PROFESSIONAL SERVICES AGREEMENT
FOR TRAFFIC SIGNAL ENGINEERING SERVICES

THIS AGREEMENT is made and entered into this 16th day of April, 2013 ("Effective Date"), by and between the CITY OF COSTA MESA, a municipal corporation ("City"), and ITERIS, a California Corporation ("Consultant").

WITNESSETH:

A.   WHEREAS, City proposes to utilize the services of Consultant as an independent contractor to provide traffic signal coordination along Victoria and 17th Street corridors as more fully described in Consultant's Proposal attached as Exhibit "A"; and

B.   WHEREAS, Consultant represents that it has that degree of specialized expertise contemplated within California Government Code, Section 37103, and holds all necessary licenses to practice and perform the services herein contemplated; and

C.   WHEREAS, City and Consultant desire to contract for the specific services described in Exhibit "A" (the "Project") and desire to set forth their rights, duties and liabilities in connection with the services to be performed; and

D.   WHEREAS, no official or employee of City has a financial interest, within the provisions of California Government Code, Sections 1090-1092, in the subject matter of this Agreement.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions contained herein, the parties hereby agree as follows:

1.0.   SERVICES PROVIDED BY CONSULTANT

1.1.   Scope of Services. Consultant shall provide the professional services described in Consultant's Proposal, a copy of which is attached hereto as Exhibit "A" and incorporated herein by this reference.

1.2.   Professional Practices. All professional services to be provided by Consultant pursuant to this Agreement shall be provided by personnel experienced in their respective fields and in a manner consistent with the standards of care, diligence and skill ordinarily exercised by professional consultants in similar fields and circumstances in accordance with sound professional practices. It is understood that in the exercise of every aspect of its role, within the scope of work, consultant will be representing the City of Costa Mesa, and all of its actions, communications, or other work, during its employment, under this contract is under the direction of the department. Consultant also warrants that it is familiar with all laws that may affect its performance of this Agreement and shall advise City of any changes in any laws that may affect Consultant's performance of this Agreement.

1.3.   Performance to Satisfaction of City. Consultant agrees to perform all the work to the complete satisfaction of the City and within the hereinafter specified. Evaluations of the work will be done by the City Clerk or her designee. If the quality of work is not satisfactory, City in its discretion has the right to:

(a)   Meet with Consultant to review the quality of the work and resolve the matters of concern;

(b)   Require Consultant to repeat the work at no additional fee until it is satisfactory; and/or

(c)   Terminate the Agreement as hereinafter set forth.

1.4.   Warranty. Consultant warrants that it shall perform the services required by this Agreement in compliance with all applicable Federal and California employment laws including, but not limited to, those laws related to minimum hours and wages; occupational health and safety; fair employment and employment practices; workers' compensation insurance and safety in employment; and all other Federal, State and local laws and ordinances applicable to the services required under this Agreement. Consultant shall indemnify and hold harmless City from and against all claims, demands, payments, suits, actions, proceedings, and judgments of every nature and description including attorneys' fees and costs, presented, brought, or recovered against City for, or on account of any liability under any of the above-mentioned laws, which may be incurred by reason of Consultant's performance under this Agreement.

1.5.   Non-discrimination. In performing this Agreement, Consultant shall not engage in, nor permit its agents to engage in, discrimination in employment of persons because of their race, religion, color, national origin, ancestry, age, physical handicap, medical condition, marital status, sexual gender or sexual orientation, except as permitted pursuant to Section 12940 of the Government Code.

1.6.   Non-Exclusive Agreement. Consultant acknowledges that City may enter into agreements with other consultants for services similar to the services that are subject to this Agreement or may have its own employees perform services similar to those services contemplated by this Agreement.

1.7.   Delegation and Assignment. This is a personal service contract, and the duties set forth herein shall not be delegated or assigned to any person or entity without the prior written consent of City. Consultant may engage a subcontractor(s) as permitted by law and may employ other personnel to perform services contemplated by this Agreement at Consultant's sole cost and expense.

1.8.   Confidentiality. Employees of Consultant in the course of their duties may have access to financial, accounting, statistical, and personnel data of private individuals and employees of City. Consultant covenants that all data, documents, discussion, or other information developed or received by Consultant or provided for performance of this Agreement are deemed confidential and shall not be disclosed by Consultant without written authorization by City. City shall grant such authorization if disclosure is required by law. All City data shall be returned to City upon the termination of this Agreement. Consultant's covenant under this Section shall survive the termination of this Agreement.

2.0.   COMPENSATION AND BILLING

2.1.   Compensation. As compensation for the provision of services outlined in Exhibit

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"A" and in accordance with this agreement, Consultant shall be paid in accordance with the fee schedule set forth in Exhibit "B," attached hereto and incorporated by reference. Consultant's total compensation shall not exceed Two Hundred Forty Five Thousand and Seventy One Dollars ($245,071.00) for the 17th Street traffic signal coordination project and Two Hundred Thirty Five Thousand Four Hundred and Ninety Nine Dollars ($235,499.00) for the Victoria Street traffic signal coordination project.

2.2. **Additional Services.** Consultant shall not receive compensation for any services provided outside the scope of services specified in the Consultant's Proposal or the Project Manager for this Project, prior to Consultant performing the additional services, approves such additional services in writing. It is specifically understood that oral requests and/or approvals of such additional services or additional compensation shall be barred and are unenforceable.

2.3. **Method of Billing.** Consultant may submit invoices to City supervisor for approval on a progress basis, but no more often than two times a month. Said invoice shall be based on the total of all Consultant's services which have been completed to City's sole satisfaction as of the date the invoice is created. City shall pay Consultant's invoice within forty-five (45) days from the date City receives said invoice. Each invoice shall describe in detail, the services performed, the date of performance, and the associated time for completion. Any additional services approved and performed pursuant to this Agreement shall be designated as "Additional Services" and shall identify the number of the authorized change order, where applicable, on all invoices.

2.4. **Records and Audits.** Records of Consultant's services relating to this Agreement shall be maintained in accordance with generally recognized accounting principles and shall be made available to City or its Project Manager for inspection and/or audit at mutually convenient times for a period of three (3) years from the Effective Date.

3.0. TIME OF PERFORMANCE

3.1. **Commencement and Completion of Work.** The professional services to be performed pursuant to this Agreement shall commence within five (5) days from the Effective Date of this Agreement.

3.2. **Excusable Delays.** Neither party shall be responsible for delays or lack of performance resulting from acts beyond the reasonable control of the party or parties. Such acts shall include, but not be limited to, acts of God, fire, strikes, material shortages, compliance with laws or regulations, riots, acts of war, or any other conditions beyond the reasonable control of a party.

4.0. TERM AND TERMINATION

4.1. **Term.** This Agreement shall commence on the Effective Date and continue for a period of Five (5) years and Two (2) months ending on June 30, 2018, unless previously terminated as provided herein or as otherwise agreed to in writing by the parties. At the end of the term period, Consultant and City may mutually agree, in writing, to renew the contract for up to four (4) term periods of one (1) year each.

4.2. <u>Notice of Termination</u>. The City reserves and has the right and privilege of canceling, suspending or abandoning the execution of all or any part of the work contemplated by this Agreement, with or without cause, at any time, by providing written notice to Consultant. The termination of this Agreement shall be deemed effective upon receipt of the notice of termination. In the event of such termination, Consultant shall immediately stop rendering services under this Agreement unless directed otherwise by the City.

4.3. <u>Compensation</u>. In the event of termination, City shall pay Consultant for reasonable costs incurred and professional services satisfactorily performed up to and including the date of City's written notice of termination. Compensation for work in progress shall be prorated as to the percentage of work completed as of the effective date of termination in accordance with the fees set forth herein. In ascertaining the professional services actually rendered hereunder up to the effective date of termination of this Agreement, consideration shall be given to both completed work and work in progress, to complete and incomplete drawings, and to other documents pertaining to the services contemplated herein whether delivered to the City or in the possession of the Consultant.

4.4. <u>Documents</u>. In the event of termination of this Agreement, all documents prepared by Consultant in its performance of this Agreement including, but not limited to, finished or unfinished design, development and construction documents, data studies, drawings, maps and reports, shall be delivered to the City within ten (10) days of delivery of termination notice to Consultant, at no cost to City. Any use of uncompleted documents without specific written authorization from Consultant shall be at City's sole risk and without liability or legal expense to Consultant.

5.0. INSURANCE

5.1. <u>Minimum Scope and Limits of Insurance</u>. Consultant shall obtain, maintain, and keep in full force and effect during the life of this Agreement all of the following minimum scope of insurance coverages with an insurance company admitted to do business in California, rated "A," Class X, or better in the most recent Best's Key Insurance Rating Guide, and approved by City:

(a) Commercial general liability, including premises-operations, products/completed operations, broad form property damage, blanket contractual liability, independent contractors, personal injury or bodily injury with a policy limit of not less than One Million Dollars ($1,000,000.00), combined single limits, per occurrence. If such insurance contains a general aggregate limit, it shall apply separately to this Agreement or shall be twice the required occurrence limit.

(b) Business automobile liability for owned vehicles, hired, and non-owned vehicles, with a policy limit of not less than One Million Dollars ($1,000,000.00), combined single limits, per occurrence for bodily injury and property damage.

(c) Workers' compensation insurance as required by the State of California. Consultant agrees to waive, and to obtain endorsements from its workers'

compensation insurer waiving subrogation rights under its workers' compensation insurance policy against the City, its officers, agents, employees, and volunteers arising from work performed by Consultant for the City and to require each of its subcontractors, if any, to do likewise under their workers' compensation insurance policies.

(d)   Professional errors and omissions ("E&O") liability insurance with policy limits of not less than One Million Dollars ($1,000,000.00), combined single limits, per occurrence and aggregate. Architects' and engineers' coverage shall be endorsed to include contractual liability. If the policy is written as a "claims made" policy, the retro date shall be prior to the start of the contract work. Consultant shall obtain and maintain, said E&O liability insurance during the life of this Agreement and for three years after completion of the work hereunder.

5.2.   <u>Endorsements</u>. The commercial general liability insurance policy and business automobile liability policy shall contain or be endorsed to contain the following provisions:

(a)   Additional insureds: "The City of Costa Mesa and its elected and appointed boards, officers, officials, agents, employees, and volunteers are additional insureds with respect to: liability arising out of activities performed by or on behalf of the Consultant pursuant to its contract with the City; products and completed operations of the Consultant; premises owned, occupied or used by the Consultant; automobiles owned, leased, hired, or borrowed by the Consultant.."

(b)   Notice: "Said policy shall not terminate, be suspended, or voided, nor shall it be cancelled, nor the coverage or limits reduced, until thirty (30) days after written notice is given to City.

(c)   Other insurance: "The Consultant's insurance coverage shall be primary insurance as respects the City of Costa Mesa, its officers, officials, agents, employees, and volunteers. Any other insurance maintained by the City of Costa Mesa shall be excess and not contributing with the insurance provided by this policy."

(d)   Any failure to comply with the reporting provisions of the policies shall not affect coverage provided to the City of Costa Mesa, its officers, officials, agents, employees, and volunteers.

(e)   The Consultant's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

5.3.   <u>Deductible or Self Insured Retention</u>. If any of such policies provide for a deductible or self-insured retention to provide such coverage, the amount of such deductible or self-insured retention shall be approved in advance by City. No policy of insurance issued as to which the

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City is an additional insured shall contain a provision which requires that no insured except the named insured can satisfy any such deductible or self-insured retention.

5.4. Certificates of Insurance: Consultant shall provide to City certificates of insurance showing the insurance coverages and required endorsements described above, in a form and content approved by City, prior to performing any services under this Agreement.

5.5. Non-limiting: Nothing in this Section shall be construed as limiting in any way, the indemnification provision contained in this Agreement, or the extent to which Consultant may be held responsible for payments of damages to persons or property.

6.0. GENERAL PROVISIONS

6.1. Entire Agreement: This Agreement constitutes the entire Agreement between the parties with respect to any matter referenced herein and supersedes any and all other prior writings and oral negotiations. This Agreement may be modified only in writing, and signed by the parties in interest at the time of such modification. The terms of this Agreement shall prevail over any inconsistent provision in any other contract document appurtenant hereto, including exhibits to this Agreement.

6.2. Representatives. The City Manager or his or her designee shall be the representative of City for purposes of this Agreement and may issue all consents, approvals, directives and agreements on behalf of the City, called for by this Agreement, except as otherwise expressly provided in this Agreement.

Consultant shall designate a representative for purposes of this Agreement who shall be authorized to issue all consents, approvals, directives and agreements on behalf of Consultant called for by this Agreement, except as otherwise expressly provided in this Agreement.

6.3. Project Managers. City shall designate a Project Manager to work directly with Consultant in the performance of this Agreement.

Consultant shall designate a Project Manager who shall represent it and be its agent in all consultations with City during the term of this Agreement. Consultant or its Project Manager shall attend and assist in all coordination meetings called by City.

6.4. Notices: Any notices, documents, correspondence or other communications concerning this Agreement or the work hereunder may be provided by personal delivery, facsimile or mail and shall be addressed as set forth below. Such communication shall be deemed served or delivered: a) at the time of delivery if such communication is sent by personal delivery; b) at the time of transmission if such communication is sent by facsimile; and c) 48 hours after deposit in the U.S. Mail as reflected by the official U.S. postmark if such communication is sent through regular United States mail.

IF TO CONSULTANT: IF TO CITY:

Iteris   City of Costa Mesa

1700 Carnegie Ave, Suite 100   77 Fair Drive
Santa Ana, CA 92705   Costa Mesa, CA 92626
Tel: 949-270-9400   Tel: 714-754-5017
Fax: 949-270-9401   Fax: 714-754-5028
Attn: Scot Carlson, P.E., VP   Attn: David Cho

6.5. Drug-free Workplace Policy. Consultant shall provide a drug-free workplace by complying with all provisions set forth in City's Council Policy 100-5, attached hereto as Exhibit "C" and incorporated herein by reference. Consultant's failure to conform to the requirements set forth in Council Policy 100-5 shall constitute a material breach of this Agreement and shall be cause for immediate termination of this Agreement by City.

6.6. Attorneys' Fees: In the event that litigation is brought by any party in connection with this Agreement, the prevailing party shall be entitled to recover from the opposing party all costs and expenses, including reasonable attorneys' fees, incurred by the prevailing party in the exercise of any of its rights or remedies hereunder or the enforcement of any of the terms, conditions, or provisions hereof.

6.7. Governing Law: This Agreement shall be governed by and construed under the laws of the State of California without giving effect to that body of laws pertaining to conflict of laws. In the event of any legal action to enforce or interpret this Agreement, the parties hereto agree that the sole and exclusive venue shall be a court of competent jurisdiction located in Orange County, California.

6.8. Assignment: Consultant shall not voluntarily or by operation of law assign, transfer, sublet or encumber all or any part of Consultant's interest in this Agreement without City's prior written consent. Any attempted assignment, transfer, subletting or encumbrance shall be void and shall constitute a breach of this Agreement and cause for termination of this Agreement. Regardless of City's consent, no subletting or assignment shall release Consultant of Consultant's obligation to perform all other obligations to be performed by Consultant hereunder for the term of this Agreement.

6.9. Indemnification and Hold Harmless Consultant agrees to defend, indemnify, hold free and harmless the City, its elected officials, officers, agents and employees, at Consultant's sole expense, from and against any and all claims, actions, suits or other legal proceedings brought against the City, its elected officials, officers, agents and employees arising out of the performance of the Consultant, its employees, and/or authorized subcontractors, of the work undertaken pursuant to this Agreement. The defense obligation provided for hereunder shall apply without any advance showing of negligence or wrongdoing by the Consultant, its employees, and/or authorized subcontractors, but shall be required whenever any claim, action, complaint, or suit asserts as its basis the negligence, errors, omissions or misconduct of the Consultant, its employees, and/or authorized subcontractors, and/or whenever any claim, action, complaint or suit asserts liability against the City, its elected officials, officers, agents and employees based upon the work performed by the Consultant, its employees, and/or authorized subcontractors under this Agreement, whether or not the Consultant, its employees, and/or authorized subcontractors are specifically named or otherwise asserted to be liable. Notwithstanding the foregoing, the Consultant shall not be liable for the defense or indemnification of the City for claims, actions, complaints or suits arising out of the sole active

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negligence or willful misconduct of the City. This provision shall supersede and replace all other indemnity provisions contained either in the City's specifications or Consultant's Proposal, which shall be of no force and effect.

6.10. Independent Contractor. Consultant is and shall be acting at all times as an independent contractor and not as an employee of City. Consultant shall have no power to incur any debt, obligation, or liability on behalf of City or otherwise act on behalf of City as an agent. Neither City nor any of its agents shall have control over the conduct of Consultant or any of Consultant's employees, except as set forth in this Agreement. Consultant shall not, at any time, or in any manner, represent that it or any of its or employees are in any manner agents or employees of City. Consultant shall secure, at its sole expense, and be responsible for any and all payment of Income Tax, Social Security, State Disability Insurance Compensation, Unemployment Compensation, and other payroll deductions for Consultant and its officers, agents, and employees, and all business licenses, if any are required, in connection with the services to be performed hereunder. Consultant shall indemnify and hold City harmless from any and all taxes, assessments, penalties, and interest asserted against City by reason of the independent contractor relationship created by this Agreement. Consultant further agrees to indemnify and hold City harmless from any failure of Consultant to comply with the applicable worker's compensation laws. City shall have the right to offset against the amount of any fees due to Consultant under this Agreement any amount due to City from Consultant as a result of Consultant's failure to promptly pay to City any reimbursement or indemnification arising under this paragraph.

6.11. PERS Eligibility Indemnification. In the event that Consultant or any employee, agent, or subcontractor of Consultant providing services under this Agreement claims or is determined by a court of competent jurisdiction or the California Public Employees Retirement System (PERS) to be eligible for enrollment in PERS as an employee of the City, Consultant shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for PERS benefits on behalf of Consultant or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

Notwithstanding any other agency, state or federal policy, rule, regulation, law or ordinance to the contrary, Consultant and any of its employees, agents, and subcontractors providing service under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any claims to, any compensation, benefit, or any incident of employment by City, including but not limited to eligibility to enroll in PERS as an employee of City and entitlement to any contribution to be paid by City for employer contribution and/or employee contributions for PERS benefits.

6.12. Cooperation. In the event any claim or action is brought against City relating to Consultant's performance or services rendered under this Agreement, Consultant shall render any reasonable assistance and cooperation which City might require.

6.13. Ownership of Documents. All findings, reports, documents, information and data including, but not limited to, computer tapes or discs, files and tapes furnished or prepared by Consultant or any of its subcontractors in the course of performance of this Agreement, shall be and remain the sole property of City. Consultant agrees that any such documents or information

shall not be made available to any individual or organization without the prior consent of City. Any use of such documents for other projects not contemplated by this Agreement, and any use of incomplete documents, shall be at the sole risk of City and without liability or legal exposure to Consultant. City shall indemnify and hold harmless Consultant from all claims, damages, losses, and expenses, including attorneys' fees, arising out of or resulting from City's use of such documents for other projects not contemplated by this Agreement or use of incomplete documents furnished by Consultant. Consultant shall deliver to City any findings, reports, documents, information, data, in any form, including but not limited to, computer tapes, discs, files audio tapes or any other Project related items as requested by City or its authorized representative, at no additional cost to the City.

6.14. <u>Public Records Act Disclosure</u>: Consultant has been advised and is aware that all reports, documents, information and data including, but not limited to, computer tapes, discs or files furnished or prepared by Consultant, or any of its subcontractors, and provided to City may be subject to public disclosure as required by the California Public Records Act (California Government Code Section 6250 et. seq.). Exceptions to public disclosure may be those documents or information that qualify as trade secrets, as that term is defined in the California Government Code Section 6254.7, and of which Consultant informs City of such trade secret. The City will endeavor to maintain as confidential all information obtained by it that is designated as a trade secret. The City shall not, in any way, be liable or responsible for the disclosure of any trade secret including, without limitation, those records so marked if disclosure is deemed to be required by law or by order of the Court.

6.15. <u>Conflict of Interest</u>. Consultant and its officers, employees, associates and subconsultants, if any, will comply with all conflict of interest statutes of the State of California applicable to Consultant's services under this agreement, including, but not limited to, the Political Reform Act (Government Code Sections 81000, et seq.) and Government Code Section 1090. During the term of this Agreement, Consultant and its officers, employees, associates and subconsultants shall not, without the prior written approval of the City Representative, perform work for another person or entity for whom Consultant is not currently performing work that would require Consultant or one of its officers, employees, associates or subconsultants to abstain from a decision under this Agreement pursuant to a conflict of interest statute.

6.16. <u>Responsibility for Errors</u>. Consultant shall be responsible for its work and results under this Agreement. Consultant, when requested, shall furnish clarification and/or explanation as may be required by the City's representative, regarding any services rendered under this Agreement at no additional cost to City. In the event that an error or omission attributable to Consultant occurs, then Consultant shall, at no cost to City, provide all necessary design drawings, estimates and other Consultant professional services necessary to rectify and correct the matter to the sole satisfaction of City and to participate in any meeting required with regard to the correction.

6.17. <u>Prohibited Employment</u>. Consultant will not employ any regular employee of City while this Agreement is in effect.

6.18. <u>Order of Precedence</u>. In the event of an inconsistency in this Agreement and any of the attached Exhibits, the terms set forth in this Agreement shall prevail. If, and to the extent this Agreement incorporates by reference any provision of any document, such provision shall be

deemed a part of this Agreement. Nevertheless, if there is any conflict among the terms and conditions of this Agreement and those of any such provision or provisions so incorporated by reference, this Agreement shall govern over the document referenced.

6.19. Costs. Each party shall bear its own costs and fees incurred in the preparation and negotiation of this Agreement and in the performance of its obligations hereunder except as expressly provided herein.

6.20. No Third Party Beneficiary Rights. This Agreement is entered into for the sole benefit of City and Consultant and no other parties are intended to be direct or incidental beneficiaries of this Agreement and no third party shall have any right in, under or to this Agreement.

6.21. Headings. Paragraphs and subparagraph headings contained in this Agreement are included solely for convenience and are not intended to modify, explain or to be a full or accurate description of the content thereof and shall not in any way affect the meaning or interpretation of this Agreement.

6.22. Construction. The parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises with respect to this Agreement, this Agreement shall be construed as if drafted jointly by the parties and in accordance with its fair meaning. There shall be no presumption or burden of proof favoring or disfavoring any party by virtue of the authorship of any of the provisions of this Agreement.

6.23. Amendments. Only a writing executed by the parties hereto or their respective successors and assigns may amend this Agreement.

6.24. Waiver. The delay or failure of either party at any time to require performance or compliance by the other of any of its obligations or agreements shall in no way be deemed a waiver of those rights to require such performance or compliance. No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the party against whom enforcement of a waiver is sought. The waiver of any right or remedy in respect to any occurrence or event shall not be deemed a waiver of any right or remedy in respect to any other occurrence or event, nor shall any waiver constitute a continuing waiver.

6.25. Severability. If any provision of this Agreement is determined by a court of competent jurisdiction to be unenforceable in any circumstance, such determination shall not affect the validity or enforceability of the remaining terms and provisions hereof or of the offending provision in any other circumstance. Notwithstanding the foregoing, if the value of this Agreement, based upon the substantial benefit of the bargain for any party, is materially impaired, which determination made by the presiding court or arbitrator of competent jurisdiction shall be binding, then both parties agree to substitute such provision(s) through good faith negotiations.

6.26. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original. All counterparts shall be construed together and shall constitute one agreement.

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6.27. Corporate Authority. The persons executing this Agreement on behalf of the parties hereto warrant that they are duly authorized to execute this Agreement on behalf of said parties and that by doing so the parties hereto are formally bound to the provisions of this Agreement.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed by and through their respective authorized officers, as of the date first above written.

CITY OF COSTA MESA,
A m█████████████████████████

███████████████████████████
Date: ___5/8/13___

Mayor of the City of Costa Mesa

███████████████████
Date: ___4.5.13___

Departm█████████████████

CONSULTANT
████████████████████████████

████████████████████████████
Date: ___4/3/2013___

Dan Gilliam VP Contracts

Name and Title

████████████████████

Social Security or Taxpayer ID Number

ATTEST:

███████████████████ 5/9/13

City Clerk and ex-officio Clerk
of the City of Costa Mesa

APPROVED AS TO FORM:
████████████████████

████████████████████
Date: ___03/29/13___

APPROVED AS TO INSURANCE:

Date: __4/5/13__

APPROVED AS TO CONTENT:

Date: __4-5-13__
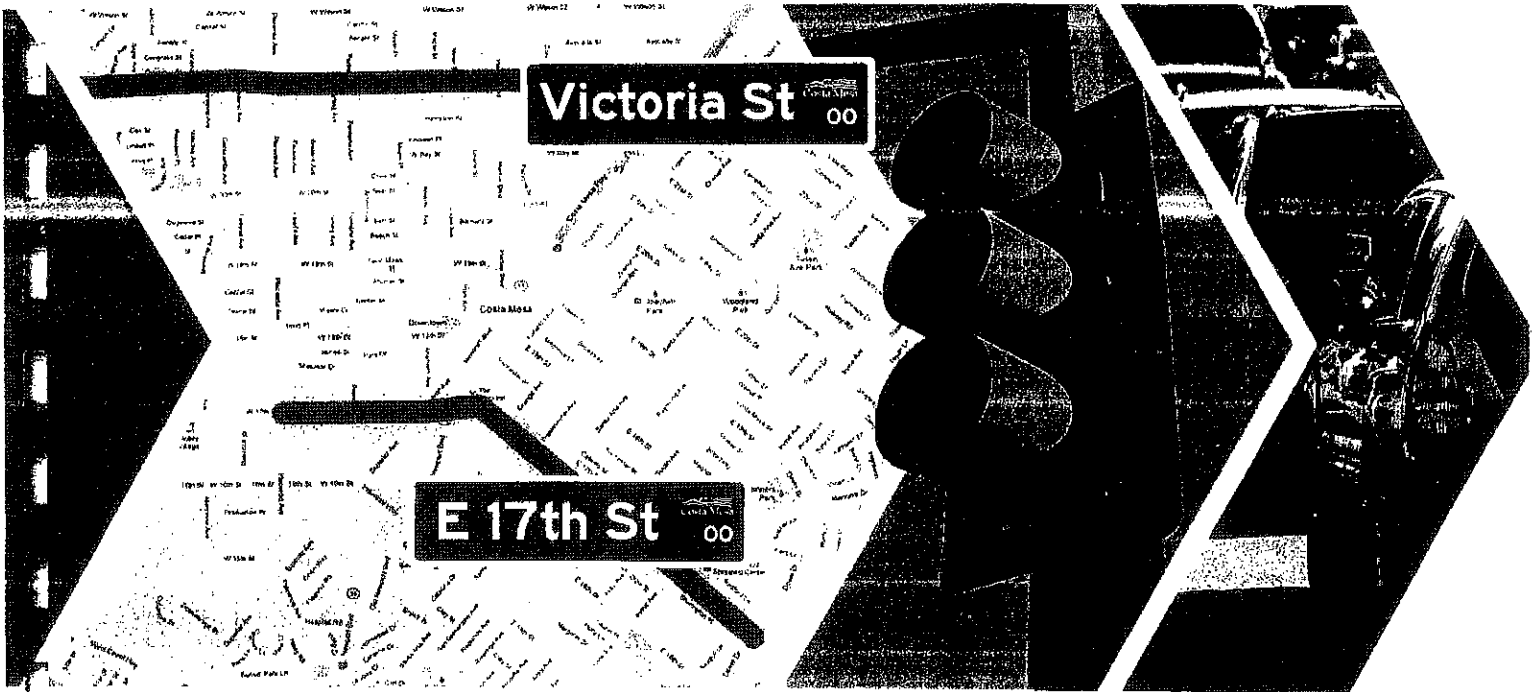
EXHIBIT A

CONSULTANT'S PROPOSAL

Costa Mesa

Proposal to Provide:

Traffic Signal Coordination along Victoria Street and 17th Street Corridors

Submitted by:

ITERIS

In Association with:

Crosstown Electrical & Data, Inc.   **NDS**

January 18, 2013

P13-0006

ITERIS *Innovation for better mobility*

January 18, 2013

Mr. Raja Sethuraman, Transportation Services Manager
Transportation Services Division
City of Costa Mesa
77 Fair Drive
Costa Mesa, CA 92626 .

Re: Proposal for Traffic Signal Coordination along Victoria Street and 17th Street Corridors

P13-0006

Dear Mr. Sethuraman:

Iteris, Inc. (Iteris) is extremely pleased to submit this Proposal to assist the Cities of Costa Mesa, Newport Beach, Huntington Beach and Caltrans with the development, implementation, fine-tuning and monitoring of regional traffic signal synchronization plans, as well as providing infrastructure improvements, for the <u>Victoria Street</u> and <u>17th Street</u> corridors.

Iteris is the most experienced transportation engineering firm specializing in the fields of traffic signal operations, traffic system integration, traffic engineering, Intelligent Transportation Systems (ITS) and transportation planning, headquartered in Santa Ana, California. The firm's knowledge of ITS, traffic engineering and operations enables staff to design, integrate and implement transportation solutions that help public agencies reduce traffic congestion, enhance system reliability and improve mobility.

This proposal, submitted by Iteris, contains several key items to successfully complete the 17th Street, from Placentia Avenue to Dover Drive, and Victoria Street, from Santa Ana River to SR-55, multi-jurisdictional projects. The following are key points on why Iteris is uniquely qualified to perform this project for the City of Costa Mesa, based on the four proposal evaluation criteria shown in the RFP:

<u>**Firm Qualifications:**</u> Iteris is a recognized leader in Orange County, <u>ranking No. 1 among twelve local traffic engineering consultants who recently submitted signal timing qualifications to OCTA to provide Traffic Engineering and Synchronization Services for years 2012 thru 2014.</u> Iteris received an overall score of 93.65 and is the only firm to score over 90 points. Some of the evaluation committee comments include:

- Firm has expertise in traffic operations, signal synchronization, corridor analysis, and traffic engineering projects
- Highly experienced team with dedicated staff and expertise on related projects
- Comprehensive quality control process that included schedule and budget approach
- Excellent presentation in the interview and addressed all key issues
- Excellent work plan that articulates understanding of the project requirements program management roles and thorough ability of staff to accomplish tasks

All project personnel are located in our Santa Ana office, and we all have direct relevant qualifications in developing and implementing traffic signal coordination plans that resulted in tremendous improvements in travel times, delays and stops with previous projects. The references provided with our project qualifications will attest to the high quality of our work and qualifications of our staff.

ITERIS® *Innovation for better mobility*

Management Approach: Iteris' methodology and management approach developed for this project is based on proven experience in similar successfully completed projects for many other agencies, which includes a very thorough internal quality control plan. Iteris is certified for having established and applied a quality system for the design and implementation of all transportation engineering projects. Iteris staff will implement appropriate quality control procedures, carry out independent reviews for all key deliverables, and strictly follow the guidelines set forth within the certified corporate ISO 9001 Quality Management.

Work Plan: Our comprehensive work plan and turn-key approach provided in Section 2 of this proposal will ensure successful completion of this project on time and within budget, which is further enhanced by our familiarity of both corridors. Not only are all the Iteris' staff local, many of our staff use the study corridors regularly. Therefore, we fully understand the traffic conditions, issues and needs of the corridors. In preparing this proposal, Iteris key staff has also conducted field review, travel time studies, and observed traffic conditions along the study corridors. The preliminary Corridor Synchronization Performance Index (CSPI) scores are presented in the proposal to highlight project familiarity.

Overall Presentation: This proposal is organized according to specifications of the Request for Proposal (RFP), which demonstrates our understanding of the project, qualifications of our staff and similar experience that we possess. Within the past five years, Iteris personnel have completed similar signal synchronization and infrastructure upgrade for over 1,000 traffic signals. Some of our recent similar projects include:

- Warner Avenue Traffic Signal Synchronization (TSS) and Infrastructure Upgrade Project (41 signals, 5 agencies)
- Jamboree Road TSS Project (27 signals, 4 agencies)
- Lincoln Avenue TSS and Infrastructure Upgrade Project (35 signals, 5 agencies)
- Valley View Avenue TSS and Infrastructure Upgrade Project (24 signals, 3 agencies)
- Newport Coast Drive TSS Project (21 signals, 3 agencies)
- Katella Avenue TLSP Project (48 signals, 9 agencies)

Iteris will apply our extensive experience on similar projects to ensure successful completion of this project on-time and within-budget. In accordance with the RFP, Iteris' Cost Proposals for Victoria Street and 17th Street Corridors are provided in separate sealed envelopes.

Thank you very much for the opportunity to submit this proposal. Iteris has reviewed the sample agreement and does not take any exceptions. Iteris looks forward to assisting the City of Costa Mesa on a successful completion of the Traffic Signal Coordination Projects. Please feel free to call me at 949-270-9578 or sec@iteris.com should you have any questions.

Sincerely,
Iteris, Inc.

Scott Carlson, P.E.
Vice President, Transportation Systems

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Appendix – Resumes

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1.0 MANAGEMENT APPROACH

The City of Costa Mesa, in association with Caltrans District 12 and the Cities of Newport Beach and Huntington Beach has successfully obtained funding for three (3) Traffic Signal Synchronization (TSS) Projects through the Orange County Transportation Authority's (OCTA's) Renewed Measure M (M2) Regional Traffic Signal Synchronization Program (RTSSP or Project P). These projects will provide traffic signal infrastructure improvements and optimized signal timing plans along the following three corridors: (1) Baker Street / Placentia Avenue from Red Hill Avenue to Hospital Road, (2) 17th Street from Placentia Avenue to Dover Drive, and (3) Victoria Street from Santa Ana River to SR-55. Iteris is submitting this proposal to provide services on projects (2) and (3) as previously numbered. Consistent with requirements of OCTA's M2 RTSSP, all participating agencies will be required to work together and prepare a regional traffic signal synchronization plans.

Iteris operates by a core principle that excellent project management is essential in the successful completion of any project. Iteris has developed a methodology that has proven effective in measuring progress, anticipating problems, reacting quickly to changes in the project and maintaining schedule integrity. The methodology includes the following items:

- **Internal Team Meetings:** Weekly internal meetings will be held to provide a status of accomplishments and potential issues. These meetings are a fact-finding, problem-solving endeavor to keep the Project Manager and task leaders advised of the project status.
- **Performance Monitoring:** Monitor and control project activities with respect to schedule using detailed project schedule created in Microsoft Project.
- **Subcontractor Coordination:** Develop and execute well-defined subcontract to clearly define the roles and responsibilities of each subcontractor. Iteris will assign the subcontractor to focus on installing infrastructure and less on integrating ITS elements and implementing the network.
- **Initial Site Installations:** Iteris will conduct an Acceptance Testing Readiness inspection after the contractor completes the installation work. This inspection would result in an Acceptance Testing Readiness report that would identify installation problems prior to turning on the system.
- **Stakeholder Management:** Iteris has established a solid working relationship with the Cities of Huntington Beach and Newport Beach, and is currently the only firm conducting ITS design and signal timing services for the City of Newport Beach. Iteris will work with the City of Costa Mesa to coordinate efforts with stakeholders and ensure all goals are met. Iteris will also assist the City of Costa Mesa with producing the necessary documents and reports to OCTA, serving as an extension of City staff for these administrative duties.

As an International Organization for Standardization (ISO) 9001 (Quality Management Program) certified firm, Iteris is audited annually and certificate renewed every three years. With this certification, Iteris is recognized as having established and applied a quality system for the design and implementation of all transportation engineering projects. This project is no exception. Iteris staff will implement appropriate quality control procedures, carry out independent reviews for all key deliverables, and strictly follow the guidelines set forth within the certified corporate ISO 9001 Quality Management Program.

The Iteris QA/QC Plan is an all-encompassing plan that covers documents, design plans, synchronization plans, as well as software development. Not only will Iteris follow this plan, we also demand sub-consultants to adhere to our quality requirements as part of our team. Mr. Ramin Massoumi will serve as the QA/QC lead, and will be responsible for the overall QC/QA aspect of this project.

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2.0 WORK PLAN

Iteris is proposing to perform the necessary traffic engineering services for two (2) of the three corridors: 17th Street and Victoria Street. Iteris' Scope of Services, below, is the same for both corridors unless otherwise noted in each individual task.

With the exception of the Caltrans signalized intersection on 17th Street and Newport Boulevard, all signalized intersections along both corridors have existing interconnect, which is or once was connected to their respective TMC's. Upgrading the corridors to fiber optic cable and controllers to ASC/3 in the City of Costa Mesa will ensure that the intersections are synchronized along the corridor and provide for quicker response time. Based on our understanding of the corridor characteristics, below are areas to focus on during the operational analysis.

- 17th Street corridor is mostly surrounded by retail land uses with high pedestrian activity during all the peaks. Residential homes are typically found east of the corridor near Westcliff/Dover in the City of Newport Beach; Iteris did the signal modifications, ITS design, construction support, and signal timing along Westcliff Drive from Irvine Avenue to Dover Drive for the City of Newport Beach in 2009 – 2011. It is anticipated that left-turn splits before and after the lunch period will vary, which may require an additional off-peak period or the use of advanced parameter settings available in the ASC/3 controllers.

- Victoria Avenue is mostly surrounded by residential areas with few retail land uses. Operational analysis should take into account the Victoria Elementary School located south of American Avenue, which generates high volumes of vehicle and pedestrians during school peak hours. During the analysis of the corridor, an additional school peak for this intersection will be evaluated.
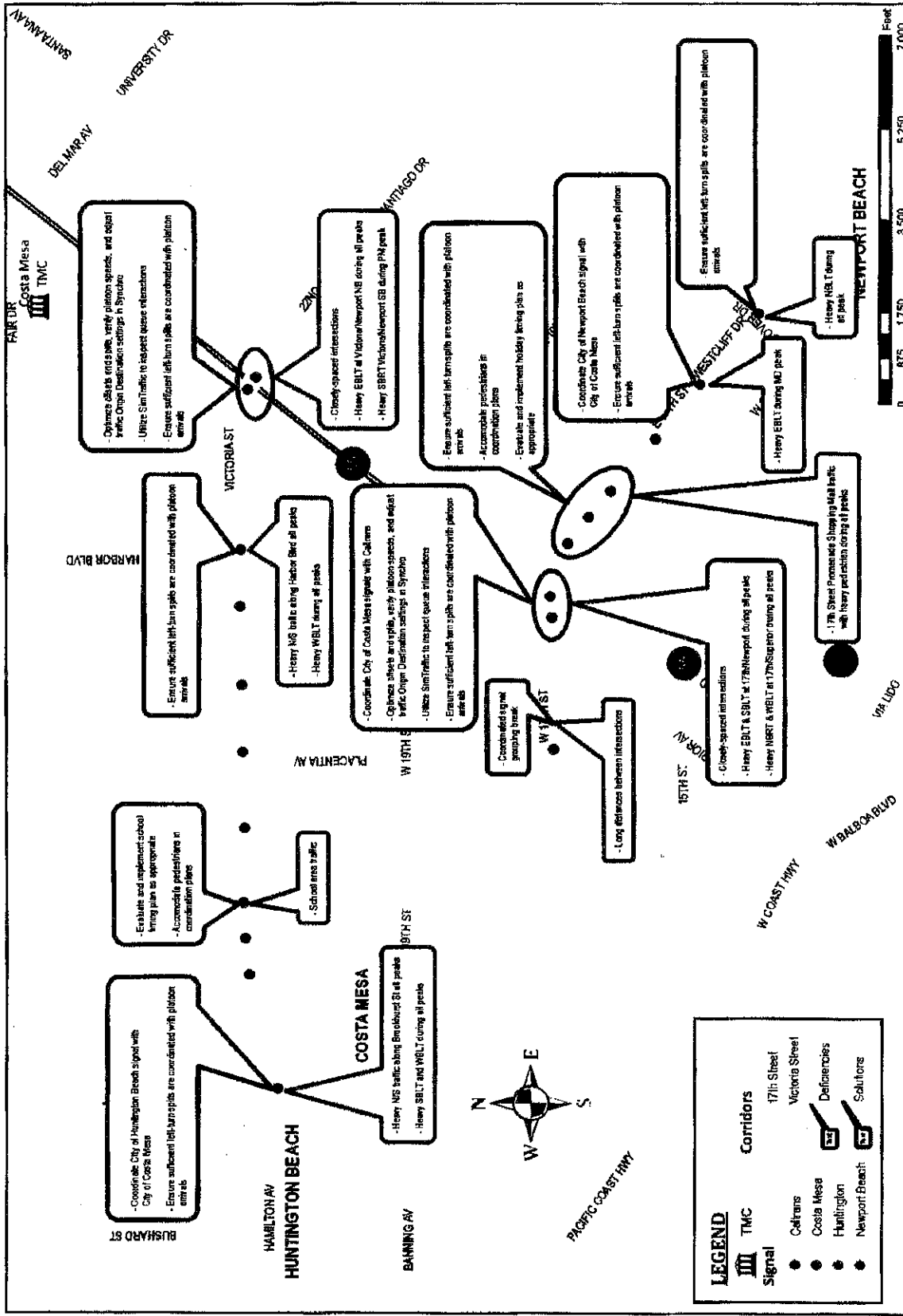
Victoria Street also intersects Brookhurst Street in the City of Huntington Beach and both corridors intersect Harbor Boulevard in the City of Costa Mesa, which were recently coordinated as part of separate projects led by OCTA. The cycle lengths and offsets for these crossing arterials will need to be maintained. However, in our analysis, should a cycle length change be recommended, Iteris is committed to modifying the necessary coordinated timings affected along the crossing corridors.

In order to provide the City with the most an extensively detailed scope of work, and to also aid in developing zero learning curve to initiate the project, Iteris staff drove the corridor in preparation of this proposal and **Figure 1**, below, highlights additional observations made in the field.

ITERIS

Traffic Signal Coordination along
Victoria Street and 17th Street Corridors

Figure 1 – Existing Conditions and Potential Solutions

Iteris developed the scope presented below based on our understanding of the goals and objectives of these projects and our extensive experience on similar projects.

Task 1. Project Management

As highlighted in Section 2, Iteris strongly believes that excellent project management is essential in the successful completion of any project. Successful completion does not only mean finishing the project but also completing the project to the client's satisfaction within budget and on schedule. With this goal in mind, Mr. Bernard Li, your Project Manager for this project will focus on three key principles:

Figure 2 – QC/QA Flowchart

- Ensure an efficient and coordinated project development process
- Delivery of a high quality product
- Deployment of the project components within budget and on schedule

This can be achieved by good initial planning at the onset of the project, followed by close monitoring the progress of each task and sub-task on a weekly basis, and making necessary corrective actions should issues arise.

In order to provide a clear plan in managing this project, Iteris will prepare a Project Management Plan detailing the roles, responsibilities, deliverables, lines of communication, invoices, scope of work, deliverables, and project quality plan. The Project Management Plan will also highlight the additional tasks and deliverables required to meet the OCTA documenting and reporting requirements.

An internal QC/QA team, led by Mr. Massoumi, consisting of the back-checker/verifier and task leader will review all deliverables prior to delivery to the City. **Figure 2** illustrates the QA/QC flowchart proposed for this project.

Task 1 Deliverables:
- Detailed Project Management Plan
- Monthly Progress Reports

Task 2. Data Collection and Field Review

Iteris will collect all pertinent information (such as existing timing sheets, phasing diagrams, As-Built plans, speed surveys, collision history, historical counts, Agency timing preferences, etc.) that will support the design and signal timing activities of the 17th Street and Victoria Street corridors. Having completed the previous ITS design and signal timing work, Iteris already has this information for the City
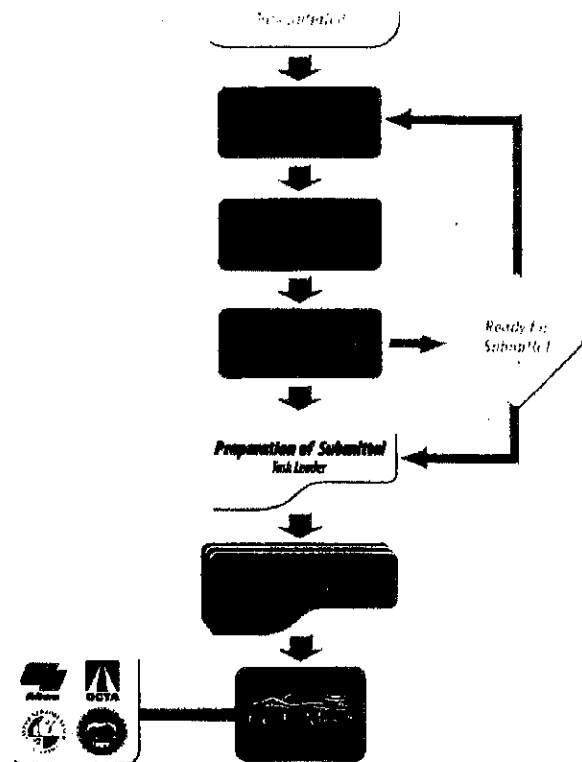
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of Newport Beach.

In addition to collecting Agency provided data, Iteris will conduct a thorough field review of the project area. Each study intersection will be visited to inventory existing signal infrastructure and document existing traffic signal phasing, roadway speeds, and operational efficiencies. Digital photos will also be taken of each intersection approaches and the inside of the controller cabinet.

NDS, our traffic counts sub-consultant, will collect the 7-day, 24-hour average daily traffic (ADT) counts and intersection turning movement counts along the 17th Street and Victoria Street corridors. With the recent changes in the MUTCD as it relates to pedestrian timing and bicycle timing, Iteris will also collect video at up to four intersections (two per study corridor) that will be used as a basis for the pedestrian timing and bicycle timing needs.

Using the ADT data, vehicle turning movement, pedestrian, and bicycle counts will be collected manually at all 9 project intersections along 17th Street and 11 project intersections along Victoria Street for the AM, Midday, PM, night, and Saturday peak periods.

Task 2 Deliverables:
- Existing Signal Timing Table
- Existing Signal Infrastructure and ITS Inventory Table
- Field Inventory Diagrams
- ADT and Turning Movement Counts (raw data files in Excel format)

Task 3. Design Plans and PS&E

The scope for this task involves the infrastructure improvements along the 17th Street and Victoria Street corridors, as well as any necessary integration and configuration at the respective TMC. **Table 1,** below, quantifies the improvements along both corridors.

Table 1 – Infrastructure Improvements

	Intersection Improvements		Arterial Improvements	TMC Improvements
17th Street Corridor	• Fiber Switch • Type P Cabinet and ASC/3 Controller • ASC/3 Controller Assembly • D-Panel & Convenience Outlet • Splice Enclosure & FDU • #6E Pull Box (Home Run) • CCTV Camera System	(7) (1) (6) (7) (7) (7) (1)	• Fiber Optic Cable 11,400' • #6 Pull Box[1] Every 500'	• Video server (1) • Gigabit Fiber Switch (1) • Copper Switch (1)
Victoria Street Corridor	• Fiber Switch • ASC/3 Controller Assembly • D-Panel & Convenience Outlet • Splice Enclosure & FDU • #6E Pull Box (Home Run) • CCTV Camera System	(9) (8) (8) (9) (9) (1)	• Fiber Optic Cable 10,700' • #6 Pull Box[1] Every 500'	

[1]Based on both Iteris' and Crosstown's experience on many fiber communication design projects, typical pullbox spacing for fiber installation is 500'. Therefore, not all pull boxes (every 250') will need to be upgraded to a #6 for the fiber installation, and the fiber can be pulled in and out of every other pull box to provide additional savings in the project.

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The improvements at the City of Huntington Beach and Newport Beach signals will be identified during the field review task. Any improvements identified will be within the allocated budget, as specified in the RFP.

Using the field review data collected as part of Task 2, Iteris will develop a Preliminary Design Memorandum to recommend design elements for CCTVs, signal systems, and communications improvements. The Memorandum will provide details of the existing signal and ITS infrastructure along with the proposed upgrades requested with this project. These projects have a fixed budget which may require that the total list of upgrades be adjusted based on the total cost of the hardware and construction. Iteris will prepare CAD design plans in 1"=40' scale to support all fiber optic cable and signal infrastructure upgrades. The recommendations of the Preliminary Design Memorandum will be incorporated into the design plans.

Iteris will develop the detailed logical network design for the project. This task will involve identifying all the subsystems for the project, the geographic location of the subsystems and configuration parameters. The design will also detail the Virtual Local Area Network (VLAN) assignments and configuration requirements. In addition, Iteris will review the IP schema and VLANS to expand the network to the project. Iteris will assign the IP address and VLAN for each device, by agency.

Based on the plans and specifications and network design, Iteris will prepare the communication network drawings for the project. These drawings will depict all the proposed equipment and will include communication devices such as workstations, routers, switches, CCTV cameras, CCTV encoders, traffic signal controllers, and fiber infrastructure. The drawings will be developed using a combination of the CAD files and Visio illustrations.

Task 3 Deliverables:
- Preliminary Design Memorandum
- Design Plans and Specifications
- Network Design (VLAN and IP Schema) Technical Memorandum
- Network Drawings

Task 4. Construction and Integration

Iteris staff have experience to provide turn-key solutions and have been responsible for hardware procurement, configuration and integration on numerous ITS projects, including the City of Newport Beach. Iteris will schedule procurement of traffic signal controllers, CCTV camera systems, and Ethernet switches with enough lead time to configure and bench test items prior to installation. This task will focus on the implementation of all infrastructure improvements approved as part of Task 3.

Upon approval of the final design plans and the arrival of all the hardware and equipment, Iteris and our subcontractor will begin the construction phase of the project. Iteris will procure the services of Crosstown for all controller cabinets and communications work, while Iteris will be responsible for the installation and integration of the IP equipment.

Construction oversight is the bridge between the design process and the integration phase of the project. The primary purpose is for Iteris to provide management and technical recommendations to our subcontractor during the communication infrastructure and field element installation.

Iteris will configure the Ethernet switches and traffic signal controllers and bench test all hardware prior to installation. This is completed by simulating field connections and testing transfer of data packets in

our Santa Ana headquarters. In addition, suitcase testers will be used to verify traffic signal controller programming is correct. Iteris will install the communication equipment and test connectivity from the Traffic Management Center (TMC) to each traffic signal controller cabinet. Iteris will also modify the existing central software systems for the traffic signal controllers, to accommodate the upgrade to Ethernet-based communications.

Iteris will be on-site to assist Econolite during controller change-outs to verify controller programming and intersection operations. Once the hardware and communications system is installed, Iteris will conduct end-to-end acceptance testing of the 17th Street and Victoria Street corridors from the field locations and TMCs.

After construction, integration, and final acceptance testing, Iteris will update design plans and finalize all items to produce as-built record drawings. Furthermore, any network design changes (such as IP address or VLAN modifications) will be incorporated into the network drawings.

Task 4 Deliverables:
- As-Built Record Drawings
- Final Network Drawings

Task 5. Corridor 'Before' Study

Prior to doing the travel time runs, Iteris will review the existing time of day operation and the average daily traffic (ADT) counts, collected as part of Task 2, to identify the best hours to conduct the runs. The 'Before' studies should be conducted during the hours of operation that will be recommended for the proposed coordinated timing; however, it is also important to note when the existing coordinated timings are running to provide a more accurate comparison between the "Before" and "After" conditions.

Iteris will perform 'before' travel time studies using the floating car method (GPS interfaced Tru-Traffic 10.0 runs). A minimum of three runs will be conducted in each direction to obtain a statistically valid estimation. *In preparation for this proposal, Iteris staff drove Victoria Street and 17th Street during the AM and PM periods for a preliminary sample of the 'before' conditions.* Table 2, below, summarizes the travel time studies conducted along each corridor, including the OCTA CSPI tier, where 1 represents great coordination and 5 represents poor coordination, per peak period.

Table 2 – Existing 'Before' Travel Time Studies

VICTORIA STREET	AM Peak				PM Peak			
	EB		WB		EB		WB	
Parameters		score		score		score		score
Avg Speed	23.1	19.5	27.0	25.5	27.0	25.5	22.0	18.0
Green/Red	2.1	16.8	2.7	21.6	2.9	23.2	1.8	14.4
Stops per Mile	1.3	27.0	1.1	29.0	1.0	30.0	1.4	25.0
CSPI	63.3		76.1		78.7		57.4	
CSPI Tier	4		2		2		5	
17TH STREET	AM Peak				PM Peak			
	EB		WB		EB		WB	
Parameters		score		score		score		score
Avg Speed	20.0	15.0	18.0	12.2	19.0	13.6	13.0	8.0
Green/Red	0.8	8.0	1.0	8.0	1.0	8.0	0.6	8.0
Stops per Mile	2.7	17.0	2.4	17.0	2.4	17.0	2.9	17.0
CSPI	40.0		37.2		38.6		33.0	
CSPI Tier	5		5		5		5	

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Measures of effectiveness (MOE) will be compiled from this data as well as MOE data output by the existing conditions Synchro 8.0 models and will be used to evaluate the effects of the Synchronization plan improvements. The MOE's will include OCTA established Corridor Synchronization Performance Index (CSPI) metrics such as average speed, number of stops per mile, and green light to red light ratio. Iteris will also include additional metrics, such as average travel time, average delay, number of total stops, fuel consumption, and vehicle pollutant and greenhouse gas emissions. Iteris will submit all 'before' study data for review by agency staff.

Task 5 Deliverables:
- Before Study Technical Memorandum

Task 6. Signal Timing Optimization

This task will focus on the operation improvements of the 17th Street and Victoria Street corridors, which will be occurring in conjunction with the design tasks. The development of optimized signal timing plans begins with the review of non-coordination timing elements for each of the project intersections. In the data collection task (Task 2), Iteris will be recording the signal timing settings, which includes the following basic timing parameters (at a minimum):

- <u>Minimum Green Time</u>: Iteris will compare the existing value with the value calculated using City preferences, phase movement and street classification, or the 2012 California MUTCD (CA MUTCD) Section 4D.105(CA) Bicycle/Motorcycle Detection guidance.
- <u>Yellow Change Interval Time</u>: Iteris will compare the existing value with the value calculated using City preferences, or the 2012 CA MUTCD Table 4D-102(CA) and the maximum of the posted speed limit or the 85th percentile speed of each approach.
- <u>Red Clearance Interval Time</u>: Iteris will compare the existing value with the value calculated using City preferences or the 2012 CA MUTCD Section 4D.26 support that "when used, red clearance intervals normally range from 0.1 to 2.0 seconds."
- <u>Walk Interval Time</u>: Iteris will compare the existing value with the value calculated using City preferences or the 2012 CA MUTCD Section 4E.06 guidance.
- <u>Pedestrian Clearance (Flash Don't Walk) Time</u>: Iteris will compare the existing value with the value calculated using City preferences and the 2012 CA MUTCD Section 4E.06 guidance and crosswalk distances collected in the field. Iteris will measure the distance from center of ADA ramp to center of ADA ramp, as well as "outside" crosswalk strip from curb to curb.

Iteris will provide recommendations for the key parameter settings for each controller and will submit to the participating Agencies for review. With the Agencies' approval, Iteris will review the advanced actuated settings (i.e. vehicle extension, vehicle density features, recall modes, etc.) for each study intersection to identify opportunities to enhance safety and to minimize delay during non-coordinated periods.

Iteris will create separate Synchro (version 8) and Tru-Traffic (version 10) files for each corridor per peak (maximum of five peaks – AM, midday, PM, night, and Saturday). *During the preparation of this proposal, Iteris created the 17th Street and Victoria Street corridor base Synchro file based on its geographic location (using GIS Shape files as a background) for ease in merging the peak corridor Synchro files into a combined network.* For example, the files created by Iteris will be merged onto the existing City of Newport Beach's existing citywide Synchro network by location. However, in creating the Synchro models, it is important to standardize the Synchro node identification numbers, especially when OCTA requires all information to be provided using the ROADS ID number.

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All existing Synchro networks will be modeled and calibrated based on actual field conditions and counts collected as part of Task 2. Models will include accurate lane configurations, phasing and basic timing parameters. A high level of network detail will be input to allow SimTraffic software simulation. These details include, but are not limited to:

- Lane widths
- Storage lengths
- Right turn channelized, turn radius, and additional lanes
- Turning Speeds
- Traffic volumes
- Conflicting pedestrian and bicycle volumes
- Leading and Trailing detectors, sizes, and positions

All proposed Synchro networks will be updated with the approved basic parameters and optimized per analysis of the following tasks.

Signal Synchronization for at least four (4) weekday and one (1) weekend time-of-day coordination plans is included in this task. Prior to conducting detailed analysis, Iteris will develop preliminary cycle lengths and signal groupings based on traffic patterns, the critical cycle length per intersection (or the lowest common cycle length at which the intersection can operate), and the optimal common cycle length for a group of signalized intersections. Preliminary cycle lengths and groupings will be presented to the agencies for comment and approval. With the approval, detailed analysis (i.e. split timings, phase sequence order, offsets, etc.) will be conducted.

Iteris will complete signal timing optimization and analyses according to a general process that is summarized below. The process includes, phase and pedestrian timing analysis, critical cycle length calculations, signal groupings analysis, cycle length evaluation, and coordination parameter analysis.

Step 1: Critical Cycle Length Analysis: Iteris will use Synchro to evaluate network cycle length optimizations. In addition to Synchro optimization runs, Iteris will complete a secondary analysis that uses an iterative, capacity-based methodology which utilizes a tool developed by Iteris. Studies have shown that a capacity-based methodology provides more accurate results than delay-based methodologies (Highway Capacity Manual (HCM) and Synchro delay methodologies).

Step 2. Signal Groupings and Subsystem Analysis: Although signal coordination typically reduces traffic delay and vehicle emissions, a single cycle length is not always the best solution for an entire corridor. Iteris will analyze various factors to determine signal groupings and subsystems. Some of these factors include: similarity of cycle lengths; existing crossing arterials that needs to remain fixed; travel distance and travel time between intersections; and traffic volumes between intersections. Iteris will use Synchro to produce Coordinability Factors to assist in evaluating signal groupings and subsystem analysis.

Step 3. System Cycle Length Evaluation: Iteris will use the results from the previous steps to determine the best cycle lengths for signal coordination. Cycle lengths will be selected based on pedestrian and bicycle activity at each intersection, traffic volumes, and agency preferences. At intersections with high pedestrian and bicycle activity, the cycle length would need to satisfy both vehicle and pedestrian timing needs. At intersections with low pedestrian and bicycle activity, the critical cycle length will satisfy vehicle demand and coordinated pedestrian requirements only. Agency preferences and approvals will determine the need to accommodate pedestrian and bicycle timings. For example, Caltrans prefers to accommodate pedestrian timing regardless of pedestrian counts.

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However, the City of Newport Beach allows splits to be less than pedestrian timing, if pedestrian counts are low. Iteris will use agency preferences, pedestrian count analysis, and MOE improvements to determine the appropriate system cycle length.

Step 4. Coordination Splits, Phase Sequence and Offset Analysis: Iteris will use Synchro (version 8) and a secondary analysis to calculate the optimum signal timing splits to efficiently serve all vehicles, pedestrians, and bicycles. The phase sequences and offsets will be optimized to provide progression for vehicle platoons. Iteris will consider through movements, as well as heavy side street turn movements to minimize delay and improve operations.

Signal timings will be exported from Synchro to develop time-space diagrams using Tru-Traffic (version 10.0). Iteris will provide the project stakeholders with implementation ready timing sheets in the appropriate Agency format.

Task 6 Deliverables:
- Recommendations Technical Memorandum
- Implementation ready timing sheets
- Synchro 8.0 and Tru-Traffic 10.0 Proposed Timing Models

Task 7. Timing Implementation and Fine-tuning

Iteris staff will be available to implement the proposed timings or assist the participating agencies with implementation and field fine-tuning activities, as preferred by each Agency. Iteris has experience in the use of the 170 controllers, 2070 controllers, and ASC/3 controllers. In addition, Iteris supported Econolite in the programming and installation of Econolite ASC/3 controllers along Harbor Blvd in the City of Costa Mesa and Newport Beach (Centracs and ASC/3 controllers). Iteris proposes to prepare timing sheets in electronic Microsoft Excel format for all participating Agencies. The timing sheets will contain all coordination parameters specific to the cities (coordination pattern splits and offsets as percent of cycle length). The files will also include firmware parameters such as phase sequence in 1 through 16 format and offset reference points using TS2-begininning of green for Econolite locations. Iteris will coordinate with the City staff to implement the timing plans using the City of Costa Mesa's MIST system, City of Newport Beach's Centracs system, and City of Huntington Beach's QuicNet system.

Although modern optimization software produces excellent coordination plans, observation and fine-tuning of the plans under field conditions are crucial to achieving the best possible coordinated flows along the corridor. Once the proposed signal timing plans have been implemented, Iteris staff will conduct thorough field reviews after the deployment of the timing plans. Special attention will be given to the interaction of cross-corridors, existing coordinated crossing arterials and minor streets. When developing optimum signal timing plans, in addition to providing the widest green bandwidth along the coordinated corridors, it is important to observe the vehicle delays and queuing on the minor movements during the field fine-tuning exercise.

Upon completion of the field fine-tuning, Iteris will revise the signal timing sheets and deliver final timing plan sheets to the City for their records and use.

Task 7 Deliverables:
- Signal Timing Optimization and Implementation Technical Memorandum

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Task 8. Corridor 'After' Study and Project Report

Similar to the 'before' travel time study, the floating car method will be utilized to conduct the 'after' travel time study. The 'after' travel time study will be conducted two weeks after the fine tuning activities are completed. The 'after' studies will be conducted on the same days and during the same time periods as the 'before' travel time study. As with the 'before' studies, a minimum of three runs in each direction will be collected. The same Measure of Effectiveness (MOE) elements (OCTA CSPI, travel time, delay, total stops, fuel consumption reduction, pollution and greenhouse gas emissions) will be collected to evaluate the improvements of the synchronization plans. The MOE's will be compared to those of the proposed Synchro 8.0 model.

Iteris will prepare a final report to describe all tasks completed and present project results. A detailed Cost/Benefit Analysis will be completed using monetary values derived from the Caltrans Cost/Benefit Model. When comments are received from the City of Costa Mesa and project agencies, the final version of the Project Report will be delivered.

Task 8 Deliverables:
- Draft and Final Project Report

Task 9. Maintenance and Operations Support

To account for any changes in traffic patterns that may occur following the implementation and fine-tuning phases, Iteris is committed to provide post-implementation support to the Cities of Costa Mesa, Newport Beach, Huntington Beach, and Caltrans. Iteris will, on a monthly basis, observe traffic along the corridor, and recommend or conduct fine-tuning activities for up to a period of three (3) years. The period of support will begin upon completion and acceptance of the fine-tuning activities. The picture shown to the right is Iteris' traffic management center in which we currently assist many agencies in the operation and maintenance of their signal systems, including the City of Newport Beach. This facility will be available under this task.
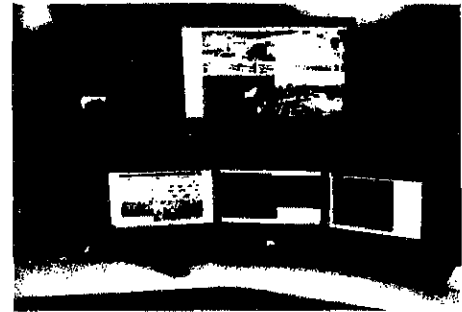
The Iteris TMC is not only a fully operational traffic operation support center, it is also a test lab with multiple ITS equipment where configuration, testing, troubleshooting, and training of such equipment take place prior to field installation.

Iteris is an expert in the integration and operation of communication infrastructure. The communication system is the critical component to maintaining the optimized signal timing. ***Because of the necessity of the robust communication system, Iteris will provide as part of this project, three (3) years of communications and detection support.***

Task 9 Deliverables:
- Revised Signal Timing Plans
- Memorandum documenting changes

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3.0 FIRM QUALIFICATIONS & REFERENCES

Founded in 1993, Iteris is the largest transportation engineering firm headquartered in California (Santa Ana) specializing in traffic engineering, Intelligent Transportation Systems (ITS), and operations and maintenance. Iteris takes a disciplined approach to each project based on ISO 9001 standards that start with understanding the end-users' needs. Iteris delivers cost-effective solutions that meet customers' needs and expectations based on twelve basic core competencies:

- Traffic Engineering and Operations
- ITS Planning
- ITS Design
- Operations and Maintenance
- Systems Integration
- ITS Systems Engineering and Architecture

- Transportation Planning
- On-Call Services
- Design/Build Contracting
- Construction Assistance
- Transit
- Commercial Vehicle Operations (CVO)

Iteris specializes in multi-jurisdictional signal coordination timing analysis, systems integration, and traffic operations and maintenance. Iteris integrates hardware, software and the user-interface into a fully functional system that delivers the most cost-effective turnkey solution. Iteris has extensive experience in complex system engineering; design; product development; systems integration; and implementation, including system acceptance testing. Iteris can also assist with operations and maintenance of traffic operations, signal timing, and equipment. Iteris has monitored communication networks, detection systems, and cabinet hardware for various agencies in Southern California.

Crosstown Electrical and Data, Inc. is a Southern California based Electrical Contractor. Crosstown has developed an in-house technical team who is highly proficient in the implementation, installation, integration and maintenance of fiber optic, video, wireless, and data communications systems and have established themselves as premier integrators and installers of Traffic, Transportation, and Public Works related communications and CCTV systems in Southern California.

National Data & Surveying Services (NDS) was established to deliver accurate and cost-effective solutions client's traffic, transit and GIS/GPS data collection. NDS has eighteen plus years of successful corporate operations that have established them as the foremost, full service, traffic and transit data collection company on the west coast. NDS has an outstanding team of 100 professional full time employees that will ensure the successful coordination and completion of your project.

Iteris has a history of successful projects with similar scope and work content for the many agencies throughout California. Iteris has a proven track record of on-time, within-budget performance on projects; and encourages the City of Costa Mesa to check with references provided with our project qualifications below. Iteris is proud of the reputation the company has earned, and the resulting numerous repeat clients. In accordance with the RFP, Iteris has provided client contact references, along with projects completed for each reference. The projects are summarized in **Table 3** below followed by a detailed description of each project.

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Traffic Signal Coordination along
Victoria Street and 17th Street Corridors

Table 3 – Relevant Project Experience Matrix

| PROJECT QUALIFICATIONS	YEAR	SIGNALS	CONTROLLER TYPE, SYSTEM	AREAS OF EXPERTISE								
				Fiber Optic Design and Upgrade	Communications Configuration and Testing	Controller Upgrades & Installation	Central System Integration	Signal Timing Optimization	Signal Timing Implementation	Board/Council Presentations	Signal Timing Monitoring	Communications & ITS Maintenance
OCTA Traffic Signal Synchronization Project (Orange County, CA)	2011	150	ASC/3, 2070, Telvent MIST ASC/3, Siemens i2 ASC/3, Econolite Centracs 2070, Siemens Actra	X	X	X	X	X	X	X	X	
Traffic Signal Modernization Project (City of Newport Beach, CA)	2010	95	ASC/3, Econolite Centracs	X	X	X	X	X	X		X	X
ITS Phase III, IV, V Projects (City of Fountain Valley, CA)	2010	49	2070, McCain QuicNet	X	X	X	X				X	X
ITS Design and Citywide Synchronization Project (City of Westminster, CA)	2010	55	2070, McCain QuicNet	X	X	X	X	X	X		X	X
Citywide Master Plan and Design Projects (City of Cypress, CA)	2010	90	ASC/3, Econolite Centracs	X	X	X	X					
Citywide ATMS Design and Signal Synchronization Projects (City of Corona, CA)	2011	150	2070/Omni eX, McCain QuiNet	X	X	X	X	X	X	X	X	X
OCTA TLSP Katella Avenue TLSP (9 agencies within Orange County, CA)	2011	48	ASC/3, Econolite Aries 2070, Siemens Actra ASC/3, Siemens i2			X		X	X	X	X	
Jamboree Road Traffic Signal Synchronization Project (Irvine, Newport Beach Tustin, CA)	2012	27	ASC/3, Econolite Aries 2070, Siemens Actra			X	X	X	X	X	X	
Lincoln Avenue Traffic Signal Synchronization Project (Anaheim, Orange, CA)	2012	35	2070, Siemens Actra ASC/3, Siemens i2	X	X	X	X	X	X	X	X	X
OCTA Warner Avenue Traffic Signal Synchronization Project (Huntington Beach, Fountain Valley, Santa Ana, Tustin, CA)	2012	41	170, McCain QuicNet 2070, McCain QuicNet ASC/3, 2070, Telvent MIST	X	X	X	X	X	X	X	X	X

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OCTA Traffic Signal Synchronization Implementation and Monitoring along 3 Corridors – Orange County, CA

Iteris was the lead consultant to provide traffic signal synchronization, and the lead system integrator to procure and install communications and traffic control hardware, along three corridors within Orange County: Bristol/State College Boulevard; Harbor Boulevard; and Westminster/17th Street. The project comprises 252 signalized intersections within 11 jurisdictions and along 46 centerline miles. The "before" and "after" studies revealed travel times improvements ranging from **5% to 22%** on all corridors, during all peak periods. Iteris
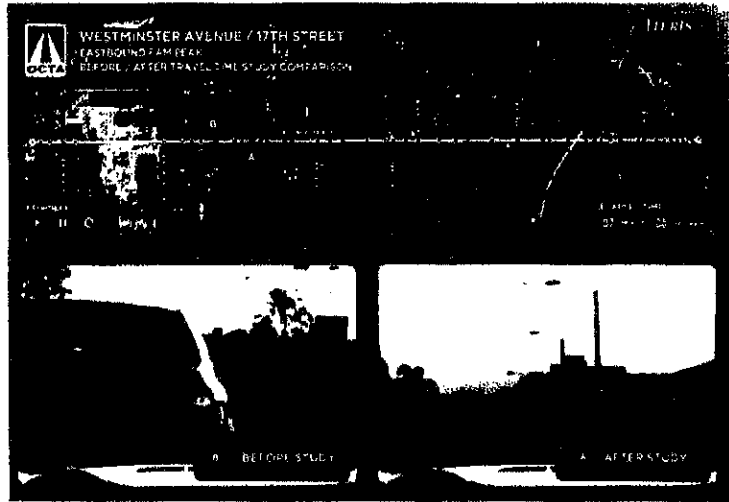
presented the results showing the "before" and "after" videos (see above screenshot) at a recent OCTA Highways Committee meeting. <u>The members of the Board were thoroughly impressed with the performance reporting tool as designed by Iteris; it has become the standard for all signal timing projects managed by OCTA</u>. Below is an excerpt of the email message sent to all traffic engineering consultants by Mr. Ron Keith, Principal Traffic Engineer at OCTA on August 1, 2011, *"This was shown to the BOD today at Highways Committee and they liked it so much they want it and others like it up on the website. So this is the bar we have to set with regard to the synchronized video requirements for the TLSP and any OCTA led TSS project in the future."* A sample video can be found on our website at: http://www.iterisprojects.com/douglasparkstudy/.

Iteris has also currently completed 9 months of signal timing monitoring support for all implemented timing and equipment for OCTA and all 11 participating agencies.

Client Reference:	Ron Keith, Principal Traffic Engineer, OCTA, 550 South Main Street, Orange, CA 92863-1584, Tel: 714-560-5990, rkeith@octa.net
Project Duration:	December 2010 to March 2012
Project Budget:	$1,773,862

Traffic Signal Modernization Projects – Newport Beach, CA

Iteris has served as the consultant for the City of Newport Beach on four ITS projects, including the Master Plan and Phase 1 Project in 2007, the Phase 2 & 3 Project in 2008, the Phase 4 & 7 Project in 2009 and the Phase 5 project. The Communications Master Plan detailed the upgrade of the current leased T1 lines and VMS-330 traffic signal system with 820 traffic signal controllers to a combination of fiber optic cable and microwave radio supported by a new Centracs traffic signal system and ASC/3 traffic signal controllers. The Communications Master Plan also detailed the deployment of ITS strategies including CCTV cameras and a new Traffic Management Center.

Based on the details of the Master Plan, Iteris has completed the PS&E for all four ITS projects. The projects replace the existing twisted pair cable with fiber optic cable, upgrade the 820 traffic signal controllers with ASC/3 controllers, and deploy Cohu CCTV cameras. To date, approximately 90 of the

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City's 120 signalized intersections have been upgraded as part of the four ITS Projects and approximately 23 CCTV cameras have been deployed.

In addition to the design, the project also includes the analysis of signalized intersections encompassing each phase (95 signals total for all phases) for coordination timing during the AM, midday, PM and Saturday (Phase 1 only) peak periods. Iteris also conducted two days of signal timing training, including basic phasing to implementation and fine-tuning using Centracs and Synchro, to City staff.

Client Reference: . Brad Sommers, City of Newport Beach, 3300 Newport Blvd, P.O. Box 1768, Newport Beach, CA 92658, Tel: 949-644-3326, bsommers@city.newport-beach.ca.us

Project Duration: Master Plan and Phase 1 - April 2007 to November 2008; Phase 2&3 – June 2008 to November 2010; Phase 4&7 – November 2009 to June 2011; Phase 5 – October 2010 to Present

Project Budget: Master Plan and Phase 1 – $263,215; Phases 2-3 – $361,835; Phases 4-7 – $446,820, Phase 5 - $155,700

Traffic Signal Master Control System / ITS Design; Citywide Traffic Signal Synchronization and Monitoring Project – City of Westminster, CA

Iteris has been selected for multiple phases of this project by the City of Westminster. Phase 1 involved the installation of fiber optic communications, video detection cameras and CCTV cameras along three major arterials. Subsequent phases included the design and construction of their TMC and expansion of the communication, detection and CCTV systems. Iteris also assisted the City with the replacement of the existing VMS-330 Traffic Control System (TCS) with a new QuicNet Pro TCS and the replacement of 64 Multisonics 820 controllers with 2070 controllers using BiTran 2033 firmware.
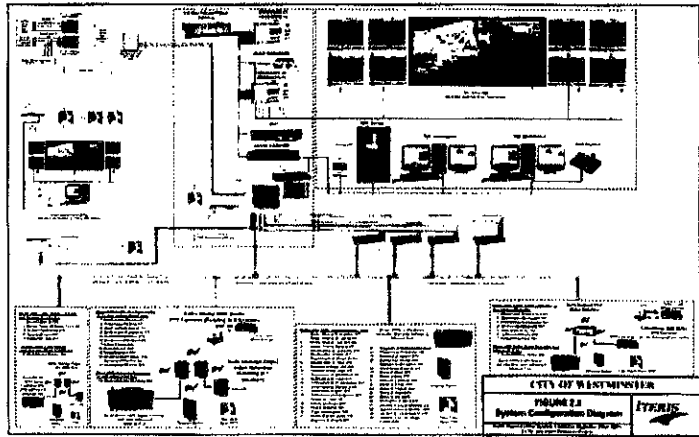
Iteris' responsibilities for the signal synchronization portion of the project included the collection of ADT and turning movement counts, the development of new City timing standards based on the most current California MUTCD standards, review of all existing actuated and basic timing parameters and signal timing plans, updating of timing sheet phase diagrams and timings to reflect intersection modifications., and new timing recommendations based on the new City standards. Iteris was also responsible for the development of four peak period coordination plans, for the AM, Midday, PM and weekend peaks, and conducting 'before' and 'after' studies to quantify the results. Optimal coordination plans were developed using location specific field conditions, critical intersection cycle lengths, corridor critical cycle lengths, and modeled with Synchro 7.0 software. New timings were implemented in stages at the City's TMC through the QuicNet Pro system, and then further fine-tuned in the field.

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Iteris is currently monitoring all the City's traffic signals remotely at our own TMC located in the Santa Ana headquarters, using a QuicNet Pro client software that we purchased from McCain, while streaming all the live traffic signal data from the City's QuicNet Pro server at the City's TMC.

Client Reference:	Adolfo Ozaeta, PE, Associate Civil Engineer, City of Westminster, 8200 Westminster Blvd., Westminster, CA 92683. Tel: 714-548-3462, aozaeta@ci.westminster.ca.us
Project Duration:	February 2007 to Present
Project Budget:	$1,250,000 Phase 1; $1,490,000 Phase 2; $390,900 Phases 3-5

OCTA – Warner Avenue Traffic Signal Synchronization Project – Orange County, CA

As part of the renewed Measure M (aka Measure M2) Regional Traffic Signal Synchronization Program (Project P), the Orange County Transportation Authority (OCTA) initiated the Warner Avenue Corridor Traffic Signal Synchronization (TSS) Project to improve and enhance signal timing and synchronization services and operations for signalized intersections along Warner Avenue. The project will provide operations and infrastructure improvements at 41 intersections along the 13-mile segment of Warner Avenue.

In addition to OCTA, four (4) agencies are involved with this project, including the Cities of Huntington Beach, Fountain Valley, Santa Ana, and Tustin. The three main phases of the project consists of the following:

- Traffic Signal Equipment/Software Upgrades: communication, cabinets, and controllers
- Traffic Signal Synchronization: new coordination plans and travel time studies
- Operation and Maintenance: equipment and timing support
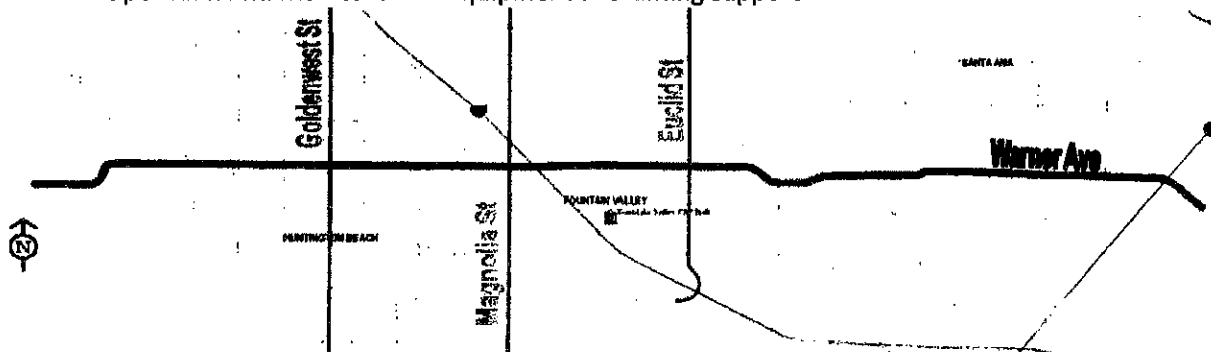
Iteris will be working closely with OCTA to ensure that all participating agencies receive the necessary traffic signal upgrades, optimized plans, and on-going support, as it was detailed in the M2 application. Iteris will also be coordinating with participating agencies and other consulting firms working on similar concurrent projects that will be intersecting the Warner Avenue corridor.

Client Reference:	Ron Keith, Principal Traffic Engineer, OCTA, 550 South Main Street, Orange, CA 92863-1584, Tel: 714-560-5990, rkeith@octa.net
Project Duration:	June 2012 to Present
Project Budget:	$648,662

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4.0 PERSONNEL

Mr. Bernard Li will serve as the Project Manager for this project. He will be the principal contact with the City and other entities per the City's direction. As Project Manager, Mr. Li will be responsible for coordinating the staff activities, coordinating meetings, project strategy and will oversee work from project inception to completion. Mr. Li is a registered Professional Electrical and Traffic Engineer with over 24 years of professional engineering experience in public and private sectors. Over the past six years, he has completed signal synchronization of over 300 intersections in Orange County, including four Regional Traffic Signal Synchronization projects. With his extensive background and experience on other projects similar to this one, Mr. Li is the ideal Project Manager for the City of Costa Mesa. Mr. Li 's contact information is provided in **Table 4** below:

Table 4 – Project Manager's Contact Information

PROJECT MANAGER
Bernard Li, P.E., PTOE
1700 Carnegie Avenue, Suite 100, Santa Ana, CA 92705-5551
Phone: 949-270-9633 Fax: 949-270-9401 Email: bkl@iteris.com

Key Personnel Organization Chart

Iteris Team availability and skills matrix is listed below in **Table 5**, followed by Iteris' project team organization of the proposed key staff in **Figure 3**. One page resumes of the Iteris staff are located in the **Appendix**.

Table 5 – Key Personnel Availability and Relevant Experience

KEY STAFF	PROJECT ROLE	AVAILABILITY	OCTA TSS	Newport Beach Modernization	Westminster Citywide Improvements	OCTA – Warner Avenue
Iteris, Inc.						
Bernard K. Li, PE, PTOE	Project Manager	60%	X		X	X
Ramin Massoumi, PE	Senior Advisor, Quality Control	40%	X	X	X	
Paul Frislie, PE	Design/PS&E Task Leader	65%	X	X	X	
Gabe Murillo, TE	Integration Task Leader	50%	X	X	X	
Alicia Yang	Signal Synchronization Task Leader	70%	X	X	X	X
Jonathan Yee, PE, TE	O&M Support Task Leader	70%	X		X	X
Venkatesh Jadhav	Data Collection Task Leader	75%	X	X	X	X
Llency Aquino	Design/PS&E Support	70%	X	X	X	
Kathy Nguyen, PE	Signal Synchronization Support	75%	X	X	X	X

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Traffic Signal Coordination along
Victoria Street and 17th Street Corridors

Figure 3 – Project Team Organizational Chart

Costa Mesa

| **Ramin Massoumi, PE** | **Bernard Li, PE, PTOE** |
| Senior Advisor, Quality Control | Project Manager |

| Data Collection / Field Review / Corridor Travel Time Studies |
| Venkatesh Jadhav   Llency Aquino   Jonathan Yee, PE, TE ⚲   Kathy Nguyen, PE   NDS |
| Task Leader |

Design Plans and PS&E	Construction and Integration	Signal Timing Optimization/ Implementation & Fine-Tuning
Paul Frislie, PE *Task Leader*	Gabe Murillo, TE *Task Leader*	Alicia Yang *Task Leader*
Llency Aquino	Jonathan Yee, PE, TE ⚲	Venkatesh Jadhav
	Cubello	Kathy Nguyen, PE

| Jonathan Yee, PE, TE ⚲   Venkatesh Jadhav   Kathy Nguyen, PE   Llency Aquino |
| Task Leader |

⚲ indicates Cisco CNA Certification

| Project Manager | | Mr. Bernard Li is currently the Project Manager for the OCTA Regional Traffic Signal Synchronization Project on Warner Avenue, which is scheduled to be completed by June 2013. Through his career, he has successfully implemented signal coordination timing and infrastructure upgrade for over 2,000 intersections in the Southern California area, including the recently completed Katella Avenue TLSP Project, and Santa Monica Signal Timing Project along 3 corridors. |
| Senior Advisor / QC | | Mr. Massoumi has a background in transportation systems analysis and design, ITS planning and design and traffic engineering utilizing system engineering practices. He has served as Project Manager for the previous City of Newport Beach Modernization Projects as well as the OCTA BRT. He has implemented signal coordination timing for over 1800 intersections in the Southern California area. |

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Design/PS&E Task Leader	Mr. Frislie has been involved in several transportation and traffic engineering projects that include design and deployment of ITS, and traffic signal design. Recently, he has served as the Project Manager for the Newport Beach ITS Phase 5 Project. He is proficient in the use of AutoCAD as well as development of subroutines within the program to enhance the efficiency and expedite delivery of high quality designs.
Integration Task Leader	Mr. Murillo has experience in transportation systems design and analysis, regional-based signal timing analyses and communications systems engineering and monitoring. He managed the fiber optic upgrades, Ethernet on twisted-pair upgrades, controller upgrades, TMC upgrades and system integration for a fully functional traffic management operation with MIST along Harbor Boulevard in the City of Costa Mesa.
Signal Synchronization Task Leader	Ms. Yang has experience in regional (multi-agency) signal synchronization projects and special events timing. She has led signal timing implementation and fine-tuning training courses to City staff and has served as Task Leader for the City of Newport Beach Modernization Projects. Ms. Yang has completed Synchro analysis and deployed signal coordination timing (in the field and at the TMC) for over 800 intersections in Southern California.
O&M Support Task Leader	Mr. Yee has experience in traffic signal timing and communications systems (design and implementation). He assisted the implementation and configuration of the ASC/3 controller and D-panel installations along Harbor Blvd in the City of Costa Mesa. Mr. Yee has completed Synchro analysis and deployed signal coordination timing for over 700 intersections in Southern California, including 170, 2070, and ASC/3 controllers.
Data Collection and Travel Time Studies Task Leader	Mr. Jadhav has experience on various signal timing, traffic simulation and traffic analysis projects. He has also served as Project Engineer providing assistance and troubleshooting of hardware, software, and network issues at the TMC or in the field. He has been involved in all tasks of a signal timing project, especially leading the efforts in the field review and data collection tasks.
Design/PS&E Support	Mr. Aquino has systems engineering, systems design, systems integration, testing, traffic engineering design and construction management experience. He has served as a Task Manager and Project Engineer on several ITS projects including the design and incorporation of Advanced Traffic Management Systems and supporting Communications System elements.
Signal Synchronization Support	Ms. Nguyen's work has been diverse, with projects ranging from ITS design and integration to traffic signal operation and special event management. She has worked with traffic control systems such as ACTRA, Centracs, QuicNet Pro and i2 and signal controllers such as 170, ASC/2, ASC/3, and 2070. Ms. Nguyen is proficient with various software including Synchro, Tru-Traffic, PC-Travel, and AutoCAD.

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Traffic Signal Coordination along
Victoria Street and 17th Street Corridors

5.0   PROJECT SCHEDULE

Essential to the success of this project is the development and adherence to a project schedule that identifies tasks and subtasks, deliverables with agency review times, and milestones. The schedule in **Figure 4** is a high-level schedule that details the tasks presented in our Scope of Work. Using this schedule as a baseline, Iteris will develop a more detailed schedule in Microsoft Project within five days of NTP.

Figure 4 – Project Schedule

Task 1: Project Management
Task 2: Data Collection and Field Review
Task 3: Design Plans and PS&E
Task 4: Construction and Integration
Task 5: Corridor 'Before' Study
Task 6: Signal Timing Optimization
Task 7: Timing Implementation and Fine-Tuning
Task 8: Corridor 'After' Study and Project Report
Task 9: Maintenance and Operations Support (36 months)

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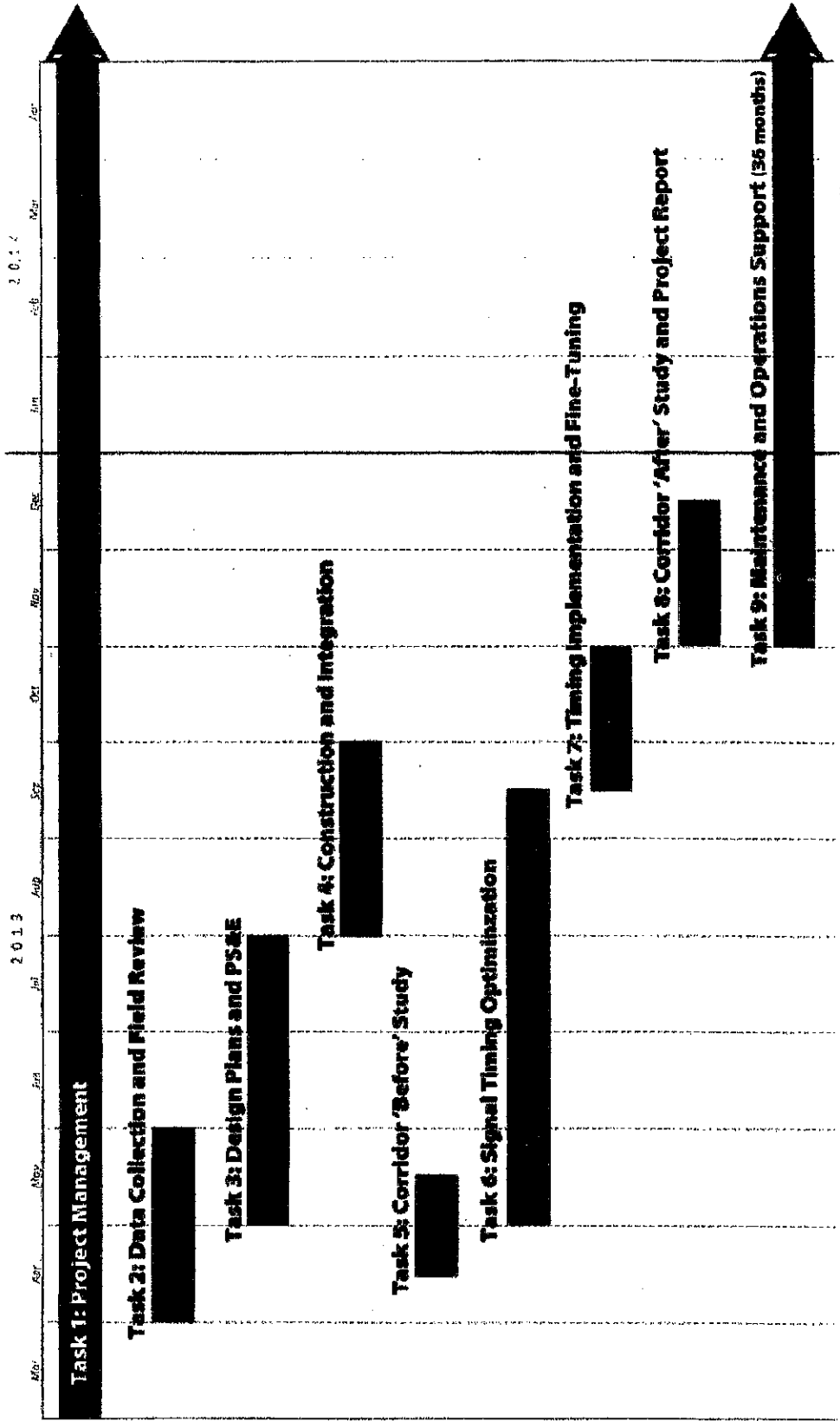
Bernard K. Li, EE, TE, PTOE
Associate Vice President

EXPERIENCE SUMMARY

Mr. Bernard Li has over 24 years of experience in providing professional services in planning, design and implementation of electrical and traffic engineering. He has served as Project Manager or Principal-in-Charge on numerous traffic and Intelligent Transportation Systems (ITS) design/construction projects, traffic signal timing and synchronization, operational analysis, feasibility studies and municipal traffic engineering. His traffic engineering design expertise includes traffic signal installation, signal modification, roadway signage/striping, street lighting, worksite traffic control and neighborhood traffic management (i.e. traffic calming). Mr. Li's ITS experience comprises fiber optic communications, closed-circuit television (CCTV), video-detection system (VDS), dynamic message signs (DMS) and highway advisory radio (HAR). He also has vast expertise in traffic signal operations, having assisted many agencies in analysis, retiming and synchronization of traffic signals, both corridor and network wide; and he is very familiar with different traffic signal systems. His transportation planning expertise includes traffic impact studies, parking studies, transportation master plans, signal warrant analysis and stop warrant analysis. He has also served as City's Traffic Engineering Consultant for many agencies, in resolving numerous day-to-day traffic engineering issues, including residents' inquiries, plan checking and safety evaluation.

PROJECT EXPERIENCE

Project Name and Location: Jamboree Road Regional Traffic Signal Synchronization Project – Irvine, Tustin, Newport Beach, CA
Project Role: Mr. Li is the Project Manager to provide traffic signal synchronization and equipment upgrade along Jamboree Road from Portola Parkway to MacArthur Boulevard, spanning across the Cities of Tustin, Irvine, Newport Beach, as well as freeway on/off ramps at I-5 and I-405 within Caltrans jurisdiction. The project is funded by the Renewed Measure M from OCTA, with the City of Irvine serving as the lead agency. The project includes the development, implementation and fine-tuning of the AM, PM, mid-day, off-peak and weekend traffic signal coordination timing plans for all 27 intersections along the corridor. Traffic signal controllers and GPS time-based units will also be upgraded at the Caltrans freeway ramps. Also as part of the project, Iteris assisted the City of Irvine in evaluating and recommending operational improvements for the intersection of Jamboree Road and Barranca Parkway. Upon completion of the project, Iteris will continue to provide operations and maintenance (O&M) support for two years. Project Duration: June 2012 to present.

Project Name and Location: Katella Avenue Traffic Light Synchronization Project (TLSP) – Orange County, CA
Project Role: Mr. Li was the Project Manager to design and implement traffic signal synchronization and equipment upgrade for 68 traffic signals along 13-mile section of Katella Avenue from I-605 to Cannon Street. Close coordination via team meetings and individual agency meetings were led by Mr. Li with all nine involved agencies: Cities of Los Alamitos, Stanton, Cypress, Garden Grove, Anaheim, Orange, Villa Park, County of Orange, and Caltrans. Besides providing optimized and synchronized timings during the AM, mid-day, PM and weekend peak periods to improve traffic flow and safety, the project also provided equipment upgrade, including new controllers and cabinets, Encom 5.8 GHz Ethernet wireless communications between Tustin Street and Wanda Road in Orange, and various GPS units for time-based coordination. Project Duration: July 2011 to June 2012.

Project Name and Location: Warner Avenue Regional Traffic Signal Synchronization and ITS Design/Build Project - Various cities within Orange County, CA
Project Role: Mr. Li is currently serving as the Project Manager to provide ITS upgrade design/build and traffic signal synchronization improvements along Warner Avenue from Pacific Coast Highway to Redhill Avenue. The corridor encompasses a total of 43 signals, covering 13 miles of roadway, crossing the Cities of Huntington Beach, Fountain Valley, Santa Ana and Tustin. The project is funded by the Renewed Measure M from OCTA. ITS upgrade includes fiber-optic communications, CCTVs, signal controllers and cabinets. Iteris will also synchronize all 43 intersections along the corridor with AM, PM, mid-day, off-peak and weekend traffic signal coordination timing plans. Upon completion of the project, Iteris will continue to provide operations and maintenance (O&M) support for two years. Project Duration: August 2012 to present.

Ramin M. Massoumi, PE
Vice President

EDUCATION
MBA, University of
Southern California, 2004

MS, Engineering, University
of California, Berkeley,
1996

BS, Civil Engineering,
University of California,
Irvine, 1994

EMPLOYMENT HISTORY
Iteris, Inc.
6/2011 – Current
Vice President

DKS Associates
2/2010 – 6/2011
Principal

Iteris, Inc.
1/1998 – 2/2010
Associate Vice President

Korve Engineering
7/1994 – 1/1998
Transportation Engineer

PROFESSIONAL REGISTRATIONS
Civil Engineer, California
#C64225, 2003

PROFESSIONAL AFFILIATIONS
Orange County Traffic
Engineers Council – Board
Member

Institute of Transportation
Engineers

PROFESSIONAL AWARDS
Young Professional
Technical Paper Award at
the 2007 Annual District 6
ITE Meeting

EXPERIENCE SUMMARY
Mr. Massoumi serves as the Vice President of the Transprotation Systems Division of Iteris responsible for all business development activities. In his 18 years of experience, he has served as Project Manager, Deputy Project Manager, Task Manager, Quality Control Advisor and Project Engineer on numerous projects. Mr. Massoumi has a background in transportation systems analysis and design, ·ITS planning and design and traffic engineering utilizing system engineering practices. This includes providing regional based signal timing analysis and deployment, ITS-based traffic, transportation, transit and communications consulting systems engineering services to public agencies and transit operators. He is experienced in a wide range of applications including the development of coordinated advanced traffic management systems and the design and implementation of systems for arterial, highway, transit and highway-railroad grade crossings.

PROJECT EXPERIENCE
Project Name and Location: OCTA Traffic Signal Synchronization (TSS) Project
Project Role: Mr. Massoumi served as the Principal-in-Charge for the OCTA TSS project in Orange County which included traffic signalized intersections for eleven jurisdictions across three major arterial corridors with 252 signalized intersections. This project involved the existing signal timing parameter analysis and final analysis and implementation of three weekday timing plans and one weekend timing plan for all 252 intersections. The implementation and fine-tuning was analyzed using travel time studies and visually presented using an effective tool that depicts the before and after data using animation and actual video recorded during the before study and the after study.

This project also involved over $600,000 in traffic signal equipment and communication upgrades throughout the corridors. These upgrades included traffic signal controllers, communication equipment, PS&E development, construction and integration of fiber optic cable and hardware, central traffic management systems upgrades and integration and phasing improvements.

Project Name and Location: Newport Beach Traffic Signal Communication Design & Signal Timing Project – City of Newport Beach, CA
Project Role: Mr. Massoumi was the Task Leader for the signal timing analysis and deployment component of this project. As part of the City's migration to new, ASC/3 controllers and new central system, Mr. Massoumi assisted them in developing an understanding of the needs of the new signal controllers and development of coordinated timing plans. This project was a result of Mr. Massoumi's work with the City to obtain Measure M funding through OCTA .

Project Name and Location: OCTA TLSP-Edinger/Irvine Center/Moulton/Golden Lantern – Orange County, CA
Project Role: Mr. Massoumi served as the Project Manager for signal coordination timing of over 100 intersections along Edinger/Irvine Center/Moulton/Golden Lantern. In his role as the Project Manger, he has overseen the identification of communication deficiencies, design and deployment of a new IP based communication system, deployment of a new central system with new controllers (Centracs and Aries), and development of coordination plans. The timings were deployed for Econolite ASC/2 and ASC/3 controllers using a Centracs and Aries systems, as well as Eagle 2070 controllers (EPAC) using an ACTRA system.

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Paul M. Frislie, PE
Senior Transportation Engineer
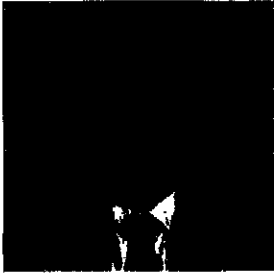
EDUCATION
MBA, University of
Phoenix, 2011

BS, Civil Engineering,
University of California,
Irvine, 2000

**PROFESSIONAL
REGISTRATIONS**
PE, CA #72982, 2008

PE, NV #21174, 2011

IMSA Traffic Signal Level I
#AA_97189, 2010

IMSA Work Zone Safety
#ZZ_97189, 2010

EMPLOYMENT HISTORY
Iteris, Inc.
5/2006 – Current
Sr.Transportation Engineer
1/2001 to 8/2005
Transportation Engineer

City of Costa Mesa
8/2005 – 5/2006
Assistant Transportation
Engineer

Environmental Resolutions
6/2000 – 01/2001
Project Engineer

**PROFESSIONAL
AFFILIATIONS**
Orange County Traffic
Engineers Council
(OCTEC)

EXPERIENCE SUMMARY

For over eleven years, Mr. Frislie has been involved in several transportation and traffic engineering projects that include both planning as well as design and deployment of ITS, and traffic signal design. Recently, he has served as the Project Manager for the Cypress Phase 1, 2 and 3 ITS Projects, the Newport Beach ITS Phase 5 Project, the Santa Monica ATMS Phase 4c project and the Agua Mansa, Western University and Franzman Ranch Land Development Projects. He has also been the Lead Design Engineer for the development of design plans for the Oxnard ITS Master Plan Design Project, the Santa Monica ATMS 4a/4b Project, SR-710 ITS Design Project, Newport Beach ITS Phase 1, 2, 3, 4 and 7 Projects and the Fountain Valley Phase IV project, as well as the Project Manager for completion of the Inglewood, Corona and Fontana communication design tasks.

He is proficient in the use of AutoCAD and Microstation as well as development of subroutines within each program to enhance the efficiency and expedite delivery of high quality design products. In addition to skills relative to design, he is also proficient in several signal timing and optimization programs (i.e. Synchro) and has served as a Project Engineer for the Carlsbad Signal Retiming Project.

PROJECT EXPERIENCE

Project Name and Location: Oxnard ITS Master Plan Design Project – City of Oxnard, CA
Project Role: Mr. Frislie is the Design Lead Engineer for the development of the design package for the Oxnard ITS Master Plan Design Project that will implement Ethernet-based communications to all of the City's approximately 150 signalized intersections. The Ethernet network will be supported by primarily new fiber optic cable installed primarily in existing conduit, replacing the City's existing twisted pair cable. Several of the signalized intersections will be supported by wireless Ethernet radios and select signalized intersections will retain twisted pair cable for Ethernet communications, as cost saving measures. The Ethernet network will be shared with other City departments to provide communications to City facilities including police stations, fire stations, City buildings. The project will also design and build the City's new Traffic Management Center (TMC). The project began in December 2010 and is ongoing.

Project Name and Location: Phase 5 ITS Project – Newport Beach, CA
Project Role: Mr. Frislie is the Project Manager for the development of the design package for the Newport Beach Phase 5 project that includes approximately three CCTV cameras, 10 traffic signal controller upgrades, over two miles of fiber optic cable and the expansion of the City's Gigabit-Ethernet backbone communication system. Iteris is also responsible for developing coordinated signal timing plans at all Project signalized intersections. The project began in September 2010 and design was completed in April 2011. Signal timing implementation is expected to be completed in September 2011 after construction is completed.

Project Name and Location: Corona ATMS Phase 2 Project – City of Corona, CA
Project Role: Mr. Frislie is the Lead Design Engineer assisting with the development of the design package for the Corona ATMS Phase 2 project that includes 25 CCTV cameras; over 110 traffic signal controller upgrades; over 15 miles of fiber optic cable; and the expansion of the City's Gigabit-Ethernet backbone communication system to include an additional six Gigabit Ethernet hubs.

Gabe A. Murillo, TE
Associate Vice President

EDUCATION
MBA, University of
California, Irvine, 2001

BS, Electrical Engineering,
Loyola Marymount
University, 1991

**PROFESSIONAL
REGISTRATIONS**
Traffic Engineer, California
#1843, 1995

EMPLOYMENT HISTORY
Iteris, Inc.
9/2008 – Current
Senior Systems Engineer

David Evans and
Associates
3/2007 – 9/2008
Senior Transportation
Engineer

City of Los Angeles
08/91 – 03/2007

EXPERIENCE SUMMARY

Mr. Murillo has over 21 years of experience in transportation systems design and integration; ITS planning and design; traffic engineering; systems engineering; and design, development and integration of real-time traffic systems utilizing system engineering practices. He has served as Project Manager, Task Leader and Project Design Engineer on numerous projects. This includes providing regional-based signal timing analysis and deployment; and ITS-based traffic, transportation, transit and communications consulting systems engineering services to public agencies and transit operators. He is an expert with traffic operations in a TMC environment having spent over 14 years working in a large TMC operating over 2000 intersections. He is also an expert with Adaptive Traffic Control having managed traffic control systems with over 800 traffic signal intersections operating with "Adaptive" functions. He designed and developed an Adaptive Traffic Control System that controls over 3,000 intersections in the Southern California area. He is experienced in a wide range of applications including the design, development and integration of coordinated advanced traffic management systems, and the design and implementation of systems for arterial, highway, transit and highway-railroad grade crossings. These applications have included the use of systems engineering practices to design, deploy and integrate ITS elements, advanced transportation management systems and advanced traveler information systems; transit signal priority systems and bus rapid transit systems; traffic operations/management center design and implementation; advanced coordinated signalized intersection networks; and communication systems.

PROJECT EXPERIENCE

Project Name and Location: Lincoln Avenue TSS Project – Cities of Anaheim, Orange & Caltrans, CA
Project Role: Mr. Murillo currently serves as a Project Manager for the development, implementation and fine-tuning of optimized signal timing plans for more than 53 intersections involving three agencies (Caltrans, Orange, and the City of Anaheim). The technologies used on this project to control traffic are Type 170E, 2070N, and ASC/3 traffic signal controllers. and ACTRA/TACTICS and i2 for the central traffic management systems. In addition to the signal timing work, the project also involves traffic system upgrades (also being developed by Iteris). The project began in June 2012 and is ongoing.

Project Name and Location: Orange County Transit Authority (OCTA) Traffic Signal Synchronization
Project Role: Mr. Murillo served as the Project Manager for the OCTA TSS project in Orange County which includes traffic signalized intersections for eleven jurisdictions across three major arterial corridors with 252 signalized intersections. This project involved the existing signal timing parameter analysis and final analysis and implementation of three weekday timing plans and one weekend timing plan for all 252 intersections. The implementation and fine-tuning was analyzed using travel time studies and visually presented using an effective tool that depicts the before and after data using animation and actual video recorded during the before study and the after study. This project also involved over $600,000 in traffic signal equipment and communication upgrades throughout the corridors for which Mr. Murillo provided integration management and leadership for the quality control process. These upgrades included traffic signal controllers, communication equipment, PS&E development, construction and integration of fiber optic cable and hardware, central traffic management systems integration and upgrades and traffic signal phasing improvements.

Project Name and Location: Corona Citywide Signal Timing Project – Corona, CA
Project Role: Mr. Murillo served as the Project Manager for the Citywide signal timing project in the City of Corona which includes traffic signalized intersections in the City of Norco and Caltrans ramp interchanges. This project involved the data collection, existing signal timing parameter analysis and design and implementation of four weekday timing plans and one weekend timing plan for nearly 150 intersections. The implementation and fine-tuning was analyzed using travel time studies and visually presented using an effective tool that depicts the before and after data using animation and actual video recorded during the before study and the after study. Mr. Murillo led a team of engineers in the deployment of 150 latest ATC traffic signal controllers throughout the City. An extremely unique element of this project was in the development of special incident timing. The development of this timing is based on the special "Flush" plans developed and utilized nearly daily in the Los Angeles traffic management center. This task included the development of 30 special timing plans that are available for every signalized intersection on this project. The project began in July 2010 and is ongoing.

EDUCATION
BS, Civil Engineering,
University of California,
Irvine, 2005

PROFESSIONAL REGISTRATIONS
EIT, California #119860,
2004

EMPLOYMENT HISTORY
Iteris, Inc.
7/2005 – Current
Senior Transportation
Engineer

City of Anaheim
7/2005 – Current
Event Operator

City of Anaheim
7/2004 – 7/2005
TMC Intern

PROFESSIONAL AFFILIATIONS
Institute of Transportation
Engineers (ITE)

Orange County Traffic
Engineering Council
(OCTEC)

American Society of Civil
Engineers (ASCE)

EXPERIENCE SUMMARY

Ms. Yang has over seven years of experience working in traffic operations and engineering, transportation planning, transportation design and various transportation software. Though Ms. Yang has experience in various aspects of transportation engineering, she specializes in traffic operations, having worked on a number of regional (multi-agency) signal synchronization projects and special events timing. Since 2005, Ms. Yang has been involved in all tasks in a signal synchronization project, from field reviews and travel time studies to implementation (locally or centrally) and field fine-tuning. Ms. Yang's software knowledge includes Synchro, AutoCAD, MicroStation, PC-Travel, ArcGIS, Tru-Traffic (formerly TS/PP-Draft) and Vissim. She has worked with signal controllers such as 170, 2070, M52, Econolite and Multisonics; controller firmware including BI Tran, C8, Econolite, NextPhase, Naztec and SEPAC; and traffic control systems such as Actra, Aries, ATMS.now, Centracs, i2, icons, QuicNet, Tactics and VMS.

PROJECT EXPERIENCE

Project Name and Location: Warner Avenue Regional Traffic Signal Synchronization and ITS Design/Build Project – Orange County, CA
Project Role: Ms. Yang is leading the timing analysis and optimization of 41 project intersections along Warner Avenue. Ms. Yang also assisted with determining the necessary equipment and communication modifications to improve the current operation of the signals. In coordination with OCTA and the participating agencies, Ms. Yang will assist in the implementation, fine-tuning, travel time studies, and monitoring of the AM, midday, PM, and Saturday peak periods.

Project Name and Location: City of Newport Beach Traffic Signal Modernization Phases 1-5 and 7 – Newport Beach, CA
Project Role: Ms. Yang has led the signal timing task for all phases the of the projects, including the analysis of the vehicular and pedestrian clearance intervals, coordination timing analysis, and the implementation and fine-tuning of the signalized intersections. Ms. Yang has provided training that covered actuated settings, controller parameters, signal coordination, fine-tuning tips, and general Centracs operations and features. In addition, Ms. Yang was also involved in the proposed phasing modification of the City's "Mix Master" location, which involved adding a signalized crosswalk to two intersections operating under one controller.

Project Name and Location: Orange County Transit Authority (OCTA) Traffic Signal Synchronization (TSS) Project
Project Role: Ms. Yang served as a Task Leader for the OCTA TSS project in Orange County, which includes traffic signalized intersections for 11 jurisdictions across three major arterial corridors with 252 signalized intersections. Ms. Yang provided background knowledge about the project during the design finalization and assisted with the implementation, both in the agency TMC or in the field, and field fine-tuning.

Project Name and Location: Westminster Citywide Signal Timing and Synchronization Project – Westminster, CA
Project Role: Ms. Yang served as Project Engineer for the development of optimized citywide signal timing plans in the City of Westminster. The signal timing followed the replacement of the City's VMS330 system with BI Trans QuicNet Pro system and the controller replacements to Type 2070 controllers with BI Trans 2033 firmware.

EDUCATION
MS, Civil Engineering,
University of California
Berkeley, 2006

BS, Electrical Engineering,
University of California
Irvine, 2004

**PROFESSIONAL
REGISTRATIONS**
Professional Engineer,
Traffic, CA #TR2567, 2010

Professional Engineer,
Electrical, CA #E18936,
2009

Professional Engineer,
Electrical, WA #47308,
2010

Cisco CCNA, 2012

EMPLOYMENT HISTORY
Iteris, Inc.
09/2011 – Current
Transportation Engineer

DKS Associates
06/2009 – 09/2011
Senior ITS Engineer

Advantec Consulting
Engineers
06/2006 – 06/2009
Transportation Engineer

EXPERIENCE SUMMARY

Mr. Yee has six years of experience in traffic signal timing, ITS, communications systems, traffic design, and transportation planning. This includes data collection and analysis; local cabinet and central system deployment of signal timings; travel time surveys; field observation and fine-tuning; design, deployment and integration of communication elements; advanced transportation management systems (ATMS) troubleshooting and support; CAD plans; specifications and estimates; and traffic impact studies. He has been involved with signal synchronization and support for over 800 traffic signals, ITS design and planning for over 500 locations, and traffic analysis for over 200 intersections. His ITS design experience includes copper, fiber optic, and wireless communication systems using Ethernet, serial, and legacy protocols. Jonathan is very familiar with various controller firmware (BiTran, SEPAC, ASC 2/3) and signal systems (QuicNet, ACTRA, i2, Aries, Centracs). He is also proficient in software (Synchro, Tru-Traffic, AutoCAD), standards (MUTCD, Caltrans, ITE), and methodologies (HCM, ICU, micro-simulation). Jonathan is a registered Electrical Engineer, Traffic Engineer, and Certified Cisco Networking Associate.

PROJECT EXPERIENCE

Project Name and Location: OCTA TLSP Katella Avenue Project – Orange County, CA
Project Role: Mr. Yee was a Task Leader for a multi-jurisdictional signal synchronization project for a 17 mile arterial involving nine agencies. Jonathan completed programming and installation of seven (7) Econolite ASC/3 controllers in the City of Los Alamitos. This involved conversion of signal timings from Econolite ASC/2s, hand entry of parameters into controllers, and cabinet installations. The project began in June 2011 and is on-going.

Project Name and Location: OCTA Traffic Signal Synchronization Project – Orange County, CA
Project Role: Mr. Yee was a Task Leader for signal coordination timing of 75 intersections along three major corridors. Jonathan completed programming and installation of 17 Econolite ASC/3 controllers in the City of Costa Mesa. This involved conversion of signal timings from Multisonic 820As, hand entry of parameters into controllers, and cabinet installations. The project began in December 2010 and was completed in June 2012.

Project Name and Location: OCTA TLSP "Street of 4 Names" Project – Orange County, CA
Project Role: Mr. Yee was a Task Leader for a multi-jurisdictional signal synchronization project for a 22 mile arterial involving nine agencies. The project designed and implemented Ethernet-based copper cable and wireless communications networks to interface 47 signalized intersections to traffic central systems. Central system, communications testing, and integration was completed for 38 intersections. This involved configuration of communications switches, inspection of cabinet and equipment installations, as well as verification of central systems settings to ensure proper device functionality. The project began in June 2010 and was completed in August 2012.

Venkateshawar Jadhav, EIT
Associate Transportation Engineer

EDUCATION
MS, Engineering, University of Utah, Salt Lake City, 2007

BS, Civil Engineering, National Institute of Technology, Surathkal, 2004

PROFESSIONAL REGISTRATIONS
EIT, CA, #134935, 2009

EMPLOYMENT HISTORY
Iteris, Inc.
7/2007 – Current
Associate Transportation Engineer

PROFESSIONAL AFFILIATIONS
Institute of Transportation Engineers (ITE)

Orange County Traffic Engineering Council (OCTEC)

EXPERIENCE SUMMARY

Mr. Jadhav has over five years of experience and is working at Iteris as a transportation engineer. He has served as Project Engineer on various signal timing, traffic simulation and traffic analysis projects. Recently completed projects include a Westminster Citywide signal timing, and development of optimized signal timing plans at 97 signalized intersections for the OCTA BRT and ITS project TSS component. He is currently serving as a Project Engineer on the Lincoln TSS Project with the development of optimized signal timing plans at 53 signalized intersections. Mr. Jadhav's technical expertise through project and research work includes traffic engineering, transportation planning and transportation design. Mr. Jadhav is proficient in using Modeling, Simulation and signal timing software including Vissim, Corsim Simtraffic, Synchro, Transyt-7F, SCOOT, Tru-Traffic (formerly TS/PP Draft) and PC-Travel.

PROJECT EXPERIENCE

Project Name and Location: Lincoln Avenue TSS Project – Cities of Anaheim, Orange and Caltrans, CA
Project Role: Mr. Jadhav currently serves as a Project Engineer for the development, implementation and fine-tuning of optimized signal timing plans for more than 53 intersections involving three agencies (Caltrans, Orange, and the City of Anaheim). Intersections operate with Type 170E, 2070N, and ASC/3 controllers. Signal systems includes ACTRA/TACTICS and i2. In addition to the signal timing work, the project also involves traffic system upgrades (also being developed by Iteris). The project began in June 2012 and is ongoing.

Project Name and Location: City Of Corona Traffic Signal Timing Plans – Corona, CA
Project Role: Mr. Jadhav currently serves as a Project Engineer for the development, implementation and fine-tuning of optimized signal timing plans for more than 130 intersections involving four agencies (Caltrans, Corona, Riverside County, and the City of Norco). Intersections operate with Type 170, 170E, 2070L, 2070N, and TMP390CJ controllers. Signal systems includes QuicNet Pro. In addition to the signal timing work, the project also involves emergency detour flush plans (also being developed by Iteris). The project began in July 2010 and is ongoing.

Project Name and Location: Traffic Signal Synchronization Implementation Project, Orange County, CA
Project Role: Mr. Jadhav served as a Project Engineer for the implementation and fine-tuning of optimized signal timing plans for more than 50 intersections involving four agencies (Garden Grove, Westminster, Anaheim, and Catrans). Intersections operate with Multisonics 820, Econolite ASC/2S-2100 and ASC/3-2100, and 2070N controllers. Signal systems included QuicNet 2006, ARIES, and ACTRA. The project began in December 2010 and was completed in June 2012.

Project Name and Location: Westminster Citywide Signal Timing and Synchronization Project – Westminster, CA
Project Role: Mr. Jadhav served as Project Engineer for the development of optimized citywide signal timing plans in the City of Westminster. The signal timing followed the replacement of the City's VMS330 system with BI Trans QuicNet Pro system and the controller replacements to Type 2070 controllers with BI Trans 2033 firmware.

Llency M. Aquino, EIT
Associate Transportation Engineer
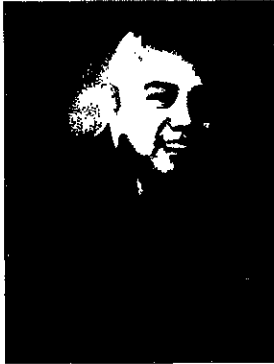
EDUCATION
BS, Civil Engineering,
California Polytechnic State
University, San Luis
Obispo, 2006

**PROFESSIONAL
REGISTRATIONS**
EIT, CA #122596, 2005

EMPLOYMENT HISTORY
Iteris, Inc.
5/2007 – Current
Associate Transportation
Engineer

State of California,
Department of Water
Resources
7/2006 to 5/2007
Engineer, WR (Water
Resources)

EXPERIENCE SUMMARY

Mr. Aquino has over five years of systems engineering, systems design, systems integration, testing, traffic engineering design and construction management experience at Iteris. He has served as a Task Manager and Project Engineer on several Intelligent Transportation Systems (ITS) projects including the design and incorporation of Advanced Traffic Management Systems for various agencies and supporting Communications System elements. He is experienced in the areas of fiber optic and wireless communications, Video/Vehicle Detection Systems, CCTV Surveillance Cameras, Dynamic Message Signs (DMS), IP network communication design/configuration/integration, systems integration, traffic management center design/implementation, IP network troubleshooting and traffic engineering design ranging from traffic signals to striping. In addition to working with several regional and municipal agencies, Mr. Aquino has worked with multiple state agencies including Caltrans, Minnesota DOT, Utah DOT, Nevada DOT, Texas DOT and Iowa DOT. His software knowledge ranges from CAD programs such as Microstation & AutoCAD to user softwares of various ITS products in the market today. Mr. Aquino is currently pursuing CCNA (Cisco Certified Network Associate) Certification.

PROJECT EXPERIENCE

ITS Planning, Design and Integration

Project Name and Location: Oxnard ITS Master Plan Design Project – Oxnard, CA
Project Role: Mr. Aquino is a Project Engineer and Systems Integrator for the Oxnard ITS Master Plan Design Project that will implement Ethernet-based communications to all of the City's approximately 150 signalized intersections. The Ethernet network will be supported by primarily new fiber optic cable installed primarily in existing conduit, replacing the City's existing twisted pair cable. Several of the signalized intersections will be supported by wireless Ethernet radios and select signalized intersections will retain twisted pair cable for Ethernet communications, as cost saving measures. The Ethernet network will be shared with other City departments to provide communications to City facilities including police stations, fire stations, City buildings. The project will also design and build the City's new Traffic Management Center (TMC). The project began in December 2010 and is on-going. Iteris is providing hardware and integration services under a separate project.

Project Name and Location: Corona ATMS Phase 2 Project for Design Services – City of Corona, CA
Project Role: Mr. Aquino was a Project Engineer for the development of the design package for the Corona ATMS Phase 2 project that includes 29 CCTV cameras, over 110 traffic signal controller upgrades, over 10 miles of fiber optic cable and the expansion of the City's Gigabit-Ethernet backbone communication system to include an additional six Gigabit Ethernet hubs. The project represented a multijurisdictional ITS deployment in partnership with the City of Corona, Caltrans District 8, Riverside County and the City of Norco. The project began in December 2008 and was completed in April 2009. Construction began in late 2009 and Iteris is providing hardware and integration services under a separate project.

EDUCATION
BS, Civil Engineering,
California State University,
Fullerton, 2009

**PROFESSIONAL
REGISTRATIONS**
PE, CA # C79924, 2012

**EMPLOYMENT HISTORY
Iteris, Inc.**
6/2009 – Current
Associate Transportation
Engineer

City of Anaheim
6/2009 – Current
Event Operator

City of Anaheim
10/2006 – 6/2009
Intern

**PROFESSIONAL
AFFILIATIONS**
American Society of Civil
Engineers (ASCE)

Institute of Transportation
Engineers (ITE)

Orange County Traffic
Engineering Council
(OCTEC)

EXPERIENCE SUMMARY

Ms. Kathy Nguyen has over six years of experience in traffic engineering and is currently an Associate Transportation Engineer at Iteris. Her professional work has been diverse, with projects ranging from Intelligent Transportation System (ITS) design and integration to traffic signal operation and special event management. She has worked with traffic control systems such as ACTRA, Centracs, QuicNet Pro and i2 and signal controllers such as 170, ASC/2, ASC/3, M52 and 2070. Ms. Nguyen is proficient with various traffic and design softwares including Synchro, Tru-Traffic, PC-Travel, ArcGIS, AutoCAD, Visio and Adobe Photoshop.

PROJECT EXPERIENCE

Project Name and Location: Katella Avenue Traffic Light Synchronization Project (TLSP) – Orange County, CA
Project Role: Ms. Nguyen was the Project Engineer assisting with data collection, timing analysis, and travel time studies for this project, which synchronized 69 traffic signals along Katella Avenue stretching across nine jurisdictions (Los Alamitos, Cypress, Stanton, Garden Grove, Anaheim, Orange, Villa Park, Orange County, and Caltrans). This project provided the necessary equipment and communication modifications to improve the current operation of the signals, especially those that are not connected to their respective TMC. In coordination with OCTA and the participating agencies, Ms. Nguyen assisted with the implementation, fine-tuning, and travel time studies for the AM, midday, PM, and Saturday peak periods. Ms. Nguyen proactively monitored the corridor to ensure that all implemented timings were operating efficiently during the support phase of the project. The project began in July 2011 and was completed in June 2012.

Project Name and Location: Orange County Transportation Authority, Traffic Signal Synchronization Program – Orange County, CA
Project Role: Iteris was the lead consultant to provide traffic signal synchronization along three corridors within Orange County: Bristol/State College Boulevard; Harbor Boulevard; and Westminster/17th Street. As a key element of the transportation control measures to improve air quality, this project was comprised of 252 traffic signal intersections within 11 jurisdictions and along 46 miles across the three corridors. Ms. Nguyen was the Project Engineer assisting with the review of proposed timing plans, implementation, and fine-tuning along the three major arterials. The project began in December 2010 and was completed in March 2012.

Project Name and Location: City of Newport Beach Traffic Signal Modernization Phase 4 and 7 – Newport Beach, CA
Project Role: The project involved the modernization of the City's traffic signal controllers, deployment of CCTV cameras at select intersections, and developing optimized signal timing plans for project intersections. Ms. Nguyen was responsible for the analysis of the existing vehicular and pedestrian clearance intervals and the development of the Synchro base in preparation for proposed timings. She assisted with the field analysis of existing conditions, helped prepare CCTV design plans, and implemented and fine-tuned the project's signalized intersections. The project began in November 2009 and was completed in June 2011.

EXHIBIT B

FEE SCHEDULE

General Fee Schedule

17TH STREET

Part 1 -- Signal Coordination, Assessments, Modeling, Before and After
Studies, Reports and documents for OCTA reporting   Lump Sum $ 34,950

Part 2 -- Work for Costa Mesa Intersections   Lump Sum $ 169,701

Part 3 -- Work for Newport Beach Intersections   Lump Sum $ 5,000

Part 4 -- Preparation of Record drawings, or Project Plans Specifications and
Estimate or Procurement documents   Lump Sum $ 18,290

Part 5 -- 3 Years follow-up Maintenance
(Timing and Hardware)   Per Year $ 5,710   Sub-Total $ 17,130

CUMULATIVE NOT-TO-EXCEED FEE: $ 245,071

Additive Work Scope

Traffic Count at Intersections*   Per Intersection $ 820.00   Total _____

Install 3" Conduit^   Per Lineal Foot $ 40.00   Total _____

Additive work shall be included exclusively at the discretion of the City contingent on bid results. Please include an estimated work breakdown structure for the project and personnel rate sheet. The evaluation recognizes that costs may vary based upon project approach so work breakdown structure information should support fee submissions.

All originals of plans, field notes, data and calculations, correspondence, reports, electronic files, etc., will be turned over to the City upon completion of work. Ten percent (10%) of the total contract fee will be withheld until final project documents are submitted by the City.

* Traffic Counts unit cost includes 2-hour AM, midday, PM, night and Saturday turning movement counts with pedestrian and bicycle (2 surveyors) - Part 1 includes counts for this project

^ New conduit is not specified in the RFP for this project; however, the unit cost is included should there be a need after field inventory

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17th Street Traffic Signal Coordination Project
City of Costa Mesa, City of Newport Beach, and Caltrans
Cost Estimate

Task	Bernard Li, PE — Project Manager ($235.00)	Ramin Massoumi, PE — Senior Advisor & QA/QC ($295.00)	Paul Fristle, PE — Task Leader ($245.00)	Gabriel Murillo, TE — Task Leader ($215.00)	Jonathan Yee, PE — Task Leader ($195.00)	Alicia Yang — Task Leader ($140.00)	Venkatesh Jadhav — Task Leader ($220.00)	Llency Aquino — Project Engineer ($120.00)	Kathy Nguyen, PE — Project Engineer ($100.00)	Hours	Labor Cost	ODC / Hardware	TOTAL PROJECT COST
TASK 1 Project Management	16	8								24	$ 5,520	$ 200	$ 5,720
TASK 2 Data Collection and Field Review	2	4			4		8	8	10	32	$ 3,920	$ 300	$ 4,220
TASK 3 Design Plans and PS&E	6	2	12	8	26			35		65	$ 9,960		$ 9,960
TASK 4 Construction and Integration	6	2		12					12	46	$ 7,930	$ 400	$ 8,330
TASK 5 Corridor 'Before' Study		1				6	8		12	26	$ 3,000	$ 200	$ 3,200
TASK 6 Signal Timing Optimization						8	10		12	36	$ 4,900		$ 4,900
TASK 7 Timing Implementation & Fine-Tuning	5	1				10	15		15	46	$ 6,080	$ 500	$ 6,580
TASK 8 Corridor 'After' Study and Project Report	5	1			8	10	8		15	34	$ 4,090	$ 200	$ 4,290
TASK 9 Maintenance and Operations Support	14			6	8	6	30	30	30	124	$ 16,630	$ 500	$ 17,130
TOTAL HOURS	**54**	**17**	**12**	**26**	**38**	**40**	**79**	**73**	**94**	**433**	**$ 62,030**	**$ 2,300**	**$ 64,330**

TOTAL COUNTS	$ 6,040
TOTAL NEWPORT BEACH EQUIPMENT	$ 5,000
TOTAL COSTA MESA EQUIPMENT	$ 169,701
TOTAL	**$ 245,071**

LOCATION	AGENCY PRIMARY	STUDY CORRIDOR	CROSS STREET	CONTROLLER CABINET EQUIPMENT — Item	Unit Price	COMMUNICATION/FIELD EQUIPMENT — Item	Unit Price	TMC EQUIPMENT/SOFTWARE — Item	Unit Price
1	Costa Mesa	17th Street	Placentia	New Type P Cabinet & ASC/3 Controller	$22,761	New Fiber Switch (EX71620-V0B)	$1,168	New Fiber Distribution Unit	$1,143
				New D Panel & Convenience Outlet	$915	New #6E PB	$1,520		
						New Splice Enclosure	$1,233		
2	Costa Mesa	17th Street	Superior	New ASC/3 Controller	$3,866	New Fiber Switch (EX71620-V0B)	$1,168	New Fiber Distribution Unit	$1,143
				New D Panel & Convenience Outlet	$915	New #6E PB	$1,520		
				New Oahu Helios 3960 HD CCTV	$11,566	New Splice Enclosure	$1,233		
3	Costa Mesa	17th Street	Newport	New ASC/3 Controller	$3,866	New Fiber Switch (EX71620-V0B)	$1,168	New Fiber Distribution Unit	$1,143
				New D Panel & Convenience Outlet	$915	New #6E PB	$1,520		
						New Splice Enclosure	$1,233		
4	Costa Mesa	17th Street	Orange	New ASC/3 Controller	$3,866	New Fiber Switch (EX71620-V0B)	$1,168	New Fiber Distribution Unit	$1,143
				New D Panel & Convenience Outlet	$915	New #6E PB	$1,520		
						New Splice Enclosure	$1,233		
5	Costa Mesa	17th Street	Westminster	New ASC/3 Controller	$3,866	New Fiber Switch (EX71620-V0B)	$1,168	New Fiber Distribution Unit	$1,143
				New D Panel & Convenience Outlet	$915	New #6E PB	$1,520		
						New Splice Enclosure	$1,233		
6	Costa Mesa	17th Street	Santa Ana	New ASC/3 Controller	$3,866	New Fiber Switch (EX71620-V0B)	$1,168	New Fiber Distribution Unit	$1,143
				New D Panel & Convenience Outlet	$915	New #6E PB	$1,520		
						New Splice Enclosure	$1,233		
7	Costa Mesa	17th Street	Tustin	New ASC/3 Controller	$3,866	New Fiber Switch (EX71620-V0B)	$1,168	New Fiber Distribution Unit	$1,143
				New D Panel & Convenience Outlet	$915	New #6E PB	$1,520		
						New Splice Enclosure	$1,233		
8	Newport Beach	17th Street	Irvine	Newport Beach Upgrades	$2,500				
9	Newport Beach	17th Street	Dover	Newport Beach Upgrades	$2,500				
						New SMFO on 17th (11400)	$34,008	New Gigabit Fiber Switch (EX77064-V0V(	$4,398
						New #6 PB on 17th	$27,300	New Copper Switch (ED3175)	$1,075
						New Drop Cables on 17th (300)	$715	New Video Server	$2,829
				Subtotal:	$68,928		$89,470		$16,303
	City of Costa Mesa TMC (77 Fair Drive, Costa Mesa, CA 92626)								
				TOTAL:			$174,701		

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General Fee Schedule

VICTORIA STREET

Part 1 -- Signal Coordination, Assessments, Modeling, Before and After Studies, Reports and documents for OCTA reporting	Lump Sum $	42,435
Part 2 -- Work for Costa Mesa Intersections	Lump Sum $	153,384
Part 3 -- Work for Huntington Beach Intersections	Lump Sum $	5,000
Part 4 -- Preparation of Record drawings, or Project Plans Specifications and Estimate or Procurement documents	Lump Sum $	17,640
Part 5 -- 3 Years follow-up Maintenance (Timing and Hardware)	Per Year $ 5,680	Sub-Total $ 17,040

CUMULATIVE NOT-TO-EXCEED FEE: $ 235,499

Additive Work Scope

Traffic Count at Intersections*	Per Intersection $	820.00	Total
Install 3" Conduit^	Per Lineal Foot $	40.00	Total

Additive work shall be included exclusively at the discretion of the City contingent on bid results. Please include an estimated work breakdown structure for the project and personnel rate sheet. The evaluation recognizes that costs may vary based upon project approach so work breakdown structure information should support fee submissions.

All originals of plans, field notes, data and calculations, correspondence, reports, electronic files, etc., will be turned over to the City upon completion of work. Ten percent (10%) of the total contract fee will be withheld until final project documents are submitted by the City.

* Traffic Counts unit cost includes 2-hour AM, midday, PM, night and Saturday turning movement counts with pedestrian and bicycle (2 surveyors) - Part 1 includes counts for this project

^ New conduit is not specified in the RFP for this project; however, the unit cost is included should there be a need after field inventory

17-P13-0006

Victoria Street Traffic Signal Coordination Project

City of Costa Mesa, City of Huntington Beach, and Caltrans

Cost Estimate

Task		Bernard Li, PE Project Manager	Ramin Massoumi, PE Senior Advisor & QA/QC	Paul Frislie, PE Task Leader	Gabriel Murillo, TE Task Leader	Jonathan Yee, PE Task Leader	Alicia Yang Task Leader	Venkatesh Jadhav Task Leader	Llency Aquino Project Engineer	Kathy Nguyen, PE Project Engineer	Hours	Labor Cost	ODC / Hardware	TOTAL PROJECT COST
	billing rate	230.00	230.00	145.00	215.00	185.00	140.00	120.00	120.00	100.00				
TASK 1	Project Management	15	8								23	$ 5,290	$ 200	$ 5,490
TASK 2	Data Collection and Field Review	2				4		8	8	10	32	$ 3,920	$ 300	$ 4,220
TASK 3	Design Plans and PS&E	6	4	10	8				32		60	$ 9,310		$ 9,310
TASK 4	Construction and Integration	6	2		12	26					46	$ 7,930	$ 400	$ 8,330
TASK 5	Corridor 'Before' Study						10	10		12	32	$ 3,800	$ 200	$ 4,000
TASK 6	Signal Timing Optimization	8	2				12	12		16	50	$ 7,020		$ 7,020
TASK 7	Timing Implementation & Fine-Tuning	8	2				15	20		20	65	$ 8,800	$ 500	$ 9,300
TASK 8	Corridor 'After' Study and Project Report		2				10	10		18	40	$ 4,860	$ 200	$ 5,060
TASK 9	Maintenance and Operations Support	14			10	14	8	24	24	24	118	$ 16,540	$ 500	$ 17,040
	TOTAL HOURS	59	20	10	30	44	55	84	64	100	466	$ 67,470	$ 2,300	$ 69,770
													TOTAL COUNTS	$ 7,345
													TOTAL HUNTINGTON BEACH EQUIPMENT	$ 5,000
													TOTAL COSTA MESA EQUIPMENT	$ 153,384
													TOTAL	$ 235,499

ITERIS

VICTORIA ST TRAFFIC SIGNAL COORDINATION PROJECT
PROPOSED EQUIPMENT/SERVICES

ITERIS

LOCATION	AGENCY PRIMARY	STUDY CORRIDOR	CROSS STREET	CONTROLLER CABINET EQUIPMENT Item	Unit Price	COMMUNICATION / FIELD EQUIPMENT Item	Unit Price	TMC EQUIPMENT / SOFTWARE Item	Unit Price
1	Costa Mesa	Victoria Street	Valley			New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
						New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
2	Costa Mesa	Victoria Street	Canyon	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
3	Costa Mesa	Victoria Street	American	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
4	Costa Mesa	Victoria Street	National	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
5	Costa Mesa	Victoria Street	Placentia	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
6	Costa Mesa	Victoria Street	Pomona	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
7	Costa Mesa	Victoria Street	Maple	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
8	Costa Mesa	Victoria Street	Harbor	New Cohu Helios 3960 HD CCTV	$ 11,566				
9	Costa Mesa	Victoria Street	Newport SB	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
10	Costa Mesa	Victoria Street	Newport NB	New ASC/3 Controller	$ 3,866	New Fiber Switch (EX71620-V0B)	$ 1,168	New Fiber Distribution Unit	$ 1,143
				New D Panel & Convenience Outlet	$ 915	New #6E PB	$ 1,520		
						New Splice Enclosure	$ 1,233		
11	Huntington Beach	Hamilton	Brookhurst	Huntington Beach Upgrades	$ 5,000				
	City of Costa Mesa TMC (77 Fair Drive, Costa Mesa, CA 92626)					New SMFO on Victoria (10700)	$ 31,304		
						New #6 PB on Victoria	$ 25,500		
						New Drop Cables on Victoria (500')	$ 1,190		
			Subtotal:		$ 54,814		$ 93,283		$ 10,287
			TOTAL:			$158,384			

EXHIBIT C

CITY COUNCIL POLICY 100-5

SUBJECT	POLICY NUMBER	EFFECTIVE DATE	PAGE
DRUG-FREE WORKPLACE	100-5	8-8-89	1 of 3

BACKGROUND

Under the Federal Drug-Free Workplace Act of 1988, passed as part of omnibus drug legislation enacted November 18, 1988, contractors and grantees of Federal funds must certify that they will provide drug-free workplaces. At the present time, the City of Costa Mesa, as a sub-grantee of Federal funds under a variety of programs, is required to abide by this Act. The City Council has expressed its support of the national effort to eradicate drug abuse through the creation of a Substance Abuse Committee, institution of a City-wide D.A.R.E. program in all local schools and other activities in support of a drug-free community. This policy is intended to extend that effort to contractors and grantees of the City of Costa Mesa in the elimination of dangerous drugs in the workplace.

PURPOSE

It is the purpose of this Policy to:

1. Clearly state the City of Costa Mesa's commitment to a drug-free society.

2. Set forth guidelines to ensure that public, private, and nonprofit organizations receiving funds from the City of Costa Mesa share the commitment to a drug-free workplace.

POLICY

The City Manager, under direction by the City Council, shall take the necessary steps to see that the following provisions are included in all contracts and agreements entered into by the City of Costa Mesa involving the disbursement of funds.

1. Contractor or Sub-grantee hereby certifies that it will provide a drug-free workplace by:

   a. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in Contractor's and/or sub-grantee's workplace, specifically the job site or location included in this contract, and specifying the actions that will be taken against the employees for violation of such prohibition;

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b. Establishing a Drug-Free Awareness Program to inform employees about:

1. The dangers of drug abuse in the workplace;

2. Contractor's and/or sub-grantee's policy of maintaining a drug-free workplace;

3. Any available drug counseling, rehabilitation and employee assistance programs; and

4. The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

c. Making it a requirement that each employee to be engaged in the performance of the contract be given a copy of the statement required by subparagraph A;

d. Notifying the employee in the statement required by subparagraph 1 A that, as a condition of employment under the contract, the employee will:

1. Abide by the terms of the statement; and

2. Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction;

e. Notifying the City of Costa Mesa within ten (10) days after receiving notice under subparagraph 1 D 2 from an employee or otherwise receiving the actual notice of such conviction;

f. Taking one of the following actions within thirty (30) days of receiving notice under subparagraph 1 D 2 with respect to an employee who is so convicted:

1. Taking appropriate personnel action against such an employee, up to and including termination; or

2. Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health agency, law enforcement, or other appropriate agency;

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g. Making a good faith effort to maintain a drug-free workplace through implementation of subparagraphs 1 A through 1 F, inclusive.

2. Contractor and/or sub-grantee shall be deemed to be in violation of this Policy if the City of Costa Mesa determines that:

   a. Contractor and/or sub-grantee has made a false certification under paragraph 1 above;

   b. Contractor and/or sub-grantee has violated the certification by failing to carry out the requirements of subparagraphs 1 A through 1 G above;

   c. Such number of employees of Contractor and/or sub-grantee have been convicted of violations of criminal drug statutes for violations occurring in the workplace as to indicate that the contractor and/or sub-grantee has failed to make a good faith effort to provide a drug-free workplace.

3. Should any contractor and/or sub-grantee be deemed to be in violation of this Policy pursuant to the provisions of 2 A, B, and C, a suspension, termination or debarment proceeding subject to applicable Federal, State, and local laws shall be conducted. Upon issuance of any final decision under this section requiring debarment of a contractor and/or sub-grantee, the contractor and/or sub-grantee shall be ineligible for award of any contract, agreement or grant from the City of Costa Mesa for a period specified in the decision, not to exceed five (5) years. Upon issuance of any final decision recommending against debarment of the contractor and/or sub-grantee, the contractor and/or sub-grantee shall be eligible for compensation as provided by law.