussions with the City, the implementation of signal timing will be completed by City of Inglewood staff to support the selected consultant. In our experience, the implementation of timing by the consultant firm staff provides the most ideal conditions for both schedule and the fine tuning. As such, as an extra value service, the KOA team is proposing to implement the coordinated timings for each intersection either in the field at the controllers or in directly in the Transparency central system. Also, we have added under Task 4 “Before/After” Travel Time Studies. Observation

Though not called for in the RFP, we believe the use of before studies lends the better understanding of the corridor for making timing adjustments and improvements. Additionally, the use of After studies is also a great indicator for improvements achieved and provide valuable MOE’s for things like cost savings, reduction of emissions, and other criteria. With this, we have also proposed to create a sync’d “Before/After” video comparison for the City which can be shared with City Council or made public on the City website.
SCOPE OF WORK
The success of this project will depend on the skills and experiences of the team members managing the project; understanding key challenges; and providing value, quality work, and responsive service. KOA’s recent portfolio of completed signal timing and ITS improvements highlights our ability to deliver successful projects with premium service. Our team has the knowledge and experience working with the systems and operations needed to deliver a successful project. Our project focus and approach will be to leverage our past project skills that apply directly to the City needs and outlined deliverables: KOA has prepared the scope of work shown below recommended to provide all outlined deliverables A-H from the RFP.

Task 0 – Project Management
Management, Meeting and Schedule
It is expected that the majority of the project management will be accomplished through meetings, e-mails, phone calls, and other key correspondence. KOA will organize and initiate all planned meetings with the City for 1) Kick-Off, 2) Baseline Timing, 3) Strategy Meeting, 4) Coordination Meeting, and 5) Close Out Meeting. For each meeting, the KOA team will prepare agendas and document minutes for all meetings and activities. Due to the tight schedule of this project, communication and coordination is critical. KOA will send project development updates to the City through e-mail on a weekly basis, noting project progress or unforeseen setbacks.

Quality control will be consistently and thoroughly applied throughout the project development. This will be done by placing a priority on deliverables, which will be organized and streamlined to maximize efficiency. The QA/QC manager will conduct the appropriate level of oversight and will demonstrate a concerted commitment to provide a high-quality product. With our strategically allocated personnel resources, we are confident that we will be able to complete the signal timing implementation and project close out before March 2020.

Task 1 – Field Reviews & As-Built Plans
The field review will include our KOA staff working in groups to review controller programming and operation, perform field measurements needed to update “Phase timings”, and work for preparing As-built plans. We will document our findings with photos taken as part of our field review. For our anticipated scope of work, we propose the following elements:

Task 1-A Signalized Intersection Field Review
KOA will review existing controller timing charts/sheets and available as-built plan documents that will be requested from the City at the project kick-off meeting. KOA staff will conduct a field survey of all existing project traffic signals with permitted access from the City to the controller cabinets for our field review. The review will focus on the items needed for implementing new controllers/timing within the existing intersections; provide an overall conditions assessment, and gain sufficient design information to produce requested As-built Plans. Below is a summary of review items that will include, but not limited to, the following the key signal system components:

- **General Signal System** - Signal cabinet, conduits, controller/program software, time source units, EVP, BBS/UPS, load flashers, etc
- **Vehicle Detection** - Detector racks, terminal blocks, conditions of loops, detector cards. Single Camera or Multi Camera Video detection and applicable communication modules
- **ITS System** - CCTV’s, video encoders/decoders, Bluetooth performance modules, and other ITS system components
- **Communication** - SIC Type, routers, switches, fiber patch panels/fiber distribution units, jumper cables, etc.
- **Signal Poles, Mast Arms, Luminares** - Review for viable mounting of proposed system item
The deliverable for the field inventory will be a customized inventory checklist sheets with photo logs for each intersection as shown below. The inventory sheets will be reviewed with City staff in advance of any field work being performed to ensure a mutual agreement/concurrence of the data that will be collected.
QUESTIONNAIRE - 4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

Task 1B - As-built Signal Record Files
As-built plan production, when discussed with the City was noted primarily for their own knowledge and use. As these plans will not be used for major construction of the roadway, the production will not include the need for survey or utility research/coordination. For this Task, the KOA team will produce in AutoCAD the As-built traffic signal plans drawn at 20-scale over an aerial base on the City standard border. The plan will include all collected data from City provided files, field inventory notes, and other information. The plan will show estimated centerlines and right-of-way lines, curb ramps, curb returns, and existing traffic controls noted with Detailed Pole and Conductor schedules, and other call outs and notes to provide a complete documentation of each intersections existing traffic signal system. This work comprises of the highest number of staff and hours for production. As these plans are not tied to any project signal modifications, it will not delay subsequent task projects tasks.

Florence Avenue CCTV & Controller Upgrades
Florence Avenue is the only proposed project corridor which new signal upgrades of 14 new controllers and 5 CCTV cameras are proposed. As part of the project, our fee will include the direct procurement of these items, with City of Inglewood Staff proving the final implantation. The controllers will not require any special construction details for City implementation. The CCTV cameras will be shown on the as-built plans with assisted design support for selecting the proposed mounting location and routing back to the controller cabinets. For the proposed and recommended CCTV locations, we will coordinate with the City to determine the optimal camera location. The CCTV integration to the communication system will be shown on the as-built plans for final design.

Task 1 Deliverables
Field Reviews
- 42 Intersection Inventory Sheets & Photo Logs
As-built Plan Files
- 42 Plan Sheets (3 sets Hard copies) with PDF and AutoCAD Files
Florence Avenue Signal Improvement Procurement Items
- 14 – 2070E McCain Controllers with 2033 program
- 5 – Bosch CCTV Cameras

ARBOR VITA STREET, PRAIRIE AVENUE, LA CIENEGA BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT
CITY OF INGLEWOOD
Task 2 – DATA COLLECTION & ANALYSIS

Task 2A Collection of Corridor Traffic Volume Data

Traffic counts will be collected for the purpose of establishing intersection phase splits and governing cycle lengths needed at key project locations to be used for the coordinated time of day (TOD) plans. Additionally, they will also provide information for peak period travel patterns, peak hour factors, directional flow, bike and pedestrian demands, and determination of start/stop times of each coordinated TOD plans. For this proposal, we have collected quotes from several firms. If necessary, we will use up to two data collection firms, in which case the division of work will expedite the schedule and cost efficiency. New traffic counts will be collected for critical intersection locations on each corridor where the cross street traffic demand and intersection phasing (protected left turns) are anticipated to control the cycle lengths of the corridor. In these quotes, we have assumed a total of eight (8) hours of turning movement counts (TMC’s) inclusive of vehicles, bicycles, and pedestrians for the AM (3 hours), Midday (2 hours), and PM (3 hours) peak hours. A summary of proposed corridor count locations is shown below for the following 15 intersections:

<table>
<thead>
<tr>
<th>Location</th>
<th>Traffic Count</th>
<th>Phase Control</th>
<th>Time/Number</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shermota</td>
<td>School Crossing - potential for high pedestrian volumes</td>
<td>Manchester/Avondale</td>
<td>1,000</td>
<td>Manchester</td>
</tr>
<tr>
<td>Lakota</td>
<td>Intersection w/Pedestrian Crosswalk</td>
<td>800</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Prairie</td>
<td>Project Corridor Crossing Point</td>
<td>800</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>Total</td>
<td>2,600</td>
<td>3,000</td>
<td>3,000</td>
<td>3,000</td>
</tr>
</tbody>
</table>

Task 2A Deliverables:
Traffic volume data & delivery of count files

Task 2B CA MUTCD Timing Audit

The goal of the timing audit is to ensure that the timing used at these intersections are up to the latest standards per the California Manual on Uniform Traffic Control devices (CA MUTCD) to ensure adequacy for service and safety for all users, as well as protect the City against any potential legal suits.

“Phase” timing conformance with CA MUTCD for pedestrian clearance (Walk + Flash Don’t Walk), Yellow time, Red time, and bike minimum green for each intersection are based equations with the primary controlling criteria of distances and speed. The distance used for each assessment will be the crossing/clearance measurements for vehicles, bicycles, and pedestrians obtained from the Filed Review’s and As-Built Plan preparation. The critical controlling element for this audit will be the determination of design vehicle speed and other factors related to utilized in the “phase” timings calculations inclusive of the following, but not limited to, engineering judgment criteria:

- **85th Percentile Speeds** collected from 2017 Engineering and Traffic Survey (E&T). The use of these values is the starting point for determining the yellow change interval on the major street approaches per the CA MUTCD Section 40.26 Yellow Change and Red clearance Intervals. The use of yellow time determination on a per intersection 85th percentile approach basis is not recommended based on cost, logistical accuracy of collected speeds near intersection approaches, and potential for inconsistency on an intersection to intersection basis along a corridor segment.

- **Posted Speed Limits** for all approaches where E&T data has not been provided (i.e minor leg crossings).

- **Existing Advance Detector Placement** distance that will be compared with the 85th percentile speeds/posted speeds limits of each approach. This is needed to ensure that the placement of advance loops are compatible with the recommended minimum yellow change interval (Yellow time = Detector Setback Distance/Speed) to allow drivers with enough time to stop and avoid “dilemma.decision zone” conflicts.

- **Observed driver speeds and behavior** from initial travel runs and field reviews.

- **Determination of grade adjustments**: Needed to adjust deceleration rate (+/-) based on grade. Though not
QUESTIONNAIRE - 4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

anticipated due to existing terrain, this will be completed using the Goggle Earth Pro “Elevation Profile” tool at segments noted in the field.

Once the determination of the appropriate vehicle approach speed has been identified, the project will provide calculations for each intersection’s “Phase” timings per the CA MUTCD guidelines and standards:

**Phase Yellow clearance Interval:** This will follow CA MUTCD calculations based on multiple considerations for the selected vehicle design speed and detector setback distance.

**Phase All Red Interval:** This will be based on the FHWA/NCHRP Signal Timing Manual, 2nd edition calculations. Determination will include the multiple considerations for the selected vehicle design speed and crossing distance from limit line to far side of last conflicting lane of intersection. Other considerations such as heavy vehicle traffic and grade will also be considered.

**Pedestrian Intervals:** This will be the calculation of the Walk interval, Pedestrian Change Interval or Flash Don’t Walk (FDW), and buffer interval per CA MUTCD Section 4E.06 Pedestrian Intervals and Signal Phases:

- **Walk** interval will be 7 seconds Minimum, or others recommended based on engineering judgement and/or the City preference.
- **FDW** will be calculated from the field-measured crosswalk lengths (center of ramp to center of ramp) with a walking speed of 3.5 feet per second.
- **Buffer** interval will be equal to the yellow change interval and red clearance interval.

**Bike Minimum Green times (Alternate Initial):** Per CA MUTCD Table 4D-1.09 (CA) calculations using yellow time, red time, and crossing distance from limit line to far side of last conflicting lane of intersection.

These calculations will be provided in an excel spread sheet along with determination findings summarized in a brief technical memo with appendices data signed and stamped by a licensed California Traffic Engineer. Once approved by the City, these phase timings will be implemented in the revised controller timing sheets for each project intersection.

**Task 28 Deliverables:**
CA MUTCD Timing Audit Tech Memo

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Vehicle Travel Direction</th>
<th>Phase</th>
<th>Vehicle Travel Speed (mph)</th>
<th>Vehicle Conflicting Lane Distance (ft)</th>
<th>X-WALK LEG</th>
<th>Calculated Crossing Time (sec)</th>
<th>Recommended Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange/Pioneer</td>
<td>Northbound</td>
<td>2</td>
<td>30</td>
<td>32</td>
<td>East Leg</td>
<td>32</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>Southbound</td>
<td>6</td>
<td>30</td>
<td>32</td>
<td>West Leg</td>
<td>92</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Westbound</td>
<td>4</td>
<td>40</td>
<td>85</td>
<td>North Leg</td>
<td>182</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>Eastbound</td>
<td>8</td>
<td>40</td>
<td>85</td>
<td>South Leg</td>
<td>182</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake/Olive</td>
<td>North Leg</td>
<td>2</td>
<td>40</td>
<td>77</td>
<td>North Leg</td>
<td>88</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>South Leg</td>
<td>6</td>
<td>40</td>
<td>77</td>
<td>South Leg</td>
<td>88</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>East Leg</td>
<td>8</td>
<td>40</td>
<td>60</td>
<td>East Leg</td>
<td>65</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>West Leg</td>
<td>4</td>
<td>40</td>
<td>60</td>
<td>West Leg</td>
<td>65</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adams/Chapman</td>
<td>North Leg</td>
<td>7</td>
<td>50</td>
<td>55</td>
<td>North Leg</td>
<td>69</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>South Leg</td>
<td>6</td>
<td>50</td>
<td>55</td>
<td>South Leg</td>
<td>69</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>East Leg</td>
<td>8</td>
<td>50</td>
<td>47</td>
<td>East Leg</td>
<td>72</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>West Leg</td>
<td>4</td>
<td>35</td>
<td>67</td>
<td>West Leg</td>
<td>72</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**Notes:**
(1) Crosswalk length is measured from Center-of-Ramp to Center-of-Ramp.
(2) pedestrian crossing speed is 3.5 ft/sec.
(3) All red time based on calculated vehicle speed and crossing distance to clear last conflicting lane of intersection.
(4) Vehicle Speed Assumption based on CA MUTCD Adjustments toPosted Speed limit, 85th Percentile Speed value, Advance Detector placement distance calculation.
QUESTIONNAIRE - 4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

TASK 3 - SIGNAL SYSTEM OPTIMIZATION & NEW TIMING SHEETS
Task 3A Network Modeling
The corridor intersections will be modeled in Synchro network model files. KOA will use the existing timing sheets, traffic volumes, and field reviewed data in the construction of Existing Conditions network models using Synchro 10 software. These network files will be created to model the inventoried and agreed-upon inputs with emphasis on the following key areas:

- Intersection lane geometry (lane widths, detection, and placement)
- Modeled Vehicle speed inputs
- Signal Phase Timings & Functions
- Phasing, Overlaps, and dummy phases, etc.
- Conversions of Volume Density Operations from 2033 (Reduce by/ Reduce Every) to Synchro (Time Before Reduce/Time to Reduce).
- Detector placements and functions
- Special conditions (bus pull-outs, parking maneuvers, pedestrian crossings, queuing)
- Traffic Volume Adjustments (PHF, heavy vehicle percent, and pedestrian volumes/calls)
- Time of Day Parameters (cycle length, phasing, force off's, offset reference, recall’s, permissive’s, coord/sync phases)
- Set up of Flagged Network Optimization Intersection Groupings
- Cross Coordination Intersections and Identified Hold Points

Additional Synchro calibration will include comparison with observed existing operation from initial travel runs using Tru-Traffic and dash cam video to ensure it is accurately replicated. These existing Synchro models will be submitted for Agency review along with our "Model construction" technical memorandum. The final performance statistics generated by Synchro and Tru-Traffic for existing conditions will be used as the benchmark for the evaluation of coordinated plans. Existing intersection operational parameters will be summarized to highlight applicable Synchro network model coding to include base assumptions for detectors, cycle lengths, sync phases, offsets, and force-offs.

Task 3A Deliverables
Tech memo summary of existing Synchro network inputs and validation
QUESTIONNAIRE - 4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

- Existing AM, MID & PM peak period Synchro files
- Full-scale time-space diagrams (Tru-Traffic, Sycnhro, & LA County AutoCAD Plots)

Task 3B Network Optimizations

Corridor synchronization of the Synchro network files will be completed in conjunction with TruTraffic software. KOA’s optimization plan will focus on reducing stops, managing queues, and maintaining vehicle platoons on project corridors. Our process works big to small using Synchro and TruTraffic software programs. Optimization will be completed through an iterative process of manual adjustments with the following steps:

- Identify ideal cycle length and split demand for each phase of each signal
- Review best operational plans for cycle to cycle conditions between hold points to maintain platoons with adjustments to intersection’s phasing and offset
- Volume/demand fluctuations & phase split probability
  - Establish timing inputs to avoid queuing and delays
  - Examine likelihood of pedestrian actuations, early return to green, etc.
- 2033 Controller Operation Programming – Implement extra functions available to achieve enhanced operational capabilities

Our optimizations method will be compared to the baseline condition and the results of prior approaches until a true optimum plan is found. The final optimized networks will be submitted to the City for review, accompanied by a tech memo summary outlining the various proposed coordination plan inputs, including cycle lengths; offsets; sync points; free, isolated or coordinated operation; and force-offs or splits assumed.

The proposed optimized networks will be submitted to the City for review, accompanied by a tech memo summary outlining the various proposed coordination plan inputs, including cycle lengths; offsets; sync points; free, isolated or coordinated operation; and force-offs or splits assumed. Recommended coordination inputs will be provided to the City with time-space diagrams as well as Synchro network performance statistics detailing improvement over the existing base networks.

Task 3B Deliverables

![Image of network diagrams and tables showing timing plans and optimized times]

ARBOR VITA STREET, PRAIRIE AVENUE, LA CIENEGA BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL
FLORENCE AVENUE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT
CITY OF INGLEWOOD
QUESTIONNAIRE - 4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

Tech memo summary of Optimized TOD networks
- Optimized AM, MID & PM peak period Synchro files
- Full-scale time-space diagrams (Tru-Traffic comparison with existing submittal)

Task 3C Final Timing Sheets & Fine Tuning
Upon approval of the optimized signal timings by the City, KOA will prepare final timing charts that indicate proposed timing plans and coordination data for new and existing 2070E controllers with the 2033 program. This will include the conversion of any intersections with Type 170 controllers and the 233 program to McCain 2070E controllers running the 2033 program per the City directive.

Controller Programming Considerations
KOA is well versed in the operations and functions of the McCain 2070E and 2033 program. KOA will ensure that the proposed timing sheets will be programmed accordingly with considerations for both improved functionality and safety operations. As an example, there are a lot of protective-permissive left turn along the corridors, which we will ensure that programming will not result in ‘yellow trap’. Along Florence Avenue there are a lot of Metro crossings, which light rail per-emptions which KOA is already greatly experienced with having worked on the timing of these intersections as part of the Metro Crenshaw-LAX Light Rail Transit Line project. Other considerations may also include advanced logic programming, setting permisives/periods, and other improved cross-corridor operations.

Implementation (Extra Value Task)
Per discussions with the City, the implementation of signal timing will be completed by City of Inglewood staff to support the selected consultant. In our experience, the implementation of timing by the consultant firm staff provides the most ideal conditions for both schedule and the fine tuning. As such, as an extra value service, the KOA team is proposing to implement the coordinated timings for each intersection either in the field at the controllers or in directly in the Transparity central system. Our staff will implement timings during off-peak hours, with our schedule, to complete one corridor per day and all corridors in one week. At each intersection we will review the operation of each timing plan to ensure proper operation. At intersections with new controllers, KOA will assist staff with the controller deployments as well. This will include programming for all IP address/network configurations and integration into the City Transparity system. KOA will, if not already completed, bring these controllers online within the system and draw background intersection graphics.

Task 3C Deliverables
Tech memo summary of controller conversions, operation revisions, and results of Fine tuning
- Converted controller timing sheets (hard copy & Excel files)
- Final Timing sheets (2 hard copies & excel files)
- Final Optimized AM, MID & PM peak period Synchro files
- Full-scale time-space diagrams (Tru-Traffic comparison with existing submittal)

TASK 4 - CONDUCT “BEFORE”/”AFTER” TRAVEL TIME STUDY (OPTIONAL)

Conduct “Before” Travel Time Study
Observation of the existing travel conditions of the project corridors will be done with a before study, using the floating car method paired with GPS tracking software (Tru-Traffic) and dash-mounted video recordings. Video recordings paired with Tru-Traffic for each corridor’s unique travel characteristics and the ability to create synced before and after synchronization comparison videos. Key measures of effectiveness (MOEs) will be tracked, with emphasis on average travel time and speed, number of stops, and consistency between travel runs and traffic flow.
QUESTIONNAIRE - 4. QUESTIONS/RESPONSE TO SCOPE OF SERVICES

Travel time runs will be conducted for each corridor for the AM, midday, and PM peak periods with a minimum of four (4) travel time runs conducted in each direction. The before study report will discuss existing travel patterns, driver speed versus posted speed limit, cross-corridor operations, potential operations improvements, plus other focus points and strategies for signal synchronization.

Conduct "After" Travel Time Study
After initial implementation of new optimized timing plans, the public will need approximately 2 weeks’ time to adjust to the coordinated timing plans before "After" travel runs can be conducted. After study travel time surveys will be conducted in the same manner and method as the before travel time surveys. The MOEs utilized in the before study will be compared to the same MOEs from the optimized models and travel time runs. KOA will prepare a final performance report and present a comparison of the before and after studies.

Task 4 Deliverables (Optional):
Final before & after comparison report
• Travel run data, MOEs calculations, before & after comparison
• Tru-Traffic generated Video & time-space diagrams, before & after comparison

Harrison Street: Before Travel Run Southbound PM

Harrison Street: After Travel Run Southbound PM

Time Space Diagram

Travel Run Video

Time Space Diagram

Travel Run Video

City of Coachella

KOA Corporation
Planning & Engineering

ARBOR VITAE STREET, PRAIRIE AVENUE, LA CIENEGA BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL FLORENCE AVENUE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT
CITY OF INGLEWOOD
KOA's fees are provided in a separate sealed envelope, as requested per the RFP.
QUESTIONNAIRE - 6. REFERENCES

CITY OF LONG BEACH

Carl Hickman, Senior Traffic Engineer
City of Long Beach, 333 W. Ocean Boulevard, Long Beach, CA 90802
562.570.6759 / Carl.Hickman@longbeach.gov
  • Project: Atlantic Avenue and Metro Blue Line Traffic Signal Synchronization, Six-Corridor TSSP and Ocean TSSP
    Date of work: 2016 - Jan 2019
    Key Personnel: Ryan Calad (Project Manager), Walter Okitsu (QA/QC, Mgr), Wyatt Sing (Assistant Engineer), Kevin Kelley (Assistant Engineer)

CITY OF SOUTH PASADENA

Alex Chou, Associate Civil Engineer
City of South Pasadena, 1414 Mission Street, South Pasadena, CA 91030
(626) 403-7240 / achou@SouthPasadenaCA.gov
  • Project: Fair Oaks Avenue HSIP Signal/Metro ATMS Improvement Project
    Date of work: 2017 - On Going
    Key Personnel: Ryan Calad (Project Manager), Walter Okitsu (QA/QC, Mgr), Wyatt Sing (Assistant Engineer), Kevin Kelley (Assistant Engineer)

CITY OF AZUSA

Daniel Bobadilla, PE, Director of Public Works / City Engineer
City of Azusa, 213 E. Foothill Blvd., Azusa, CA 91702
626.812.5264 / dbobadilla@ci.azusa.ca.us
  • Project: Azusa Traffic Management System Project
    Date of work: 05/01/2016 - ongoing / Cost: $5.78 Million
    Key Personnel: Ryan Calad (Project Manager), Walter Okitsu (QA/QC, Mgr), Wyatt Sing (Assistant Engineer), Kevin Kelley (Assistant Engineer)

CITY OF COACHELLA

Oscar Espinoza, PE, Senior Civil Engineer
City of Coachella, 1515 Sixth Street, Coachella, CA 92236
760.398.5744 / oespinoza@coachella.org
  • Project: ST-68 Traffic Signal Synchronization Project (TSSP)
    Date of work: 2015 - 2017
    Key Personnel: Ryan Calad (Project Manager), Walter Okitsu (QA/QC, Mgr), Wyatt Sing (Assistant Engineer)

CITY OF DIAMOND BAR

David Liu, Public Works Director/City Engineer
City of Diamond Bar, 21825 Copley Drive, Diamond Bar, CA 91765
909.839.7040 / publicworks@diamondbarca.gov
  • Project: On-Call for ITS-Related Services for the City’s TMC
    Date of work: 2011-2016
    Key Personnel: Ryan Calad (On-Call Engineer), Wyatt Sing (Assistant Engineer)
### Inglewood TSSP Project Schedule

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Task 1: Project Management</td>
<td>Mon 4/1/19</td>
<td>Fri 3/27/20</td>
</tr>
<tr>
<td>2</td>
<td>Task 2A: Project Management and Scheduled Meetings</td>
<td>Mon 4/1/19</td>
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<td>Task 3C: Final Timing Sheets and Fine Tuning</td>
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<td>Task 4: Conduct &quot;Before/After&quot; Travel Time Study (Optional)</td>
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<td>Task 4A: &quot;Before&quot; Travel Time Study</td>
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**CERTIFICATE OF LIABILITY INSURANCE**

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFER NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

**PRODUCER**

Dealer, Renton & Associates
P. O. Box 12875
Oakland, CA 94604-2875
License #0020739

**INSURER**

KOACorporation
1100 Corporate Center Dr #201
Monterey Park, CA 91754
323-280-4703

**COVERAGES**

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QUESTIONNAIRE - 9. BUSINESS TAX CERTIFICATE

CITY OF INGLEWOOD BUSINESS LICENSE
KOA does not currently have a City of Inglewood Business Tax Certificate. We will procure an Inglewood Business Tax Certificate immediately when our proposal is successful, and will renew it, as needed, to fulfill the requirements of this Proposal.
**McCain®**

Kevin Kelley  
KOAC  
nkelley@koacorp.com

**QUOTATION**

**Estimator:** Jennifer Phelan  
(760)734-5050  
jennifer.phelan@mccain-inc.com

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*Turn on support is not included

**Reference Total**  
$40,453.00  
with tax = $43,689.24

Prices firm for 30 days. Freight included. Add sales tax.  
Sale is subject to McCain's standard terms and conditions.  
The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or legally privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited.  
If you received this in error, please contact the sender and delete the material from any computer.
5962 La Place Court, Suite 245  
Carlsbad, Ca. 92008  
951.691.1385 - Voice  
951.308.4541 - Fax  
619-609-6697 - Cell

TO: Kevin Kelly  
KOA Associates

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<td>Joe Hoferer</td>
<td>Bosch ITS camera</td>
<td>Net 30 OAC</td>
<td>1/24/19</td>
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| 5.00     | Part Numbers: VG5-ITS1080-30X5  
          Description: Bosch VG5-ITS1080-30X5 1080P ITS TS2 Traffic Camera, Bare Camera (Ships only with Power Supply) | $3,414.63 | $17,073.17 |
| 5.00     | Gondy Cane Mount | $249.99 | $1,129.95 |

Alternate Kit:

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| 5.00     | Part Number: VG5-ITS1080P-30X5 KIT  
          Description: ITS Version IP HD 1080P High Temp TS-2 Camera  
                      Includes Candy Cane, 24Volt PS & VG4-A-9543 I/F | $3,597.56 | $17,987.80 |

Note: Sales Tax is NOT Included  
Note: Delivery is 30-45 (or less if in stock) days ARO  
Note: Freight is Included

Quotation prepared by: Joe Hoferer  

This is a quotation on the goods named, subject to CT West standard terms and conditions.

To accept this quotation, sign here and return: ____________________________________________________________________________

*Assumes City will provide all wiring and cable. Not included with price.

****Thank you for the opportunity to provide this quote to you ****

ARBOR VITAE STREET, PRAIRIE AVENUE, LA CIENEGA BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL FLORENCE AVENUE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT  
CITY OF INGLEWOOD
The AUTODOME ITS Series is an easy-to-install, high-speed PTZ HD dome camera in a field-proven indoor/ outdoor housing. The camera delivers unmatched picture quality and network performance day/night and has full built-in support for the NTCIP protocol used in transportation applications.

The camera provides complete network-based control of all dome functionality including pan/tilt/zoom operation, presets, tours and alarms as well as web-based configuration of all dome settings. It also provides direct network video streaming using H.264 compression / bandwidth throttling to efficiently manage bandwidth and storage requirements while delivering outstanding image quality.

The AUTODOME ITS Series conforms to the National Transportation Communications for ITS Protocol (NTCIP) specification. NTCIP conformance ensures that the AUTODOME camera integrates with transportation management devices.

Functions

High-performance PTZ day/night camera
The HD model has a large sensor area that contributes to high camera sensitivity. The camera can be configured to operate in 720p50/60 mode for capturing fast motion (for example, in traffic or gaming scenarios). The default 1080p25/30 mode delivers high-resolution images with six times more details than a standard definition (SD) camera.

The camera features Wide Dynamic Range (WDR) technology that allows for the capture of clear image reproduction from both bright and dark areas in the same frame. WDR ensures that bright areas are not saturated and that dark areas are not too dark. Day/night capabilities and outstanding sensitivity make the IP model an exceptional performer in all lighting conditions. In low light, the camera switches automatically from color to monochrome by removing the IR filter to boost the infrared illumination sensitivity while maintaining superior image quality.
Progressive scan
The camera is ideally suited for IP imaging applications. The progressive scan technology in the camera provides smooth and clear images when viewing images from the camera.

Intelligence
With built-in video content analysis (VCA), the camera reinforces the Intelligence-at-the-Edge concept where edge devices become increasingly intelligent. The camera comes with the state-of-the-art VCA method by Bosch, Intelligent Video Analytics, that reliably detects, and analyzes moving objects while suppressing unwanted alarms from spurious sources in the image.
With this method, the camera is able to detect idle and removed objects as well as loitering, multiple line crossing, and trajectories. This method also supports BEV (Bird's Eye View) People counting.

Intelligent Tracking
The camera utilizes the built-in Intelligent Video Analytics (IVA) to follow an individual or an object continuously. Objects detected by IVA in a stationary position activate the Intelligent Tracking feature, which controls the pan/tilt/zoom actions of the camera to keep the tracked object in the scene.
The new tracking feature is based on robust flow detection algorithms which can reliably track moving objects even under challenging scenes.
The tracking and detection reliability can be enhanced further with virtual masking for scenes with a lot of background “noise” such as trees or other objects creating constant motion in the scene.
The camera supports three modes for Intelligent Tracking:
- **Auto mode**: When configured in this mode, the camera actively analyzes the video to detect any moving object. If it detects movement, it begins to track the object. This mode is most useful for scenarios where no motion is expected in the scene.
- **Click mode**: In this mode, users can click an object moving in the live video image to enable the camera to track the movement of the selected object. This mode is most useful for scenarios where normal scene activity is expected.
- **IVA-triggered mode**: In this mode, the camera continuously analyzes the scene for IVA alarms or IVA rule violations. If an IVA rule is violated, it triggers the advanced tracking feature of the camera to start following the object/person that triggered the alarm. This unique combination of robust IVA and Intelligent Tracking allows the camera to track moving objects of interest without getting distracted by other moving objects in the scene.

PTZ drive and mechanism
The camera supports 256 pre-positions and two styles of Guard Tours: Preset and Record/Playback. Users can configure the preset standard tour with as many as 256 sequential pre-positions, with a configurable dwell time between pre-positions. The camera also provides support for two recorded tours, which are recorded macros of an operator’s movements, including pan, tilt, and zoom activities, and can be played back with the click of a button.
Pan and tilt preset repeatability are accurate to within ±0.1 degrees to ensure that the correct scene is captured every time. The camera delivers variable pan/tilt speeds from a crawl speed of only 0.1 degrees per second to a full 400 degrees per second. The camera is capable of pan speeds of 400 degrees per second and tilt speeds of 300 degrees per second between pre-positions. The camera provides a tilt angle 18 degrees above the horizon, and a pan range of up to 360 degrees continuous rotation.
The AutoScaling (proportional zoom) and AutoPivot (automatically rotates and flips the camera) features ensure optimal control.
Five pre-programmed but configurable user modes, optimized with the best settings for a variety of typical applications, make on-site programming easy and user-friendly. Users select from the menu the mode that best defines the environment in which the camera is installed:
- **Outdoor** – General day-to-night changes with sun highlights and street lighting
- **Indoor** – Ideal mode for indoor applications where lighting is constant and not changing
- **Low light** – Optimized for sufficient details at low light
- **Motion** – Monitoring traffic or fast moving objects; motion artifacts are minimized
- **Vibrant** – Enhanced contrast color reproduction and sharpness
Users have the ability to customize these modes, if necessary, for the specific requirements of the site.

Image Stabilization
As PTZ cameras continue to increase their optical zoom capabilities, image stabilization becomes critical to eliminate movement caused by unstable camera mounts. Minor movement of the camera mount can shift the field of view by a large distance when the camera is zoomed to a high value. This can render images unusable. The camera incorporates an image stabilization algorithm that allows the camera to detect continuous vibration. If it detects vibration, the camera dynamically corrects the shaky video in both the vertical and horizontal axis, resulting in exceptional image clarity and a stable field of view on the monitor.

Superior privacy masking
The camera provides 24 individual, easy to configure privacy masks, with up to 8 displayed in the same scene. As the camera is zoomed, each mask changes size smoothly and quickly, ensuring that the covered object cannot be seen in most cases.
Intelligent Defog
Users can configure the mode to be active continuously, or to activate automatically when the video analytics in the camera detect fog and add light to the video image (and then deactivate when the fog clears or the scene changes).

Comprehensive streaming capabilities on Bosch's Common Product Platform (CPP4)
The camera has an advanced, efficient H.264 encoder (CPP4) embedded for high-quality streaming video and very efficient streaming and network capabilities.
The new platform supports simultaneous streaming of individually configurable streams [SD (H.264 and M-JPEG) or HD] and allows a choice of resolution [SD, or HD in combination of SD resolutions].

Recording and storage management
A memory card (SD (Secure Digital), SDHC (Secure Digital High Capacity), or SDXC (Secure Digital eXtended Capacity)) can be used for local alarm recording or for scheduled local recording to improve the overall recording reliability. Recording management can be controlled by the Bosch Video Recording Manager (VRM), or the camera can use iSCSI targets directly without any recording software. The camera offers Quality of Service (QoS) configuration options to ensure fast network response to PTZ data and images. Quality of Service (QoS) is the set of techniques to manage network resources. QoS manages the delay, delay variation (jitter), bandwidth, and packet loss parameters to guarantee the ability of a network to deliver predictable results. QoS identifies the type of data in a data packet and divides the packets into traffic classes that can be prioritized for forwarding.

Dual power options
All AUTODOME starlight models can be powered by either a PoE+ (IEEE 802.3at)-capable network switch or a High PoE midspan.
In a PoE configuration, a single cable connection provides power while simultaneously supporting data and video transmission.
For additional system reliability, users can connect 24 VAC power and PoE to provide fully redundant power to the camera without disruption to operation.

Ease of installation and servicing
The camera has been designed for quick and easy installation, a key feature from Bosch IP video products. All housings feature recessed screws and latches for increased tamper resistance.
Indoor/outdoor pendant housings are rated to provide IP66 protection and offer an operating temperature range down to -40 °C (-40 °F). The indoor/outdoor pendant comes fully assembled with a sunshield and ready for wall or pipe applications with the proper mounting hardware (sold separately). You can easily convert the outdoor pendant for indoor applications by removing the sunshield.

Bosch offers a full complement of hardware and accessories (sold separately) for wall, corner, mast, roof, and pipe mounts for indoor and outdoor environments, which allow the camera to be adapted easily to individual site requirements.

Video management system support
The camera ships with Bosch Video Client (BVC), an easy-to-use software from Bosch that is suitable for midsize installations. For large enterprise systems, AUTODOME cameras can be used with Bosch Video Management System (BVMS), which allows enhanced video management and viewing capabilities.
In addition, the camera is supported/integrated into all of the leading third party video management systems.

ONVIF conformance
The AUTODOME Series conforms to the ONVIF Profile S specification allowing easy integration with the conformant devices and VMS.
For more information about ONVIF, visit www.onvif.org.
The camera conforms to the ONVIF (Open Network Video Interface Forum) specification which guarantees interoperability between network video products regardless of manufacturer. ONVIF conformant devices are able to exchange live video, audio, metadata and control information. They are automatically discovered and connected to network applications such as video management systems.

Fiber Optic Kit
Bosch offers the optional VG4-5FFPSCKT, a unique media converter module for use with various Bosch devices. This media converter module is designed to accept a wide-range of 10/100 Mb/s SFP modules for use with Multimode or Single-mode optical fiber with LC or SC connectors.
The media converter module along with the SFP module is user-installed directly into the camera's power supply box to provide an integrated fiber optic solution.
As with all Bosch products, the camera is designed using the industry's best design process and is subjected to the most stringent testing standards such as HALT (highly accelerated life testing), which pushes the limits of products to ensure reliability throughout their lifetime.

Data security
Special measures have been put in place to ensure the highest level of security for device access and data transport. The three-level password protection with security recommendations allows users to customize device access. Web browser access can be protected using HTTPS and firmware updates can also be protected with authenticated secure uploads.
The on-board Trusted Platform Module (TPM) and Public Key Infrastructure (PKI) support, guarantee superior protection from malicious attacks. The 802.1x
network authentication with EAP/TLS, supports
TLS 1.2 with updated cipher suites including AES 256
encryption.
The advanced certificate handling offers:
- Self-signed unique certificates automatically created
  when required
- Client and server certificates for authentication
- Client certificates for proof of authenticity
- Certificates with encrypted private keys

Unsurpassed reliability
As with all Bosch products, the camera is designed
using the industry's best design process and is
subjected to the most stringent testing standards such as
HALT (highly accelerated life testing), which pushes
the limits of products to ensure reliability throughout
their lifetime.

Certifications and approvals

HD standards
- Complies with the SMPTE 274M-2008 Standard in:
  - Resolution: 1920x1080
  - Scan: Progressive
  - Color representation: complies with ITU-R BT.709
  - Aspect ratio: 16:9
  - Frame rate: 25, 30, 50 and 60 frames/s
- Complies with the 296M-2001 Standard in:
  - Resolution: 1280x720
  - Scan: Progressive
  - Color representation: complies with ITU-R BT.709
  - Aspect ratio: 16:9
  - Frame rate: 25, 30, 50 and 60 frames/s

Electromagnetic Compatibility (EMC)
- Complies with FCC Part 15, ICES-003, and
  CE regulations, including latest versions of
  EN 50130-4
  EN 55032
  EN 61000-3-3
  EN 61000-6-1
  EN 61000-6-2
  EN 50121-4 (Railway applications)

Product Safety
- Complies with UL, CE, CSA, EN, and IEC
  Standards 60950-1 & 22

Environmental
- P66, NEMA 4X

ONVIF Conformance
- EN 50130-4-2

NEMA TS 2-2003
- Complies with:
  Section 2.2.7: Transients, Temperature,
  Voltage and Humidity tests
  Section 2.2.8: Vibration test
  Section 2.2.9: Shock test

Notice
Conformity to EN 50130-4
One of the following power supply units is
required to conform to the EN 50130-4 standard:
VG4-A-PSU0, VG4-A-PSU1, VG4-A-PSU2, VG4-A-
PA0, VG4-A-PA1, or VG4-A-PA2.

Technical specifications

VG5-ITS1080P-30X5

- Imager: 1/2.8-type Exmor CMOS sensor
- Effective Picture Elements (Pixels): 1944 x 1224 (2.38 MP)
- Lens: 30x Zoom
  - 4.3 mm to 129 mm
  - F1.6 to F4.7
- Field of View (FOV): 2.5° to 65°
- Focus: Automatic with manual override
- Iris: Automatic with manual override
- Digital Zoom: 12x

Video performance - Sensitivity
- (3100K, reflectivity 89%, 1/30, F1.6, 30 IRE)
  - Color: 0.0077 lx
  - Monochrome: 0.0008 lx

Additional Camera Settings

Gain control
- AGC, Fixed
- Aperture Correction: Horizontal and vertical
- Electronic Shutter Speed (AES):
  - 1/1 sec to 1/10000 sec (22 steps)
- Signal-to-Noise Ratio (SNR):
  - >55 dB
- Day/Night switch: Automatic IR cut filter
- Backlight compensation (BLC):
  - On / Off / Intelligent Auto Exposure (IAE)
- White balance:
  - 2000 K to 10,000 K
  - ATW, AWB Hold, Extended ATW, Manual,
    Sodium Lamp Auto, Sodium Lamp
- Day/Night:
  - Monochrome, Color, Auto
- Defog mode feature:
  - Improves visibility when viewing foggy or
    other low-contrast scenes.
## Dynamic range

| High dynamic range (HDR) Mode | 120 dB WDR (theoretical) 94 dB (measured according to IEC 62876 Part 5) |

## Mechanical

| Pan Range | 360° cont. |
| Tilt Angle | 18° above horizon |
| Pre-position Speed | Pan: 400°/s  Tilt: 300°/s |
| Pan/Tilt Modes |  ・ Turbo Mode (Manual Control) Pan: 0.1°/s - 400°/s  Tilt: 0.1°/s - 300°/s  ・ Normal Mode 0.1°/s - 120°/s |
| Preset Accuracy | ± 0.1° typ. |

## Electrical

| Input Voltage | 21-30 VAC, 50/60 Hz; (class II) High PoE (with Bosch 60 W midspan) |
| Power Consumption, typical | 60 W / 69 VA (heaters on) or 24 W / 44 VA (heaters off) |

## Surge Suppression

| Protection on Alarm Inputs | Peak current 17 A, peak power 300 W (8/20 μs) |
| Protection on Alarm Outputs | Peak current 2 A, peak power 300 W (8/20 μs) |
| Protection on Relay Output | Peak current 7.3 A, peak power 600 W (10/1000 μs) |
| Protection on Power Input (Dome) | Peak current 7.3 A, peak power 600 W (10/1000 μs) |
| Protection on Power Output (Arm Power Supply) | Peak current 21.4 A, peak power 1500 W (10/1000 μs) |
| 10/100 Ethernet Data Lines | Peak current 14 A, peak power 200 W (8/20 μs) |

## Network

<p>| Video compression | H.264 (ISO/IEC 14496-10), M-JPEG |
| Encoding / Streaming | |</p>
<table>
<thead>
<tr>
<th>Stream 1</th>
<th>Stream 2</th>
<th>Stream 3</th>
<th>Stream 4</th>
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<tbody>
<tr>
<td>1</td>
<td>Full HD 1080p30</td>
<td>Full HD 1080p30</td>
<td>I-frame only from Stream 1</td>
</tr>
<tr>
<td>2</td>
<td>Full HD 1080p30</td>
<td>HD 720p30</td>
<td>I-frame only from Stream 1</td>
</tr>
<tr>
<td>3</td>
<td>Full HD 1080p30</td>
<td>Downscaled stream</td>
<td>I-frame only from Stream 1</td>
</tr>
<tr>
<td>4</td>
<td>Full HD 1080p30</td>
<td>Copy of Stream 1</td>
<td>I-frame only from Stream 1</td>
</tr>
<tr>
<td>5</td>
<td>HD 720p60</td>
<td>HD 720p8</td>
<td>I-frame only from Stream 1</td>
</tr>
<tr>
<td>6</td>
<td>HD 720p30</td>
<td>HD 720p30</td>
<td>I-frame only from Stream 1</td>
</tr>
<tr>
<td>7</td>
<td>HD 720p30</td>
<td>Downscaled stream</td>
<td>I-frame only from Stream 1</td>
</tr>
<tr>
<td>8</td>
<td>Downscaled stream</td>
<td>Downscaled stream</td>
<td>I-frame only from Stream 1</td>
</tr>
</tbody>
</table>

## Resolutions (H x V)

<table>
<thead>
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<th>HD Resolutions</th>
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<tbody>
<tr>
<td>1080p HD</td>
<td>1920 x 1080</td>
</tr>
<tr>
<td>720p HD</td>
<td>1280 x 720</td>
</tr>
</tbody>
</table>

## Down-scaled SD streams

| 432p SD | 768 x 432 |
| 288p 3D | 512 x 288 |
| 144p SD | 256 x 144 |
| Corridor mode | 400 x 720 |
| D1 4:3 cropped | 704 x 480 |

## Software Control

| Camera Setup/Control | Via web browser (such as Internet Explorer version 7.0 or later), Bosch Configuration Manager, Bosch Video Management System (BVMS), Bosch Recording Station (BRS), or Bosch Video Client (BVC) |
| Software Update | Network firmware upload |
### Autodome T0000 ITS Series for Transportation Applications

| Protocols | IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, ARP, DHCP, APN (Auto IP, link local address), NTP (SNTP), 802.1x, DNS, DNSv6, DDNS (Dyn.com, selfhost.de, no-ip.com), SMTP, IMAP, UPnP (SSDP), Diffserv (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication |
| CCTV Camera Control | NTCP 1205 |
| Application Layer | SNMP per NTCP 1101:1996 & NTCP 2301 |
| Transport/Network Layers | TCP/IP per NTCP 2202:2001 |
| Sub-network Layer | PMPP (Point to Multi-Point Protocol) per NTCP 2101:2001 & NTCP 2102:2003 |
| Advanced Networking | IPv6, QoS |
| Ethernet | 10-Base T/100 Base-TX, auto-sensing, half/full duplex, RJ45 |
| Encryption | TLS 1.0, SSL, DES, 3DES, AES |
| GOP Structure | IP, IBP, BBP |
| Data Rate | 9.6 kbps to 8 Mbps |
| Overall IP Delay | 240 ms |
| Signal-to-Noise Ratio | >50 dB |
| Audio | G.711, 8 kHz sampling rate |
| - Standard | L16, 16 kHz sampling rate |
| - Signal-to-Noise Ratio | >50 dB |
| - Audio Streaming | Bidirectional (full-duplex) |
| Local Storage | User-supplied SD/SDHC/SDXC memory card (maximum 2TB – SDXC) |
| Recording | Continuous recording of video and audio, alarm/events/schedule recording |
| Fiber Optic Kit | VG4-SFPSCKT |
| Description | Fiber Optic Ethernet Media Converter kit. Requires a small form-factor pluggable (SFP) module (sold separately). |
| Data Interface | Ethernet |

| Data Rate | 10/100 Mbps |
| Compatible Receiver | CNFE2MC |
| Installation | Installed inside a VG4-A-PAO, VG4-A-PA1, VG4-A-PA2, or VG4-A-PSU1, or a VG4-A-PSU2 power supply box with supplied mounting hardware |

### SFP Modules

| Description | Interchangeable modules available for use with MMF or SMF optical fiber. |
| Data Interface | Ethernet |
| Data Rate | 10/100 Mbps |
| Weight (all SFP modules) | 0.23 kg (0.5 lb) |
| Dimensions (LxWxH) | SFP-2: 55.5 x 13.5 x 8.5 mm (2.2 x 0.5 x 0.3 in.), SFP-25, SFP-26: 63.8 x 13.5 x 8.5 mm (2.5 x 0.5 x 0.3 in.) |
| Type | Connector | Wavelength (transmit / receive) | Max. Distance |
| SFP-2 | MMF | Duplex LC | 1310 nm / 1310 nm | 2 km (1.2 miles) |
| SFP-3 | SMF | Duplex LC | 1310 nm / 1310 nm | 20 km (12.4 miles) |
| SFP-25 | MMF | Single SC | 1310 nm / 1550 nm | 2 km (1.2 miles) |
| SFP-26 | MMF | Single SC | 1550 nm / 1310 nm | 2 km (1.2 miles) |

### Fiber Compatibility

| Optical Fiber Compatibility, MMF | 50/125 μm MMF. For 50/125 μm fiber, subtract 4 dB from the specified optical budget value. Must meet or exceed fiber standard ITU-T G.651. |
| Optical Fiber Compatibility, SMF | 8-10/125 μm SMF. Must meet or exceed fiber standard ITU-T G.652. |
| Optical Distance Specifications | Specified transmission distances are limited to the optical loss of the fiber and any additional loss introduced by connectors, splices, and patch panels. The modules are designed to operate over the entire optical loss budget range, so they do not require a minimum loss in order to operate. |
### Miscellaneous

<table>
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<tr>
<th>Sectors / Title</th>
<th>16 independent sectors with 20 characters per title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privacy Masks</td>
<td>24 individually configurable privacy masks</td>
</tr>
<tr>
<td>Virtual Masks</td>
<td>24 individually configurable masks to hide parts of the scene (background motion such as moving trees, pulsating lights, busy roads, etc.) which should not be considered for flow analysis to trigger Intelligent Tracking.</td>
</tr>
<tr>
<td>Prepositions</td>
<td>256, each with 20 characters per title</td>
</tr>
<tr>
<td>Guard Tours</td>
<td>Two (2) types of tours: two (2), maximum total duration 30 minutes (depending on amount of commands sent during recording)</td>
</tr>
<tr>
<td>Supported Languages</td>
<td>English, Czech*, Dutch, French, German, Italian, Polish, Portuguese, Russian*, Spanish, Japanese, Chinese *Available with selected languages</td>
</tr>
<tr>
<td>Protocol Support</td>
<td>Bosch (OSRD), ONVIF, NTCIP</td>
</tr>
<tr>
<td>Compass Direction</td>
<td>8 direction points, on/off</td>
</tr>
<tr>
<td>Absolute Position</td>
<td>Displays in 0-359° AZ and +17° to -95° EL, on/off</td>
</tr>
<tr>
<td>Custom logo</td>
<td>File format: .bmp, 8 bit (256 colors), 128x128 pixels maximum</td>
</tr>
<tr>
<td>Camera titles</td>
<td>Twenty-character, two-line and three-line camera titles (on the OSD), with configurable text colors, that display either the options for Azimuth/Elevation/Compass/Zoom, or the camera title and compass data</td>
</tr>
</tbody>
</table>

### Audio

- 1 x mono line in, 1 x mono line out
- Signal line in: 12 kOhm typical, 1 Vrms max
- Signal line out: 1 Vrms at 1.5 kOhm, typical

### Environmental

**Ingress Protection**

- **Rating/Standard**: IP66
- **NEMA 4X**
  - Access to Hazardous parts
  - Ingress of solid foreign objects (falling dirt, circulating dust, settling dust)
  - Ingress of water (dripping and light splashing, hose down and splashing)
  - Corrosive agents

**Operating Temperature**

- -40 °C to +55 °C
- (-40 °F to +131 °F) or
- -10 °C to +55 °C
- (+14 °F to +131 °F)

**Storage Temp.**

- -40 °C to 80°C
- (-40 °F to 140°F)

**Humidity**

- 0% to 100% relative, condensing

**NEMA T5 2-2003 (R2008), para 2.1.5.1 using fig. 2.1 test profile**

- -34 °C to +74 °C (-30 °F to +165 °F)

### Construction

**Dimensions**

- See dimensional drawings

**Weight**

- 3.06 kg (6.75 lb)

**Bubble Size**

- 153.1 mm diameter (6.03 in.)

**Construction Material**

- **Housing**: Cast aluminum
- **Bubble**: Pendant: high-resolution acrylic or rugged polycarbonate

**Standard Color**

- White (RAL 9003)

**Standard Finish**

- Powder coated, sand finish

### Mounts/Accessories

**Bubbles**

- Clear high-resolution acrylic (Included with pendant camera models.)
- VGA-BUBBLE-PCLA

**Note:** Polycarbonate bubbles are not recommended for use with HD products because of optical degradation.
### Pendant Arm Mounts
- Wall Arm (No Transformer): VG4-A-PA0
- Wall Arm (120/230 VAC Transformer): VG4-A-PA1 / VG4-A-PA2
- Pendant Arm with Wiring: VGA-PEND-ARM
- Mounting plate for VGA-PEND-ARM: VGA-PEND-WPLATE
- Trim skirt for VG4 Series Power Supplies: VG4-A-TSKIRT

### Optional Mounting Plates for Arm Mounts
- Corner Mounting Plate: VG4-A-9542
- Mast (Pole) Mounting Plate: VG4-A-9541

### Pendant Pipe Mounts
- Pipe Mount Cap: VG4-A-9543

### Optional Mounting Plates for Roof Mounts
- Flat Roof Adapter for Parapet Mount: LTC 9230/01

### Power Supplies
- High PoE Midspan 60W, single port, AC in: NPD-6001B
- Outdoor Power Supply Box, no transformer: VG4-A-PSU0
- Outdoor Power Supply Box (120/230 VAC Transformer): VG4-A-PSU1 / VG4-A-PSU2
- Fiber Optic Kit: VG4-SFPSCKT

### Dimensional Drawings

**Dimensions - Pendant, Pipe mounts**
1. Power supply box and sunshield
2. Sunshield removed
3. Mounting plate
4. Power supply box
5. Trim skirt
6.

---

**SD card slot (1)**
Ordering information

VGS-ITS1080P-30X5 PTZ dome 2MP 30x IVA TS-2 pendant ITS
Superb quality indoor/outdoor IP PTZ dome camera
Order number VGS-ITS1080P-30X5

NPD-6001B High PoE Midspan
High PoE Midspan, 60 W, single port, AC in
Order number NPD-6001B

Accessories

VGA-PEND-ARM Pendant Arm Mount
Pendant arm mount with power supply box for an AUTODOME Series camera, white
Order number VGA-PEND-ARM

VGA-ROOF-MOUNT Roof Mount
Roof parapet mount, white
Order number VGA-ROOF-MOUNT

LTC 9230/01 Flat Roof Mount Adapter
For mounting a unit in an upright position on a flat surface for roof parapet mount VGA-ROOF-MOUNT
Order number LTC 9230/01

VGA-A-9541 Pole Mount Adapter
Pole mount adapter for an AUTODOME pendant arm or a DINION imager, designed for poles with a diameter of 100-380 mm (4-15 in.), white
Order number VGA-A-9541

VGA-A-9542 Corner Mount Adapter
Corner mount adapter for an AUTODOME pendant arm or a DINION imager
Order number VGA-A-9542

VGA-A-9543 Pipe Mount
Pipe mount, white, for an AutoDome Series pendant housing
Order number VGA-A-9543

VGA-PSU0 24 VAC Power Supply Unit
Power supply, 24 VAC input, for a PTZ camera in the AUTODOME Series. White, aluminum enclosure with cover, rated IP66 and IK 08. 100 W output. Optional trim skirt (sold separately).
Order number VGA-PSU0

VGA-A-PSU1 120 VAC Power Supply Unit
Power supply with transformer, 120 VAC input, for an AUTODOME or MIC7000 Series PTZ camera. White, aluminum enclosure with cover, rated IP66 and IK 08. 100 W output. Optional trim skirt (sold separately).
Order number VGA-A-PSU1

VGA-A-PSU2 230 VAC Power Supply Unit
Power supply with transformer, 230 VAC input, for an AUTODOME or MIC7000 Series PTZ camera. White, aluminum enclosure with cover, rated IP66 and IK 08. 100 W output. Optional trim skirt (sold separately).
Order number VGA-A-PSU2

VGA-SBOX-COVER Cover for AutoDome Power Supply Boxes
Order number VGA-SBOX-COVER

VGA-PSU0, VGA-A-PSU1, and VGA-A-PSU2
Order number VGA-A-PSU0
VGA-BUBBLE-PCLA Clear High-resolution Bubble for a Pendant Housing
Low-impact acrylic bubble
Order number VGA-BUBBLE-PCLA

VGA-BUBBLE-PTIA Tinted High-resolution Bubble for a Pendant Housing
Low-impact acrylic bubble
Order number VGA-BUBBLE-PTIA

VGA-BUSBHD-CCLA Clear HD High-Resolution Acrylic Bubble for In-Ceiling AUTODOME cameras
Order number VGA-BUSBHD-CCLA

VGA-BUSBHD-CTIA Tinted HD High-Resolution Acrylic Bubble for In-Ceiling AUTODOME cameras
Order number VGA-BUSBHD-CTIA

VGA-BUBBLE-IK10 Bubble, pendant, IK10-rated
IK10-rated bubble qualified for use with AUTODOME 7000 HD cameras with pendant housings
Order number VGA-BUBBLE-IK10

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Phone: +31 40 2577 284
www.security.siemens.com
www.boschsecurity.com

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Fax: 1-585-225-8180
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Fax: +65 6711 2908
apsecuritysystems@us.bosch.com
www.boschsecurity.asia

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17667364803 | en, 02, 29, 2018

ARBOVITAE STREET, PRAIRIE AVENUE, LA CIENEGA BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL FLORENCE AVENUE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT
CITY OF INGLEWOOD
ATTACHMENT NO. 3
FEE PROPOSAL FOR
ARBOR VITAE STREET, PRAIRIE AVENUE, LA CIENEGA
BOULEVARD AND FLORENCE AVENUE TRAFFIC SIGNAL
SYNCHRONIZATION PROJECT
CITY OF INGLEWOOD | JAN 30, 2019

Prepared for
Attn: Raquel Mendez
Associate Engineer
City of Inglewood
One Manchester Blvd
Inglewood, CA 90312

Submitted by
Mr. Ryan Calad, PE
Project Manager
rcalad@koacorp.com
T: 714.573.0317
### Multi-Corridor Traffic Signal Coordination Project, City of Inglewood

**COMPENSATION SCHEDULE - ALL CORRIDORS**

<table>
<thead>
<tr>
<th>Task</th>
<th>KOA Corporation</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
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<td>*(Hr/Day) $ (Hr/Week) $ (Hr/Month) $ (Hr/Year) $ (Hr/30 Days) $</td>
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*Price includes 8% Tax

**Procurement of 34 McCall 20701 WJ 2013 Program (Florence Ave Corridor - Deliverable 6):**

$16,877

**Procurement of 5 Bosch CCTV Cameras (Florence Ave Corridor - Deliverable 6):**

$43,669

**Traffic Counts:**

$4,995

**Total Project Cost:**

$282,014
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**TOTAL PROJECT COST:** $16,564
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*Price includes 8% Tax*
## Compensation Schedule - Prairie Ave Corridor

### Task: Multi-Corridor Traffic Signal Coordination Project, City of Inglewood

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ATTACHMENT NO. 4
AGREEMENT NO.: ______

THIS AGREEMENT is made and entered into this ________ day of __________, 2019, by and between the CITY OF INGLEWOOD (“City”), a municipal corporation, One Manchester Boulevard, Inglewood, California 90301; and KOA CORPORATION, (the “Consultant”) a California corporation with a corporate number of C1919798 and a local place of business located at 1100 Corporate Center Drive, Suite 201, Monterey Park, California 91754.

RECITALS

WHEREAS, the City desires a consultant to provide design and construction engineering services for the City’s Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard and Florence Avenue Traffic Signal Synchronization Project (the “Project”); and

WHEREAS, on December 6, 2018, the City issued a Request for Proposal (“RFP”) for the Project; and

WHEREAS, on January 30, 2019, the City received responses from four (4) prospective firms; and

WHEREAS, the Consultant represents that it is validly registered with the California Department of Industrial Relations as required by law with a PWC Registration Number of 1000018374; and

WHEREAS, the Consultant represents that its listed subcontractor(s), if any, is in good standing in the State of California and validly registered with the California Department of Industrial Relations as required by law; and

WHEREAS, the Consultant represents that it and its subcontractor(s), if any, will remain validly licensed and registered, as required by California law, during the Term of this Agreement; and

WHEREAS, the Consultant represents that it has the background, knowledge, experience and expertise to perform the obligations set forth in this Agreement; and

WHEREAS, the City determined the Consultant to be the best qualified; and

WHEREAS, the services City seeks from the Consultant are of a professional nature; and
WHEREAS, the Consultant holds itself out as capable and competent to provide such consulting services as the City requires.

NOW, THEREFORE, the City and the Consultant (hereinafter collectively referred to as the “Parties”) hereto mutually agree as follows:

ARTICLE 1 – SCOPE OF SERVICES

The Consultant shall:

1. Provide the services contemplated in Exhibit “A,” the City’s Specifications in its Request for Proposal, Arbor Vitae Street, Prairie Avenue, La Cienega Boulevard and Florence Avenue Traffic Signal Synchronization Project, in a professional manner.

2. Not deviate from Exhibit “B,” Fee Proposal and breakdown of Hours and Rates for various services contemplated by the Project. Each Exhibit is incorporated herein by this reference as if set forth in full. In the event of ambiguity, conflict, or inconsistent language, the order of precedence shall be (in descending order):
   a. Change orders and Amended Agreements (whichever occurs last);
   b. This Agreement;
   c. Exhibit “A;”
   d. Exhibit “B.”

3. Provide all labor, office space, transportation, materials, tools, machinery, equipment, and other items and services necessary to properly perform the services contemplated by this Agreement.

4. Ensure that all personnel engaged by the Consultant to perform the services contemplated by this Agreement shall be properly licensed.

5. Agree to comply with and be bound by all applicable federal, state, county and local laws, rules and regulations.

6. Obtain, at its own expense, all necessary licenses and permits, including but not limited to those required by the City of Inglewood, to perform the services contemplated by this Agreement.
ARTICLE 2 – CITY’S DUTIES

The City hereby promises to provide all access, data, records, and documents reasonably within its possession or control as are necessary for the Consultant to perform the services contemplated by this Agreement.

ARTICLE 3 – TERM

Time is of the essence with respect to all time limits set forth in this Agreement. The Term of this Agreement shall be one (1) year from the date specified in the City’s Notice to Proceed. At the City’s option the Agreement may be extended an additional year.

ARTICLE 4 – COMPENSATION

1. The Consultant shall be paid, pursuant to Exhibit “B,” a not-to-exceed amount of two hundred eighty-two thousand and sixteen dollars ($282,016) for work faithfully performed. The Consultant may be compensated an additional not-to-exceed contingency of seventy thousand five hundred and four ($70,504) or 25% of the contract price for a total not-to-exceed amount of three hundred fifty-two thousand five hundred and twenty dollars ($352,520).

2. The Consultant shall invoice the City every thirty (30) calendar days for services contemplated hereunder and which have been completed within that thirty (30) day period.

3. Fees in Article 4 of this Agreement represent full compensation for the Consultant’s services rendered and include all compensation for any expenses incurred by the Consultant for providing services including but not limited to travel, lodging, food, clerical, photo copying, telephone, and any other related expenses.

4. The Consultant shall invoice City within ten (10) working days after the termination of this Agreement. City shall pay Consultant in the ordinary course of City business, and agrees that it will use its best efforts to avoid all unnecessary delays in processing the Consultant’s invoices.

5. All invoices shall contain:
   a. date of invoice;
b. sequential invoice number;
c. City Agreement number;
d. project code number and title;
e. description of services billed under this invoice;
f. position title and hours worked;
g. total amount for invoiced services;
h. total amount billed to date;
i. total amount remaining on the Agreement, and total Agreement amount.

6. The Consultant shall be responsible for the cost of supplying all documentation necessary to verify the monthly billings to the satisfaction of the City and shall certify, on each invoice, that it is entitled to receive the amount invoiced.

7. The Consultant agrees that cost shall not be the overriding factor when assigning its personnel to a task. However, the Consultant shall nevertheless provide the services contemplated by this Agreement in a cost effective manner when and where reasonable.

8. The Consultant agrees that, should work be performed outside the Scope of Services without the prior written approval of the City, such work shall be deemed a gratuitous effort on the part of Consultant, and Consultant shall have no claim against the City for reimbursement.

ARTICLE 5 – TERMINATION

This Agreement shall be subject to termination by the City upon its own discretion, or when conditions encountered during the work contemplated hereunder make it impossible or impracticable to proceed, or when City is prevented from proceeding with the Agreement by law or by official action of a public authority, or if the City fails to authorize the necessary funds in any fiscal year budget covering the term of the Agreement.

In the event of such termination, the City shall pay the Consultant an amount which equitably reflects the proportion of work completed by the Consultant, provided that in no
event shall the compensation paid pursuant to this paragraph exceed the amount which would
have been payable pursuant to Article 4 of this Agreement.

ARTICLE 6 – NOTICES

Any notice given pursuant to this Agreement shall be deemed received and
effective on the date personally delivered or, if mailed, five (5) days after deposit of the same
in the custody of the United States Postal Service, when properly addressed, posted and
deposited in the United States mail addressed to the respective Parties as follows:

CITY:
Yvonne Horton,
City Clerk
City of Inglewood
One Manchester Boulevard
Inglewood, California 90301-1750

CONSULTANT:
Chuck Stephan,
Vice President
KOA Corporation
1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754

WITH COPY TO:
Public Works Director,
One Manchester Boulevard
Inglewood, California 90301-1750

AGENT FOR SERVICE OF PROCESS
Jimmy Lin
1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754

The Consultant may from time to time designate another address, addressee or Agent
for Service of Process and shall, in such instances, notify City in writing within ten (10) calendar
days of such designation. Notwithstanding any contrary language in this Agreement, changes,
modifications, updates or amendments to any name, title or address in this Article shall not
require City Council action.

ARTICLE 7 – INSURANCE REQUIREMENTS

The Consultant shall procure and maintain for the duration of the contract insurance
against claims for injuries to persons or damages to property which may arise from or in
connection with the performance of the work hereunder by the Consultant, his agents,
representatives, employees or subcontractors. The cost of such insurance shall be borne by
the Consultant. Failure to maintain or renew coverage or to provide evidence of renewal may
be treated by City as a material breach of contract.

Minimum Scope of Coverage

Coverage shall be at least as broad as indicated below:
1. Insurance Service Office Commercial General Liability coverage (occurrence form CG 00 01 11 85 or 11 88).

2. Insurance Service Office Form Number CA 00 01 06 92 covering Automobile Liability, Code 1 (any auto).

3. California and Employer’s Liability Insurance.

4. Errors and Omissions Liability Insurance appropriate to the Consultant’s profession.

**Minimum Limits of Insurance**

The Consultant shall maintain these policies during the course of this Agreement and shall cause all parties supplying services, labor, or materials to maintain the following insurance in amounts not less than those specified below:

1. General Liability (Including General Liability (Including operations, products and completed operations)): **$1,500,000** per occurrence for bodily injury, personal injury and property damage. If Commercial General Liability Insurance or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.

2. Automobile Liability: **$1,500,000** per accident for bodily injury or property damage.

3. Employer’s Liability: **$1,500,000** per accident for bodily injury or disease.

4. Errors and Omissions Liability: **$1,500,000** per claim.
   a. The “Retro Date” must be shown, and must be before the date of the contract or beginning of contract work.
   b. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract work.
   c. If coverage is canceled or non-renewed and not replaced with another claims-made policy form with a “Retro Date” prior to the contract effective date, the Consultant must purchase “extended reporting” coverage for a minimum of five (5) years after completion of contract work.
   d. A copy of the claims reporting requirements must be submitted to the
City for review.

Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the Inglewood City Attorney's office. At the option of the City, either the insurer shall reduce or eliminate such deductibles or self-insured retentions with respects to the City, its officers, officials, employees and volunteers; or the Consultant shall provide a financial guarantee satisfactory to the Inglewood City Attorney's Office guaranteeing payment of losses and related investigations, claims administration and defense expenses.

Other Insurance Provisions

The general liability policy and automobile liability policy are to contain, or be endorsed to contain, the following provisions:

1. The City of Inglewood, its officers, officials, employees and volunteers are to be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Consultant; and with respect to liability arising out of work or operations performed by or on behalf of the Consultant including materials, parts or equipment furnished in connection with such work or operations. General insurance, liability coverage can be provided in the form of an endorsement to the Consultant’s insurance, or as a separate owner’s policy (forms CG 20 10 11 85 or CG 20 26 11 85).

2. For any claims related to this project, the Consultant’s insurance coverage shall be primary insurance with respect to the City, its officers, officials, employees and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees or volunteers shall be in excess of the Consultant’s insurance and shall not contribute to it.

3. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days prior written notice has been given to the City by certified mail, return receipt requested.

4. Coverage shall not extend to any indemnity coverage for the active negligence of
the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the Civil Code.

Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best’s rating of no less than A:VII if admitted.

Verification of Coverage

The Consultant shall furnish the City of Inglewood with original certificates and amendatory endorsements affecting coverage required by this clause. All certificates and endorsements are to be received and approved by the Inglewood City Attorney’s Office before work commences. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting the coverage required by these specifications at any time.

Subcontractors

The Consultant shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

ARTICLE 8 – INDEMNIFICATION

The Consultant shall indemnify and hold harmless the City and its officers, employees and volunteers from and against all claims, damages, losses and expenses including attorney fees arising out of the performance of the work described herein, to the extent caused in whole or in part by any negligent act or omission, recklessness or willful misconduct of the Consultant, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, except where caused by the active negligence, sole negligence, or willful misconduct of the City.

If any action or proceeding is brought against Indemnitees by reason of any of the matters against which the Consultant has agreed to indemnify Indemnitees as provided above, the Consultant, upon notice from the City, shall defend Indemnitees at the Consultant’s expense by counsel acceptable to the City, such acceptance not to be unreasonably withheld.
Indemnitees need not have first paid for any of the matters to which Indemnitees are entitled to indemnification in order to be so indemnified. The insurance required to be maintained by the Consultant under this Article shall ensure the Consultant’s obligations under this section, but the limits of such insurance shall not limit the liability of the Consultant hereunder. The provisions of this Article shall survive the expiration or earlier termination of this Agreement and shall exist for four (4) years beyond the termination or completion of the Consultant’s work.

**ARTICLE 9 – AUDIT**

The Consultant shall maintain any and all records or documents pursuant to this Agreement, and the same shall be made available for inspection, audit and copying, at any time during regular business hours, upon written request by City or its designated representatives. Copies of such documents or records shall be provided directly to the City for inspection, audit and copying when it is practical to do so; otherwise, unless an alternative is mutually agreed upon, such documents and records shall be made available at City’s address indicated for receipt of notices in this Agreement.

**ARTICLE 10 – BOOKS AND RECORDS**

The Consultant shall maintain any and all documents and records demonstrating or relating to the Consultant’s performance of services pursuant to this Agreement. The Consultant shall maintain any and all ledgers, books of account, invoices, vouchers, canceled checks or other documents or records evidencing or relating to work, services, expenditures and disbursements charged to City pursuant to this Agreement. Any and all such documents or records shall be maintained in accordance with generally accepted accounting principles and shall be sufficiently complete and detailed so as to permit an accurate evaluation of the services provided by the Consultant pursuant to this Agreement. Any and all such documents or records shall be maintained to the extent required by laws relating to audits of public agencies and their expenditures.

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ARTICLE 11 – OWNERSHIP OF DOCUMENTS

Ownership of Documents. “Documents” as used in this paragraph means original studies, surveys, reports, data, substantive notes, and other evidence used in preparation of the Report, whether existing as electronic files or in hard copy. “Documents” does not refer to informal communications such as emails and staff notes, whether those communications are internal to the Consultant’s staff or between the Consultant and any subconsultants. All documents prepared, developed, or discovered by the Consultant in the course of providing any services pursuant to this Agreement shall remain the sole property of the City and may not be used, reused, or otherwise disposed of without the permission of the City. Upon completion, expiration, or termination of this Agreement, the Consultant shall give the City all such documents within ten (10) days of delivery of the termination notice, completion or expiration of this Agreement, at no cost to the City. In the event the City requires or desired other information in the control of the Consultant that is not a document as described above (such as informal communications, staff notes, and other correspondence), the Consultant shall provide any requested information to the City within thirty (30) days. The City acknowledges that its alteration of documents without the consent of the Consultant, or use of the documents for any purpose other than the Scope of Work contemplated by this Agreement, is at the City’s own risk and without liability to the Consultant.

ARTICLE 12 – INDEPENDENT CONTRACTOR

The Consultant enters into this Agreement as an independent contractor and not as an employee of the City. Consultant shall have no power or authority by this Agreement to bind the City in any respect. Nothing in this Agreement shall be construed to be inconsistent with this relationship or status. All employees, agents, contractors or subcontractors hired or retained by the Consultant are employees, agents, contractors or subcontractors of the Consultant and not of the City. The City shall not be obligated in any way to pay any wage claims or other claims made against Consultant by any such employees, agents, contractors, or subcontractors, or any other person resulting from performance of this Agreement. City shall not have the right to direct and control the manner and means in which the Consultant carries
out the work contemplated by this Agreement. City shall not train nor provide instruction to
the Consultant for the carrying out of the services contemplated by this Agreement.

ARTICLE 13 – NON-ASSIGNABILITY

The expertise and experience of the Consultant are material considerations for this
Agreement. The City has an interest in qualifications of and capability of the Consultant which
will fulfill the duties and obligations imposed under this Agreement. In recognition of that
interest, the Consultant shall not assign or transfer this Agreement or any portion of this
Agreement or the performance of any of the Consultant’s duties or obligations under this
Agreement without the prior written consent of the City. Any attempted unauthorized
assignment shall be ineffective, null and void, and shall constitute a material breach of this
Agreement entitling the City to any and all remedies at law or in equity, including summary
termination of this Agreement. The Consultant shall not assign any interest in this Agreement
and shall not transfer any interest in the same whether by assignment or novation, without
prior written approval of the City.

ARTICLE 14 – EQUAL EMPLOYMENT

Consultant agrees that during the performance of this Agreement, it will not
discriminate against any employee or applicant for employment because of race, color,
religious creed, national origin, ancestry, sex, sexual orientation, age, physical handicap,
medical condition or marital status.

ARTICLE 15 – CHANGES, AMENDMENTS AND MODIFICATIONS

No change, amendment or modification to this Agreement shall be effective unless in
writing and signed by the Parties hereto.

ARTICLE 16 – SEVERABILITY

In the event that any condition or covenant herein is held to be invalid or void by any
court of competent jurisdiction, the same shall be deemed severable from the remainder of
the Agreement and shall in no way affect any other covenant or condition herein contained as
long as the invalid provision does not render the Agreement meaningless with regard to a
material term in which event the entire Agreement shall be void. If such condition, covenant,
or other provision shall be deemed invalid due to its scope or breadth, such provision shall be
d deemed valid to the extent the scope or breadth is permitted by law.

ARTICLE 17 – WAIVER

Waiver by any party to this Agreement of any term, condition, or covenant of this
Agreement shall not constitute a waiver of any other term, condition, or covenant. Waiver by
any party of any breach of the provisions of this Agreement shall not constitute a waiver of any
other provision, nor a waiver of any subsequent breach or violation of any provision of this
Agreement. Acceptance by the City of any work or services by Consultant shall not constitute
a waiver of any of the provisions of this Agreement.

ARTICLE 18 – ENTIRE AGREEMENT

This Agreement is the entire, complete, final and exclusive expression of the Parties
with respect to the matters addressed therein and supersedes all other Agreements or
understandings, whether oral or written, entered into between the Consultant and the City
prior to the execution of this Agreement. No statements, representations or other
Agreements, whether oral or written, made by any party which are not embodied herein shall
be valid and binding unless in writing and duly executed by the Parties or their authorized
representatives.

ARTICLE 19 – GOVERNING LAW; VENUE

This Agreement shall be interpreted, construed and governed according to the laws of
the State of California. In the event of litigation between the Parties, venue in state trial courts
shall lie exclusively in the County of Los Angeles, Superior Court, Southwest District, located at
825 Maple Avenue, Torrance, California 90503-5058. In the event of litigation in the United
States District Court, venue shall lie exclusively in the Central District of California, in Los
Angeles.

ARTICLE 20 – MISCELLANEOUS

The Parties waive any benefits from the principle of contra proferentem and
interpreting ambiguities against drafters. No party shall be deemed to be the drafter of this
Agreement, or of any particular provision or provisions, and no part of this Agreement shall be

construed against any party on the basis that the particular party is the drafter of any part of
this Agreement.

This Agreement may be executed in counterparts, and when each party hereto has
signed and delivered at least one such counterpart, each counterpart shall be deemed an
original and, when taken together with the other signed counterparts, shall constitute one
Agreement, which shall be binding upon and effective as to all Parties hereto.

Article titles, paragraph titles or captions contained herein are inserted as a matter of
convenience and for reference, and in no way define, limit, extend, or describe the scope of
this Agreement or any provision hereof.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the date
and year first above written.

CITY OF INGLEWOOD

KOA CORPORATION

________________________________________  ________________________________
James T. Butts, Jr.,                     Chuck Stephan,
Mayor                                   Vice President

ATTEST:

APPROVED AS TO FORM:

________________________________________  ________________________________
Yvonne Horton,                           Kenneth R. Campos,
City Clerk                              City Attorney