

REQUEST FOR PROPOSALS (RFP) 0-1398

**TRAFFIC SIGNAL SYNCHRONIZATION
IMPLEMENTATION**



**ORANGE COUNTY TRANSPORTATION AUTHORITY
550 South Main Street
P.O. Box 14184
Orange, CA 92863-1584
(714) 560-6282**

Key RFP Dates

Issue Date:	August 24, 2010
Pre-Proposal Conference Date:	September 8, 2010
Question Submittal Date:	September 13, 2010
Proposal Submittal Date:	September 23, 2010
Interview Date:	October 12 and 13, 2010

**U.S. Department of Transportation
FTA Section 5309 Capital Funds
FTA Project No. CA-03-0709**

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August 24, 2010

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**SUBJECT: NOTICE OF REQUEST FOR PROPOSALS
RFP 0-1398: "TRAFFIC SIGNAL SYNCHRONIZATION (TSS)
IMPLEMENTATION "**

Gentlemen/Ladies:

The Orange County Transportation Authority (Authority) invites proposals from qualified consultants to provide traffic signal timing and signal synchronization on three corridors within Orange County.

Proposals must be received in the Orange County Transportation Authority's office at or before 2:00 p.m. on September 23, 2010.

Proposals delivered in person or by a means other than the U.S. Postal Service shall be submitted to the following:

**Orange County Transportation Authority
Contracts Administration and Materials Management
600 South Main Street, 4th Floor
Orange, California 92868
Attention: Lance Wade, Section Manager**

Proposals delivered using the U.S. Postal Service shall be addressed as follows:

**Orange County Transportation Authority
Contracts Administration and Materials Management
P.O. Box 14184
Orange, California 92863-1584
Attention: Lance Wade, Section Manager**

Proposals and amendments to proposals received after the date and time specified above will be returned to the Offerors unopened.

Firms interested in obtaining a copy of this Request For Proposals

CHIEF EXECUTIVE OFFICE

*Will Kempton
Chief Executive Officer*

(RFP) 0-1398 may do so by faxing their request to (714) 560-5792, or e-mail your request to *rfp_ifb_Requests@octa.net* or calling (714) 560-5922. Please include the following information:

- Name of Firm
- Address
- Contact Person
- Telephone and Facsimile Number
- Request For Proposal (RFP) 0-1398

All firms interested in doing business with the Authority are required to register their business on-line at CAMM NET, the Authority's interactive website. The website can be found at *www.octa.net*. From the site menu, click on CAMM NET to register.

To receive all further information regarding this RFP 0-1398, firms must be registered on CAMM NET with at least one of the following commodity codes for this solicitation selected as part of the vendor's on-line registration profile:

Commodities for this solicitation are:

Category(s):

Professional Services
Professional Services
Engineering
Professional Consulting
Professional Consulting
Construction
Construction

Commodity(s):

Transit Management Services
Engineering – Traffic
Traffic
Transit Planning
Transportation Planning
Traffic Control Services
Traffic Control Devices

A pre-proposal conference will be held on **September 8, 2010**, at 1:00 p.m. at the Authority's Administrative Office, 600 South Main Street, Orange, California, in Conference Room 1112. All prospective Offerors are encouraged to attend the pre-proposal conference.

The Authority has established **October 12 and 13, 2010**, as the dates to conduct interviews. All prospective Offeror's will be asked to keep this date available.

Offerors are encouraged to subcontract with small businesses to the maximum extent possible.

All Offerors will be required to comply with all applicable equal opportunity laws and regulations.

The award of this contract is subject to a financial assistance contract between the Orange County Transportation Authority, Federal Transit Administration (FTA) and Congestion Mitigation and Air Quality (CMAQ) funding. Therefore, all Offerors will be required to certify that they are not debarred, suspended or otherwise excluded from participating in federally assisted projects. All Offerors will be required to certify that they are not on the Comptroller General's list of ineligible Consultants.

The budget amount for this project is \$1,898,643 for a term of 2 years.

Plans, specifications and drawings for this project are available on OCTA's web site at :

TSS Maps and Agency Status.zip (18.2 MB)

[http://www.octa.net/pdf/rfp/C-7-1164 TSS Maps and Agency Status.zip](http://www.octa.net/pdf/rfp/C-7-1164%20TSS%20Maps%20and%20Agency%20Status.zip)

TSS Section 5.4 Harbor Boulevard.zip (3.17 GB)

[http://www.octa.net/pdf/rfp/C-7-1164 TSS Section 5.4 Harbor Boulevard.zip](http://www.octa.net/pdf/rfp/C-7-1164%20TSS%20Section%205.4%20Harbor%20Boulevard.zip)

TSS Section 5.5 Westminster & 17th.zip (893 MB)

[http://www.octa.net/pdf/rfp/C-7-1164 TSS Section 5.5 Westminster + 17th.zip](http://www.octa.net/pdf/rfp/C-7-1164%20TSS%20Section%205.5%20Westminster%20+17th.zip)

TSS Section 5.6 Bristol & State College (part1).zip (110 MB)

[http://www.octa.net/pdf/rfp/C-7-1164 TSS Section 5.6 Bristol + State College \(part1\).zip](http://www.octa.net/pdf/rfp/C-7-1164%20TSS%20Section%205.6%20Bristol%20+State%20College%20(part1).zip)

TSS Section 5.6 Bristol & State College (part2).zip (4.61 GB)

[http://www.octa.net/pdf/rfp/C-7-1164 TSS Section 5.6 Bristol + State College \(part2\).zip](http://www.octa.net/pdf/rfp/C-7-1164%20TSS%20Section%205.6%20Bristol%20+State%20College%20(part2).zip)

TSS Section 5.6 Bristol & State College (part3).zip (235 MB)

[http://www.octa.net/pdf/rfp/C-7-1164 TSS Section 5.6 Bristol + State College \(part3\).zip](http://www.octa.net/pdf/rfp/C-7-1164%20TSS%20Section%205.6%20Bristol%20+State%20College%20(part3).zip)

TSS Corridor Map & Time Space Diagram Attachments.zip (615 K)

[http://www.octa.net/pdf/rfp/RFP 0-1398 TSS Corridor Map + Time Space Diagram Attachments.zip](http://www.octa.net/pdf/rfp/RFP%200-1398%20TSS%20Corridor%20Map%20+Time%20Space%20Diagram%20Attachments.zip)

Sincerely,

Lance Wade

Section Manager, Capital Projects

Contracts Administration and Materials Management

SECTION I

INSTRUCTIONS TO OFFERORS

SECTION I. INSTRUCTIONS TO OFFERORS

A. PRE-PROPOSAL CONFERENCE

A pre-proposal conference will be held on September 8, 2010 at 1:00 p.m. at the Authority's Administrative Office, 600 South Main Street, Orange, California, in Conference Room 1112. All prospective Offerors are encouraged to attend the pre-proposal conference.

B. EXAMINATION OF PROPOSAL DOCUMENTS

By submitting a proposal, Offeror represents that it has thoroughly examined and become familiar with the work required under this RFP and that it is capable of performing quality work to achieve the Authority's objectives.

C. ADDENDA

Any Authority changes to the requirements will be made by written addendum to this RFP. Any written addenda issued pertaining to this RFP shall be incorporated into the terms and conditions of any resulting Agreement. The Authority will not be bound to any modifications to or deviations from the requirements set forth in this RFP as the result of oral instructions. Offerors shall acknowledge receipt of addenda in their proposals.

D. AUTHORITY CONTACT

All questions and/or contacts with Authority staff regarding this RFP are to be directed to the following Contract Administrator:

Lance Wade, Section Manager
Contracts Administration and Materials Management Department
550 South Main Street
P.O. Box 14184
Orange, CA 92863-1584
Phone: 714.560.5789, Fax: 714.560.5792

E. CLARIFICATIONS

1. Examination of Documents

Should an Offeror require clarifications of this RFP, the Offeror shall notify the Authority in writing in accordance with Section E.2. below. Should it be found that the point in question is not clearly and fully set forth, the Authority will issue a written addendum clarifying the matter which will be sent to all firms registered on CAMM NET under the commodity codes specified in this RFP.

2. Submitting Requests

- a. All questions, including questions that could not be specifically answered at the pre-proposal conference must be put in writing and must be received by the Authority no later than 5:00 p.m., on September 13, 2010.
- b. Requests for clarifications, questions and comments must be clearly labeled, "Written Questions". The Authority is not responsible for failure to respond to a request that has not been labeled as such.
- c. Any of the following methods of delivering written questions are acceptable as long as the questions are received no later than the date and time specified above:
 - (1) U.S. Mail: Orange County Transportation Authority, 550 South Main Street, P.O. Box 14184, Orange, California 92863-1584.
 - (2) Personal Courier: Contracts Administration and Materials Management Department, 600 South Main Street, 4th Floor, Orange, California 92868.
 - (3) Facsimile: The Authority's fax number is (714) 560-5792.
 - (4) E-Mail: Lance Wade, Section Manager e-mail address is lwade@octa.net.

3. Authority Responses

Responses from the Authority will be posted on CAMM NET, the Authority's interactive website, no later than September 15, 2010. Offerors may download responses from CAMM NET at www.octa.net/cammnet, or request responses be sent via U.S. Mail by e-mailing or faxing the request to Lance Wade, Section Manager.

To receive e-mail notification of Authority responses when they are posted on CAMM NET, firms must be registered on CAMM NET with at least one of the following commodity codes for this solicitation selected as part of the vendor's on-line registration profile:

Commodities for this solicitation are:

<u>Category(s):</u>	<u>Commodity(s):</u>
Professional Services	Transit Management Services
Professional Services	Engineering – Traffic
Engineering	Traffic
Professional Consulting	Transit Planning
Professional Consulting	Transportation Planning
Construction	Traffic Control Services
Construction	Traffic Control Devices

Inquiries received after September 13, 2010, will not be responded to.

F. SUBMISSION OF PROPOSALS

1. Date and Time

Proposals must be received in the Orange County Transportation Authority's office at or before 2:00 p.m. on September 23, 2010.

Proposals received after the above-specified date and time will be returned to Offerors unopened.

2. Address

Proposals delivered in person or by a means other than the U.S. Postal Service shall be submitted to the following:

**Orange County Transportation Authority
Contracts Administration and Materials Management (CAMM)
600 South Main Street, 4th Floor
Orange, California 92868
Attention: Lance Wade, Section Manager**

Or proposals delivered using the U.S. Postal Services shall be addressed as follows:

**Orange County Transportation Authority
Contracts Administration and Materials Management (CAMM)
P.O. Box 14184
Orange, California 92863-1584
Attention: Lance Wade, Section Manager**

Firms must obtain a visitor badge from the receptionist in the lobby of the 600 Building prior to delivering any information to CAMM.

3. Identification of Proposals

Offeror shall submit an **original and 5 copies** of its proposal in a sealed package, addressed as shown above, bearing the Offeror's name and address and clearly marked as follows:

"RFP 0-1398: Traffic Signal Synchronization Implementation"

4. Acceptance of Proposals

- a. The Authority reserves the right to accept or reject any and all proposals, or any item or part thereof, or to waive any informalities or irregularities in proposals.
- b. The Authority reserves the right to withdraw or cancel this RFP at any time without prior notice and the Authority makes no representations that any contract will be awarded to any Offeror responding to this RFP.
- c. The Authority reserves the right to postpone proposal openings for its own convenience.
- d. Proposals received by Authority are public information and must be made available to any person upon request.
- e. Submitted proposals are not to be copyrighted.

G. PRE-CONTRACTUAL EXPENSES

The Authority shall not, in any event, be liable for any pre-contractual expenses incurred by Offeror in the preparation of its proposal. Offeror shall not include any such expenses as part of its proposal.

Pre-contractual expenses are defined as expenses incurred by Offeror in:

1. Preparing its proposal in response to this RFP;
2. Submitting that proposal to the Authority;
3. Negotiating with the Authority any matter related to this proposal; or
4. Any other expenses incurred by Offeror prior to date of award, if any, of the Agreement.

H. JOINT OFFERS

Where two or more firms desire to submit a single proposal in response to this RFP, they should do so on a prime-subcontractor basis rather than as a joint venture. The Authority intends to contract with a single firm and not with multiple

firms doing business as a joint venture.

I. TAXES

Offerors' proposals are subject to State and Local sales taxes. However, the Authority is exempt from the payment of Federal Excise and Transportation Taxes.

J. PROTEST PROCEDURES

The Authority has on file a set of written protest procedures applicable to this solicitation that may be obtained by contacting the Contract Administrator responsible for this procurement. Any protests filed by an Offeror in connection with this RFP must be submitted in accordance with the Authority's written procedures.

K. CONTRACT TYPE

It is anticipated that the Agreement resulting from this solicitation, if awarded, will be a firm-fixed price contract specifying firm-fixed prices for individual tasks specified in the Scope of Work, included in this RFP as Exhibit A.

L. CONFLICT OF INTEREST

All Offerors responding to this Request For Proposals must avoid organizational conflicts of interest which would restrict full and open competition in this procurement. An organizational conflict of interest means that due to other activities, relationships or contracts, an Offeror is unable, or potentially unable to render impartial assistance or advice to the Authority; an Offeror's objectivity in performing the work identified in the Scope of Work is or might be otherwise impaired; or an Offeror has an unfair competitive advantage. Conflict of Interest issues must be fully disclosed in the Offeror's proposal.

M. CODE OF CONDUCT

All Offerors agree to comply with the Authority's Code of Conduct as it relates to Third-Party contracts which is hereby referenced and by this reference is incorporated herein. All Offerors agree to include these requirements in all of its subcontracts.

SECTION II

PROPOSAL CONTENT

SECTION II. PROPOSAL CONTENT

A. PROPOSAL FORMAT AND CONTENT

1. Format

Proposals should be typed with a standard 12 point font, double-spaced and submitted on 8 1/2" x 11" size paper, using a single method of fastening. Charts and schedules may be included in 11"x17" format. Offers should not include any unnecessarily elaborate or promotional material. Lengthy narrative is discouraged and presentations should be brief and concise. Proposals should not exceed fifty (50) pages in length, excluding any appendices.

2. Letter of Transmittal

The Letter of Transmittal shall be addressed to Lance Wade, Section Manager and must, at a minimum, contain the following:

- a. Identification of Offeror that will have contractual responsibility with the Authority. Identification shall include legal name of company, corporate address, telephone and fax number. Include name, title, address, and telephone number of the contract person identified during period of proposal evaluation.
- b. Identification of all proposed subcontractors including legal name of company, whether the firm is a Disadvantaged Business Enterprise (DBE), contact person's name and address, phone number and fax number; relationship between Offeror and subcontractors, if applicable.
- c. Acknowledgement of receipt of all RFP addenda, if any.
- d. A statement to the effect that the proposal shall remain valid for a period of not less than 120 days from the date of submittal.
- e. Signature of a person authorized to bind Offeror to the terms of the proposal.
- f. Signed statement attesting that all information submitted with the proposal is true and correct.

3. Technical Proposal

a. Qualifications, Related Experience and References of Offeror

This section of the proposal should establish the ability of Offeror to satisfactorily perform the required work by reasons of: experience in performing work of a similar nature; demonstrated competence in the services to be provided; strength and stability of the firm; staffing capability; work load; record of meeting schedules on similar projects; and supportive client references.

Offeror to:

- (1) Provide a brief profile of the firm, including the types of services offered; the year founded; form of the organization (corporation, partnership, sole proprietorship); number, size and location of offices; and number of employees.
- (2) Provide a general description of the firm's financial condition and identify any conditions (e.g., bankruptcy, pending litigation, planned office closures, impending merger) that may impede Offeror's ability to complete the project.
- (3) Describe the firm's experience in performing work of a similar nature to that solicited in this RFP, and highlight the participation in such work by the key personnel proposed for assignment to this project. Describe experience in working with the various government agencies identified in this RFP.
- (4) Identify subcontractors by company name, address, contact person, telephone number and project function. Describe Offeror's experience working with each subcontractor.
- (5) Provide as a minimum three (3) references for the projects cited as related experience, and furnish the name, title, address and telephone number of the person(s) at the client organization who is most knowledgeable about the work performed. Offeror may also supply references from other work not cited in this section as related experience.

b. Proposed Staffing and Project Organization

This section of the proposal should establish the method, which will be used by the Offeror to manage the project as well as identify key personnel assigned.

Offeror to:

- (1) Provide education, experience, and applicable professional credentials of project staff.
- (2) Furnish brief resumes (not more than two [2] pages each) for the proposed Project Manager and other key personnel.
- (3) Indicate adequacy of labor resources utilizing a table projecting the labor-hour allocation to the project by individual task.
- (4) Identify key personnel proposed to perform the work in the specified tasks and include major areas of subcontract work. Include the person's name, current location, proposed position for this project, current assignment, level of commitment to that assignment, availability for this assignment and how long each person has been with the firm.
- (5) Include a project organization chart, which clearly delineates communication/reporting relationships among the project staff.
- (6) Include a statement that key personnel will be available to the extent proposed for the duration of the project acknowledging that no person designated as "key" to the project shall be removed or replaced without the prior written concurrence of the Authority.

c. Work Plan

Offeror should provide a narrative, which addresses the Scope of Work, and shows Offeror's understanding of Authority's needs and requirements.

Offeror to:

- (1) Describe the approach to completing the tasks specified in the Scope of Work. The work plan shall be of such detail to demonstrate the Offerors ability to accomplish the project objectives and overall schedule.
- (2) Outline sequentially the activities that would be undertaken in completing the tasks and specify who would perform them.
- (3) Furnish a project schedule for completing the tasks in terms of elapsed weeks from the project commencement date.
- (4) Identify methods that Offeror will use to ensure quality control

as well as budget and schedule control for the project.

- (5) Identify any special issues or problems that are likely to be encountered in this project and how the Offeror would propose to address them.
- (6) Offeror is encouraged to propose enhancements or procedural or technical innovations to the Scope of Work that do not materially deviate from the objectives or required content of the project.

d. Exceptions/Deviations

State any exceptions to or deviations from the requirements of this RFP, segregating "technical" exceptions from "contractual" exceptions. Where Offeror wishes to propose alternative approaches to meeting the Authority's technical or contractual requirements, these should be thoroughly explained. If no contractual exceptions are noted, Offeror will be deemed to have accepted the contract requirements as set forth in Exhibit C.

4. Cost and Price Proposal

As part of the cost and price proposal, the Offeror shall submit proposed pricing to provide the services for each work task described in Exhibit A, Scope of Work.

The Offeror shall complete the "Price Summary Sheet" form included with this RFP (Exhibit B), and furnish any narrative required to explain the prices quoted in the schedules. As noted earlier in these instructions, firm-fixed-price (FFP), is the preferred method of pricing. It is anticipated that the Authority will issue a firm-fixed-price contract specifying firm-fixed-prices for individual tasks.

5. Appendices

Information considered by Offeror to be pertinent to this project and which has not been specifically solicited in any of the aforementioned sections may be placed in a separate appendix section. Offerors are cautioned, however, that this does not constitute an invitation to submit large amounts of extraneous materials. Appendices should be relevant and brief.

B. FORMS – EXHIBIT D

1. Party and Participant Disclosure Forms – EXHIBIT D

In conformance with the statutory requirements of the State of California Government Code Section 84308, part of the Political Reform Act and Title 2, California Code of Regulations 18438 through 18438.8, regarding campaign contributions to members of appointed Boards of Directors, Offeror is required to complete and sign the Party and Participant Disclosure Forms provided in this RFP and submit as part of the proposal. Offeror is required to submit only one copy of the completed form(s) as part of its proposal and it should be included in only the original proposal. The prime consultant and subcontractors must complete the form entitled “Party Disclosure Form”. The form entitled “Participant Disclosure Form” must be completed by lobbyists or agents representing the prime consultant. Therefore, the prime consultant, subcontractors and agents will be required to report all campaign contributions from the proposal submittal date up and until the Board of Directors makes a selection, which is currently scheduled for **November 8, 2010**.

2. Status of Past and Present Contracts Form – EXHIBIT D

Offeror is required to complete and sign the form entitled “Status of Past and Present Contracts” provided in this RFP and submit as part of the proposal. Offeror shall list the status of past and present contracts where the firm has either provided services as a prime contractor or a subcontractor during the past five (5) years and the contract has ended or will end in a termination, settlement, or litigation. A separate form must be completed for each contract. Offeror shall provide an accurate name and telephone number for each contract and indicate the term of the contract and the original contract value. If the contract was terminated, Offeror must list the reason for termination. Offeror must identify and state the status of any litigation, claims or settlement agreements related to any of the contracts. Each form must be signed by the Offeror confirming the information that the information provided is true and accurate. Offeror is required to submit one copy of the completed form(s) as part of its proposals and it should be included in only the original proposal.

3. Restrictions on Lobbying Form – EXHIBIT D

As a recipient of federal funds, the Authority is required to certify compliance with the influencing restrictions and efforts of Offeror to influence federal officials regarding specific procurements in excess of \$100,000.00 that must be disclosed pursuant to section 1352, Title 31, U.S. Code.

This RFP includes, under Exhibit D, the following: a certification form entitled

"Certification of Restrictions on Lobbying," the Office of Management and Budget (OMB) Standard Form LLL entitled "Disclosure of Lobbying Activities," and a document entitled "Limitation on Payments to Influence Certain Federal Transactions."

The Offeror to this solicitation will be required to complete and submit to the Authority in their proposal, the certification form entitled "Certification of Restrictions on Lobbying" whether or not any lobbying efforts took place. If the Offeror did engage in lobbying activities, then OMB Standard Form LLL "Disclosure of Lobbying Activities" must also be completed and submitted to the Authority.

4. RACE NEUTRAL DBE SOLICITATION PROVISIONS – EXHIBIT E
CALTRANS FINAL REPORT – EXHIBIT E-1
DBE CERTIFICATE STATUS CHANGE – EXHIBIT E-2
FORM 103 – EXHIBIT E-3
RACE-NEUTRAL FORM 103 - EXHIBIT E-4
RACE-NEUTRAL SOLICITATION PROVISIONS - EXHIBIT E-5
BIDDERS LIST - EXHIBIT E-6
RACE-NEUTRAL DBE PARTICIPATION LIST - EXHIBIT E-7
REQUEST FOR ADDITIONAL DBE
SUBCONTRACTOR/SUPPLIER - EXHIBIT E-8

Offeror shall complete all exhibits per the instructions set forth in Section I: "Instructions to Offerors" and Exhibit E: "Race Neutral Solicitation Provisions".

5. CERTIFICATION OF COMPLIANCE – EXHIBIT F

OFFEROR'S CERTIFICATE OF COMPLIANCE REGARDING "BUY AMERICA" REQUIREMENTS

Pursuant to 49 CFR Part 661, as amended by Section 337 of the Surface Transportation and Uniform Relocation Act of 1987, no federal funds authorized by the Urban Mass Transportation Act of 1964, as amended; 23 USC 103 (e)(4); and Section 14 of the National Capital Transportation Act of 1969 as amended; and which were obligated by the Federal Transit Administration (FTA) after January 6, 1983 shall be obligated by the Authority unless steel and manufacturers' products used in such articles are produced in the United States.

A consultant providing articles that do not meet the above provision must submit a written request to the Authority, which may be forwarded, to FTA. FTA shall review the request for waiver and FTA may grant such a waiver if FTA determines that:

1. The application of the domestic preference requirements would be inconsistent with the public interest; Materials are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory

- quality; or
2. The inclusion of a domestic item or domestic material will increase the cost of the contract for the item or material by more than 25 percent.

FTA may grant a waiver in the case of the procurement of buses and other rolling stock (including train control, communications and traction power equipment), if the cost of components and subcomponents of such items which are produced in the United States is more than 60 percent for contracts entered into after April 1, 1992 with any supplier or contractor or any successor in interest or assignee which complied with the requirements of Section 165(b)(3) of the Surface Transportation Assistance Act of 1982 prior to April 2, 1987.

To determine costs of components or subcomponents for compliance with the Buy America Requirements, the Offeror is referred to the Federal Register, Volume 56, No. 6, Dated January 9, 1991.

In order to demonstrate compliance with the Buy America Requirements, Offeror shall complete the Certificates of Compliance/Noncompliance, Exhibit B, included in this RFP. Failure to complete the appropriate certificate shall render an Offeror non-responsive to this solicitation and will result in the rejection of the bid.

6. SAFETY SPECIFICATIONS – EXHIBIT G

Offeror shall comply with the general health, safety & environmental requirements as set forth in the Level 1 Safety Specification – EXHIBIT G

SECTION III
EVALUATION AND AWARD

SECTION III. EVALUATION AND AWARD

A. EVALUATION CRITERIA

The Authority will evaluate the offers received based on the following criteria:

- 1. Qualifications of the Firm 25%**
Technical experience in performing work of a closely similar nature; experience working with public agencies; strength and stability of the firm; strength, stability, experience and technical competence of subcontractors; assessment by client references.
- 2. Staffing and Project Organization 25%**
Qualifications of project staff, particularly key personnel and especially the Project Manager; key personnel's level of involvement in performing related work cited in "Qualifications of the Firm" section; logic of project organization; adequacy of labor commitment; concurrence in the restrictions on changes in key personnel.
- 3. Work Plan 30%**
Depth of Offeror's understanding of Authority's requirements and overall quality of work plan; logic, clarity and specificity of work plan; appropriateness of labor distribution among the tasks; ability to meet the project deadline; reasonableness of proposed schedule; utility of suggested technical or procedural innovations.
- 4. Cost and Price 20%**
Reasonableness of the total price and competitiveness of this amount with other offers received; adequacy of data in support of figures quoted; reasonableness of individual task budgets.

B. EVALUATION PROCEDURE

An evaluation committee will be appointed to review all proposals received for this RFP. The committee is comprised of Authority staff and may include outside personnel. The committee members will evaluate the written proposals using criteria identified in Section III A. A list of top ranked proposals, firms within a competitive range, will be developed based upon the totals of each committee members' score for each proposal.

During the evaluation period, the Authority may interview some or all of the proposing firms. The Authority has established **October 12 and 13, 2010**, as the dates to conduct interviews. All prospective Offerors will be asked to keep this

dates available. No other interview dates will be provided, therefore, if an Offeror is unable to attend the interview on these dates; its proposal may be eliminated from further discussion. The interview may consist of a short presentation by the Offeror after which the evaluation committee will ask questions related to the firm's proposal and qualifications.

At the conclusion of the proposal evaluations, Offerors remaining within the competitive range may be asked to submit a Best and Final Offer (BAFO). In the BAFO request, the firms may be asked to provide additional information, confirm or clarify issues and submit a final cost/price offer. A deadline for submission will be stipulated.

At the conclusion of the evaluation process, the evaluation committee will recommend to the appropriate Board Committee, the Offeror with the highest final ranking or a short list of top ranked firms within the competitive range whose proposal(s) is most advantageous to the Authority. The Board Committee will review the evaluation committee's recommendation and forward its decision to the full Board of Directors for final action.

C. AWARD

The Authority will evaluate the proposals received and will submit, with approval of the Highways Committee, the proposal considered to be the most competitive to the Authority's Board of Directors, for consideration and selection. The Authority may also negotiate contract terms with the selected Offeror prior to award, and expressly reserves the right to negotiate with several Offerors simultaneously and, thereafter, to award a contract to the Offeror offering the most favorable terms to the Authority.

The Authority reserves the right to award its total requirements to one Offeror or to apportion those requirements among several Offerors as the Authority may deem to be in its best interest. In addition, negotiations may or may not be conducted with Offerors; therefore, the proposal submitted should contain Offeror's most favorable terms and conditions, since the selection and award may be made without discussion with any Offeror.

D. NOTIFICATION OF AWARD AND DEBRIEFING

Offerors who submit a proposal in response to this RFP shall be notified via CAMM NET of the contract award. Such notification shall be made within three (3) days of the date the contract is awarded.

Offerors who were not awarded the contract may obtain a debriefing concerning the strengths and weaknesses of their proposal. Unsuccessful Offerors, who wish to be debriefed, must request the debriefing in writing or electronic mail and the Authority must receive it within three (3) days of notification of the contract award.

EXHIBIT A
SCOPE OF WORK

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ATTACHMENT A – BRAVO! PROGRAM TRAFFIC SIGNAL SYNCHRONIZATION
CORRIDORS MAP

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PREVIOUS CONSULTANT

SECTION 1.0

PROJECT DESCRIPTION

SECTION 1.0 PROJECT DESCRIPTION

1.1 OBJECTIVE AND BACKGROUND

As a key element of the planned Bravo! Bus Rapid Transit (BRT) Program, the Orange County Transportation Authority (AUTHORITY) seeks traffic engineering consultant services to finish design, implement, and provide support services for traffic signal synchronization (TSS) on three corridors within Orange County. The first corridor shall be along Bristol Street/State College Boulevard (formerly referred to as the “28-Mile” corridor), the second corridor shall be along Harbor Boulevard, and the third corridor shall be along Westminster Avenue/17th Street (Reference Documents - Attachment A). Each corridor is a required transportation control measure project for the purpose of meeting federal air quality mandates within the South Coast Air Basin. The implementation on all three corridors shall be completed by June 2011 to satisfy this requirement.

The TSS component is divided into three major phases as follows:

- TSS Design Finalization Phase,
- TSS Implementation Phase, and
- TSS Support Services Phase

Since January 2008, design efforts for the TSS design phase have been under development by others. As of January 2010, the TSS design phase is approximately 80% complete. Completed TSS design phase tasks include:

1. Final TSS Study Alignment Verification Reports,
2. TSS Data Collection and Field Inventory Reviews,
3. TSS “Before” Studies,
4. Draft optimized and synchronized Traffic Signal Timing Plans, and
5. Draft Signal Timing Optimization Plans.

As part of this SOW, CONSULTANT shall complete all remaining TSS design phase tasks not completed by others. Remaining TSS design phase tasks include:

- Final optimized and synchronized Traffic Signal Timing Plans, and
- Final Signal Timing Optimization Plans.

For the TSS Implementation Phase, CONSULTANT shall furnish and install traffic signal equipment as defined in the scope of work (SOW) (including, but not limited to, traffic signal controllers (hardware and software) and GPS clocks). CONSULTANT shall also verify all recommendations for traffic signal equipment upgrades that may be necessary for the implementation of the TSS plans.

The implementation of TSS on the Bristol/State College Boulevard BRT Corridor shall be completed by December 2010 in order to comply with committed dates within the Regional Transportation Improvement Program. The implementation on the Harbor Boulevard and Westminster/17th Street BRT Corridors shall be completed at the latest by June 2011.

The TSS Support Services Phase requires CONSULTANT to provide continuing signal timing support for a period of nine (9) months after the TSS Implementation Phase. CONSULTANT shall monitor, observe, fine-tune, and optimize the signal timing and phasing operations of the synchronized signalized intersections as defined in the SOW.

The overall TSS effort encompasses two hundred and fifty-two (252) intersections within eleven (11) agency jurisdictions, which include Anaheim, Brea, Costa Mesa, Fountain Valley, Fullerton, Garden Grove, Orange, Santa Ana, Seal Beach, Westminster, and Caltrans District 12. Memorandums of Understanding (MOU) and/or cooperative agreements with each of the eleven (11) agencies is underway with AUTHORITY and agency staff with expected completion by winter 2010.

In the future, the three TSS corridors will be updated and maintained within the AUTHORITY's Regional Traffic Signal Synchronization Program under the Renewed Measure M program.

The agencies are currently using different types and models of traffic signal controller systems as part of their local controller system or master controller system. The following traffic signal controller systems are currently used along the corridors:

1. NEMA – Multisonics 820A
2. NEMA - Econolite ASC/2 and ASC/3
3. NEMA - Eagle M52
4. 170, 170E
5. 2070, 2070N, 2070L, 2070LN

Table 1-1 summarizes the traffic signal controller make and type, local intersection software, and traffic management system software per agency that

optimized signal timing and synchronization shall be implemented at along the corridors.

Table 1-1
**Summary of Signalized Intersections Traffic Signal Systems and
Traffic Management Systems Hardware and Software**

Agency		Controller Make & Type								Local Intersection Software						Traffic Management System Software								
		Model 170	Model 170E	Model 2070	Model 2070-N	Model 2070-L AND 2070-LN	NEMA Eagle M52	NEMA - Econolite ASC/2	NEMA - Econolite ASC/3	NEMA - Multisonics (820A)	C8 (Caltrans)	TSCP (Caltrans)	SE-PAC (Siemens)	820A (Multisonics)	BI Trans 233	ASC/2 (Econolite)	ASC/3 (Econolite)	ACTRA (Siemens)	ARIES (Econolite)	I2 (Siemens)	CTNET (Caltrans)	MIST (Televent Farradyne)	QuicNet 4 (BI Tran)	SCOOT (Siemens)
1	Anaheim				√							√					√						√	
2	Brea								√				√											√
3	Costa Mesa								√				√											√
4	Fountain Valley								√				√									√		√
5	Fullerton						√					√					√							
6	Garden Grove							√	√						√	√		√						
7	Orange, City of							√	√						√	√			√					
8	Santa Ana								√				√								√			√
9	Seal Beach			√										√								√		
10	Westminster								√				√									√		√
11	Caltrans	√	√	√						√										√		√		

The objective of this TSS project is to improve traffic flow through the synchronization of signalized intersections along the corridors. This includes additional intersections beyond the project limits due to short roadway segments along the corridors and/or to

maintain existing synchronized zones. The main goals of the synchronization project are to optimize signal timings to increase throughput, decrease travel times, reduce overall delay, and comply with the South Coast Air Quality Management District (AQMD) requirements.

1.2 PROJECT LIMITS AND DESCRIPTION

1.2.1 BRISTOL/STATE COLLEGE BRT CORRIDOR

Optimized signal timing and synchronization shall be implemented at the following roadway segments along the Bristol/State College BRT Corridor including additional intersections beyond the corridor limits due to short roadway segments and/or to maintain existing synchronized zones:

1. Bristol Street from Baker Street to the SR-22 ramps, as well as including West Memory Lane to The City Drive.
2. The City Drive from West Memory Lane and continuing along State College Boulevard to Brea Boulevard.

Table 1-2 summarizes the number of signalized intersections per agency along the Bristol/State College BRT Corridor including additional intersections beyond the BRT corridor limits.

TABLE 1-2
Bristol/State College Boulevard BRT Corridor
Number of Signalized Intersections Per Arterial

Arterial	No. of Signalized Intersections Along BRT Route	Additional Signalized Intersections Outside BRT Route (Potentially Coordinated with Signalized Intersections Along BRT Route)	Total No. of Traffic Signals Desired to be Coordinated
State College Boulevard	41	7	48
Katella Avenue	2	0	0
City Drive	7	0	7
Metropolitan Drive	0	1	1
Bristol Street	22	11	33
*Newhope Street	0	2	2
* Fairview Road	0	6	6
Sunflower Avenue	5	0	0
Main Street	9	0	0
Von Karman Ave	3	0	0
Michelson Drive	3	0	0
Jamboree Road	2	0	0
Campus Drive	8	0	0
Culver Drive	7	0	0
Irvine Center Drive	2	0	0
Fortune Drive	4	0	0
Alton Parkway	5	0	0
Barranca Parkway	1	0	0
Total	121	27	97

* Signalized intersections are currently linked with Bristol/State College's coordinated system.

Note: Total intersection counts = 123

Overlapping intersection counts: Harbor Boulevard Corridor = 1, Westminster/17th Corridor = 1

The locations of the additional signalized intersections per arterial beyond the Bristol/State College Boulevard BRT Corridor limits is summarized in Table 4-4 at the end of Section 4.

1.2.2 HARBOR BOULEVARD BRT CORRIDOR

Optimized signal timing and synchronization shall be implemented at the following roadway segments along the Harbor Boulevard BRT Corridor including additional intersections beyond the corridor limits due to short roadway segments and/or to maintain existing synchronized zones:

1. Chapman Avenue from Euclid Street to the SR-57 ramps.
2. Harbor Boulevard from Brea Boulevard to Newport Boulevard.

Table 1-3 summarizes the number of signalized intersections per agency along the Harbor Boulevard BRT Corridor including additional intersections beyond the BRT corridor limits.

TABLE 1-3
Harbor Boulevard BRT Corridor
Number of Signalized Intersections per Arterial

Arterial	No. of Signalized Intersections Along BRT Route	Additional Signalized Intersections Outside BRT Route (Potentially Coordinated with Signalized Intersections Along BRT Route)	Total No. of Traffic Signals Desired to be Coordinated
State College Boulevard	1	0	0
Nutwood Avenue	2	0	0
Chapman Avenue	8	9	17
Lemon Street	2	0	0
Commonwealth Avenue	2	0	0
Harbor Boulevard	74	6	80
Trask Ave	1	1	1
*Adams Avenue	-	6	6
*Fairview Road	-	3	3
19th Street	1	0	0
Newport Boulevard	2	1	1
Superior Avenue	6	0	0
Hospital Road	1	0	0
Balboa Boulevard	3	0	0
Total	103	26	108

* Signalized intersections are currently linked with Harbor Boulevard's coordinated system.

The locations of the additional signalized intersections per arterial beyond the Harbor Boulevard BRT Corridor limits is summarized in Table 4-5 at the end of Section 4.

1.2.3 WESTMINSTER/17TH STREET BRT CORRIDOR

Optimized signal timing and synchronization shall be implemented at the following roadway segment along the Westminster/17th Street BRT Corridor including additional intersections beyond the corridor limits due to short roadway segments and/or to maintain existing synchronized zones:

1. Westminster/17th Street from Apollo Drive to Santiago Street.

Table 1-4 summarizes the number of signalized intersections per agency along the Westminster/17th Street BRT Corridor including additional intersections beyond the BRT corridor limits.

Table 1-4
Westminster/17th Street BRT Corridor
Number of Signalized Intersections Per Arterial

Arterial	No. of Signalized Intersections Along BRT Route	Additional Signalized Intersections Outside BRT Route (Potentially Coordinated with Signalized Intersections Along BRT Route)	Total No. of Traffic Signals Desired to be Coordinated
Pacific Coast Highway	2	0	0
Channel Drive	1	0	0
7th Street	5	0	0
Seal Beach Boulevard	4	0	0
Westminster Avenue	29	2	31
*Brookhurst Street	0	3	3
17th Street	7	6	13
Flower Street	2	0	0
Civic Center Drive	6	0	0
Santa Ana Boulevard	1	0	0
Total	57	11	47

*Signalized intersections are currently linked with Westminster Avenue/17th Street's coordinated system.

Note: Total intersection count = 58

Overlapping intersection counts: Harbor Boulevard Corridor = 1

The locations of the additional signalized intersections per arterial beyond the Westminster/17th Street BRT Corridor limits is summarized in Table 4-6 at the end of Section 4.

1.3 APPROACH TO TRAFFIC SIGNAL SYNCHRONIZATION DESIGN FINALIZATION, IMPLEMENTATION, AND SUPPORT SERVICES

AUTHORITY shall issue one contract for TSS design finalization, implementation, and support services on the three planned BRT corridors. CONSULTANT shall be responsible for the activities specified in the SOW.

The first TSS corridor to be implemented is the Bristol/State College Boulevard BRT Corridor. This corridor is approximately nineteen (19) miles in length and

has ninety-seven (97) intersections. The cooperating agencies for this corridor are the cities of Anaheim, Brea, Costa Mesa, Fullerton, Orange, Santa Ana, and Caltrans District 12.

The second TSS corridor to be implemented is the Harbor Boulevard BRT Corridor. This corridor is approximately twenty-three (23) miles in length and has one hundred and eight (108) intersections. The cooperating agencies for this corridor are the cities of Anaheim, Costa Mesa, Fullerton, Fountain Valley, Garden Grove, Santa Ana, and Caltrans District 12.

The third TSS corridor to be implemented is the Westminster/17th Street BRT Corridor. This corridor is approximately fourteen (14) miles in length and has forty-seven (47) intersections. The cooperating agencies for this corridor are the cities of Garden Grove, Santa Ana, Seal Beach, Westminster, and Caltrans District 12.

All work performed will be subject to the rules, policies, standards, and specifications of Section 86 of the State of California Standard Specifications (SSS) and State of California Standard Plans (SSP) and each agencies' respective standards and specifications, and policies.

1.4 TRAFFIC SIGNAL SYNCHRONIZATION DESIGN FINALIZATION PHASE REQUIREMENTS

1.4.1 AUTHORITY shall issue a Notice to Proceed (NTP) to CONSULTANT to begin the TSS design finalization phase and related activities. The design finalization phase shall include the following specific activities:

- a. Review all completed design phase documentation completed by others including, but not limited to, reports, plans, diagrams, and data.
- b. Provide a technical memorandum to AUTHORITY detailing findings of the completed design phase documentation review.
- c. Compile and review all agencies comments for the submitted Draft traffic signal timing plans and Draft Signal Timing Optimization Plans completed by others.
- d. Obtain AUTHORITY approval to proceed with the Signal Timing Optimization task deliverables.
- e. Submit Final traffic signal timing plans and Final Signal Timing Optimization Plan to AUTHORITY and agencies which addresses all comments provided by AUTHORITY and agencies in the Draft Signal Timing Optimization Plan.

- f. Obtain final AUTHORITY and agencies approvals to complete the TSS design finalization phase prior to the beginning of the implementation phase.

1.4.2 The TSS Design Phase is separated into the following sections: Bristol/State College BRT Corridor TSS Design Services (Part “A”), Harbor Boulevard BRT Corridor TSS Design Services (Part “B”), and Westminster/17th Street BRT Corridor TSS Design Services (Part “C”). With AUTHORITY oversight, approximately 80% of the TSS Design Phase was completed by others.

Table 1-5 summarizes the completion status for each TSS Design Phase task and deliverable along the BRT Corridors and lists what file format the completed deliverables are available.

TABLE 1-5
TSS Design Phase Task Completion Status

TSS Design Phase Task	Task Deliverable	Completion Status	File Format
TSS Study Alignment Verification	TSS Alignment Final Report	● Completed by others.	PDF and MS Word
Data Collection	Data Collection Report including existing timing sheets and as-built drawings.	● Completed by others.	PDF, MS Word and MS Excel
	24-hour traffic counts	● Completed by others.	MS Excel
	Axle classification counts	● Completed by others.	MS Excel
	Intersection peak period turning movement traffic counts	● Completed by others.	MS Excel
Inventory of Existing Traffic Signals, Field Masters/Hubs Locations, Signal Communications, and Traffic Management Systems	Field Inventory Report	● Completed by others.	PDF and MS Word
	Field Review Summary Sheets of each signalized intersection	● Completed by others.	PDF, MS Word and MS Visio
	Photographs of each intersection including the location and inside of each signal controller cabinet	● Completed by others.	PDF and MS Word
"Before" Study	"Before" Study Project Report	● Completed by others.	PDF, MS Word and MS Excel
	Floating car data using PC Travel software	● Completed by others.	PDF and PC Travel data files
Signal Timing Optimization	Draft optimized and synchronized traffic signal timing plans produced with Synchro	● Completed by others and submitted to Agencies for initial review. Agency comment collection and coordination not completed.	PDF and Synchro 7.0 data files
	Draft Time-Space Diagrams produced with Tru-Traffic TS/PP	● Completed by others and submitted to Agencies for initial review. Agency comment collection and coordination not completed.	PDF and Tru – Traffic TS/PP data files
	Draft Signal Timing Optimization Plan	● Completed by others and submitted to Agencies for initial review. Agency comment collection and coordination not completed.	PDF, MS Word and MS Excel
	Final optimized and synchronized traffic signal timing plans produced with Synchro	● Not completed.	None
	Final Time-Space Diagrams produced with Tru-Traffic TS/PP	● Not completed.	None
	Final Signal Timing Optimization Plan	● Not completed.	None

1.5 TRAFFIC SIGNAL SYNCHRONIZATION IMPLEMENTATION PHASE REQUIREMENTS

1.5.1 AUTHORITY shall issue a Notice to Proceed (NTP) to CONSULTANT to begin the TSS Implementation Phase and related activities after the TSS Design Finalization Phase is successfully completed and approved in writing by AUTHORITY. The Implementation Phase shall include, but not be limited to, the following activities:

- a. Signal Timing Implementation and Fine-Tuning
- b. Furnishing of equipment, equipment installation, and testing of equipment, as specified in SOW.

1.5.2 The TSS Implementation Phase is outlined in the following sections: Bristol/State College BRT Corridor TSS Implementation Services (Part “A”), Harbor Boulevard BRT Corridor TSS Implementation Services (Part “B”), and Westminster/17th Street BRT Corridor TSS Implementation Services (Part “C”).

1.6 TRAFFIC SIGNAL SYNCHRONIZATION SUPPORT SERVICES PHASE REQUIREMENTS

1.6.1 AUTHORITY shall issue a Notice to Proceed (NTP) to CONSULTANT to begin the TSS Support Services Phase and related activities after the TSS Implementation Phase is successfully completed and approved in writing by AUTHORITY. The Support Services Phase shall include, but is not limited to, the following activities:

- a. Provide support services for all three (3) corridors as specified in the SOW.

1.6.2 The TSS Support Services Phase is outlined in the following sections: Bristol/State College BRT Corridor TSS Support Services (Part “A”), Harbor Boulevard BRT Corridor TSS Support Services (Part “B”), and Westminster/17th Street BRT Corridor TSS Support Services (Part “C”).

1.7 GENERAL RESPONSIBILITIES

1.7.1 AUTHORITY RESPONSIBILITIES

AUTHORITY shall be responsible for the following:

- 1. Provide CONSULTANT with approximately 80% completed TSS design phase documentation, agreements with agencies, and other data and documents that may contribute to completing the required deliverables within the SOW.

2. Assist CONSULTANT with communication and liaison with agencies, contractors, and other similarly involved third parties.

1.7.2 CONSULTANT RESPONSIBILITIES

CONSULTANT shall be responsible for the following:

1. Conduct daily project management tasks, organize and attend meetings, develop progress reports, develop and monitor schedules, and create and submit monthly invoices **(Deliverable)** to AUTHORITY.
2. Perform all tasks required in SOW to evaluate and determine implementation support and procurement issues for the installation and implementation of each corridor.
3. As part of this CONTRACT, CONSULTANT shall furnish, install, test, commission, perform operations activities, and contract closeout activities for a fully functional TSS, which shall include the items that meet the specified requirements.
4. Provide a complete and fully functional TSS implementation with all necessary equipment, even if the materials or equipment are not specifically identified herein.
5. Prior to designing and installing the equipment, CONSULTANT shall obtain all necessary permits, licenses, and written approvals from the governing agencies for all necessary installations. This shall also include all additional permits, licenses, and approvals resulting from changes, modifications, and specified upgrades at no additional cost to AUTHORITY.
6. Per the requirements herein, CONSULTANT shall cooperate with all involved parties including parties performing other work not specified in this CONTRACT, the cities, Caltrans, and regulating agencies. All work in this CONTRACT shall be coordinated through AUTHORITY unless approved otherwise in writing by AUTHORITY.
7. Per requirements herein, CONSULTANT shall develop schedules in conjunction with, and in coordination with, AUTHORITY's other TSS contracts and other AUTHORITY programs and projects.
8. CONSULTANT shall be responsible, upon written approval by AUTHORITY, to coordinate and perform all necessary lane closures and detour traffic for public safety during the installation of required equipment.
9. Due to emergencies, local agency requirements, or other projects, it is possible that CONSULTANT may have to work alternate hours not considered as normal business hours. CONSULTANT shall be given

written information from the AUTHORITY on such situations and CONSULTANT shall continue to function as required by this SOW without additional cost to AUTHORITY.

10. In an event of non-compliance, CONSULTANT may have to stop work and take corrective actions on the work completed as directed by AUTHORITY.
11. CONSULTANT is encouraged to propose alternative proven implementation strategies that benefit AUTHORITY through cost savings, equipment reliability, reduced maintenance, and other means deemed appropriate.
12. Per the requirements herein, CONSULTANT must submit completed and quality checked deliverables to AUTHORITY according to milestones within the Project Schedule **(Deliverable)**.

SECTION 2.0
PROJECT MANAGEMENT

SECTION 2.0 PROJECT MANAGEMENT

2.1 GENERAL INFORMATION

This section specifies CONSULTANT's project management requirements starting from the NTP through Final Acceptance of the TSS Design Finalization, Implementation, and Support Services Phase.

1. CONSULTANT shall not distribute, disclose, or communicate the SOW activities with the public, media, or other AUTHORITY and/or agencies' contractors, and other similarly involved third parties without prior written consent from AUTHORITY. Any such requests to CONSULTANT shall be brought promptly to AUTHORITY's attention.
2. CONSULTANT shall cooperate with AUTHORITY, agencies, contractors, and other similarly involved third parties, to the extent reasonably necessary for the performance by such other consultants or contractors. CONSULTANT shall not interfere or hinder the progress and work conducted by other contractors and/or agencies' personnel. In case of conflict or possible schedule and/or site related issues, CONSULTANT shall bring such issues to AUTHORITY and/or agencies' immediate attention for resolution.
3. CONSULTANT shall not communicate the SOW activities with previous consultant and his sub consultants without prior written consent from AUTHORITY. Any such requests to CONSULTANT shall be brought promptly to AUTHORITY's attention.

2.2 PROJECT MANAGEMENT REQUIREMENTS

1. CONSULTANT shall have key staff for Design Finalization, Implementation, and Support Services Phases located within the Orange County area for the duration of the CONTRACT. Orange County area is defined as Orange County and locations within 10 miles of the Orange County border.
2. For the duration of the CONTRACT, CONSULTANT shall be involved in and responsible for the entire management of the TSS design finalization, implementation, and support services including the purchasing and furnishing of necessary equipment and interface equipment, installation, inspection, testing, and commissioning of the work provided under this SOW.
3. CONSULTANT shall assign a qualified, experienced, and licensed certified California Traffic Engineer with a minimum of 10 years of TSS experience and familiarity with agencies in Orange County as the Project

Manager (PM). The PM shall be responsible for overseeing the project activities and shall be the single point of contact between AUTHORITY and CONSULTANT and shall be responsible for all administrative and management duties under this SOW as specified herein including, but not limited to, providing directions to CONSULTANT staff, providing directions to sub-consultants, contractors, agency personnel, and general project coordination.

4. Field Technicians shall have a minimum of five (5) years experience of providing signal timing implementation services, shall be familiar with the different controller systems (hardware/software) as described in the SOW, and shall be familiar with the agencies in Orange County.
5. CONSULTANT shall proceed with the number of sufficient qualified personnel necessary to expedite and fully complete all services as required under this CONTRACT in a professional manner and all applicable professional standards. If the AUTHORITY observes deficiencies with the CONSULTANT's PM, the AUTHORITY will request the CONSULTANT to replace the PM within fifteen (15) days to ensure the successful completion of this project within budget and schedule. If such actions are required, CONSULTANT shall provide credentials for review and approval by AUTHORITY.
6. CONSULTANT shall develop and submit for AUTHORITY written approval a Work Plan **(Deliverable)** fifteen (15) days after NTP. The Work Plan shall include the following:
 - a. CONSULTANT Organization chart with defined roles, responsibilities, and percent commitment to this project.
 - b. Outline of tasks required to meet the goals and objectives defined within the SOW.
 - c. Outline coordination requirements with agencies, contractor, coordination requirements including, but not limited to:
 - i. CONSULTANT shall meet with AUTHORITY on a bi-weekly basis throughout the project, and conduct required meetings with agencies, contractors, and other similarly involved third parties to complete tasks and deliverables.
7. Project Schedule – Baseline **(Deliverable)** to submit to AUTHORITY in a format as approved by AUTHORITY within fifteen (15) days after NTP.

1. All durations and dates within the Project Schedule and this SOW shall be in reference to calendar days.
2. Project Schedule shall be provided in a clear, concise, and legible format for approval by AUTHORITY. Project Schedule shall be submitted at a minimum on 11 inches by 17 inches medium suitable for black and white reproduction. Electronic file copies shall be provided on Compact Disc (CD-ROM).
3. Project Schedule shall include:
 - a. Title block, revision block, CONTRACT number, and legend.
 - b. NTP date, interim milestones as specified in SOW, completion of specific tasks, and CONTRACT completion date.
 - c. Scheduled start and/or completion dates imposed on schedule by CONSULTANT consistent with SOW. Define milestone events as scheduled dates specified in SOW and prominently identify (flag) and connect to appropriate activity, denoting start and completion, as applicable. Verify that start milestones constrain start of dependent items.
 - d. Project Schedule shall be created, updated, and submitted in Microsoft Project 2007 format (.MPP file format).
 - e. CONSULTANT shall update the Project Schedule upon changes showing actual progress, actual start/finish dates (shown for work items in progress), and identify current sequence to milestones and project completion.
 - f. CONSULTANT shall make revisions to the Project Schedule in the same format and detail as the baseline Project Schedule. Proposed revisions are subject to AUTHORITY review and approval.
 - g. Failure to include items required for performance of the SOW shall not excuse CONSULTANT from completing work required to achieve milestone event completion, notwithstanding AUTHORITY written approval of the Project Schedule.

8. Final Deliverables List (**Deliverable**) within fifteen (15) days after NTP for written approval by AUTHORITY.
9. Develop Monthly Progress Reports and invoices with detailed backup information (**Deliverable**). The report shall include details of the current status of the project against the work plan and the Project Schedule (**Deliverable**). The Monthly Progress Report shall be updated and kept current by CONSULTANT throughout the duration of CONTRACT and shall clearly show start and completion dates of all activities. An updated and current project schedule shall be included in each Monthly Progress Report (**Deliverable**). The report shall include:
 1. Status of each deliverable.
 2. Delays and issues with planned actions.
 3. Organizational changes with key staff and level of commitment (all key staff changes will require submittal of resume outlining level of expertise as pertaining to project).
 4. Progress of sub-consultants.
 5. Include actual start and completion dates for work items completed during report period.
 6. Estimated remaining durations for work items in progress.
 7. Identification of possible delays for work items scheduled to start during month following report period.
 8. Work items not included in the Project Schedule (**Deliverable**).
 9. Any potential delays identified in the Monthly Progress Report (**Deliverable**) shall be addressed as follows:
 - i. If the delay is within CONSULTANT's control, CONSULTANT shall identify the problem, its cause, the work items affected, any additional costs implications, and provide an explanation of the proposed corrective action to meet the affected milestone dates and/or to mitigate further delays.

- ii. If the delay is not within CONSULTANT's control, CONSULTANT shall identify the problem, its cause, its duration, the specific work items affected, any additional costs impacts, and the logic constraints of each work item. CONSULTANT shall propose steps to mitigate any resulting delay.
10. Submit all project documentation. CONSULTANT shall be responsible for all delivery costs incurred in submitting project documentation to AUTHORITY and agencies. CONSULTANT shall be responsible for implementing corrections, as applicable, for all deliverables and deliverable data as specified within the SOW including, but not limited to, plans, schedules, and reports.
 11. Interface with AUTHORITY, agencies, contractors, and other similarly involved third parties regarding the requirements outlined in the SOW. CONSULTANT shall maintain a record of all contact information and provide information to AUTHORITY upon request in hard copy and electronic formats compatible with Microsoft Office 2007 upon request.
 12. Plan, schedule, arrange, and participate in all meetings related to the SOW and as required by AUTHORITY. Document all meetings, prepare and deliver agendas, and produce/distribute meeting minutes and action item matrices (**Deliverable**).
 13. Provide all pertinent project records to AUTHORITY no later than fifteen (15) days after AUTHORITY written acceptance of the Final Technical Reports (**Deliverable**). Documents shall be organized in accordance with AUTHORITY Uniform Filing System or as specified by AUTHORITY in writing.
 14. Assist AUTHORITY with post audits, as requested by AUTHORITY in writing.
 15. CONSULTANT shall prepare and maintain a detailed progress schedule, which shall be CONSULTANT's working schedule and shall be used to plan, organize, and execute the work; record and report actual performance and progress; and forecast remaining work. CONSULTANT must fully comply with the schedule submission requirements specified herein to ensure the timely processing of payments. Specifically, submission of the monthly schedule update is a condition precedent to any payment under this SOW. Work shall be scheduled so that any specified intermediate milestone dates and completion dates are met.
 16. The work specified in the requirement consists of submitting a schedule in sufficient detail to show the sequence in which CONSULTANT proposes

to carry out work required under the SOW, from NTP through CONTRACT completion. The planning, scheduling, management, and execution of work in accordance with the SOW are the responsibility of the CONSULTANT.

SECTION 3.0

TRAFFIC SIGNAL SYNCHRONIZATION DESIGN FINALIZATION

SECTION 3.0 TRAFFIC SIGNAL SYNCHRONIZATION DESIGN FINALIZATION

3.1 PART “A” – BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES

3.1.1 TASK A-1: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – KICK-OFF MEETING

CONSULTANT shall have a kick-off meeting with the AUTHORITY to discuss the following:

1. Bristol/State College BRT Corridor alignment
2. List of arterial/collector roads
3. List of signalized intersections
4. Other projects along the Bristol/State College BRT Corridor
5. Goals and objectives of the Bristol/State College BRT Corridor TSS
6. Completed and remaining TSS Design Phase Project tasks
7. TSS analysis process
8. Review and approval coordination process
9. Project schedule, key milestones, and deliverables

3.1.2 TASK A-2: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – REVIEW COMPLETED TSS STUDY ALIGNMENT VERIFICATION

Previous consultant reviewed the Bristol/State College BRT Corridor signalized intersection list provided by the AUTHORITY and met with each affected agency to verify the number of signalized intersections that would be included on each arterial/collector road along the Bristol/State College BRT Corridor.

Previous consultant completed Bristol/State College BRT Corridor TSS Alignment Draft and Final Reports showing the study area including the arterials/collector roads and the number of signalized intersections that were synchronized as part of this project.

AUTHORITY shall provide an electronic copy, in MS Word and Adobe Acrobat (PDF) format, of the completed AUTHORITY and agencies approved TSS Alignment Final Report to the CONSULTANT for review and background information.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.1.6, to AUTHORITY detailing the findings of the completed TSS Alignment Final Report review.

**3.1.3 TASK A-3: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – REVIEW COMPLETED DATA COLLECTION**

Previous consultant collected all data necessary to thoroughly understand existing traffic conditions along the Bristol/State College BRT Corridor to facilitate the development of optimal time-of-day traffic signal synchronization plans.

Previous consultant collected from the affected agencies the following:

1. Existing timing sheets
2. Existing synchronization plans
3. Existing synchronization zones
4. Traffic signal as-built drawings
5. Traffic signal communication as-built drawings
6. Traffic Management System as-built drawings
7. Aerial photos
8. Maps

Previous consultant also collected from affected agencies signal timing and signal priority preferences, including, but not limited to, those related to pedestrian and bicycle timing, leading and lagging left-turn phasing, and conditional service, as well as the timing optimization software preference.

Previous consultant conducted all required seven-day 24-hour machine traffic counts, and axle traffic counts at AUTHORITY approved locations. Data obtained from Saturday traffic counts was used to determine the necessity of weekend signal timing. Thirty-six (36) machine traffic counts were collected for the Bristol/State College BRT Corridor at approximately one-mile spacing.

Previous consultant conducted weekday peak period turning movement traffic counts at all study intersections, including pedestrian and bicycle counts. Weekday counts were conducted for two hours of each peak period (AM, mid-day, and PM). Weekend turning movement traffic counts were conducted for a single two-hour Saturday mid-day peak period.

Peak period turning movement traffic counts were collected at 96 of the 97 approved signalized intersections along the Bristol/State College BRT Corridor.

Peak period turning movement traffic counts were not collected at future signalized intersections.

All traffic counts are summarized in MS Excel format. AUTHORITY shall provide electronic copies of the raw data count sheets to the CONSULTANT along the Bristol/State College BRT Corridor.

AUTHORITY shall provide electronic copies of the following completed and AUTHORITY approved Bristol/State College BRT Corridor Data Collection deliverables for CONSULTANT review and background information:

1. Report, in MS Word, MS Excel, and Adobe Acrobat (PDF) format, summarizing data collection effort, including timing sheets, coordination plans, coordination zones, as-built drawings, aerial photos, maps, traffic collision analysis, and traffic collision diagrams.
2. 24-hour traffic counts, in MS Excel format, collected during the month of October 2008.
3. Axle classification traffic counts, in MS Excel format, collected during the month of October 2008.
4. Intersection peak period turning movement traffic counts, in MS Excel format, collected during the month of October 2008, early November 2008 (prior to the Thanksgiving holiday), and late January 2009.

For all existing signalized intersections in which existing signal timing is modified or where new signalized intersections are constructed during the TSS Design Finalization Phase, CONSULTANT shall collect from the respective agencies all updated or new timing sheets and traffic signal as-built drawings for incorporation into the Signal Timing Optimization task. Anticipated existing signal timing modifications and new signalized intersections along the Bristol/State College Boulevard BRT Corridor include, but are not limited to, the following:

- a. State College Boulevard at Artisan Court (new signalized intersection)
- b. The City Drive at Garden Grove Boulevard/Memory Lane (signal timing modification)
- c. Metropolitan Drive at SR-22 WB Ramps (signal timing modification)
- d. Bristol Street at 17th Street (signal timing modification)
- e. Bristol Street at Santa Ana Boulevard (signal timing modification)
- f. Bristol Street at First Street (signal timing modification)
- g. Bristol Street at Willits Street/Bishop Street (signal timing modification)

- h. Bristol Street at McFadden Avenue (signal timing modification)
- i. Bristol Street at Warner Avenue (signal timing modification)

The anticipated existing signal timing modifications and new signalized intersection locations listed above are for reference only and CONSULTANT shall coordinate and verify with the respective agencies.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.1.6, to AUTHORITY detailing the findings of the completed Data Collection deliverables review.

3.1.4 TASK A-4: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – REVIEW COMPLETED INVENTORY OF EXISTING TRAFFIC SIGNALS, FIELD MASTERS/HUBS LOCATIONS, SIGNAL COMMUNICATIONS, AND TRAFFIC MANAGEMENT SYSTEMS

Previous consultant reviewed the geometric layout, existing traffic signal equipment, and identified any deficiencies (outdated controller hardware/software, obsolete equipment, etc.) for each intersection along the selected synchronized segments along the Bristol/State College BRT Corridor.

The review included an assessment of the existing intersection geometry (number of lanes, lane width, lane storage, crosswalks, etc), traffic conditions, and traffic signal control equipment along the Bristol/State College BRT Corridor using observation, available as-built plans, consultation with the local agencies, and agency aerial photos. With documented permission of the local agencies, previous consultant inspected the interior of each traffic control cabinet and made recommendations for equipment upgrades.

Previous consultant verified existing traffic signal communication systems along the Bristol/State College BRT Corridor including equipment inside the signal controller cabinets and reviewed field masters/hubs locations and equipment.

Previous consultant reviewed the agencies' traffic management system(s) including hardware and software.

Previous consultant also identified all planned and programmed improvements (widening projects, intersection improvements, etc.) on the selected synchronized segments along the Bristol/State College BRT Corridor. The identification of these projects included a list summarizing all improvements.

Key components of the completed corridor review included, but were not limited to the following:

1. Bristol/State College BRT Corridor lane configurations and lane widths.

2. Existing street and lane geometries, curbs, median, sidewalk width, pedestrian ramps, etc.
3. Location of traffic control equipment at signalized intersections – poles, controller cabinets, service cabinets, telephone service, detector loops, existing service location connection, etc.
4. Traffic signs and pavement markings at intersections along the Bristol/State College BRT Corridor and cross streets.
5. Traffic signal controller information, such as type of controller, brand and make, condition of equipment.
6. Existing signal operation characteristics – signal phasing, cycle lengths, lead-lag, protective-permissive, etc.
7. Existing signal communication equipment.
8. Existing time-referencing setup.
9. Special characteristics such as proximity to adjacent intersections, location of bus stops, location of driveways, parking prohibitions, and other factors that may affect the efficiency of operation.
10. Photographed each intersection including location of signal controller cabinet.
11. Photographed the inside of each signal controller cabinet.
12. Noted any deficiencies of traffic control equipment at each intersection.
13. Noted the maintenance condition of the traffic signal equipment.
14. Existing preemption devices.

The field notes were prepared and approved by AUTHORITY in writing.

Previous consultant noted factors that are expected to affect signal progression including, but not limited to: intersections with high pedestrian or bicyclist volumes; over-saturated intersections; uneven lane distribution; high volumes of trucks and buses; high-volume un-signalized intersections, including interchanges; parking maneuvers; location of bus stops; differing signal timing patterns among agencies; etc.

Previous consultant identified any deficiencies of the existing traffic signal control equipment (i.e. hardware, software) and geometric layout. Previous consultant provided recommended solutions that may be implemented in order to correct deficiencies and improve the traffic operations along the Bristol/State College

BRT Corridor. Recommendations provided include, but are not limited to, replacement of traffic signal controller(s), software upgrades, installation of GPS clocks, other traffic signal equipment upgrades/replacement, and geometric layout improvements.

Previous consultant prepared a Field Inventory Report summarizing the findings of the field review. The report contains photos and field review summary sheets of each signalized intersection. The report is provided in sections in accordance to each arterial along the Bristol/State College BRT Corridor.

AUTHORITY shall provide an electronic copy, in MS Word, MS Visio, and Adobe Acrobat (PDF) format, of the completed AUTHORITY and agencies approved Field Inventory Report to the CONSULTANT for review and background information.

CONSULTANT shall review and verify the following key components of the completed corridor review by others:

1. Bristol/State College BRT Corridor lane configurations
2. Existing street and lane geometries
3. Existing signal operation characteristics – signal phasing, cycle lengths, lead-lag, protective-permissive, etc.

If any existing field inventory changes in the completed corridor review are observed, CONSULTANT shall conduct all necessary field work and provide field notes to correct and implement these changes into the TSS design finalization phase. Before field work is conducted, all proposed field work locations shall be presented to AUTHORITY for review and approval. All field notes shall be prepared in a neat and readable format and approved by AUTHORITY in writing. All field work shall be photographed and photos shall be provided to the AUTHORITY.

CONSULTANT shall identify any deficiencies in the existing traffic signal control timing parameters or settings at each project intersection including: Pedestrian Walk and Pedestrian Clearance intervals; Bicycle and/or Automobile/Truck timing for Minimum Green; Yellow Change; and, All Red Clearance intervals as required by the MUTCD, CA MUTCD, Traffic Operations Policy Directives (TOPD), or enacted laws governing such issues. These deficiencies shall be submitted to the AUTHORITY and the agencies for review and comment.

Each local agency shall be solely responsible for, and provide direction to CONSULTANT and AUTHORITY in the methods and formulas used to calculate the correct time settings for these respective timing intervals. These policies will be on file with the AUTHORITY.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.1.6, to AUTHORITY detailing the findings of the completed Field Inventory Report review.

**3.1.5 TASK A-5: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – REVIEW COMPLETED BRISTOL/STATE
COLLEGE BRT CORRIDOR “BEFORE” STUDY**

Previous consultant conducted a “Before” field study report representative of the times and days for which synchronization plans were developed. The report identified Measures of Effectiveness (MOE) to evaluate the effects of the synchronization plans. MOE’s included traffic flow, travel time, average speed, stops, fuel consumption reduction, pollution reduction, and other pertinent items. The identified MOE’s were compiled for the corridor using the floating car method and Synchro 7.0.

For the “Before” field study, previous consultant conducted a minimum of five (5) floating car “runs” in each direction and during all periods in which synchronization plans were developed.

The completed report addresses optimization strategies for signal synchronization, specifically focusing on how to synchronize the Bristol/State College BRT Corridor (i.e. end-to-end optimization and/or coordinated zones). The report defines the traffic patterns along the Bristol/State College BRT Corridor throughout the day and throughout the week.

The analysis was based on all floating car data collected using a GPS device and PC Travel software. AUTHORITY shall provide all PC Travel data files and an electronic copy, in Adobe Acrobat (PDF) format, of the PC Travel summary reports for CONSULTANT review and background information. Previous consultant prepared a “Before” Study Project Report and finalized the “Before” Study Project Report based on comments received from the AUTHORITY.

AUTHORITY shall provide an electronic copy, in MS Word, MS Excel, and Adobe Acrobat (PDF) format, of the completed and AUTHORITY approved Bristol/State College BRT Corridor “Before” Study Project Report for CONSULTANT review and background information.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.1.6 to AUTHORITY detailing the findings of the completed “Before” Study Project Report review.

**3.1.6 TASK A-6: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – COMPLETED DESIGN PHASE
DOCUMENTATION REVIEW**

CONSULTANT shall review all completed design phase documentation by others listed above in Sections 3.1.2 through 3.1.5 and below in Section 3.1.7.

CONSULTANT shall prepare a technical memorandum detailing findings of the design phase documentation review. The report shall contain, but not be limited to, the following:

- a. Review Findings
- b. Deficiencies
- c. Changes of Existing Field Conditions (lane configuration, signal phasing, etc.)
- d. Missing Information / Incomplete Information
- e. Information required to update the completed design phase documentation by others
- f. Recommendations Required to Complete the Remaining TSS Design Finalization Tasks

The report shall be provided in sections in accordance to each design phase document reviewed.

Bristol/State College BRT Corridor TSS Design Finalization Services deliverables (in part to include):

A6a. Technical memorandum detailing findings of the completed design phase documentation review.

3.1.7 TASK A-7: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – SIGNAL TIMING OPTIMIZATION

Previous consultant developed a Draft model of the study area approved by the AUTHORITY. Previous consultant calibrated the draft model based on travel time, delay studies, field observations of queue lengths, and saturation flows for heavy movements at key intersections. CONSULTANT shall review, verify, and update the previously prepared Draft model of the study area, as defined in this task. Signal synchronization optimization shall be conducted in Synchro 7.0 and optimization shall be augmented with Tru – Traffic TS/PP version 8.0.

If the CONSULTANT elects to use alternative methodologies to augment or replace certain aspects of the Synchro model such as pre-processing of certain data sets or split analysis, and/or other types of processes, the CONSULTANT shall describe these operations in detail in the report with supporting documentation as to why these processes were used in lieu of or in augmentation to the Synchro model. These methodologies shall also be described in detail in the CONSULTANT'S proposal for this project.

CONSULTANT shall develop an operational model within SimTraffic software. The SimTraffic model will identify those local areas or portions of the project that

need special operational analysis of queue interactions such as starvation or spillback. The operational analysis shall be used to supplement the “Before” and “After” studies, to understand the effects of planned corridor improvements, fine tune timing plans prior to implementation, and to analyze the additional operational improvements as recommended by CONSULTANT. The entire corridor does not have to be micro – simulated. Analysis shall be performed on corridor segments that have queuing, starvation, spillback, or other problems which can be mitigated by the SimTraffic program.

CONSULTANT shall develop final optimized signal timings using Synchro 7.0, and recommend any changes to the signal phasing at each signalized intersection that may improve the efficiency of operations. The recommended final signal timing plans shall be reviewed for comments by the AUTHORITY and agencies’ staffs.

CONSULTANT shall evaluate signal timing and coordination parameters with consideration for the following:

1. Review and verification of completed design documentation provided and update the signal timing and coordination parameters as deemed appropriate through review findings, field observations, etc.
2. Optimum coordination timing, lead/lag or lead/lead left-turn phasing as deemed appropriate (except at Protected/Permissive locations, where phasing will be lead/lead only), double or half cycling, and other such techniques.
3. Timing parameters which provide adequate splits and corresponding offsets which fully accommodate pedestrians within the split time. CONSULTANT shall take into consideration the pedestrian timing parameters used by the local agency on a case by case basis.
4. Timing parameters which incorporate minimal pedestrian activity to provide the optimum vehicle split and offset timing and accommodate pedestrians using various pedestrian timing adjustment techniques for pedestrian splits during coordination.
5. Appropriate cycle lengths and signal groupings consistent with the goals of this effort. Preliminary proposed cycle lengths and signal groupings were developed by the previous consultant and presented to the agencies for review and comment. All agency preliminary comments have been addressed by the previous consultant. Additionally, the previous consultant has recommended time-of-day start and stop intervals for the various timing plans.
6. CONSULTANT shall update, at minimum, timing plans which consider the following peak periods: a.m. peak, mid-day peak, p.m. peak and one

weekend peak. Timing plans shall be in both Synchro format and the preferred timing chart format of each agency.

7. CONSULTANT shall update timing plans for a.m. peak, mid-day peak, p.m. peak and a weekend peak based on the upcoming improvements for the corridor as identified. Timing plans shall be in Synchro format and the preferred timing chart format of each agency.
8. CONSULTANT shall review, verify, and update the previously prepared Time-Space Diagrams for the synchronized segments along the BRT Corridor.

Previous consultant prepared a Draft Signal Timing Optimization Plan detailing the signal timing optimization, including detail evaluation and recommendation on the time-referencing system and analysis results. The Draft Signal Timing Optimization Plan included, but was not limited to, the following:

- a. Proposed cycle lengths and signal groupings by corridor and by agency.
- b. All Draft optimized and synchronized traffic signal timing plans in Synchro format, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).
- c. Draft Time-Space diagrams for the synchronized segments along the BRT Corridor.

The Draft Signal Timing Optimization Plan was submitted to AUTHORITY and agencies for review and comment. AUTHORITY has already provided their review and all comments were addressed by the previous consultant. AUTHORITY shall provide a copy of all AUTHORITY comments and agency comments received.

CONSULTANT shall coordinate and collect from all agencies the Draft Signal Timing Optimization Plan comments. CONSULTANT shall incorporate comments into the Final Signal Timing Optimization Plan.

Final Time-Space diagrams shall match those completed by previous consultant and submitted to the agencies for review and comment. The Time-Space diagrams shall be in color, be scaled both horizontally and vertically, show vehicle splits and movements for each intersection, show offsets and intersection distances listed below the intersections, and show forward and reverse green bands with applicable phase sequences. The Time-Space diagrams shall be separated per signal grouping and peak period plan and fully annotated with proposed cycle lengths, travel direction, signal grouping zone limits, and peak period plan identification. All intersections with crossing coordination, half cycle lengths, and existing and proposed pedestrian overrides shall be annotated as such on the Time-Space Diagrams. For a sample Draft

Time-Space Diagram completed by the previous consultant, see Reference Documents – Attachment B.

AUTHORITY shall provide electronic copies of the following completed and AUTHORITY approved Bristol/State College Boulevard BRT Corridor Signal Timing Optimization deliverables for CONSULTANT review and use:

1. All Draft optimized and synchronized traffic signal timing plans in Synchro format, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).
2. Draft Time-Space diagrams, in Adobe Acrobat (PDF) format and Tru – Traffic TS/PP data files.
3. Draft Signal Timing Optimization Plan, in MS Word, MS Excel, and Adobe Acrobat (PDF) format.
4. Electronic Synchro 7.0 data files used in the Draft analysis.

CONSULTANT shall submit a Final Signal Timing Optimization Plan to AUTHORITY and agencies which addresses all comments provided by AUTHORITY and agencies in the Draft Signal Timing Optimization Plan.

Bristol/State College BRT Corridor TSS Design deliverables (in part to include):

- A7a. All Final optimized and synchronized traffic signal timing plans in Synchro format and the preferred timing chart format of each agency, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).
- A7b. Final Time-Space diagrams.
- A7c. Final Signal Timing Optimization Plan.
- A7d. Electronic Synchro 7.0 data files used in the Final analysis.
- A7e. Electronic SimTraffic data files used in the Final analysis.
- A7f. Electronic versions of the Final analysis and all data files including the Tru – Traffic TS/PP files.

3.1.8 TASK A-8: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES - PROJECT COORDINATION AND MEETINGS

CONSULTANT shall develop a schedule for meetings with AUTHORITY, agencies, manufacturers, and others in order to facilitate the review/approval

process of the signal synchronization along the Bristol/State College BRT Corridor.

CONSULTANT shall attend meetings as directed by AUTHORITY and agencies to discuss specific information and requirements related to the signal synchronization along the Bristol/State College BRT Corridor.

Meetings will also consist of any specific meeting called by AUTHORITY and agencies, at which CONSULTANT's attendance is required.

It is required that in the TSS Design Finalization Phase, CONSULTANT, AUTHORITY, and agencies (if available), conduct bi-weekly meetings in order to provide a continuous dialogue and develop a team relationship for the success of this project.

CONSULTANT shall prepare and distribute meeting minutes and action item matrix to the project team within five (5) days from the meeting. AUTHORITY and/or its designee shall be provided with draft meeting agendas for their review and written approval prior to the preparation of final meeting agendas. AUTHORITY and/or its designee shall be provided with draft meeting minutes for their review and written approval prior to the distribution of final meeting minutes. AUTHORITY and/or its designee shall be invited and shall participate at every meeting.

Bristol/State College BRT Corridor TSS Design deliverables (in part to include):

A8a. Project Meeting Agendas.

A8b. Project Meeting Minutes and Action items.

A8c. Action Item Matrix.

3.2 PART "B" – HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES

3.2.1 TASK B-1: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – KICK-OFF MEETING

CONSULTANT shall have a kick-off meeting with the AUTHORITY to discuss the following:

1. Harbor Boulevard BRT Corridor alignment
2. List of arterial/collector roads
3. List of signalized intersections
4. Other projects along the Harbor Boulevard BRT Corridor

5. Goals and objectives of the Harbor Boulevard BRT Corridor TSS
6. Completed and remaining TSS Design Phase Project tasks
7. TSS analysis process
8. Review and approval coordination process
9. Project schedule, key milestones, and deliverables

**3.2.2 TASK B-2: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – REVIEW COMPLETED TSS STUDY ALIGNMENT
VERIFICATION**

Previous consultant reviewed the Harbor Boulevard BRT Corridor signalized intersection list provided by the AUTHORITY and met with each affected agency to verify the number of signalized intersections that would be included on each arterial/collector road along the Harbor Boulevard BRT Corridor.

Previous consultant completed Harbor Boulevard BRT Corridor TSS Alignment Draft and Final Reports showing the study area including the arterials/collector roads and the number of signalized intersections that were synchronized as part of this project.

AUTHORITY shall provide an electronic copy, in MS Word and Adobe Acrobat (PDF) format, of the completed AUTHORITY and agencies approved TSS Alignment Final Report to the CONSULTANT for review and background information.

CONSULTANT shall provide a section in the technical memorandum deliverable as described in Section 3.2.6 to AUTHORITY detailing the findings of the completed TSS Alignment Final Report review.

**3.2.3 TASK B-3: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – REVIEW COMPLETED DATA COLLECTION**

Previous consultant collected all data necessary to thoroughly understand existing traffic conditions along the Harbor Boulevard BRT Corridor to facilitate the development of optimal time-of-day traffic signal synchronization plans.

Previous consultant collected from the affected agencies the following:

1. Existing timing sheets
2. Existing synchronization plans
3. Existing synchronization zones

4. Traffic signal as-built drawings
5. Traffic signal communication as-built drawings
6. Traffic Management System as-built drawings
7. Aerial photos
8. Maps

Previous consultant also collected from affected agencies signal timing and signal priority preferences, including, but not limited to, those related to pedestrian and bicycle timing, leading and lagging left-turn phasing, and conditional service, as well as the timing optimization software preference.

Previous consultant conducted all required seven-day 24-hour machine traffic counts, and axle traffic counts at AUTHORITY approved locations. Data obtained from Saturday traffic counts was used to determine the necessity of weekend signal timing. Thirty-six (36) machine traffic counts were collected for the Harbor Boulevard BRT Corridor at approximately one-mile spacing.

Previous consultant conducted weekday peak period turning movement traffic counts at all study intersections, including pedestrian and bicycle counts. Weekday counts were conducted for two hours of each peak period (AM, mid-day, and PM). Weekend turning movement traffic counts were conducted for a single two-hour Saturday mid-day peak period.

Peak period turning movement traffic counts were collected at 104 of the 108 approved signalized intersections along the Harbor Boulevard BRT Corridor. Peak period turning movement traffic counts were not collected at the existing intersection of Harbor Boulevard and La Verne Street (pedestrian crossing) and all future signalized intersections.

All traffic counts are summarized in MS Excel format. AUTHORITY shall provide electronic copies of the raw data count sheets to the CONSULTANT along the Harbor Boulevard BRT Corridor.

AUTHORITY shall provide electronic copies of the following completed and AUTHORITY approved Harbor Boulevard BRT Corridor Data Collection deliverables for CONSULTANT review and background information:

1. Report, in MS Word, MS Excel, and Adobe Acrobat (PDF) format, summarizing data collection effort, including timing sheets, coordination plans, coordination zones, as-built drawings, aerial photos, maps, traffic collision analysis, and traffic collision diagrams.
2. 24-hour traffic counts, in MS Excel format, collected during the month of October 2008

3. Axle classification traffic counts, in MS Excel format, collected during the month of October 2008.
4. Intersection peak period turning movement traffic counts, in MS Excel format, collected during the month of October, early November 2008 (prior to the Thanksgiving holiday), and late May 2009.

For all existing signalized intersections in which existing signal timing is modified or where new signalized intersections are constructed during the TSS Design Finalization Phase, CONSULTANT shall collect from the respective agencies all updated or new timing sheets and traffic signal as-built drawings for incorporation into the Signal Timing Optimization task. Anticipated existing signal timing modifications and new signalized intersections along the Harbor Boulevard BRT Corridor include, but are not limited to, the following:

- a. Harbor Boulevard at Houston Avenue (new signalized intersection)
- b. Harbor Boulevard at Chapman Avenue (South) (signal timing modification)
- c. Harbor Boulevard at Twintree Lane (new signalized intersection)
- d. Harbor Boulevard at Kent Avenue (new signalized intersection)

The anticipated existing signal timing modifications and new signalized intersection locations listed above are for reference only and CONSULTANT shall coordinate and verify with the respective agencies.

CONSULTANT shall provide a section in the technical memorandum deliverable as described in Section 3.2.6 to AUTHORITY detailing the findings of the completed Data Collection deliverables review.

3.2.4 TASK B-4: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – REVIEW COMPLETED INVENTORY OF EXISTING TRAFFIC SIGNALS, FIELD MASTERS/HUBS LOCATIONS, SIGNAL COMMUNICATIONS, AND TRAFFIC MANAGEMENT SYSTEMS

Previous consultant reviewed the geometric layout, existing traffic signal equipment, and identified any deficiencies (outdated controller hardware/software, obsolete equipment, etc.) for each intersection along the selected synchronized segments along the Harbor Boulevard BRT Corridor.

The review included an assessment of the existing intersection geometry (number of lanes, lane width, lane storage, crosswalks, etc), traffic conditions, and traffic signal control equipment along the Harbor Boulevard BRT Corridor using observation, available as-built plans, consultation with the local agencies, and agency aerial photos. With documented permission of the local agencies, previous consultant inspected the interior of each traffic control cabinet and made recommendations for equipment upgrades.

Previous consultant verified existing traffic signal communication systems along the Harbor Boulevard BRT Corridor including equipment inside the signal controller cabinets and reviewed field masters/hubs locations and equipment.

Previous consultant reviewed the agencies' traffic management system(s) including hardware and software.

Previous consultant also identified all planned and programmed improvements (widening projects, intersection improvements, etc.) on the selected synchronized segments along the Harbor Boulevard BRT Corridor. The identification of these projects included a list summarizing all improvements.

Key components of the completed corridor review included, but were not limited to the following:

1. Harbor Boulevard BRT Corridor lane configurations and lane widths.
2. Existing street and lane geometries, curbs, median, sidewalk width, pedestrian ramps, etc.
3. Location of traffic control equipment at signalized intersections – poles, controller cabinets, service cabinets, telephone service, detector loops, existing service location connection, etc.
4. Traffic signs and pavement markings at intersections along the Harbor Boulevard BRT Corridor and cross streets.
5. Traffic signal controller information, such as type of controller, brand and make, condition of equipment.
6. Existing signal operation characteristics – signal phasing, cycle lengths, lead-lag, protective-permissive, etc.
7. Existing signal communication equipment.
8. Existing time-referencing setup.
9. Special characteristics such as proximity to adjacent intersections, location of bus stops, location of driveways, parking prohibitions, and other factors that may affect the efficiency of operation.
10. Photographed each intersection including location of signal controller cabinet.
11. Photographed the inside of each signal controller cabinet.
12. Noted any deficiencies of traffic control equipment at each intersection.

13. Noted the maintenance condition of the traffic signal equipment.
14. Existing preemption devices.

The field notes were prepared and approved by AUTHORITY.

Previous consultant noted factors that are expected to affect signal progression including, but not limited to: intersections with high pedestrian or bicyclist volumes; over-saturated intersections; uneven lane distribution; high volumes of trucks and buses; high-volume un-signalized intersections, including interchanges; parking maneuvers; location of bus stops; differing signal timing patterns among agencies; etc.

Previous consultant identified any deficiencies of the existing traffic signal control equipment (i.e. hardware, software) and geometric layout. Previous consultant provided recommended solutions that may be implemented in order to correct deficiencies and improve the traffic operations along the Harbor Boulevard BRT Corridor. Recommendations provided include, but are not limited to, replacement of traffic signal controller(s), software upgrades, installation of GPS clocks, other traffic signal equipment upgrades/replacement, and geometric layout improvements.

Previous consultant prepared a Field Inventory Report summarizing the findings of the field review. The report contains photos and field review summary sheets of each signalized intersection. The report is provided in sections in accordance to each arterial along the Harbor Boulevard BRT Corridor.

AUTHORITY shall provide an electronic copy, in MS Word, MS Visio, and Adobe Acrobat (PDF) format, of the completed AUTHORITY and agencies approved Field Inventory Report to the CONSULTANT for review and background information.

Consultant shall review and verify the following key components of the completed corridor review by others:

1. Harbor Boulevard BRT Corridor lane configurations
2. Existing street and lane geometries
3. Existing signal operation characteristics – signal phasing, cycle lengths, lead-lag, protective-permissive, etc.

If any existing field inventory changes in the completed corridor review are observed, CONSULTANT shall conduct all necessary fieldwork and provide field notes to correct and implement these changes into the TSS design finalization phase. Before fieldwork is conducted, all proposed fieldwork locations shall be presented to AUTHORITY for review and approval. All field notes shall be prepared in a neat and readable format and approved by AUTHORITY in writing.

All fieldwork shall be photographed and photos shall be provided to the AUTHORITY.

CONSULTANT shall identify any deficiencies in the existing traffic signal control timing parameters or settings at each project intersection including: Pedestrian Walk and Pedestrian Clearance intervals; Bicycle and/or Automobile/Truck timing for Minimum Green; Yellow Change; and, All Red Clearance intervals as required by the MUTCD, CA MUTCD, Traffic Operations Policy Directives (TOPD), or enacted laws governing such issues. These deficiencies shall be submitted to the AUTHORITY and the agencies for review and comment.

Each local agency shall be solely responsible for, and provide direction to CONSULTANT and AUTHORITY in the methods and formulas used to calculate the correct time settings for these respective timing intervals. These policies will be on file with the AUTHORITY.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.2.6, to AUTHORITY detailing the findings of the completed Field Inventory Report review.

**3.2.5 TASK B-5: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – REVIEW COMPLETED HARBOR BOULEVARD
BRT CORRIDOR “BEFORE” STUDY**

Previous consultant conducted a “Before” field study report representative of the times and days for which synchronization plans were developed. The report identified Measures of Effectiveness (MOE) to evaluate the effects of the synchronization plans. MOE’s included traffic flow, travel time, average speed, stops, fuel consumption reduction, pollution reduction, and other pertinent items. The identified MOE’s were compiled for the corridor using the floating car method and Synchro 7.0.

For the “Before” field study, previous consultant conducted a minimum of five (5) floating car “runs” in each direction and during all periods in which synchronization plans were developed.

The completed report addresses optimization strategies for signal synchronization, specifically focusing on how to synchronize the Harbor Boulevard BRT Corridor (i.e. end-to-end optimization and/or coordinated zones). The report defines the traffic patterns along the Harbor Boulevard BRT Corridor throughout the day and throughout the week.

The analysis was based on all floating car data collected using a GPS device and PC Travel software. AUTHORITY shall provide all PC Travel data files and an electronic copy, in Adobe Acrobat (PDF) format, of the PC Travel summary reports for CONSULTANT review and background information.

Previous consultant prepared a “Before” Study Project Report and finalized the “Before” Study Project Report based on comments received from the AUTHORITY.

AUTHORITY shall provide an electronic copy, in MS Word, MS Excel, and Adobe Acrobat (PDF) format, of the completed and AUTHORITY approved Harbor Boulevard BRT Corridor “Before” Study Project Report for CONSULTANT review and background information.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.2.6 to AUTHORITY detailing the findings of the completed “Before” Study Project Report review.

**3.2.6 TASK B-6: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – COMPLETED DESIGN PHASE
DOCUMENTATION REVIEW**

CONSULTANT shall review all completed design phase documentation by others listed above in Sections 3.2.2 through 3.2.5 and below in Section 3.2.7.

CONSULTANT shall prepare a technical memorandum detailing findings of the design phase documentation review. The report shall contain, but not be limited to, the following:

- a. Review Findings
- b. Deficiencies
- c. Changes of Existing Field Conditions (lane configuration, signal phasing, etc.)
- d. Missing Information / Incomplete Information
- e. Information required to update the completed design phase documentation by others
- f. Recommendations Required to Complete the Remaining TSS Design Finalization Tasks

The report shall be provided in sections in accordance to each design phase document reviewed.

Harbor Boulevard BRT Corridor TSS Design Finalization Services deliverables (in part to include):

B6a. Technical memorandum detailing findings of the completed design phase documentation review.

**3.2.7 TASK B-7: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – SIGNAL TIMING OPTIMIZATION**

Previous consultant developed a Draft model of the study area approved by the AUTHORITY. Previous consultant calibrated the draft model based on travel time, delay studies, field observations of queue lengths, and saturation flows for heavy movements at key intersections. CONSULTANT shall review, verify, and update the previously prepared Draft model of the study area as defined in this task. Signal synchronization optimization shall be conducted in Synchro 7.0 and optimization shall be augmented with Tru – Traffic TS/PP version 8.0.

If the CONSULTANT elects to use alternative methodologies to augment or replace certain aspects of the Synchro model such as pre-processing of certain data sets or split analysis, and/or other types of processes, the CONSULTANT shall describe these operations in detail in the report with supporting documentation as to why these processes were used in lieu of or in augmentation to the Synchro model. These methodologies shall also be described in detail in the CONSULTANT'S proposal for this project.

CONSULTANT shall develop an operational model within SimTraffic software. The SimTraffic model will identify those local areas or portions of the project that need special operational analysis of queue interactions such as starvation or spillback. The operational analysis shall be used to supplement the "Before" and "After" studies, to understand the effects of planned corridor improvements, fine tune timing plans prior to implementation, and to analyze the additional operational improvements as recommended by CONSULTANT. The entire corridor does not have to be micro – simulated. Analysis shall be performed on corridor segments that have queuing, starvation, spillback, or other problems which can be mitigated by the SimTraffic program.

CONSULTANT shall develop final optimized signal timings using Synchro 7.0, and recommend any changes to the signal phasing at each signalized intersection that may improve the efficiency of operations. The recommended final signal timing plans shall be reviewed for comments by the AUTHORITY and agencies' staffs.

CONSULTANT shall evaluate signal timing and coordination parameters with consideration for the following:

1. Review and verification of completed design documentation provided and update the signal timing and coordination parameters as deemed appropriate through review findings, field observations, etc.
2. Optimum coordination timing, lead/lag or lead/lead left-turn phasing as deemed appropriate (except at Protected/Permissive locations, where phasing will be lead/lead only), double or half cycling, and other such techniques.
3. Timing parameters which provide adequate splits and corresponding offsets which fully accommodate pedestrians within the split time.

CONSULTANT shall take into consideration the pedestrian timing parameters used by the local agency on a case by case basis.

4. Timing parameters which incorporate minimal pedestrian activity to provide the optimum vehicle split and offset timing and accommodate pedestrians using various pedestrian timing adjustment techniques for pedestrian splits during coordination.
5. Appropriate cycle lengths and signal groupings consistent with the goals of this effort. Preliminary proposed cycle lengths and signal groupings were developed by the previous consultant and presented to the agencies for review and comment. All agency preliminary comments have been addressed by the previous consultant. Additionally, the previous consultant has recommended time-of-day start and stop intervals for the various timing plans.
6. CONSULTANT shall update, at minimum, timing plans which consider the following peak periods: a.m. peak, mid-day peak, p.m. peak and one weekend peak. Timing plans shall be in both Synchro format and the preferred timing chart format of each agency.
7. CONSULTANT shall update timing plans for a.m. peak, mid-day peak, p.m. peak and a weekend peak based on the upcoming improvements for the corridor as identified. Timing plans shall be in Synchro format and the preferred timing chart format of each agency.
8. CONSULTANT shall review, verify, and update the previously prepared Time-Space Diagrams for the synchronized segments along the BRT Corridor.

Previous consultant prepared a Draft Signal Timing Optimization Plan detailing the signal timing optimization, including detail evaluation and recommendation on the time-referencing system and analysis results. The Draft Signal Timing Optimization Plan included, but was not limited to, the following:

- a. Proposed cycle lengths and signal groupings by corridor and by agency.
- b. All Draft optimized and synchronized traffic signal timing plans in Synchro format, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).
- c. Draft Time-Space diagrams for the synchronized segments along the BRT Corridor.

The Draft Signal Timing Optimization Plan was submitted to AUTHORITY and agencies for review and comment. AUTHORITY has already provided their review and all comments were addressed by the previous consultant.

AUTHORITY shall provide a copy of all AUTHORITY comments and agency comments received.

CONSULTANT shall coordinate and collect from all agencies the Draft Signal Timing Optimization Plan comments. CONSULTANT shall incorporate comments into the Final Signal Timing Optimization Plan.

Final Time-Space diagrams shall match those previously completed by previous consultant and submitted to the agencies for review and comment. The Time-Space diagrams shall be in color, be scaled both horizontally and vertically, show vehicle splits and movements for each intersection, show offsets and intersection distances listed below the intersections, and show forward and reverse green bands with applicable phase sequences. The Time-Space diagrams shall be separated per signal grouping and peak period plan and fully annotated with proposed cycle lengths, travel direction, signal grouping zone limits, and peak period plan identification. All intersections with crossing coordination, half cycle lengths, and existing and proposed pedestrian overrides shall be annotated as such on the Time-Space Diagrams. For a sample Draft Time-Space Diagram completed by the previous consultant, see Reference Documents – Attachment B.

AUTHORITY shall provide electronic copies of the following completed and AUTHORITY approved Harbor Boulevard BRT Corridor Signal Timing Optimization deliverables for CONSULTANT review and use:

1. All Draft optimized and synchronized traffic signal timing plans in Synchro format, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).
2. Draft Time-Space diagrams, in Adobe Acrobat (PDF) format and Tru – Traffic TS/PP data files.
3. Draft Signal Timing Optimization Plan, in MS Word, MS Excel, and Adobe Acrobat (PDF) format.
4. Electronic Synchro 7.0 data files used in the Draft analysis.

CONSULTANT shall submit a Final Signal Timing Implementation Plan to AUTHORITY and agencies, which addresses all comments provided by AUTHORITY and agencies in the Draft Signal Timing Optimization Plan.

Harbor Boulevard BRT Corridor TSS Design deliverables (in part to include):

- B7a. All Final optimized and synchronized traffic signal timing plans in Synchro format and the preferred timing chart format of each agency, including (a) existing corridor conditions and (b) planned and programmed

improvements (widening projects and intersection improvements) within the next five years (after NTP).

B7b. Final Time-Space diagrams.

B7c. Final Signal Timing Optimization Plan.

B7d. Electronic Synchro 7.0 data files used in the Final analysis.

B7e. Electronic SimTraffic data files used in the Final analysis.

B7f. Electronic versions of the Final analysis and all data files including the Tru – Traffic TS/PP files.

3.2.8 TASK B-8: HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES - PROJECT COORDINATION AND MEETINGS

CONSULTANT shall develop a schedule for meetings with AUTHORITY, agencies, manufacturers, and others in order to facilitate the review/approval process of the signal synchronization along the Harbor Boulevard BRT Corridor.

CONSULTANT shall attend meetings as directed by AUTHORITY and agencies to discuss specific information and requirements related to the signal synchronization along the Harbor Boulevard BRT Corridor.

Meetings will also consist of any specific meeting called by AUTHORITY and agencies, at which CONSULTANT's attendance is required.

It is required that in the TSS Design Phase, CONSULTANT, AUTHORITY, and agencies (if available), conduct bi-weekly meetings in order to provide a continuous dialogue and develop a team relationship for the success of this project.

CONSULTANT shall prepare and distribute meeting minutes and action item matrix to the project team prior to the next meeting. CONSULTANT shall provide progress reports and schedules that will include completion and milestones for each task including meetings. The progress report and schedule will be provided to AUTHORITY on a monthly basis.

AUTHORITY and/or its designee shall be provided with draft meeting agendas for their review and written approval prior to the preparation of final meeting agendas. AUTHORITY and/or its designee shall be provided with draft meeting minutes for their review and written approval prior to the distribution of final meeting minutes. AUTHORITY and/or its designee shall be invited and shall participate at every meeting.

Harbor Boulevard BRT Corridor TSS Design deliverables (in part to include):

B8a. Project Meeting Agendas.

B8b. Project Meeting Minutes and Action items.

B8c. Action Item Matrix.

3.3 PART “C” – WESTMINSTER/17th STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES

3.3.1 TASK C-1: WESTMINSTER/17th STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – KICK-OFF MEETING

CONSULTANT shall have a kick-off meeting with the AUTHORITY to discuss the following:

1. Westminster/17th Street BRT Corridor alignment
2. List of arterial/collector roads
3. List of signalized intersections
4. Other projects along the Westminster/17th Street BRT Corridor
5. Goals and objectives of the Westminster/17th Street BRT Corridor TSS
6. Completed and remaining TSS Design Phase Project tasks
7. TSS analysis process
8. Review and approval coordination process
9. Project schedule, key milestones, and deliverables

3.3.2 TASK C-2: WESTMINSTER/17th STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – REVIEW COMPLETED TSS STUDY ALIGNMENT VERIFICATION

Previous consultant reviewed the Westminster/17th Street BRT Corridor signalized intersection list provided by the AUTHORITY and met with each affected agency to verify the number of signalized intersections that would be included on each arterial/collector road along the Westminster/17th Street BRT Corridor.

Previous consultant completed Westminster/17th Street BRT Corridor TSS Alignment Draft and Final Reports showing the study area including the arterials/collector roads and the number of signalized intersections that were synchronized as part of this project.

AUTHORITY shall provide an electronic copy, in MS Word and Adobe Acrobat (PDF) format, of the completed AUTHORITY and agencies approved TSS Alignment Final Report to the CONSULTANT for review and background information.

CONSULTANT shall provide a section in the technical memorandum deliverable as described in Section 3.3.6 to AUTHORITY detailing the findings of the completed TSS Alignment Final Report review.

**3.3.3 TASK C-3: WESTMINSTER/17TH STREET BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – COMPLETED DATA COLLECTION**

Previous consultant collected all data necessary to thoroughly understand existing traffic conditions along the Westminster/17th Street BRT Corridor to facilitate the development of optimal time-of-day traffic signal synchronization plans.

Previous consultant collected from the affected agencies the following:

1. Existing timing sheets
2. Existing synchronization plans
3. Existing synchronization zones
4. Traffic signal as-built drawings
5. Traffic signal communication as-built drawings
6. Traffic Management System as-built drawings
7. Aerial photos
8. Maps

Previous consultant also collected from affected agencies signal timing and signal priority preferences, including, but not limited to, those related to pedestrian and bicycle timing, leading and lagging left-turn phasing, and conditional service, as well as the timing optimization software preference.

Previous consultant conducted all required seven-day 24-hour machine traffic counts, and axle traffic counts at AUTHORITY approved locations. Data obtained from Saturday traffic counts was used to determine the necessity of weekend signal timing. Eighteen (18) machine traffic counts were collected for the Westminster/17th Street BRT Corridor at approximately one-mile spacing.

Previous consultant conducted weekday peak period turning movement traffic counts at all study intersections, including pedestrian and bicycle counts.

Weekday counts were conducted for two hours of each peak period (AM, mid-day, and PM). Weekend turning movement traffic counts were conducted for a single two-hour Saturday mid-day peak period.

Peak period turning movement traffic counts were collected at all 47 approved signalized intersections along the Westminster/17th Street BRT Corridor.

All traffic counts are summarized in MS Excel format. AUTHORITY shall provide electronic copies of the raw data count sheets to the CONSULTANT along the Westminster/17th Street BRT Corridor.

AUTHORITY shall provide electronic copies of the following completed and AUTHORITY approved Westminster/17th Street BRT Corridor Data Collection deliverables for CONSULTANT review and background information:

1. Report, in MS Word, MS Excel, and Adobe Acrobat (PDF) format, summarizing data collection effort, including timing sheets, coordination plans, coordination zones, as-built drawings, aerial photos, maps, traffic collision analysis, and traffic collision diagrams.
2. 24-hour traffic counts, in MS Excel format, collected during the month of October 2008.
3. Axle classification traffic counts, in MS Excel format, collected during the month of October 2008.
4. Intersection peak period turning movement traffic counts, in MS Excel format, collected in early November 2008 (prior to the Thanksgiving holiday), late January 2009, and late May 2009.

For all existing signalized intersections in which existing signal timing is modified or where new signalized intersections are constructed during the TSS Design Finalization Phase, CONSULTANT shall collect from the respective agencies all updated or new timing sheets and traffic signal as-built drawings for incorporation into the Signal Timing Optimization task. Anticipated existing signal timing modifications and new signalized intersections along the Westminster/17th Street BRT Corridor include, but are not limited to, the following:

- a. Westminster Avenue at Beach Boulevard/SR-39 (signal timing modification)

The anticipated existing signal timing modifications and new signalized intersection locations listed above are for reference only and CONSULTANT shall coordinate and verify with the respective agencies.

CONSULTANT shall provide a section in the technical memorandum deliverable as described in Section 3.3.6 to AUTHORITY detailing the findings of the completed Data Collection deliverables review.

3.3.4 TASK C-4: WESTMINSTER/17TH STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – COMPLETED INVENTORY OF EXISTING TRAFFIC SIGNALS, FIELD MASTERS/HUBS LOCATIONS, SIGNAL COMMUNICATIONS, AND TRAFFIC MANAGEMENT SYSTEMS

Previous consultant reviewed the geometric layout, existing traffic signal equipment, and identified any deficiencies (outdated controller hardware/software, obsolete equipment, etc.) for each intersection along the selected synchronized segments along the Westminster/17th Street BRT Corridor.

The review included an assessment of the existing intersection geometry (number of lanes, lane width, lane storage, crosswalks, etc.), traffic conditions, and traffic signal control equipment along the Westminster/17th Street BRT Corridor using observation, available as-built plans, consultation with the local agencies, and agency aerial photos. With documented permission of the local agencies, previous consultant inspected the interior of each traffic control cabinet and made recommendations for equipment upgrades.

Previous consultant verified existing traffic signal communication systems along the Westminster/17th Street BRT Corridor including equipment inside the signal controller cabinets and reviewed field masters/hubs locations and equipment.

Previous consultant reviewed the agencies' traffic management system(s) including hardware and software.

Previous consultant also identified all planned and programmed improvements (widening projects, intersection improvements, etc.) on the selected synchronized segments along the Westminster/17th Street BRT Corridor. The identification of these projects included a list summarizing all improvements.

Key components of the completed corridor review included, but were not limited to, the following:

1. Westminster/17th Street BRT Corridor lane configurations and lane widths.
2. Existing street and lane geometries, curbs, median, sidewalk width, pedestrian ramps, etc.
3. Location of traffic control equipment at signalized intersections – poles, controller cabinets, service cabinets, telephone service, detector loops, existing service location connection, etc.
4. Traffic signs and pavement markings at intersections along the Westminster/17th Street BRT Corridor and cross streets.
5. Traffic signal controller information, such as type of controller, brand and make, condition of equipment.

6. Existing signal operation characteristics – signal phasing, cycle lengths, lead-lag, protective-permissive, etc.
7. Existing signal communication equipment.
8. Existing time-referencing setup.
9. Special characteristics such as proximity to adjacent intersections, location of bus stops, location of driveways, parking prohibitions, and other factors that may affect the efficiency of operation.
10. Photographed each intersection including location of signal controller cabinet.
11. Photographed the inside of each signal controller cabinet.
12. Noted any deficiencies of traffic control equipment at each intersection.
13. Noted the maintenance condition of the traffic signal equipment.
14. Existing preemption devices.

The field notes were prepared and approved by AUTHORITY.

Previous consultant noted factors that are expected to affect signal progression including, but not limited to: intersections with high pedestrian or bicyclist volumes; over-saturated intersections; uneven lane distribution; high volumes of trucks and buses; high-volume un-signalized intersections, including interchanges; parking maneuvers; location of bus stops; differing signal timing patterns among agencies; etc.

Previous consultant identified any deficiencies of the existing traffic signal control equipment (i.e. hardware, software) and geometric layout. Previous consultant provided recommended solutions that may be implemented in order to correct deficiencies and improve the traffic operations along the Westminster/17th Street BRT Corridor. Recommendations provided include, but are not limited to, replacement of traffic signal controller(s), software upgrades, installation of GPS clocks, other traffic signal equipment upgrades/replacement, and geometric layout improvements.

Previous consultant prepared a Field Inventory Report summarizing the findings of the field review. The report contains photos and field review summary sheets of each signalized intersection. The report is provided in sections in accordance to each arterial along the Westminster/17th Street BRT Corridor.

AUTHORITY shall provide an electronic copy, in MS Word, MS Visio, and Adobe Acrobat (PDF) format, of the completed AUTHORITY and agencies approved

Field Inventory Report to the CONSULTANT for review and background information.

CONSULTANT shall review and verify the following key components of the completed corridor review by others:

1. Westminster/17th Street BRT Corridor lane configurations
2. Existing street and lane geometries
3. Existing signal operation characteristics – signal phasing, cycle lengths, lead-lag, protective-permissive, etc.

If any existing field inventory changes in the completed corridor review are observed, CONSULTANT shall conduct all necessary field work and provide field notes to correct and implement these changes into the TSS design finalization phase. Before field work is conducted, all proposed field work locations shall be presented to AUTHORITY for review and approval. All field notes shall be prepared in a neat and readable format and approved by AUTHORITY in writing. All field work shall be photographed and photos shall be provided to the AUTHORITY.

CONSULTANT shall identify any deficiencies in the existing traffic signal control timing parameters or settings at each project intersection including: Pedestrian Walk and Pedestrian Clearance intervals; Bicycle and/or Automobile/Truck timing for Minimum Green; Yellow Change; and, All Red Clearance intervals as required by the MUTCD, CA MUTCD, Traffic Operations Policy Directives (TOPD), or enacted laws governing such issues. These deficiencies shall be submitted to the AUTHORITY and the agencies for review and comment.

Each local agency shall be solely responsible for, and provide direction to CONSULTANT and AUTHORITY in the methods and formulas used to calculate the correct time settings for these respective timing intervals. These policies will be on file with the AUTHORITY.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.3.6, to AUTHORITY detailing the findings of the completed Field Inventory Report review.

3.3.5 TASK C-5: WESTMINSTER/17TH STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – COMPLETED WESTMINSTER/17TH STREET BRT CORRIDOR “BEFORE” STUDY

Previous consultant conducted a “Before” field study report representative of the times and days for which synchronization plans were developed. The report identified Measures of Effectiveness (MOE) to evaluate the effects of the synchronization plans. MOE’s included traffic flow, travel time, average speed,

stops, fuel consumption reduction, pollution reduction, and other pertinent items. The identified MOE's were compiled for the corridor using the floating car method and Synchro 7.0.

For the "Before" field study, previous consultant conducted a minimum of five (5) floating car "runs" in each direction and during all periods in which synchronization plans were developed.

The completed report addresses optimization strategies for signal synchronization, specifically focusing on how to synchronize the Westminster/17th Street BRT Corridor (i.e. end-to-end optimization and/or coordinated zones). The report defines the traffic patterns along the Westminster/17th Street BRT Corridor throughout the day and throughout the week.

The analysis was based on all floating car data collected using a GPS device and PC Travel software. AUTHORITY shall provide all PC Travel data files and an electronic copy, in Adobe Acrobat (PDF) format, of the PC Travel summary reports for CONSULTANT review and background information. Previous consultant prepared a "Before" Study Project Report and finalized the "Before" Study Project Report based on comments received from the AUTHORITY.

AUTHORITY shall provide an electronic copy, in MS Word, MS Excel, and Adobe Acrobat (PDF) format, of the completed and AUTHORITY approved Westminster/17th Street BRT Corridor "Before Study" Project Report for CONSULTANT review and background information.

CONSULTANT shall provide a section in the technical memorandum deliverable, as described in Section 3.3.6 to AUTHORITY detailing the findings of the completed "Before" Study Project Report review.

3.3.6 TASK C-6: WESTMINSTER/17TH STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – COMPLETED DESIGN PHASE DOCUMENTATION REVIEW

CONSULTANT shall review all completed design phase documentation by others listed above in Sections 3.3.2 through 3.3.5 and below in Section 3.3.7.

CONSULTANT shall prepare a technical memorandum detailing findings of the design phase documentation review. The report shall contain, but not be limited to, the following:

- a. Review Findings
- b. Deficiencies
- c. Changes of Existing Field Conditions (lane configuration, signal phasing, etc.)
- d. Missing Information / Incomplete Information

- e. Information required to update the completed design phase documentation by others
- f. Recommendations Required to Complete the Remaining TSS Design Finalization Tasks

The report shall be provided in sections in accordance to each design phase document reviewed.

Westminster/17th Street BRT Corridor TSS Design Finalization Services deliverables (in part to include):

- C6a. Technical memorandum detailing findings of the completed design phase documentation review.

3.3.7 TASK C-7: WESTMINSTER/17TH STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – SIGNAL TIMING OPTIMIZATION

Previous consultant developed a Draft model of the study area approved by the AUTHORITY. Previous consultant calibrated the draft model based on travel time, delay studies, field observations of queue lengths, and saturation flows for heavy movements at key intersections. CONSULTANT shall review, verify, and update the previously prepared Draft model of the study area, as defined in this task. Signal synchronization optimization shall be conducted in Synchro 7.0 and optimization shall be augmented with Tru – Traffic TS/PP version 8.0.

If the CONSULTANT elects to use alternative methodologies to augment or replace certain aspects of the Synchro model such as pre-processing of certain data sets or split analysis, and/or other types of processes, the CONSULTANT shall describe these operations in detail in the report with supporting documentation as to why these processes were used in lieu of or in augmentation to the Synchro model. These methodologies shall also be described in detail in the CONSULTANT'S proposal for this project.

CONSULTANT shall develop an operational model within SimTraffic software. The SimTraffic model will identify those local areas or portions of the project that need special operational analysis of queue interactions such as starvation or spillback. The operational analysis shall be used to supplement the "Before" and "After" studies, to understand the effects of planned corridor improvements, fine tune timing plans prior to implementation, and to analyze the additional operational improvements as recommended by CONSULTANT. The entire corridor does not have to be micro – simulated. Analysis shall be performed on corridor segments that have queuing, starvation, spillback, or other problems which can be mitigated by the SimTraffic program.

CONSULTANT shall develop final optimized signal timings using Synchro 7.0, and recommend any changes to the signal phasing at each signalized intersection that may improve the efficiency of operations. The recommended

final signal timing plans shall be reviewed for comments by the AUTHORITY and agencies' staffs.

CONSULTANT shall evaluate signal timing and coordination parameters with consideration for the following:

1. Review and verification of completed design documentation provided and update the signal timing and coordination parameters as deemed appropriate through review findings, field observations, etc.
2. Optimum coordination timing, lead/lag or lead/lead left-turn phasing as deemed appropriate (except at Protected/Permissive locations, where phasing will be lead/lead only), double or half cycling, and other such techniques.
3. Timing parameters which provide adequate splits and corresponding offsets which fully accommodate pedestrians within the split time. CONSULTANT shall take into consideration the pedestrian timing parameters used by the local agency on a case by case basis.
4. Timing parameters which incorporate minimal pedestrian activity to provide the optimum vehicle split and offset timing and accommodate pedestrians using various pedestrian timing adjustment techniques for pedestrian splits during coordination.
5. Appropriate cycle lengths and signal groupings consistent with the goals of this effort. Preliminary proposed cycle lengths and signal groupings were developed by the previous consultant and presented to the agencies for review and comment. All agency preliminary comments have been addressed by the previous consultant. Additionally, the previous consultant has recommended time-of-day start and stop intervals for the various timing plans.
6. CONSULTANT shall update, at minimum, timing plans which consider the following peak periods: a.m. peak, mid-day peak, p.m. peak and one weekend peak. Timing plans shall be in both Synchro format and the preferred timing chart format of each agency.
7. CONSULTANT shall update timing plans for a.m. peak, mid-day peak, p.m. peak and a weekend peak based on the upcoming improvements for the corridor as identified. Timing plans shall be in Synchro format and the preferred timing chart format of each agency.
8. CONSULTANT shall review, verify, and update the previously prepared Time-Space Diagrams for the synchronized segments along the BRT Corridor.

Previous consultant prepared a Draft Signal Timing Optimization Plan detailing the signal timing optimization, including detail evaluation and recommendation on the time-referencing system and analysis results. The Draft Signal Timing Optimization Plan included, but was not limited to, the following:

- a. Proposed cycle lengths and signal groupings by corridor and by agency.
- b. All Draft optimized and synchronized traffic signal timing plans in Synchro format, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).
- c. Draft Time-Space diagrams for the synchronized segments along the BRT Corridor.

The Draft Signal Timing Optimization Plan was submitted to AUTHORITY and agencies for review and comment. AUTHORITY has already provided their review and all comments were addressed by the previous consultant. AUTHORITY shall provide a copy of all AUTHORITY comments and agency comments received.

CONSULTANT shall coordinate and collect from all agencies the Draft Signal Timing Optimization Plan comments. CONSULTANT shall incorporate comments into the Final Signal Timing Optimization Plan.

Final Time-Space diagrams shall match those previously completed by previous consultant and submitted to the agencies for review and comment. The Time-Space diagrams shall be in color, be scaled both horizontally and vertically, show vehicle splits and movements for each intersection, show offsets and intersection distances listed below the intersections, and show forward and reverse green bands with applicable phase sequences. The Time-Space diagrams shall be separated per signal grouping and peak period plan and fully annotated with proposed cycle lengths, travel direction, signal grouping zone limits, and peak period plan identification. All intersections with crossing coordination, half cycle lengths, and existing and proposed pedestrian overrides shall be annotated as such on the Time-Space Diagrams. For a sample Draft Time-Space Diagram completed by the previous consultant, see Reference Documents – Attachment B.

AUTHORITY shall provide electronic copies of the following completed and AUTHORITY approved Westminster/17th Street BRT Corridor Signal Timing Optimization deliverables for CONSULTANT review and use:

1. All Draft optimized and synchronized traffic signal timing plans in Synchro format, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).

2. Draft Time-Space diagrams, in Adobe Acrobat (PDF) format and Tru – Traffic TS/PP data files.
3. Draft Signal Timing Optimization Plan, in MS Word, MS Excel, and Adobe Acrobat (PDF) format.
4. Electronic Synchro 7.0 data files used in the Draft analysis.

CONSULTANT shall submit a Final Signal Timing Implementation Plan to AUTHORITY and agencies, which addresses all comments provided by AUTHORITY and agencies in the Draft Signal Timing Optimization Plan.

Westminster/17th Street BRT Corridor TSS Design deliverables (in part to include):

- C7a. All Final optimized and synchronized traffic signal timing plans in Synchro format and the preferred timing chart format of each agency, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).
- C7b. Final Time-Space diagrams.
- C7c. Final Signal Timing Optimization Plan.
- C7d. Electronic Synchro 7.0 data files used in the Final analysis.
- C7e. Electronic SimTraffic data files used in the Final analysis.
- C7f. Electronic versions of the Final analysis and all data files including the Tru – Traffic TS/PP files.

3.3.8 TASK C-8: WESTMINSTER/17TH STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES - PROJECT COORDINATION AND MEETINGS

CONSULTANT shall develop a schedule for meetings with AUTHORITY, agencies, manufacturers, and others in order to facilitate the review/approval process of the signal synchronization along the Westminster/17th Street BRT Corridor.

CONSULTANT shall attend meetings as directed by AUTHORITY and agencies to discuss specific information and requirements related to the signal synchronization along the Westminster/17th Street BRT Corridor.

Meetings will also consist of any specific meeting called by AUTHORITY and agencies, at which CONSULTANT's attendance is required.

It is required that in the TSS Design Phase, CONSULTANT, AUTHORITY, and agencies (if available), conduct bi-weekly meetings in order to provide a continuous dialogue and develop a team relationship for the success of this project.

CONSULTANT shall prepare and distribute meeting minutes and action item matrix to the project team prior to the next meeting. CONSULTANT shall provide progress reports and schedules that will include completion and milestones for each task including meetings. The progress report and schedule will be provided to AUTHORITY on a monthly basis.

AUTHORITY and/or its designee shall be provided with draft meeting agendas for their review and written approval prior to the preparation of final meeting agendas. AUTHORITY and/or its designee shall be provided with draft meeting minutes for their review and written approval prior to the distribution of final meeting minutes. AUTHORITY and/or its designee shall be invited and shall participate at every meeting.

Westminster/17th Street BRT Corridor TSS Design deliverables (in part to include):

C8a. Project Meeting Agendas.

C8b. Project Meeting Minutes and Action items.

C8c. Action Item Matrix.

SECTION 4.0

TRAFFIC SIGNAL SYNCHRONIZATION IMPLEMENTATION

SECTION 4.0 TRAFFIC SIGNAL SYNCHRONIZATION IMPLEMENTATION

4.1 TASK AND DELIVERABLE REQUIREMENTS

The TSS Implementation Phase, which includes but is not limited to, signal timing implementation, furnishing of equipment, equipment installation, and support services, is outlined in the following sections: Bristol/State College BRT Corridor TSS Implementation Services (Part “A”), Harbor Boulevard BRT Corridor TSS Implementation Services (Part “B”), and Westminster/17th Street BRT Corridor TSS Implementation Services (Part “C”).

Electronic files of approved reports and planning documents shall be provided to AUTHORITY (in format(s) as approved by AUTHORITY in writing).

CONSULTANT must conduct thorough quality control/quality assurance steps prior to submitting deliverables, data, documents, and other related project information to AUTHORITY for review. CONSULTANT shall submit four (4) hard copies and four (4) electronic file copies (in a media as approved by AUTHORITY in writing) of any and all reports, exhibits, plans, and documents.

4.2 PART “A” – BRISTOL/STATE COLLEGE BRT CORRIDOR TSS IMPLEMENTATION SERVICES

4.2.1 TASK A-1: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS SERVICES – SIGNAL TIMING IMPLEMENTATION

CONSULTANT shall submit a Bristol/State College BRT Corridor technical memorandum containing the field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agencies, and final signal timing implementation plan to AUTHORITY and agencies within thirty (30) days of NTP of the BRT corridors TSS Implementation Phase for written approval by AUTHORITY.

CONSULTANT shall submit four (4) hard copies and four (4) electronic copies (in electronic media as approved by AUTHORITY in writing) of the Bristol/State College BRT Corridor technical memorandum to AUTHORITY for written approval prior to commencement of signal timing implementation.

Upon written approval of the optimized signal timings by AUTHORITY and agencies, CONSULTANT shall implement, or assist agencies’ staff in the implementation of new signal timings at all signalized intersections except those located within Caltrans District 12 jurisdiction either through: 1) the central traffic signal system (if available) or, 2) direct implementation in the field traffic signal controllers. Caltrans District 12 shall be responsible for the implementation of new signal timings at all signalized intersections located within their jurisdiction.

CONSULTANT shall use existing traffic signal interconnection systems for signal timing implementation. If interconnection systems do not exist, CONSULTANT shall implement time-based signal coordination techniques within the jurisdiction. CONSULTANT shall also implement time-based signal coordination techniques across traffic signals controlled by different agencies to provide inter-jurisdictional coordination.

The project will include the procurement of ten (10) new traffic signal controllers. The specifications and final quantity of new controllers were determined during the TSS Design Phase as a result of the previous consultant recommendations and corresponding written approvals from AUTHORITY and agencies. CONSULTANT shall be responsible for the installation of traffic signal controllers at all signalized intersections except those located within Caltrans District 12 jurisdiction. Caltrans District 12 shall be responsible for the installation of traffic signal controllers at all signalized intersections located within their jurisdiction. At no additional cost, CONSULTANT shall be responsible for the procurement and delivery of the traffic signal controllers to locations approved by AUTHORITY in writing.

As the project will be using time-based signal coordination, CONSULTANT shall evaluate the current time-referencing of all traffic signal controllers and recommend a corridor-wide strategy (such as GPS clocks) to ensure that all traffic signal controllers are on synchronized time clocks. The specifications and final quantity of new GPS clocks were determined during the TSS Design Phase as a result of the previous consultant recommendations and corresponding written approvals from AUTHORITY and agencies. At no additional cost, CONSULTANT shall be responsible for the procurement and installation of three (3) GPS clocks at locations approved by AUTHORITY in writing.

Table 4-1 summarizes the time-reference equipment recommendations, including new traffic signal controllers and GPS clocks, determined during the TSS Design Phase that will be required for the Bristol/State College Boulevard BRT Corridor.

TABLE 4-1
Bristol/State College Boulevard BRT Corridor
TSS Time-Reference Equipment Recommendations

Agency	Intersection		TSS Time-Reference Equipment Recommendation
	Arterial	Cross Street	
Caltrans	State College Boulevard	Imperial Highway / SR-90	cu - 2070 w/ 6A telemetry module
	State College Boulevard	SR-91 WB Ramps	cu - 2070 w/ 6A telemetry module, gps
	State College Boulevard	SR_91 EB Ramps	cu - 2070 w/ 6A telemetry module
	State College Boulevard	Orange Center Drive	cu - 2070 w/ 6A telemetry module
	State College Boulevard	Anaheim Blvd / I-5 NB Ramps	cu - 2070 w/ 6A telemetry module, cu - 170E TRFM, gps
	State College Boulevard	I-5 SB Ramps	cu - 2070 w/ 6A telemetry module
	La Veta Avenue	SR-22 WB On-Ramp / I-5 SB Off-Ramp / I-5 NB to SR-22 WB Connector Off-Ramp	cu - 170E TRFM, gps
	Bristol Street	I-405 NB Off-Ramp	cu - 2070 w/ 6A telemetry module
	Bristol Street	I-405 SB Ramps	cu - 2070 w/ 6A telemetry module

Note: cu = controller unit; gps = gps time source receiver

CONSULTANT shall test all furnished traffic signal equipment (including software) as required by AUTHORITY, Caltrans, agencies, equipment manufacturer(s), and/or other similarly involved third parties prior to the installation of any equipment (including software). If malfunctions, problems, or other issues related to the testing of equipment are observed by the CONSULTANT, the AUTHORITY shall be notified in writing within twenty-four (24) hours.

Upon written authorization by the AUTHORITY, CONSULTANT shall procure and install, or assist agency staff in installing, any devices that are part of the time-referencing strategy. This may include devices installed at the agency traffic management center or at traffic signal controller cabinets.

Agencies shall be responsible for local intersection inspection services on the installation of field work and equipment. Agencies shall be responsible for the inspection and installation of any central master, field master, controller units or assemblies and any related communications systems with oversight by the AUTHORITY. CONSULTANT shall work under the constraints of construction specifications and standards of each local agency and Caltrans. Caltrans personnel will be responsible for the removal and installation of any Caltrans owned or operated intersection controller systems. CONSULTANT will be responsible for all other intersection systems modifications, removal, installations, etc.

CONSULTANT shall provide onsite assistance for turn-on of any new or modified equipment.

CONSULTANT shall obtain all permits and pay all fees required by the agencies necessitated by its operations for this SOW and no additional compensation for fees will be allowed, therefore. CONSULTANT shall obtain all required encroachment permits from Caltrans District 12. CONSULTANT shall pay any and all Caltrans District 12 labor fees to install new and remove existing equipment (controllers). CONSULTANT shall include all encroachment permit costs in a lump sum price. AUTHORITY will not allow or approve any extra costs. AUTHORITY will endeavor but not guarantee to have permit requirements and associated fees removed or waived. All permits obtained shall be kept in a readily available place on the job site at all times during equipment installation.

CONSULTANT shall fine-tune, or assist local agency staff in the fine-tuning of, the new settings and timings. CONSULTANT shall fine-tune timings in the field and record all changes. Fine-tuning shall be conducted during times and days that are representative of the times and days for which coordination plans were developed. Fine-tuning shall consist of, at a minimum, driving the Bristol/State College BRT Corridor and visually verifying system operation relative to the approved time-space diagrams provided during the TSS Design Phase. Adjustments to offsets and splits shall be included as part of this task.

Upon final approval by the AUTHORITY and the respective agencies, one (1) hard copy and one (1) electronic format timing chart, per intersection, shall be provided to the respective agencies. One (1) timing chart per intersection, in electronic format, shall be provided to the AUTHORITY. Timing sheets shall be provided by CONSULTANT at time of turn on.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

- A1a. Technical memorandum containing field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agency, and final signal timing implementation plan.

The CONSULTANT shall complete all Bristol/State College Boulevard BRT Corridor Signal Timing Implementation tasks prior to May 12, 2011.

4.2.2 TASK A-2: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS IMPLEMENTATION SERVICES – EQUIPMENT PROCUREMENT

CONSULTANT shall provide a list of materials, number of units, and prices for the Bristol/State College BRT Corridor Signal Synchronization, including traffic signal equipment (traffic signal controllers, traffic signal controller software, and GPS clocks), and associated equipment that will be procured and installed by the CONSULTANT. AUTHORITY and the agencies shall review and AUTHORITY shall approve in writing the list of materials, number of units, and prices prior to ordering the equipment by CONSULTANT.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (to in part include):

A2a. List of Materials, Units, and Prices.

A2b. Copies of All Purchase Orders and Product Manuals.

**4.2.3 TASK A-3: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION SCHEDULING
OF WORK**

CONSULTANT shall provide an equipment installation schedule for the Bristol/State College BRT Corridor showing the activities, days, and locations that the equipment will be installed and tested. The installation schedule shall also indicate any implementation work that may be conducted by others at the same intersections under separate projects.

CONSULTANT shall furnish AUTHORITY with four (4) hard copies and four (4) electronic copies (in a media approved in writing by AUTHORITY) of a written timetable showing the proposed schedule of work. The schedule of work shall be submitted for approval to AUTHORITY and the agencies at least thirty (30) days prior to the beginning of the equipment installation and shall be updated on a monthly basis thereafter for the duration of the TSS Implementation Phase.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

A3a. Signal Synchronization Equipment Installation Schedule.

**4.2.4 TASK A-4: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION
COORDINATION, INSTALLATION MANPOWER, AND INSTALLATION
RESTRICTIONS**

CONSULTANT shall coordinate installation, modification, and/or upgrade of traffic signal equipment with the AUTHORITY and the agencies. CONSULTANT shall coordinate the work of the various trades and crafts to avoid possible interferences, duplication of work, or unfinished gaps, and conflicts between operations. The various trades and crafts shall agree that, due to field conditions, minor departures from the improvement plans are bound to occur, and that such departures are self compensation so far as cost of additions or deductions are concerned. No claims for extras or time extensions will be allowed in connection with such minor changes due solely to field conditions.

It shall be construed that each subcontract is an integral part of the CONTRACT and CONSULTANT shall provide and maintain, in full operation, at all times during the performance of the CONTRACT, a "sufficient" crew of laborers,

mechanics, inspectors, and foremen to execute the work with dispatch. All implementation related efforts and operations shall be continuous and sustained.

The term "sufficient" is defined to mean to provide a crew equal to the work of the various trades required by all parts of the project – whether simultaneously or in the successive sequence of implementation – as soon as each is ready to be performed so that no delays on any portion of the project shall occur.

To the extent possible, the work at the intersections shall be spaced such that they would minimize potential traffic impacts.

CONSULTANT shall notify AUTHORITY, agencies, and utility companies of its intent to begin work at least forty-eight (48) hours before work is begun. CONSULTANT shall cooperate with AUTHORITY and agencies in handling traffic through the work area.

If necessary, a traffic signal turn-off will require AUTHORITY and agencies' written approval. Two (2) weeks prior to any turn-off of the traffic signals, CONSULTANT shall coordinate with AUTHORITY and the agencies, or their assigned representatives, of the anticipated schedule for the turn-off. Notice of the scheduled signal turn-off shall be made to AUTHORITY and the agencies, or their assigned representatives, in writing at least seventy-two (72) hours prior to the signal turn-off.

CONSULTANT shall make arrangements with AUTHORITY and the agencies for all traffic signal shutdowns. CONSULTANT shall provide all necessary signing and traffic control devices for the traffic control prior to and during each traffic signal turn-off.

Traffic signal work shall not commence until such time that CONSULTANT notifies AUTHORITY and the agencies, or their assigned representatives, in writing of the date that all furnished materials and equipment are received, and said work shall start within seven (7) days after said date.

No materials or equipment shall be stored at the job sites unless written authorization is provided by AUTHORITY and the agencies, or their assigned representatives, authorizing said materials to be stored. The job sites shall be maintained in a neat and orderly condition at all times. All equipment storage and transport shall be CONSULTANT's responsibility.

Materials and equipment shall be stored so as not to create a public nuisance and to insure the preservation of their quality and fitness for the work. No materials or equipment shall be stored at the project site unless its use is imminent.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

A4a. Signal Synchronization Equipment AUTHORITY/agencies Notifications.

**4.2.5 TASK A-5: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION GUARANTEE**

CONSULTANT shall guarantee the entire work installed by it under this CONTRACT and will fully meet all requirements as to quality of workmanship and labor furnished by it. CONSULTANT shall make, at its own expense, any repairs or replacements made necessary by defects in workmanship and labor furnished by it that become evident within one (1) year after BRT Final Acceptance of the work for all corridors and to restore to full compliance with the requirements, any part of the work which during the one (1) year period is found to be deficient with respect to any provision of the plans and specifications. CONSULTANT shall make all repairs and replacements promptly upon receipt of written orders from AUTHORITY or its assigned representative. If CONSULTANT fails to make the repairs and replacements promptly, AUTHORITY or the agency may do the work and CONSULTANT shall be liable to AUTHORITY and agency for the cost.

Firmware and Software Upgrades for Control and Communications Systems for Central, Field Master, and Local intersection controller units for installed specified systems are included in the installed price for a period of 3 years.

New software for new features not originally installed nor specified is excluded from this contract. Standard Warranties or Guarantees for new software or new features are the responsibility of the agency receiving such equipment and the standard warranties or guarantees supplied by the manufacturer or vendor.

Removal of existing equipment and appurtenances is included in the "removing, reinstalling, or salvaging traffic signal equipment" installation price.

Attention is directed to:

Section 86 – 1.05 WARRANTIES, GUARANTIES, AND INSTRUCTION SHEETS of the State Standard Specifications.

CONSULTANT shall provide a Bristol/State College BRT Corridor Signal Synchronization Equipment Installation Guarantee Certification after AUTHORITY issues Final Acceptance of all three (3) BRT corridors.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

A5a. Signal Synchronization Equipment Guarantee Certification.

**4.2.6 TASK A-6: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - "AFTER STUDY"**

CONSULTANT shall conduct an “After” field study report representative of the times and days for which synchronization plans were developed. The “After” Study must be conducted in the same manner and contain the same MOE’s as the “Before” Study in order to evaluate the improvements of the synchronization plans. MOE’s should be compiled for the optimized Bristol/State College BRT Corridor using the floating car method (GPS interfaced PC Travel runs or Tru – Traffic TS/PP runs) and Synchro 7.0. The “Before” Study floating car data was collected using GPS interfaced PC Travel. If CONSULTANT decides to use GPS interfaced Tru – Traffic TS/PP runs for the “After” study, CONSULTANT must first present output compatibility between Tru – Traffic TS/PP and PC Travel runs to the AUTHORITY for approval. For the “After” Study, CONSULTANT shall conduct the same number of floating car ‘runs’ in each direction during the same time periods as was done in the “Before” study.

The CONSULTANT shall provide a synchronized video with the “After” travel time runs to augment the study. This video shall cover the entire length of the corridor and concentrate on the most congested areas of the corridor around freeways and high density commercial and business uses.

CONSULTANT shall prepare a Bristol/State College BRT Corridor “After” Study Project Report detailing the results of the signal timing optimization and implementation, time-referencing system, fine tuning components, and comparing the results of the “Before” and “After” field study with reference to the specific MOE’s. CONSULTANT shall present the findings to the AUTHORITY. CONSULTANT shall also provide all floating car data results collected as part of this task including, but not limited to, overall output statistics (distances, travel time, number of stops, average speed compared to posted speed, total delay, etc.), fuel consumption and emissions, speed/distance profiles, and time/space trajectories of all runs shown on a per link / node basis. CONSULTANT shall finalize the Bristol/State College BRT Corridor “After” Study Project Report based on comments received from the AUTHORITY and agencies.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

A6a. “After” Study Project Report.

A6b. Electronic versions of the “After” Study analysis and all floating car data files.

4.2.7 TASK A-7: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS IMPLEMENTATION SERVICES - PROJECT REPORT

CONSULTANT shall prepare a Draft Bristol/State College BRT Corridor Final Timings and Evaluation Technical Report, including an executive summary. The report shall provide complete documentation of the project, including, but not limited to, project objectives, project locations, project scope, findings,

recommendations, implementation schedule, improvements accomplished, furnished equipment test results, and procedures for continuing maintenance, surveillance, and evaluation of the coordinated signal system, work performed, data collected: "Before" and "After" studies and project benefits achieved in terms of fuel savings, travel time, and other measurable parameters. The report shall include graphical and table formats for each type of documentation for clarity purposes. The report shall also equate or quantify any savings in travel time, reduction in delay and emissions with type of emissions measured into a monetary figure consistent with current publications. Report formats, including style and content of graphs and tables, shall be approved by the AUTHORITY prior to submission.

The report shall document all planned and programmed improvements on the Bristol/State College BRT Corridor as well as recommendations for further infrastructure improvements that would likely improve the corridor signal coordination project results. CONSULTANT shall present the final report and results of the project to the AUTHORITY and city councils as required by AUTHORITY in writing.

The report shall include for each intersection: lane configurations, signal phasing, turning movement data, and cycle lengths for existing and proposed timings for all peak periods. In addition, in a separate binder, all traffic signal phase sequences, signal timing plans, and pedestrian timings shall be documented. Finally, the report shall provide recommendations, including cost and benefit estimates, for future improvements to traffic signal infrastructure (signal controllers, vehicle detection, communications, etc.), intersection capacity (appropriate signal phasing, lane geometrics, and alleviation of physical bottlenecks that curtail arterial capacity), and traffic management strategies. CONSULTANT shall submit a Final Bristol/State College BRT Corridor Final Timings and Evaluation Technical Report to AUTHORITY and agencies which addresses all comments provided by AUTHORITY and agencies in the Draft Bristol/State College BRT Corridor Final Timings and Evaluation Technical Report.

The Report format shall consist of a Table of Contents, Executive Summary, with technical appendices giving the Background, Methodologies, Before Conditions, After Conditions, Before and After Analysis and Study Results, Elements of Implementation, Special Demonstration of Equipment and Results, Conclusions, Recommendations and Lessons Learned, followed by Appendices. As each corridor has unique properties and functionality, prior to the Report being written, the CONSULTANT shall meet with the AUTHORITY to discuss format and content for each of the respective corridors.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

A7a. Draft Bristol/State College BRT Corridor Final Timings and Evaluation Technical Report.

A7b. Final Bristol/State College BRT Corridor Final Timings and Evaluation Technical Report.

A7c. Presentations to the AUTHORITY and City Councils.

**4.2.8 TASK A-8: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - PROJECT COORDINATION AND MEETINGS**

CONSULTANT shall develop a schedule for meetings with AUTHORITY, agencies, manufacturers, and others in order to facilitate the TSS Implementation Phase along the Bristol/State College BRT Corridor.

CONSULTANT shall attend meetings as directed by AUTHORITY and/or agencies to discuss specific information and requirements related to the signal synchronization along the Bristol/State College BRT Corridor.

Meetings will also consist of any specific meeting called by AUTHORITY and/or agencies, at which CONSULTANT's attendance is required.

CONSULTANT shall prepare and distribute meeting minutes and action item matrix (**Deliverable**) to the project team five (5) days after meeting. AUTHORITY and/or its designee shall be provided with draft meeting agendas for their review and written approval prior to the preparation of final meeting agendas. AUTHORITY and/or its designee shall be provided with draft meeting minutes for their review and written approval prior to the distribution of final meeting minutes. AUTHORITY and/or its designee shall be invited and shall participate at every meeting.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

A8a. Project Meeting Agendas.

A8b. Project Meeting Minutes and Action items.

A8c. Action Item Matrix.

**4.3 PART "B" – HARBOR BOULEVARD BRT CORRIDOR TSS
IMPLEMENTATION SERVICES**

**4.3.1 TASK B-1: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION
SERVICES – SIGNAL TIMING IMPLEMENTATION**

CONSULTANT shall submit a Harbor Boulevard BRT Corridor technical memorandum containing the field implementation of optimized traffic signal plans

for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agencies, and final signal timing implementation plan to AUTHORITY and agencies within sixty (60) days of NTP of the BRT corridors TSS Implementation Phase for written approval by AUTHORITY.

CONSULTANT shall submit four (4) hard copies and four (4) electronic copies (in electronic media as approved by AUTHORITY in writing) of the Harbor Boulevard BRT Corridor Draft and Final Signal Timing Implementation Plans to AUTHORITY for written approval prior to commencement of signal timing implementation.

Upon written approval of the optimized signal timings by AUTHORITY and agencies, CONSULTANT shall implement, or assist local agencies' staff in the implementation of new signal timings at all signalized intersections except those located within Caltrans District 12 jurisdiction either through: 1) the central traffic signal system (if available) or, 2) direct implementation in the field traffic signal controllers. Caltrans District 12 shall be responsible for the implementation of new signal timings at all signalized intersections located within their jurisdiction. CONSULTANT shall use existing traffic signal interconnection systems for signal timing implementation. If interconnection systems do not exist, CONSULTANT shall implement time-based signal coordination techniques within the jurisdiction. CONSULTANT shall also implement time-based signal coordination techniques across traffic signals controlled by different agencies to provide inter-jurisdictional coordination.

The project will include the procurement of thirteen (13) new traffic signal controllers. The specifications and final quantity of new controllers were determined during the TSS Design Phase as a result of the previous consultant recommendations and corresponding written approvals from AUTHORITY and agencies. CONSULTANT shall be responsible for the installation of traffic signal controllers at all signalized intersections except those located within Caltrans District 12 jurisdiction. Caltrans District 12 shall be responsible for the installation of traffic signal controllers at all signalized intersections located within their jurisdiction. At no additional cost, CONSULTANT shall be responsible for the procurement and delivery of the traffic signal controllers to locations approved by AUTHORITY in writing.

As the project will be using time-based signal coordination, CONSULTANT shall evaluate the current time-referencing of all traffic signal controllers and recommend a corridor-wide strategy (such as GPS clocks) to ensure that all traffic signal controllers are on synchronized time clocks. The specifications and final quantity of new GPS clocks were determined during the TSS Design Phase as a result of the previous consultant recommendations and corresponding written approvals from AUTHORITY and agencies. At no additional cost, CONSULTANT shall be responsible for the procurement and installation of six (6) GPS clocks at locations approved by AUTHORITY in writing.

Table 4-2 summarizes the time-reference equipment recommendations, including new traffic signal controllers and GPS clocks, determined during the TSS Design Phase that will be required for the Harbor Boulevard BRT Corridor.

**TABLE 4-2
Harbor Boulevard BRT Corridor
TSS Time-Reference Equipment Recommendations**

Agency	Intersection		TSS Time-Reference Equipment Recommendation
	Arterial	Cross Street	
Caltrans	Chapman Avenue (North)	SR-57 NB Ramps	cu - 2070 w/ 6A telemetry module, gps
	Chapman Avenue (North)	SR-57 SB Ramps	cu - 2070 w/ 6A telemetry module
	Harbor Boulevard	SR-91 WB Ramps	cu - 2070 w/ 6A telemetry module, gps
	Harbor Boulevard	SR-91 EB Ramps	cu - 2070 w/ 6A telemetry module
	Harbor Boulevard	I-5 NB Ramps	cu - 2070 w/ 6A telemetry module, cu - 170E TRFM, gps
	Harbor Boulevard	I-5 SB Ramps	cu - 2070 w/ 6A telemetry module
	Harbor Boulevard	SR-22 WB Off-Ramp / Banner Drive	cu - 170E TRFM, gps
	Trask Avenue	SR-22 EB Ramps	cu - 170E TRFM, gps
	Harbor Boulevard	I-405 NB Ramps	cu - 2070 w/ 6A telemetry module
	Harbor Boulevard	I-405 SB Ramps	cu - 2070 w/ 6A telemetry module
	Newport Blvd	Harbor Boulevard	cu - 2070 w/ 6A telemetry module
	Newport Blvd	19th Street	cu - 2070 w/ 6A telemetry module, gps (at the Caltrans field master controller located at the blockhouse on Newport Boulevard north of 19th Street)

Note: cu = controller unit; gps = gps time source receiver

CONSULTANT shall test all furnished traffic signal equipment (including software) as required by AUTHORITY, Caltrans, agencies, and equipment manufacturer(s) prior to the installation of any equipment (including software) and provide AUTHORITY with results in writing. If malfunctions, problems, or other issues related to the testing of equipment are observed by the CONSULTANT, the AUTHORITY shall be notified in writing within twenty-four (24) hours.

Upon written authorization by the AUTHORITY, CONSULTANT shall procure and install, or assist local agency staff in installing, any devices that are part of the time-referencing strategy. This may include devices installed at the agency traffic management center or at traffic signal controller cabinets.

Agencies shall be responsible for local intersection inspection services on the installation of field work and equipment. Agencies shall be responsible for the inspection and installation of any central master, field master, controller units or assemblies and any related communications systems with oversight by the AUTHORITY. CONSULTANT shall work under the constraints of construction specifications and standards of each local agency and Caltrans. Caltrans personnel will be responsible for the removal and installation of any Caltrans owned or operated intersection controller systems. CONSULTANT will be responsible for all other intersection systems modifications, removal, installations, etc.

CONSULTANT shall provide onsite assistance for turn-on of any new or modified equipment.

CONSULTANT shall obtain all permits and pay all fees required by the agencies necessitated by its operations for this SOW and no additional compensation for fees will be allowed, therefore. CONSULTANT shall obtain all required encroachment permits from Caltrans District 12. CONSULTANT shall pay any and all Caltrans District 12 labor fees to install new and remove existing equipment (controllers). CONSULTANT shall include all encroachment permit costs in a lump sum price. AUTHORITY will not allow or approve any extra costs. AUTHORITY will endeavor but not guarantee to have permit requirements and associated fees removed or waived. All permits obtained shall be kept in a readily available place on the job site at all times during equipment installation.

CONSULTANT shall fine-tune, or assist local agency staff in the fine-tuning of, the new settings and timings. CONSULTANT shall fine-tune timings in the field and record all changes. Fine-tuning shall be conducted during times and days that are representative of the times and days for which coordination plans were developed. Fine-tuning shall consist of, at a minimum, driving the Harbor Boulevard BRT Corridor and visually verifying system operation relative to the approved time-space diagrams provided during the TSS Design Phase. Adjustments to offsets and splits shall be included as part of this task.

Upon final approval by the AUTHORITY and the respective agencies, one (1) hard copy and one (1) electronic format timing chart, per intersection, shall be provided to the respective agencies. One (1) timing chart per intersection, in electronic format, shall be provided to the AUTHORITY. Timing sheets shall be provided by CONSULTANT at time of turn on.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B1a. Technical memorandum containing field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agency, and final signal timing implementation plan.

The CONSULTANT shall complete all Harbor Boulevard BRT Corridor Signal Timing Implementation tasks prior to May 12, 2011.

4.3.2 TASK B-2: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES – EQUIPMENT PROCUREMENT

CONSULTANT shall provide a list of materials, number of units, and prices for the Harbor Boulevard BRT Corridor Signal Synchronization, including traffic signal equipment (traffic signal controllers, traffic signal controller software, and

GPS clocks), and associated equipment that will be procured and installed by the CONSULTANT. AUTHORITY and the agencies shall review and AUTHORITY shall approve in writing the list of materials, number of units, and prices prior to ordering the equipment by CONSULTANT.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B2a. List of Materials, Units, and Prices.

B2b. Copies of All Purchase Orders and Product Manuals.

4.3.3 TASK B-3: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES– EQUIPMENT INSTALLATION SCHEDULING OF WORK

CONSULTANT shall provide an equipment installation schedule for the Harbor Boulevard BRT Corridor showing the activities, days, and locations that the equipment will be installed and tested. The installation schedule shall also indicate any implementation work that may be conducted by others at the same intersections under separate projects.

CONSULTANT shall furnish AUTHORITY with four (4) hard copies and four (4) electronic copies (in a media approved in writing by AUTHORITY) of a written timetable showing the proposed schedule of work. The schedule of work shall be submitted for approval to AUTHORITY and the agencies at least thirty (30) days prior to the beginning of the equipment installation and shall be updated on a monthly basis thereafter for the duration of the TSS Implementation Phase.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B3a. Signal Synchronization Equipment Installation Schedule.

4.3.4 TASK B-4: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION COORDINATION, INSTALLATION MANPOWER, AND INSTALLATION RESTRICTIONS

CONSULTANT shall coordinate installation, modification, and/or upgrade of traffic signal equipment with the AUTHORITY and the agencies. CONSULTANT shall coordinate the work of the various trades and crafts to avoid possible interferences, duplication of work, or unfinished gaps, and conflicts between operations. The various trades and crafts shall agree that, due to field conditions, minor departures from the improvement plans are bound to occur, and that such departures are self compensation so far as cost of additions or deductions are concerned. No claims for extras or time extensions will be allowed in connection with such minor changes due solely to field conditions.

It shall be construed that each subcontract is an integral part of the CONTRACT and CONSULTANT shall provide and maintain, in full operation, at all times during the performance of the CONTRACT, a "sufficient" crew of laborers, mechanics, inspectors, and foremen to execute the work with dispatch. All implementation related efforts and operations shall be continuous and sustained.

The term "sufficient" is defined to mean to provide a crew equal to the work of the various trades required by all parts of the project – whether simultaneously or in the successive sequence of implementation – as soon as each is ready to be performed so that no delays on any portion of the project shall occur.

To the extent possible, the work at the intersections shall be spaced such that they would minimize potential traffic impacts.

CONSULTANT shall notify AUTHORITY, agencies, and utility companies of its intent to begin work at least thirty-six (36) hours before work is begun. CONSULTANT shall cooperate with AUTHORITY and agencies in handling traffic through the work area.

If necessary, a traffic signal turn-off will require agencies' approval. Two (2) weeks prior to any turn-off of the traffic signals, CONSULTANT shall coordinate with AUTHORITY and the agencies, or their assigned representatives, of the anticipated schedule for the turn-off. Notice of the scheduled signal turn-off shall be made to AUTHORITY and the agencies, or their assigned representatives, in writing at least seventy-two (72) hours prior to the signal turn-off.

CONSULTANT shall make arrangements with AUTHORITY and the agencies for all traffic signal shutdowns. CONSULTANT shall provide all necessary signing and traffic control devices for the traffic control prior to and during each traffic signal turn-off.

Traffic signal work shall not commence until such time that CONSULTANT notifies AUTHORITY and the agencies, or their assigned representatives, in writing of the date that all furnished materials and equipment are received, and said work shall start within seven (7) days after said date.

No materials or equipment shall be stored at the job sites unless written authorization is provided by AUTHORITY and the agencies, or their assigned representatives, authorizing said materials to be stored. The job sites shall be maintained in a neat and orderly condition at all times. All equipment storage and transport shall be CONSULTANT's responsibility.

Materials and equipment shall be stored so as not to create a public nuisance and to insure the preservation of their quality and fitness for the work. No materials or equipment shall be stored at the project site unless its use is imminent.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B4a. Signal Synchronization Equipment AUTHORITY/agencies Notifications.

4.3.5 TASK B-5: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION GUARANTEE

CONSULTANT shall guarantee the entire work installed by it under this CONTRACT and will fully meet all requirements as to quality of workmanship and labor furnished by it. CONSULTANT shall make, at its own expense, any repairs or replacements made necessary by defects in workmanship and labor furnished by it that become evident within one (1) year after BRT Final Acceptance of the work for all corridors and to restore to full compliance with the requirements, any part of the work which during the one (1) year period is found to be deficient with respect to any provision of the plans and specifications. CONSULTANT shall make all repairs and replacements promptly upon receipt of written orders from AUTHORITY or its assigned representative. If CONSULTANT fails to make the repairs and replacements promptly, AUTHORITY or the agency may do the work and CONSULTANT shall be liable to AUTHORITY and agency for the cost.

Firmware and Software Upgrades for Control and Communications Systems for Central, Field Master, and Local intersection controller units for installed specified systems are included in the installed price for a period of 3 years.

New software for new features not originally installed nor specified is excluded from this contract. Standard Warranties or Guarantees for new software or new features are the responsibility of the agency receiving such equipment and the standard warranties or guarantees supplied by the manufacturer or vendor.

Removal of existing equipment and appurtenances is included in the "removing, reinstalling, or salvaging traffic signal equipment" installation price.

Attention is directed to:

Section 86 – 1.05 WARRANTIES, GUARANTIES, AND INSTRUCTION SHEETS of the State Standard Specifications.

CONSULTANT shall provide a Harbor Boulevard BRT Corridor Signal Synchronization Equipment Installation Guarantee Certification after AUTHORITY issues Final Acceptance of all three (3) BRT corridors.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B5a. Signal Synchronization Equipment Guarantee Certification.

4.3.6 TASK B-6: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES - "AFTER STUDY"

CONSULTANT shall conduct an "After" field study report representative of the times and days for which synchronization plans were developed. The "After" Study must be conducted in the same manner and contain the same MOE's as the "Before" Study in order to evaluate the improvements of the synchronization plans. MOE's should be compiled for the optimized Harbor Boulevard BRT Corridor using the floating car method (GPS interfaced PC Travel runs or Tru-Traffic TS/PP runs) and Synchro 7.0. The "Before" Study floating car data was collected using GPS interfaced PC Travel. If CONSULTANT decides to use GPS interfaced Tru – Traffic TS/PP runs for the "After" study, CONSULTANT must first present output compatibility between Tru – Traffic TS/PP and PC Travel runs to the AUTHORITY for approval. For the "After" Study, CONSULTANT shall conduct the same number of floating car 'runs' in each direction during the same time periods as was done in the "Before" study.

The CONSULTANT shall provide a synchronized video with the "After" travel time runs to augment the study. This video shall cover the entire length of the corridor and concentrate on the most congested areas of the corridor around freeways and high density commercial and business uses.

CONSULTANT shall prepare a Harbor Boulevard BRT Corridor "After" Study Project Report detailing the results of the signal timing optimization and implementation, time-referencing system, fine tuning components, and comparing the results of the "Before" and "After" field study with reference to the specific MOE's. CONSULTANT shall present the findings to the AUTHORITY. CONSULTANT shall also provide all floating car data results collected as part of this task including, but not limited to, overall output statistics (distances, travel time, number of stops, average speed compared to posted speed, total delay, etc.), fuel consumption and emissions, speed/distance profiles, and time/space trajectories of all runs shown on a per link / node basis. CONSULTANT shall finalize the Harbor Boulevard BRT Corridor "After" Study Project Report based on comments received from the AUTHORITY and agencies.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B6a. "After" Study Project Report.

B6b. Electronic versions of the "After" Study analysis and all floating car data files.

4.3.7 TASK B-7: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES - PROJECT REPORT

CONSULTANT shall prepare a Draft Harbor Boulevard BRT Corridor Final Timings and Evaluation Technical Report, including an executive summary. The report shall provide complete documentation of the project, including, but not limited to, project objectives, project locations, project scope, findings, recommendations, implementation schedule, improvements accomplished, furnished equipment test results, and procedures for continuing maintenance, surveillance, and evaluation of the coordinated signal system, work performed, data collected: "Before" and "After" studies and project benefits achieved in terms of fuel savings, travel time, and other measurable parameters. The report shall include graphical and table formats for each type of documentation for clarity purposes. The report shall also equate or quantify any savings in travel time, reduction in delay and emissions with type of emissions measured into a monetary figure consistent with current publications. Report formats, including style and content of graphs and tables, shall be approved by the AUTHORITY prior to submission.

The report shall document all planned and programmed improvements on the Harbor Boulevard BRT Corridor as well as recommendations for further infrastructure improvements that would likely improve the corridor signal coordination project results. CONSULTANT shall present the final report and results of the project to the AUTHORITY and city councils as required by AUTHORITY in writing.

The report shall include for each intersection: lane configurations, signal phasing, turning movement data, and cycle lengths for existing and proposed timings for all peak periods. In addition, in a separate binder, all traffic signal phase sequences, signal timing plans, and pedestrian timings shall be documented. Finally, the report shall provide recommendations, including cost and benefit estimates, for future improvements to traffic signal infrastructure (signal controllers, vehicle detection, communications, etc.), intersection capacity (appropriate signal phasing, lane geometrics, and alleviation of physical bottlenecks that curtail arterial capacity), and traffic management strategies.

CONSULTANT shall submit a Final Harbor Boulevard BRT Corridor Final Timings and Evaluation Technical Report to AUTHORITY and agencies which addresses all comments provided by AUTHORITY and agencies in the Draft Harbor Boulevard BRT Corridor Final Timings and Evaluation Technical Report.

The Report format shall consist of a Table of Contents, Executive Summary, with technical appendices giving the Background, Methodologies, Before Conditions, After Conditions, Before and After Analysis and Study Results, Elements of Implementation, Special Demonstration of Equipment and Results, Conclusions, Recommendations and Lessons Learned, followed by Appendices. As each corridor has unique properties and functionality, prior to the Report being written, the CONSULTANT shall meet with the AUTHORITY to discuss format and content for each of the respective corridors.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

- B7a. Draft Harbor Boulevard BRT Corridor Final Timings and Evaluation Technical Report.
- B7b. Final Harbor Boulevard BRT Corridor Final Timings and Evaluation Technical Report.
- B7c. Presentations to the AUTHORITY and City Councils.

4.3.8 TASK B-8: HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES - PROJECT COORDINATION AND MEETINGS

CONSULTANT shall develop a schedule for meetings with AUTHORITY, agencies, manufacturers, and others in order to facilitate the TSS Implementation Phase along the Harbor Boulevard BRT Corridor.

CONSULTANT shall attend meetings as directed by AUTHORITY and/or agencies to discuss specific information and requirements related to the signal synchronization along the Harbor Boulevard BRT Corridor.

Meetings will also consist of any specific meeting called by AUTHORITY and/or agencies, at which CONSULTANT's attendance is required.

CONSULTANT shall prepare and distribute meeting minutes and action item matrix (**Deliverable**) to the project team five (5) days after meeting. AUTHORITY and/or its designee shall be provided with draft meeting agendas for their review and written approval prior to the preparation of final meeting agendas. AUTHORITY and/or its designee shall be provided with draft meeting minutes for their review and written approval prior to the distribution of final meeting minutes. AUTHORITY and/or its designee shall be invited and shall participate at every meeting.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B8a. Project Meeting Agendas.

B8b. Project Meeting Minutes and Action items.

B8c. Action Item Matrix.

4.4 PART "C" – WESTMINSTER/17th STREET BRT TSS IMPLEMENTATION SERVICES

4.4.1 TASK C-1: WESTMINSTER/17TH STREET BRT CORRIDOR TSS IMPLEMENTATION SERVICES – SIGNAL TIMING IMPLEMENTATION

CONSULTANT shall submit a Westminster/17th Street BRT Corridor technical memorandum containing the field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agencies, and final signal timing implementation plan to AUTHORITY and agencies within sixty (60) days of NTP of the BRT Corridors TSS Implementation Phase for written approval by AUTHORITY.

CONSULTANT shall submit four (4) hard copies and four (4) electronic copies (in electronic media as approved by AUTHORITY in writing) of the Westminster/17th

Street BRT Corridor Draft and Final Signal Timing Implementation Plans to AUTHORITY for written approval prior to commencement of signal timing implementation.

Upon written approval of the optimized signal timings by AUTHORITY, and agencies, CONSULTANT shall implement, or assist local agencies' staff in the implementation of, new signal timings at all signalized intersections except those located within Caltrans District 12 jurisdiction either through: 1) the central traffic signal system (if available) or, 2) direct implementation in the field traffic signal controllers. Caltrans District 12 shall be responsible for the implementation of new signal timings at all signalized intersections located within their jurisdiction. CONSULTANT shall use existing traffic signal interconnection systems for signal timing implementation. If interconnection systems do not exist, CONSULTANT shall implement time-based signal coordination techniques within the jurisdiction. CONSULTANT shall also implement time-based signal coordination techniques across traffic signals controlled by different agencies to provide inter-jurisdictional coordination.

The project will include the procurement of new traffic signal controllers. The specifications and final quantity of new controllers were determined during the TSS Design Phase, as a result of the previous consultant recommendations and corresponding written approvals from AUTHORITY and agencies. CONSULTANT shall be responsible for the installation of traffic signal controllers at all signalized intersections except those located within Caltrans District 12 jurisdiction. Caltrans District 12 shall be responsible for the installation of traffic signal controllers at all signalized intersections located within their jurisdiction. At no additional cost, CONSULTANT shall be responsible for the procurement and delivery of the traffic signal controllers to locations approved by AUTHORITY in writing.

As the project will be using time-based signal coordination, CONSULTANT shall evaluate the current time-referencing of all traffic signal controllers and recommend a corridor-wide strategy (such as GPS clocks) to ensure that all traffic signal controllers are on synchronized time clocks. The specifications and final quantity of new GPS clocks were determined during the TSS Design Phase, as a result of the previous consultant recommendations and corresponding written approvals from AUTHORITY and agencies. At no additional cost, CONSULTANT shall be responsible for the procurement and installation of two (2) GPS clocks at locations approved by AUTHORITY in writing.

Table 4-3 summarizes the time-reference equipment recommendations, including new traffic signal controllers and GPS clocks, determined during the TSS Design Phase that will be required for the Westminster/17th Street BRT Corridor.

**TABLE 4-3
Westminster/17th Street BRT Corridor
TSS Time-Reference Equipment Recommendations**

Agency	Intersection		TSS Time-Reference Equipment Recommendation
	Arterial	Cross Street	
Caltrans	17th Street	I-5 NB Ramps / Santiago Street	gps
Garden Grove	Westminster Avenue	Roxey Street	gps

Note: gps = gps time source receiver

CONSULTANT shall test all furnished traffic signal equipment (including software) as required by AUTHORITY, Caltrans, agencies, and equipment manufacturer(s) prior to the installation of any equipment (including software). If malfunctions, problems, or other issues related to the testing of equipment are observed by the CONSULTANT, the AUTHORITY shall be notified in writing within twenty-four (24) hours.

Upon written authorization by the AUTHORITY, CONSULTANT shall procure and install, or assist local agency staff in installing, any devices that are part of the time-referencing strategy. This may include devices installed at the agency traffic management center or at traffic signal controller cabinets.

Agencies shall be responsible for local intersection inspection services on the installation of field work and equipment. Agencies shall be responsible for the inspection and installation of any central master, field master, controller units or assemblies and any related communications systems with oversight by the AUTHORITY. CONSULTANT shall work under the constraints of construction specifications and standards of each local agency and Caltrans. Caltrans personnel will be responsible for the removal and installation of any Caltrans owned or operated intersection controller systems. CONSULTANT will be responsible for all other intersection systems modifications, removal, installations, etc.

CONSULTANT shall provide onsite assistance for turn-on of any new or modified equipment.

CONSULTANT shall obtain all permits and pay all fees required by the agencies necessitated by its operations for this SOW and no additional compensation for fees will be allowed, therefore. CONSULTANT shall obtain all required encroachment permits from Caltrans District 12. CONSULTANT shall pay any and all Caltrans District 12 labor fees to install new and remove existing equipment (controllers). CONSULTANT shall include all encroachment permit costs in a lump sum price. AUTHORITY will not allow or approve any extra costs. AUTHORITY will endeavor but not guarantee to have permit requirements and associated fees removed or waived. All permits obtained shall be kept in a readily available place on the job site at all times during equipment installation.

CONSULTANT shall fine-tune, or assist local agency staff in the fine-tuning of, the new settings and timings. CONSULTANT shall fine-tune timings in the field and record all changes. Fine-tuning shall be conducted during times and days that are representative of the times and days for which coordination plans were developed. Fine-tuning shall consist of, at a minimum, driving the Westminster/17th Street BRT Corridor and visually verifying system operation relative to the approved time-space diagrams provided during the TSS Design Phase. Adjustments to offsets and splits shall be included as part of this task.

Upon final approval by the AUTHORITY and the respective agencies, one (1) hard copy and one (1) electronic format timing chart, per intersection, shall be provided to the respective agencies. One (1) timing chart per intersection, in electronic format, shall be provided to the AUTHORITY. Timing sheets shall be provided by CONSULTANT at time of turn on.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

C1a. Technical memorandum containing field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agency, and final signal timing implementation plan.

The CONSULTANT shall complete all Westminster/17th Street BRT Corridor Signal Timing Implementation tasks prior to May 12, 2011.

4.4.2 TASK C-2: WESTMINSTER/17TH STREET BRT CORRIDOR TSS IMPLEMENTATION SERVICES – EQUIPMENT PROCUREMENT

CONSULTANT shall provide a list of materials, number of units, and prices for the Westminster/17th Street BRT Corridor Signal Synchronization, including traffic signal equipment (traffic signal controllers, traffic signal controller software, and GPS clocks), and associated equipment that will be procured and installed by the CONSULTANT. AUTHORITY and the agencies shall review and AUTHORITY shall approve in writing the list of materials, number of units, and prices prior to ordering the equipment by CONSULTANT.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (to in part include):

C2a. List of Materials, Units, and Prices.

C2b. Copies of All Purchase Orders and Product Manuals.

4.4.3 TASK C-3: WESTMINSTER/17TH STREET BRT TSS IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION SCHEDULING OF WORK

CONSULTANT shall provide equipment installation schedule for the Westminster/17th Street BRT Corridor showing the activities, days, and locations that the equipment will be installed and tested. The installation schedule shall also indicate any implementation work that may be conducted by others at the same intersections under separate projects.

CONSULTANT shall furnish AUTHORITY with four (4) hard copies and four (4) electronic copies (in a media approved in writing by AUTHORITY) of a written timetable showing the proposed schedule of work. The schedule of work shall be submitted for approval to AUTHORITY and the agencies at least thirty (30) days prior to the beginning of the equipment installation and shall be updated on a monthly basis thereafter for the duration of the TSS Implementation Phase.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

C3a. Signal Synchronization Equipment Installation Schedule.

**4.4.4 TASK C-4: WESTMINSTER/17TH STREET BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION
COORDINATION, INSTALLATION MANPOWER, AND INSTALLATION
RESTRICTIONS**

CONSULTANT shall coordinate installation, modification, and/or upgrade of traffic signal equipment with the AUTHORITY and the agencies. CONSULTANT shall coordinate the work of the various trades and crafts to avoid possible interferences, duplication of work, or unfinished gaps, and conflicts between operations. The various trades and crafts shall agree that, due to field conditions, minor departures from the improvement plans are bound to occur, and that such departures are self compensation so far as cost of additions or deductions are concerned. No claims for extras or time extensions will be allowed in connection with such minor changes due solely to field conditions.

It shall be construed that each subcontract is an integral part of the CONTRACT and CONSULTANT shall provide and maintain, in full operation, at all times during the performance of the CONTRACT, a "sufficient" crew of laborers, mechanics, inspectors, and foremen to execute the work with dispatch. All implementation related efforts and operations shall be continuous and sustained.

The term "sufficient" is defined to mean to provide a crew equal to the work of the various trades required by all parts of the project – whether simultaneously or in the successive sequence of implementation – as soon as each is ready to be performed so that no delays on any portion of the project shall occur.

To the extent possible, the work at the intersections shall be spaced such that they would minimize potential traffic impacts.

CONSULTANT shall notify AUTHORITY, agencies, and utility companies of its intent to begin work at least thirty-six (36) hours before work is begun. CONSULTANT shall cooperate with AUTHORITY and agencies in handling traffic through the work area.

If necessary, a traffic signal turn-off will require agencies' approval. Two (2) weeks prior to any turn-off of the traffic signals, CONSULTANT shall coordinate with AUTHORITY and the agencies, or their assigned representatives, of the anticipated schedule for the turn-off. Notice of the scheduled signal turn-off shall be made to AUTHORITY and the agencies, or their assigned representatives, in writing at least seventy-two (72) hours prior to the signal turn-off.

CONSULTANT shall make arrangements with AUTHORITY and the agencies for all traffic signal shutdowns. CONSULTANT shall provide all necessary signing and traffic control devices for the traffic control prior to and during each traffic signal turn-off.

Traffic signal work shall not commence until such time that CONSULTANT notifies AUTHORITY and the agencies, or their assigned representatives, in writing of the date that all furnished materials and equipment are received, and said work shall start within seven (7) days after said date.

No materials or equipment shall be stored at the job sites unless written authorization is provided by AUTHORITY and the agencies, or their assigned representatives, authorizing said materials to be stored. The job sites shall be maintained in a neat and orderly condition at all times. All equipment storage and transport shall be CONSULTANT's responsibility.

Materials and equipment shall be stored so as not to create a public nuisance and to insure the preservation of their quality and fitness for the work. No materials or equipment shall be stored at the project site unless its use is imminent.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

C4a. Signal Synchronization Equipment AUTHORITY/agencies Notifications.

4.4.5 TASK C-5: WESTMINSTER/17TH STREET BRT CORRIDOR TSS IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION GUARANTEE

CONSULTANT shall guarantee the entire work installed by it under this CONTRACT and will fully meet all requirements as to quality of workmanship and labor furnished by it. CONSULTANT shall make, at its own expense, any repairs or replacements made necessary by defects in workmanship and labor furnished by it that become evident within one (1) year after BRT Final Acceptance of the work for all corridors and to restore to full compliance with the

requirements, any part of the work which during the one (1) year period is found to be deficient with respect to any provision of the plans and specifications. CONSULTANT shall make all repairs and replacements promptly upon receipt of written orders from AUTHORITY or its assigned representative. If CONSULTANT fails to make the repairs and replacements promptly, AUTHORITY or the agency may do the work and CONSULTANT shall be liable to AUTHORITY and agency for the cost.

Firmware and Software Upgrades for Control and Communications Systems for Central, Field Master, and Local intersection controller units for installed specified systems are included in the installed price for a period of 3 years.

New software for new features not originally installed nor specified is excluded from this contract. Standard Warranties or Guarantees for new software or new features are the responsibility of the agency receiving such equipment and the standard warranties or guarantees supplied by the manufacturer or vendor.

Removal of existing equipment and appurtenances is included in the “removing, reinstalling, or salvaging traffic signal equipment” installation price.

Attention is directed to:

Section 86 – 1.05 WARRANTIES, GUARANTIES, AND INSTRUCTION SHEETS of the State Standard Specifications.

CONSULTANT shall provide a Westminster/17th Street BRT Corridor Signal Synchronization Equipment Installation Guarantee Certification after AUTHORITY issues Final Acceptance of all three (3) BRT corridors.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

C5a. Signal Synchronization Equipment Guarantee Certification.

4.4.6 TASK C-6: WESTMINSTER/17TH STREET BRT CORRIDOR TSS IMPLEMENTATION SERVICES - “AFTER STUDY”

CONSULTANT shall conduct an “After” field study report representative of the times and days for which synchronization plans were developed. The “After” Study must be conducted in the same manner and contain the same MOE’s as the “Before” Study in order to evaluate the improvements of the synchronization plans. MOE’s should be compiled for the optimized Westminster/17th Street BRT Corridor using the floating car method (GPS interfaced PC Travel runs or Tru – Traffic TS/PP runs) and Synchro 7.0. The “Before” Study floating car data was collected using GPS interfaced PC Travel. If CONSULTANT decides to use GPS interfaced Tru – Traffic TS/PP runs for the “After” study, CONSULTANT must first present output compatibility between Tru – Traffic TS/PP and PC

Travel runs to the AUTHORITY for approval. For the “After” Study, CONSULTANT shall conduct the same number of floating car ‘runs’ in each direction during the same time periods as was done in the “Before” study.

The CONSULTANT shall provide a synchronized video with the “After” travel time runs to augment the study. This video shall cover the entire length of the corridor and concentrate on the most congested areas of the corridor around freeways and high density commercial and business uses.

CONSULTANT shall prepare a Westminster/17th Street BRT Corridor “After” Study Project Report detailing the results of the signal timing optimization and implementation, time-referencing system, fine tuning components, and comparing the results of the “Before” and “After” field study with reference to the specific MOE’s. CONSULTANT shall present the findings to the AUTHORITY. CONSULTANT shall also provide all floating car data results collected as part of this task including, but not limited to, overall output statistics (distances, travel time, number of stops, average speed compared to posted speed, total delay, etc.), fuel consumption and emissions, speed/distance profiles, and time/space trajectories of all runs shown on a per link / node basis. CONSULTANT shall finalize the Westminster/17th Street BRT Corridor “After” Study Project Report based on comments received from the AUTHORITY and agencies.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

C6a. “After” Study Project Report.

C6b. Electronic versions of the “After” Study analysis and all floating car data files.

4.4.7 TASK C-7: WESTMINSTER/17TH STREET BRT CORRIDOR TSS IMPLEMENTATION SERVICES - PROJECT REPORT

CONSULTANT shall prepare a Draft Westminster/17th Street BRT Corridor Final Timings and Evaluation Technical Report, including an executive summary. The report shall provide complete documentation of the project, including, but not limited to, project objectives, project locations, project scope, findings, recommendations, implementation schedule, improvements accomplished, furnished equipment test results, and procedures for continuing maintenance, surveillance, and evaluation of the coordinated signal system, work performed, data collected: “Before” and “After” studies and project benefits achieved in terms of fuel savings, travel time, and other measurable parameters. The report shall include graphical and table formats for each type of documentation for clarity purposes. The report shall also equate or quantify any savings in travel time, reduction in delay and emissions with type of emissions measured into a monetary figure consistent with current publications. Report formats, including

style and content of graphs and tables, shall be approved by the AUTHORITY prior to submission.

The report shall document all planned and programmed improvements on the Westminster/17th Street BRT Corridor as well as recommendations for further infrastructure improvements that would likely improve the corridor signal coordination project results. CONSULTANT shall present the final report and results of the project to the AUTHORITY and city councils as required by AUTHORITY in writing.

The report shall include for each intersection: lane configurations, signal phasing, turning movement data, and cycle lengths for existing and proposed timings for all peak periods. In addition, in a separate binder, all traffic signal phase sequences, signal timing plans, and pedestrian timings shall be documented. Finally, the report shall provide recommendations, including cost and benefit estimates, for future improvements to traffic signal infrastructure (signal controllers, vehicle detection, communications, etc.), intersection capacity (appropriate signal phasing, lane geometrics, and alleviation of physical bottlenecks that curtail arterial capacity), and traffic management strategies.

CONSULTANT shall submit a Final Westminster/17th Street BRT Corridor Final Timings and Evaluation Technical Report to AUTHORITY and agencies which addresses all comments provided by AUTHORITY and agencies in the Draft Westminster/17th Street BRT Corridor Final Timings and Evaluation Technical Report.

The Report format shall consist of a Table of Contents, Executive Summary, with technical appendices giving the Background, Methodologies, Before Conditions, After Conditions, Before and After Analysis and Study Results, Elements of Implementation, Special Demonstration of Equipment and Results, Conclusions, Recommendations and Lessons Learned, followed by Appendices. As each corridor has unique properties and functionality, prior to the Report being written, the CONSULTANT shall meet with the AUTHORITY to discuss format and content for each of the respective corridors.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

- C7a. Draft Westminster/17th Street BRT Corridor Final Timings and Evaluation Technical Report.
- C7b. Final Westminster/17th Street BRT Corridor Final Timings and Evaluation Technical Report.
- C7c. Presentations to the AUTHORITY and City Councils.

4.4.8 TASK C-8: WESTMINSTER/17TH STREET BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - PROJECT COORDINATION AND MEETINGS

CONSULTANT shall develop a schedule for meetings AUTHORITY, agencies, manufacturers, and others in order to facilitate the TSS Implementation Phase along the Westminster/17th Street BRT Corridor.

CONSULTANT shall attend meetings as directed by AUTHORITY and/or agencies to discuss specific information and requirements related to the signal synchronization along the Westminster/17th Street BRT Corridor.

Meetings will also consist of any specific meeting called by AUTHORITY and/or agencies, at which CONSULTANT's attendance is required.

CONSULTANT shall prepare and distribute meeting minutes and action item matrix **(Deliverable)** to the project team five (5) days after meeting. AUTHORITY and/or its designee shall be provided with draft meeting agendas for their review and written approval prior to the preparation of final meeting agendas. AUTHORITY and/or its designee shall be provided with draft meeting minutes for their review and written approval prior to the distribution of final meeting minutes. AUTHORITY and/or its designee shall be invited and shall participate at every meeting.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

C8a. Project Meeting Agendas.

C8b. Project Meeting Minutes and Action items.

C8c. Action Item Matrix.

TABLE 4-4
Bristol/State College BRT Corridor
Potential Additional Signalized Intersections
Per Arterial Beyond Corridor Limits

Agency	Arterial	Location	No.	Cross Street
Brea	State College Boulevard	North of Brea Mall Driveway North	1	Birch Street
			2	Business Park/Financial Commons
			3	Avocado Street
			4	Lambert Road
			5	Balsa Avenue
			6	Cliffwood Avenue
			7	Brea Boulevard
Orange	Metropolitan Drive	West of City Drive	1	SR-22 Westbound Ramps
Santa Ana	Bristol Street	North of Memory Lane	1	Riverglen Lane
			2	Hesperian Street/SR-22 EB Ramps
			3	SR-57 Northbound/SR-22 Westbound Connector Off Ramp
			4	I-5 Southbound Off Ramp
Costa Mesa		South of Sunflower Avenue	5	Town Center Drive
			6	Anton Boulevard
			7	I-405 Northbound Ramps
			8	I-405 Southbound Ramps
			9	Business Center/Hotel Way
			10	Paularino Avenue
			11	Baker Street
Santa Ana	Newhope St	West of Bristol Street	1	1 st Street
			2	McFadden Ave.
	Fairview St	West of Bristol Street	1	1 st St
			2	McFadden Ave.
			3	Edinger Ave.
			4	Warner Ave.
			5	Seegerstrom Ave.
			6	MacArthur Blvd.

TABLE 4-5
Harbor Boulevard BRT Corridor
Potential Additional Signalized Intersections
Per Arterial Beyond Corridor Limits

Agency	Arterial	Location	No.	Cross Street
Fullerton	Chapman Avenue	East of Commonwealth Avenue	1	SR-57 Southbound Ramps
			2	SR-57 Northbound Ramps
			3	Placentia Avenue
		West of Lemon Street	4	Pomona Avenue
			5	Harbor Boulevard
			6	Highland Avenue
			7	Richman Avenue
			8	Woods Avenue
			9	Euclid Street
Fullerton	Harbor Boulevard	North of Commonwealth	1	Amerige Avenue
			2	Wilshire Avenue
			3	Union Avenue
			4	Berkeley Avenue
			5	E. Valley View Drive
			6	W. Valley View Drive/Brea Boulevard
Garden Grove	Trask Avenue	East of Harbor Blvd.	1	SR-22 Eastbound Ramps
Costa Mesa	*Adams Avenue	East of Harbor Boulevard	1	Pinecreek Drive
			2	Fairview Road
		West of Harbor Boulevard	3	Royal Palm Drive
			4	Mesa Verde Drive East
			5	Mesa Verde Drive West
			6	Shantar Drive/Albatross Drive
	*Fairview Road	North of Adams Avenue	1	Baker Street
			2	Paularino Avenue
			3	McCormack Lane
	Newport Boulevard/SR-55	East of Harbor Boulevard	1	19th Street

*Signalized intersections are currently linked with Harbor Boulevard's coordinated system.

TABLE 4-6
Westminster/17th Street BRT Corridor
Potential Additional Signalized Intersections
Per Arterial Beyond Corridor Limits

Agency	Arterial	Location	No.	Cross Street
Seal Beach	Westminster Avenue	West of Seal Beach Boulevard	1	Apollo Drive (Driveway No.1)
			2	Road B (Driveway No. 2)
Garden Grove	*Brookhurst Street	South of Westminster Ave.	1	Reading Ave./15 th Street
			2	11th Street
			3	Hazard Avenue
Santa Ana	17th Street	East of Flower Street	1	Ross Street
			2	Broadway
			3	Main Street
			4	Spurgeon Street
			5	Penn Way
			6	I-5 Northbound Ramps/Santiago Street

*Signalized intersections are currently linked with Westminster/17th Street's coordinated system.

SECTION 5.0
SUPPORT SERVICES

SECTION 5.0 SUPPORT SERVICES

5.1 PART “A” – BRISTOL/STATE COLLEGE BRT CORRIDOR TSS SUPPORT SERVICES

5.1.1 TASK A-1: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS SIGNAL TIMING SUPPORT SERVICES

CONSULTANT shall provide continuing signal timing support to monitor, observe, fine-tune, and optimize the signal timing and phasing operations of the synchronized signalized intersections (as implemented as part of the SOW) along the Bristol/State College BRT Corridor. The signal timing support services shall last for a period of nine (9) months after written acceptance from AUTHORITY is provided for the implementation of the signal timing along the Bristol/State College BRT Corridor. The frequency of the signal timing support services shall be at a rate of once per month for the initial three (3) months and once every two months for the remaining six (6) months.

During each of the six (6) required support periods, CONSULTANT shall monitor the Bristol/State College BRT Corridor via the Traffic Management System (TMS) software (if applicable), and perform field surveys of the Bristol/State College BRT Corridor to observe the traffic patterns, recommend fine-tuning, and, if approved by AUTHORITY in writing, fine tune the signal timing based upon the surveys.

Bristol/State College BRT Corridor TSS Implementation Services deliverables (in part to include):

A1a. Revised signal timing plans and progress reports documenting the changes.

A1b. Provide TMS event logs and support activity logs.

5.2 PART “B” – HARBOR BOULEVARD BRT CORRIDOR TSS SUPPORT SERVICES

5.2.1 TASK B-1: HARBOR BOULEVARD BRT CORRIDOR TSS SIGNAL TIMING SUPPORT SERVICES

CONSULTANT shall provide continuing signal timing support to monitor, observe, fine-tune, and optimize the signal timing and phasing operations of the synchronized signalized intersections (as implemented as part of the SOW) along the Harbor Boulevard BRT Corridor. The signal timing support services shall last for a period of nine (9) months after written acceptance from AUTHORITY is provided for the implementation of the signal timing along the Harbor Boulevard BRT Corridor. The frequency of the signal timing support services shall be at a rate of once per month for the initial three (3) months and once every two months for the remaining six (6) months.

During each of the six (6) required support periods, CONSULTANT shall monitor the Harbor Boulevard BRT Corridor via the Traffic Management System (TMS) software (if applicable), and perform field surveys of the Harbor Boulevard BRT Corridor to observe the traffic patterns, recommend fine-tuning, and, if approved by AUTHORITY in writing, fine tune the signal timing based upon the surveys.

Harbor Boulevard BRT Corridor TSS Implementation Services deliverables (in part to include):

B1a. Revised signal timing plans and progress reports documenting the changes.

B1b. Provide TMS event logs and support activity logs.

5.3 PART “C” – WESTMINSTER/17th STREET BRT CORRIDOR TSS SUPPORT SERVICES

5.3.1 TASK C-1: WESTMINSTER/17TH STREET BRT CORRIDOR TSS SIGNAL TIMING SUPPORT SERVICES

CONSULTANT shall provide continuing signal timing support to monitor, observe, fine-tune, and optimize the signal timing and phasing operations of the synchronized signalized intersections (as implemented as part of the SOW) along the Westminster/17th Street BRT Corridor. The signal timing support services shall last for a period of nine (9) months after written acceptance from AUTHORITY is provided for the implementation of the signal timing along the Westminster/17th Street BRT Corridor. The frequency of the signal timing support services shall be at a rate of once per month for the initial three (3) months and once every two months for the remaining six (6) months.

During each of the six (6) required support periods, CONSULTANT shall monitor the Westminster/17th Street BRT Corridor via the Traffic Management System (TMS) software (if applicable), and perform field surveys of the Westminster/17th Street BRT Corridor to observe the traffic patterns, recommend fine-tuning, and, if approved by AUTHORITY in writing, fine tune the signal timing based upon the surveys.

Westminster/17th Street BRT Corridor TSS Implementation Services deliverables (in part to include):

- C1a. Revised signal timing plans and progress reports documenting the changes.
- C1b. Provide TMS event logs and support activity logs.

SECTION 6.0
DELIVERABLES

SECTION 6.0 DELIVERABLES

The following outlines the general requirements for contract deliverables (**Deliverable**) as defined within the SOW. In addition to the deliverables defined in the SOW, AUTHORITY may, at its sole discretion, request additional information for clarification, as needed. AUTHORITY shall require at least twenty-one (21) days for reviewing each deliverable, unless stated otherwise in writing.

6.1 DELIVERABLES REQUIREMENTS

6.1.1 GENERAL INFORMATION

Using the list of deliverables provided in the SOW as a base template, CONSULTANT shall develop a comprehensive list of all documents. All of these documents shall include sufficient information related to TSS furnishing, installation, testing, commissioning, and all other aspects of the SOW.

CONSULTANT's list of deliverables shall include all of the documents specified in this SOW, and shall also include additional documents, which CONSULTANT deems appropriate to provide complete and comprehensive information to assist AUTHORITY to review such documents. The list of deliverables within this document is intended to include the basic requirements in the SOW. However, if there are any items omitted, CONSULTANT shall provide all such additional deliverables.

CONSULTANT shall provide a comprehensive list of deliverables, including any additional deliverables that it intends to provide to AUTHORITY, and note any suggested changes to the deliverable list provided in the SOW. This list shall note any suggested changes to the due date, days to review, etc. The Final Deliverables List (**Deliverable**) shall be provided to AUTHORITY for approval in writing fifteen (15) days after NTP.

6.1.2 DELIVERABLES FORMAT

The deliverable format shall include the following information as specified below; however, not necessarily in the stated order:

1. Cover page including title, the name of CONSULTANT, the deliverable number, the submittal date, applicable section number, and other information deemed necessary by CONSULTANT.
2. List of persons who will receive a copy of the cover page and/or deliverable.
3. Revision table with revision number, revision date, general nature of change(s), and affected page(s).

4. Signatures of the author(s) and approval(s) from responsible supervisors.
5. Table of contents.
6. Description, content, drawings, and schematics as applicable.

A minimum of four (4) hard copies and one electronic copy (in a media format as approved by the AUTHORITY in writing) of each deliverable shall be provided, unless otherwise specified in the SOW. CONSULTANT shall also keep a history matrix of all deliverables related to the SOW. CONSULTANT shall provide AUTHORITY with copy of history matrix in hard copy and/or electronic format upon request.

6.2 LIST OF PROJECT DELIVERABLES

DELIVERABLE #	TASK	TITLE	SECTION #
SECTION 2.0 PROJECT MANAGEMENT			
1		Work Plan (NTP + 15 Days)	2.2.6
2		Project Schedule (NTP + 15 Days)	2.2.7
3		Final Deliverables List (NTP + 15 Days)	2.2.8
4		Monthly Progress Reports	2.2.9
5		Action Item Matrix	2.2.12
6		Final Technical Reports	2.2.13
SECTION 3.0 TRAFFIC SIGNAL SYNCHRONIZATION DESIGN FINALIZATION			
7	A6a	Bristol/State College BRT Corridor - Technical memorandum detailing findings of the design phase documentation review	3.1.6
8	A7a	Bristol/State College BRT Corridor - All Final optimized and synchronized traffic signal timing plans in Synchro format and the preferred timing chart format of each agency, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).	3.1.7

9	A7b	Bristol/State College BRT Corridor - Final Time-Space Diagrams	3.1.7
10	A7c	Bristol/State College BRT Corridor - Final Signal Timing Optimization Plan	3.1.7
11	A7d	Bristol/State College BRT Corridor - Electronic Synchro 7.0 data files used in the Final analysis	3.1.7
12	A7e	Bristol/State College BRT Corridor - Electronic Sim Traffic data files used in the Final analysis	3.1.7
13	A7f	Bristol/State College BRT Corridor - Electronic Versions of the Final analysis and all data files including the Tru-Traffic TS/PP files	3.1.7
14	A8a	Bristol/State College BRT Corridor - Project Meeting Agendas	3.1.8
15	A8b	Bristol/State College BRT Corridor - Project Meeting Minutes and Action Items	3.1.8
16	A8c	Bristol/State College BRT Corridor - Action Item Matrix	3.1.8
17	B6a	Harbor Boulevard BRT Corridor - Technical memorandum detailing findings of the design phase documentation review	3.2.6
18	B7a	Harbor Boulevard BRT Corridor - All Final optimized and synchronized traffic signal timing plans in Synchro format and the preferred timing chart format of each agency, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).	3.2.7
19	B7b	Harbor Boulevard BRT Corridor - Final Time-Space Diagrams	3.2.7
20	B7c	Harbor Boulevard BRT Corridor - Final Signal Timing Optimization Plan	3.2.7
21	B7d	Harbor Boulevard BRT Corridor - Electronic Synchro 7.0 data files used in the Final analysis	3.2.7
22	B7e	Harbor Boulevard BRT Corridor - Electronic Sim Traffic data files used in the Final analysis	3.2.7
23	B7f	Harbor Boulevard BRT Corridor - Electronic Versions of the Final analysis and all data files including the Tru-Traffic TS/PP files	3.2.7
24	B8a	Harbor Boulevard BRT Corridor - Project Meeting Agendas	3.2.8
25	B8b	Harbor Boulevard BRT Corridor - Project Meeting Minutes and Action Items	3.2.8

26	B8c	Harbor Boulevard BRT Corridor - Action Item Matrix	3.2.8
27	C6a	Westminster/17 th Street BRT Corridor – Technical memorandum detailing findings of the design phase documentation review	3.3.6
28	C7a	Westminster/17 th Street BRT Corridor – All Final optimized and synchronized traffic signal timing plans in Synchro format and the preferred timing chart format of each agency, including (a) existing corridor conditions and (b) planned and programmed improvements (widening projects and intersection improvements) within the next five years (after NTP).	3.3.7
29	C7b	Westminster/17 th Street BRT Corridor – Final Time-Space Diagrams	3.3.7
30	C7c	Westminster/17 th Street BRT Corridor – Final Signal Timing Optimization Plan	3.3.7
31	C7d	Westminster/17 th Street BRT Corridor – Electronic Synchro 7.0 data files used in the Final analysis	3.3.7
32	C7e	Westminster/17 th Street BRT Corridor – Electronic Sim Traffic data files used in the Final analysis	3.3.7
33	C7f	Westminster/17 th Street BRT Corridor – Electronic Versions of the Final analysis and all data files including the Tru-Traffic TS/PP files	3.3.7
34	C8a	Westminster/17 th Street BRT Corridor – Project Meeting Agendas	3.3.8
35	C8b	Westminster/17 th Street BRT Corridor – Project Meeting Minutes and Action Items	3.3.8
36	C8c	Westminster/17 th Street BRT Corridor – Action Item Matrix	3.3.8
SECTION 4.0 TRAFFIC SIGNAL SYNCHRONIZATION IMPLEMENTATION			
37	A1a	Bristol/State College BRT Corridor - Technical memorandum containing field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agency, and final signal timing implementation plan.	4.2
38	A2a	Bristol/State College BRT Corridor - List of Materials, Units, and Prices	4.2.1

39	A2b	Bristol/State College BRT Corridor – Copies of All Purchase Orders and Product Manuals	4.2.1
40	A3a	Bristol/State College BRT Corridor - Signal Synchronization Equipment Installation Schedule	4.2.2
41	A4a	Bristol/State College BRT Corridor - Signal Synchronization Equipment AUTHORITY/agencies Notifications	4.2.3
42	A5a	Bristol/State College BRT Corridor - Signal Synchronization Equipment Guarantee Certification	4.2.5
43	A6a	Bristol/State College BRT Corridor - “After” Study Project Report	4.2.6
44	A6b	Bristol/State College BRT Corridor - Electronic versions of the “After” Study analysis and all floating car data files	4.2.6
45	A7a	Bristol/State College BRT Corridor - Draft Bristol/State College BRT Corridor Final Timings and Evaluation Technical Report	4.2.7
46	A7b	Bristol/State College BRT Corridor - Final Bristol/State College BRT Corridor Final Timings and Evaluation Technical Report	4.2.7
47	A7c	Bristol/State College BRT Corridor - Presentations to the AUTHORITY and City Councils	4.2.7
48	A8a	Bristol/State College BRT Corridor - Project Meeting Agendas	4.2.8
49	A8b	Bristol/State College BRT Corridor - Project Meeting Minutes and Action items	4.2.8
50	A8c	Bristol/State College BRT Corridor - Action Item Matrix	4.2.8
51	B1a	Harbor Boulevard BRT Corridor - Technical memorandum containing field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agency, and final signal timing implementation plan.	4.3.1
52	B2a	Harbor Boulevard BRT Corridor - List of Materials, Units, and Prices	4.3.2
53	B2b	Harbor Boulevard BRT Corridor – Copies of All Purchase Orders and Product Manuals	4.3.2
54	B3a	Harbor Boulevard BRT Corridor - Signal Synchronization Equipment Installation Schedule	4.3.3

55	B4a	Harbor Boulevard BRT Corridor - Signal Synchronization Equipment AUTHORITY/agencies Notifications	4.3.4
56	B5a	Harbor Boulevard BRT Corridor - Signal Synchronization Equipment Guarantee Certification	4.3.5
57	B6a	Harbor Boulevard BRT Corridor - "After" Study Project Report	4.3.6
58	B6b	Harbor Boulevard BRT Corridor - Electronic versions of the "After" Study analysis and all floating car data files	4.3.6
59	B7a	Harbor Boulevard BRT Corridor - Draft Harbor Boulevard BRT Corridor Final Timings and Evaluation Technical Report	4.3.7
60	B7b	Harbor Boulevard BRT Corridor - Final Harbor Boulevard BRT Corridor Final Timings and Evaluation Technical Report	4.3.7
61	B7c	Harbor Boulevard BRT Corridor - Presentations to the AUTHORITY and City Councils	4.3.7
62	B8a	Harbor Boulevard BRT Corridor - Project Meeting Agendas	4.3.8
63	B8b	Harbor Boulevard BRT Corridor - Project Meeting Minutes and Action Items	4.3.8
64	B8c	Harbor Boulevard BRT Corridor - Action Item Matrix	4.3.8
65	C1a	Westminster/17 th Street BRT Corridor - Technical memorandum containing field implementation of optimized traffic signal plans for existing corridor conditions, including all required fine tuning and timing charts as requested by AUTHORITY and agency, and final signal timing implementation plan.	4.4.1
66	C2a	Westminster/17 th Street BRT Corridor - List of Materials, Units, and Prices	4.4.2
67	C2b	Westminster/17 th Street BRT Corridor – Copies of All Purchase Orders and Product Manuals	4.4.2
68	C3a	Westminster/17 th Street BRT Corridor - Signal Synchronization Equipment Installation Schedule	4.4.3
69	C4a	Westminster/17 th Street BRT Corridor - Signal Synchronization Equipment AUTHORITY/agencies Notifications	4.4.4
70	C5a	Westminster/17 th Street BRT Corridor - Signal Synchronization Equipment Guarantee Certification	4.4.5

71	C6a	Westminster/17th Street BRT Corridor - "After" Study Project Report	4.4.6
72	C6b	Westminster/17th Street BRT Corridor - Electronic versions of the "After" Study analysis and all floating car data files	4.4.6
73	C7a	Westminster/17th Street BRT Corridor - Draft Westminster/17th Street BRT Corridor Final Timings and Evaluation Technical Report	4.4.7
74	C7b	Westminster/17th Street BRT Corridor - Final Westminster/17th Street BRT Corridor Final Timings and Evaluation Technical Report	4.4.7
75	C7c	Westminster/17th Street BRT Corridor - Presentations to the AUTHORITY and City Councils	4.4.7
76	C8a	Westminster/17th Street BRT Corridor - Project Meeting Agendas	4.4.8
77	C8b	Westminster/17th Street BRT Corridor - Project Meeting Minutes and Action items	4.4.8
78	C8c	Westminster/17th Street BRT Corridor - Action Item Matrix	4.4.8
SECTION 5.0 SUPPORT SERVICES			
79	A1a	Bristol/State College BRT Corridor - Revised signal timing plans and progress reports documenting the changes	5.1.1
80	A1b	Bristol/State College BRT Corridor - Provide TMS event Logs and monthly support activity logs	5.1.1
81	B1a	Harbor Boulevard BRT Corridor - Revised signal timing plans and progress reports documenting the changes	5.2.1
82	B1b	Harbor Boulevard BRT Corridor - Provide TMS event Logs and monthly support activity logs	5.2.1
83	C1a	Westminster/17th Street BRT Corridor - Revised signal timing plans and progress reports documenting the changes	5.3.1
84	C1b	Westminster/17th Street BRT Corridor - Provide TMS event Logs and monthly support activity logs	5.3.1

SECTION 7.0

DEFINITIONS AND ABBREVIATIONS

SECTION 7.0 DEFINITIONS AND ABBREVIATIONS

7.1 DEFINITIONS

A
Acceptance: Accepted by AUTHORITY for its use.
Addendum, Addenda: Written document clarifying, interpreting, or revising any of the Contract Documents released by AUTHORITY. Each Addendum is sequentially numbered.
Agency (Agencies): All Cities, Counties or Caltrans districts within the jurisdiction of the three (3) BRT Corridors.
Approval, Approved: Acceptance in writing by AUTHORITY. Acceptance by AUTHORITY in no way relieves CONSULTANT of meeting all requirements of the Scope of Work.
AUTHORITY: The Orange County Transportation AUTHORITY or its appointed designee.
B
Beneficial Occupancy: Allowance by AUTHORITY, where at its sole discretion, and with the concurrence of CONSULTANT, AUTHORITY, Agency and other Parties, both Parties mutually agree to take early (prior to contractually scheduled) possession of the work in part or in whole.
Best Value Approach: Method used for selecting CONSULTANT for Design, Furnish and Install.
Bus Rapid Transit (BRT): Transit mode which can operate on exclusive transitways, HOV lanes, expressways, or ordinary streets with limited Stops.
C
Calculations: Numerical computations performed to demonstrate and quantify compliance with the SOW.
California Transportation Commission (CTC): A State Agency that sets State spending priorities for highway and transit and allocates funding. Members are appointed by the Governor.
Central Communications or CC: Central location for monitoring, directing, and controlling all bus movements and operational functions on the BRT System and the communications and administrative center for the BRT System.
Certification: The action of determining, verifying, and attesting in writing to the qualifications of personnel, equipment and/or materials.
Change Orders: A written directive issued by AUTHORITY, authorizing the CONSULTANT/CONTRACTOR to provide additional work, not originally included in the CONTRACT. Change Orders are sequentially numbered, and follow an established process/procedure from point of inception through their execution.
Component: A piece or part of an Assembly or equipment (such as a mechanical or electrical part or support structure) that is combined with other Components to form a system, subsystem, Assembly, sub Assembly, or part.
CONSULTANT: A person, persons, firm, partnership, corporation, or combination thereof which has entered into a CONTRACT with AUTHORITY to provide TSS Design, Implementation and Finalization, Support Services, and other Program related

professional services, as identified in this Scope of Work.
CONTRACT: A written, binding agreement executed between AUTHORITY and CONSULTANT setting forth the obligations of the Parties there under. The CONTRACT also includes all duly executed Change Orders issued subsequent to the original execution of the CONTRACT.
Contract Documents: All volumes including, but not limited to, the Scope of Work (Exhibit A), Drawings and Specifications (Exhibit B), Terms and Conditions (Exhibit C), Special Conditions (Exhibit C), Performance bond, and Non-Collusion Affidavit; all of which constitute one instrument.
Corridor: A consistent path and set of endpoints traversed by a BRT Bus in revenue service for transporting passengers.
Commercial-Off-The-Shelf (COTS): Referring typically to software products or software-intensive products, meets all of the following requirements: a. Exists a priori from a commercial vendor. b. It is available to the corporate community. c. It can be bought (or leased or licensed).
D
Days: Unless otherwise designated, days as used in the Contract Documents shall be understood to mean calendar days.
Defect: Non fulfillment of an intended usage requirement or reasonable expectation.
Deliverables: Items to be delivered by the CONSULTANT to AUTHORITY under this CONTRACT.
Design, Furnish, Install: CONTRACT delivery method whereby a consultant or contractor develops and provides the Design, Furnishing and Installation requirements for all Components, parts, equipment, assemblies, subsystems, and systems including hardware, software, Interfaces, wires, cables, harnesses, incidentals and other services, including labor and management, and all other related contractual requirements.
Direction: Assigned movement and orientation of a bus on the Corridor. For convention, movements are either North-South or East-West.
Draft (Design): The design which depicts all necessary elements of the System or subsystem and which requires AUTHORITY and agencies review. This design is not ready to be implemented and installed. This is the design prior to Final Design.
Drawings: Plans, Contract Drawings.
F
Factory Acceptance Tests: Tests performed prior to shipment to verify compliance with specifications and quality standards.
Failure: Malfunction of a Component, Assembly, or system resulting from a cause other than misuse, mishandling, or vandalism, requiring unscheduled maintenance/ replacement to restore to normal operating condition to achieve its intended function.
Fault: The malfunction of a Component, Assembly, or system that is not caused due to vandalism or mishandling.
Field Conditions: Including, but not limited to, site conditions, traffic patterns, etc.

Final (Design): The design which depicts all necessary elements of the System or subsystem and which is ready to be implemented and installed.
I
Invitation for Bid (IFB): Bid procurement delivery method commonly used for Public Works construction contracts.
Independent Failure: A Failure which is not the result of another Failure, either directly or indirectly.
Indicated: As used in these Contract Documents, shall be understood to mean, “as shown on the Conceptual Drawings” or “as described in the Scope of Work.”
Inspections: Visual Verifications and examinations to determine compliance to the Contract Documents and satisfactory conditions, accuracy, safety, or Performance.
Interface: a. The defined common boundary between two systems or subsystems that may be electrical, mechanical, functional, or contractual. b. A point where a system, subsystem or component comes into functional or physical contact with another.
M
Manufacturer: The Original Equipment Manufacturer (OEM) defined as the producer or supplier of materials, equipment, or apparatus for installation on the vehicle.
Memorandum of Understanding: Agreements between Local Agencies, departments, and stakeholders in the Program.
N
Non Compliance or Non Conformance: Any part, procedure, specification, or Drawing that does not conform to contractual or specified requirements.
P
Party, Parties: Entities entering into a legally binding CONTRACT.
Performance: The functional effectiveness obtained by a system, subsystem, part, or an element as specified.
Phase: Project timeframe defined by milestones.
Previous consultant: A person, persons, firm, partnership, corporation, or combination thereof which had entered into a CONTRACT with AUTHORITY and provided Engineering and Design services, as identified in this Scope of Work.
Program: Bravo! Bus Rapid Transit Program.
Q
Quality Assurance/Quality Control: Planned and systematic activities necessary to provide adequate confidence that items and services conform to the requirements and shall perform satisfactorily in service.
R
Route: See <i>Corridor</i> .

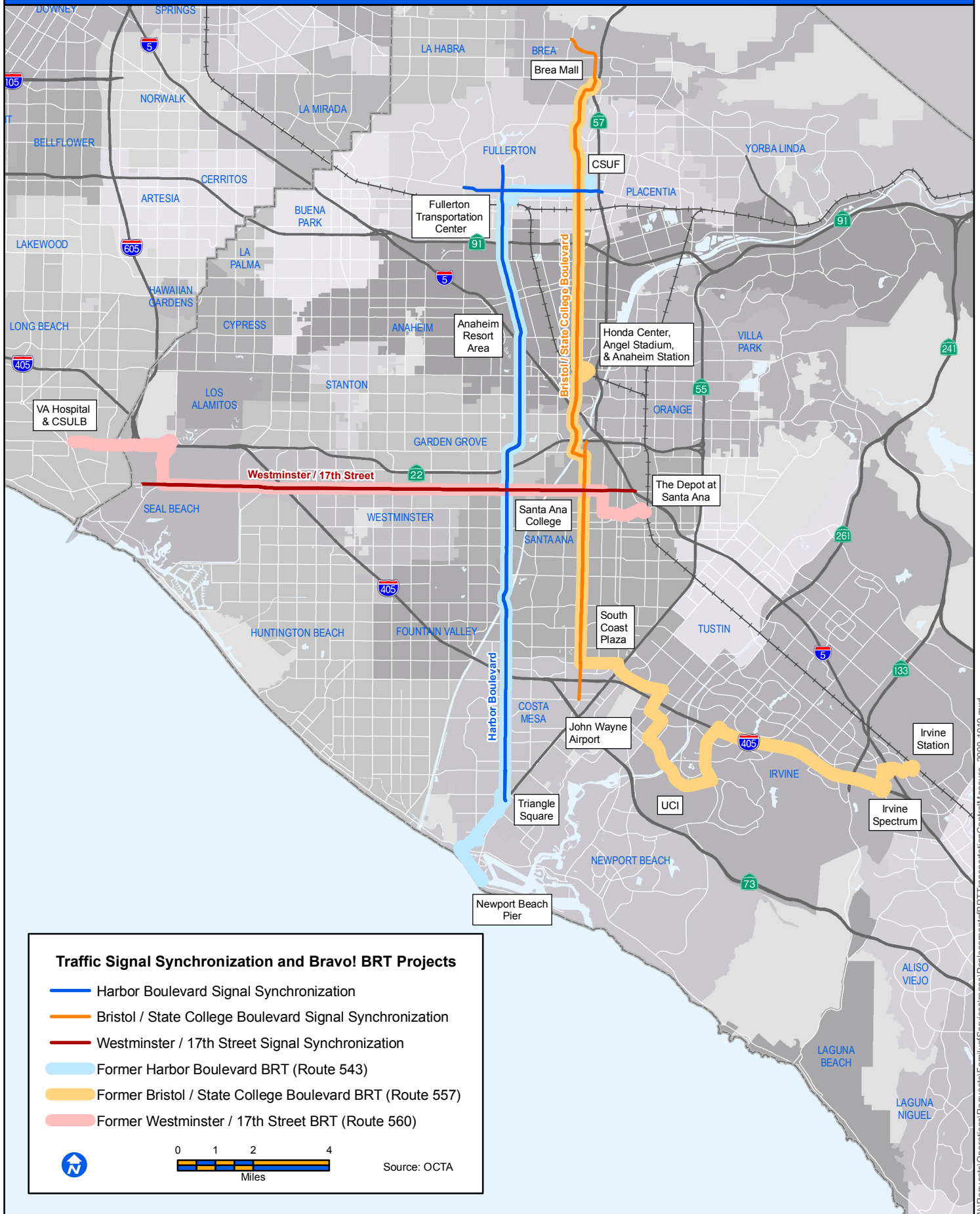
S
Schedule: A timetable which identifies each specific bus number, Direction of travel, frequency, and arrival times at each Stop.
Scope Of Work (SOW): Section of the Contract Documents that defines all of the work elements to be provided as part of the CONTRACT.
Significant Implementation Milestone: Work that has reached an advanced level or threshold of completion. This threshold varies for different types of elements of work.
State: State of California.
Submittals: See <i>Deliverables</i> .
T
Testing: The process whereby the CONSULTANT verifies that the Components, equipment, subsystems, systems and Interfaces function as specified and Interface safely and properly with each other.
Test Reports: Reports of tests signed by qualified professional attesting that tests were performed in accordance with the test method specified, that the test results reported are accurate, and that items tested meet or fail to meet the stated requirements.
Transportation Management Center: A facility housing the operations management centers.
V
Value Engineering: A formal and defined method of optimizing and balancing cost, function, operation, Maintainability, overall life cycle cost, or other project parameter(s) to achieve the best AUTHORITY defined value for the Project.
Verification: Is the act of reviewing, inspecting, Testing, checking, auditing, or otherwise establishing and documenting whether items, processes, services, or documents conform to specified requirements.
W
Work: All of the work required to Design, Furnish, Install, Test and provide complete functional TSS. Shall also include all activities after Testing until CONTRACT closeout.

7.2 ABBREVIATIONS

Abbreviations	Description
A	
A&E	Architectural and Engineering
ADA	Americans with Disabilities Act
APWA	American Public Works Association
AQMD	Air Quality Management District
ASTM	American Society for Testing and Materials
AUTHORITY	Orange County Transportation Authority
B	
BLVD	Boulevard
BRT	Bus Rapid Transit
C	
CA	California
CADD	Computer Aided Drafting & Design
CALTRANS	California Department of Transportation
CAMM	Contracts Administration and Materials Management
CAMUTCD	California Manual on Uniform Traffic Control Devices
CC	Central Communications
CCTV	Closed Circuit Television
CONSULTANT	Design, Furnish and Install Consultant
COTS	Commercial-Off-The-Shelf
CPM	Critical Path Method
CTC	California Transportation Commission
D	
DBE	Disadvantaged Business Enterprise
F	
FHWA	Federal Highway Administration
G	
GPS	Global Positioning Systems
I	
I-	Interstate
I-405	San Diego Freeway
IEEE	Institute of Electrical and Electronic Engineers
IFB	Invitation For Bid
ITC	Irvine Transportation Center
ISO	International Standards Organization
J	
JPEG	Joint Photographic Experts Group
K	
KB	Kilobytes

M	
MOE	Measures Of Effectiveness
MOU	Memorandum of Understanding
MS	Microsoft
N	
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NIC	Not In Contract
NS	Network Subsystem
NTP	Notice to Proceed
O	
O&M	Operating and Maintenance
OCTA	Orange County Transportation AUTHORITY
P	
PM	Project Manager
PMC	Project Management Consultant
PS&E	Plans, Specifications and Estimates
PW	Public Works
Q	
QA/QC	Quality Assurance/Quality Control
R	
RFI	Request for Information
RFP	Requests for Proposals
S	
SCOOT	Split, Cycle, and Offset Optimizer Techniques
SCE	Southern California Edison
SOW	Scope of Work
SR	State Route
SSP	State of California Standard Plans
SSS	State of California Standard Specifications
T	
TAC	Technical Advisory Committee
TBD	To Be Determined
TMC	Transportation Management Center
TOPD	Traffic Operations Policy Directives
TSS	Traffic Signal Synchronization
W	
WATCH	Work Area Traffic Control Handbook

Bravo! Traffic Signal Synchronization Corridors



South→

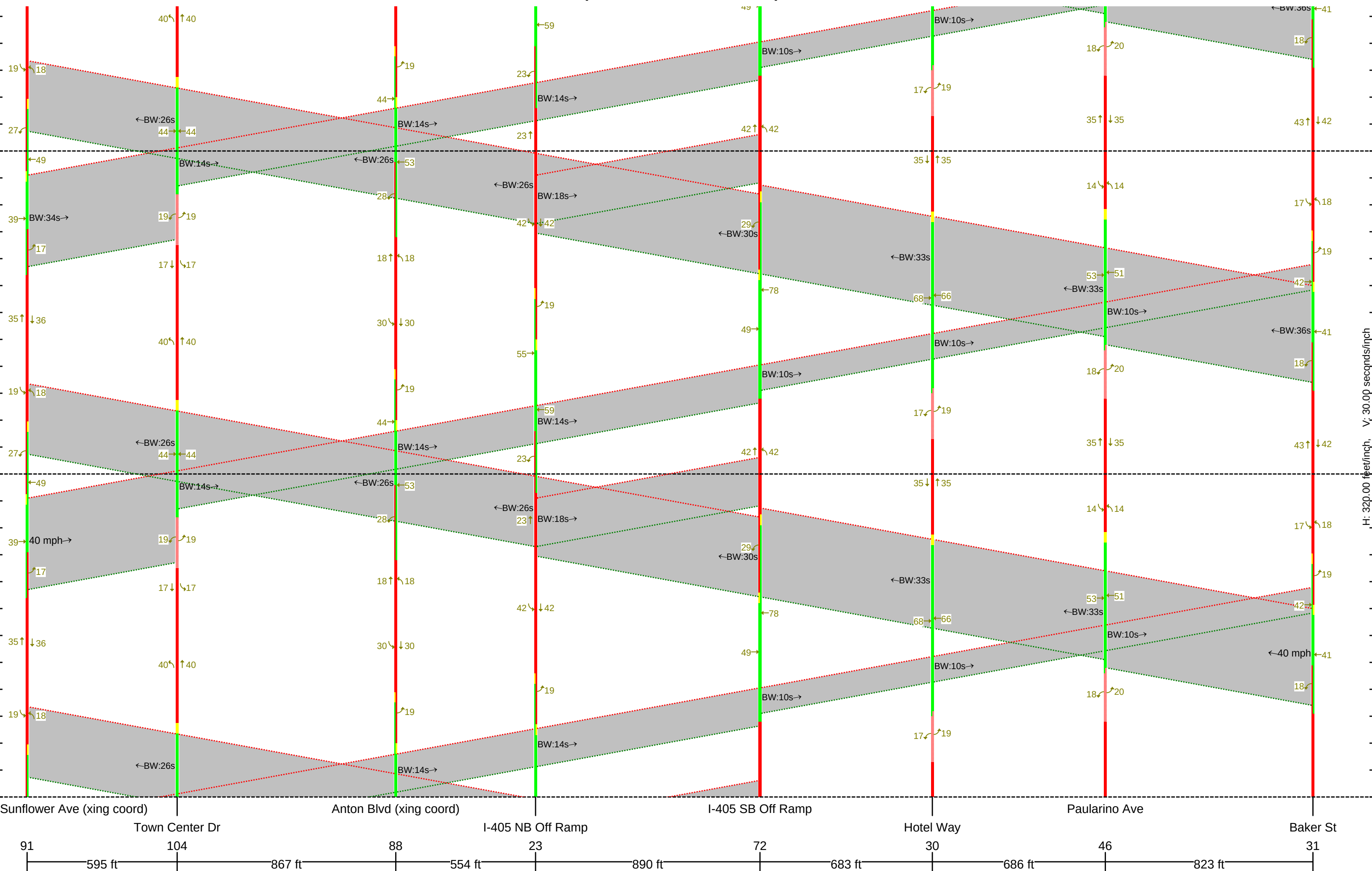


EXHIBIT B

COST AND PRICE FORMS

REQUEST FOR PROPOSALS (RFP) 0-1398

Enter below the proposed price for each task described in the Scope of Work, Exhibit A. Prices shall include direct costs, indirect costs, and profits. The Authority's intention is to award a firm-fixed price contract.

Task	Description	Firm Fixed Price
3.0	TRAFFIC SIGNAL SYNCHRONIZATION DESIGN FINALIZATION	
3.1	PART "A" – Bristol/State College BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES	
3.1.1	TASK A-1: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – Kick-Off meeting	
3.1.2	TASK A-2: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – REVIEW Completed TSS Study Alignment Verification	
3.1.3	TASK A-2: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – REVIEW Completed TSS Study Alignment Verification	
3.1.4	TASK A-3: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – review Completed Data Collection	
3.1.5	TASK A-4: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – review Completed Inventory of Existing Traffic Signals, Field Masters/Hubs Locations, Signal Communications, and Traffic Management Systems	
3.1.6	TASK A-5: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – REVIEW Completed Bristol/State College BRT Corridor "Before" Study	
3.1.7	TASK A-6: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – completed design phase documentation review	
3.1.8	TASK A-7: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – Signal Timing Optimization	
3.2	TASK A-8: Bristol/State College BRT Corridor TSS Design FINALIZATION Services - Project Coordination and Meetings	
3.2.1	PART "B" – HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES	
3.2.2	TASK B-1: Harbor Boulevard BRT Corridor TSS DESIGN FINALIZATION SERVICES – Kick-Off Meeting	
3.2.3	TASK B-2: Harbor Boulevard BRT Corridor TSS DESIGN FINALIZATION SERVICES – Review Completed TSS Study Alignment Verification	
3.2.4	TASK B-3: Harbor Boulevard BRT Corridor TSS DESIGN FINALIZATION SERVICES – review Completed Data Collection	
3.2.5	TASK B-4: Harbor Boulevard BRT Corridor TSS DESIGN FINALIZATION SERVICES – review Completed Inventory of Existing Traffic Signals, Field Masters/Hubs Locations, Signal Communications, and Traffic Management Systems	
3.2.6	TASK B-5: Harbor Boulevard BRT Corridor TSS DESIGN FINALIZATION SERVICES – review Completed Harbor Boulevard BRT Corridor "Before" Study	

Task	Description	Firm Fixed Price
3.2.7	TASK B-6: Harbor Boulevard BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – completed design phase documentation review	
3.2.8	TASK B-7: Harbor Boulevard BRT Corridor TSS DESIGN FINALIZATION SERVICES – Signal Timing Optimization	
3.3	TASK B-8: Harbor Boulevard BRT Corridor TSS DESIGN FINALIZATION SERVICES - Project Coordination and Meetings	
3.3.1	Task C-1: Westminster/17th Street BRT Corridor TSS DESIGN FINALIZATION SERVICES – Kick-Off Meeting	
3.3.2	TASK C-2: Westminster/17th Street BRT Corridor TSS DESIGN FINALIZATION SERVICES – Review Completed TSS Study Alignment Verification	
3.3.3	TASK C-3: Westminster/17th Street BRT Corridor TSS DESIGN FINALIZATION SERVICES – Completed Data Collection	
3.3.4	TASK C-4: Westminster/17th Street BRT Corridor TSS DESIGN FINALIZATION SERVICES – Completed Inventory of Existing Traffic Signals, Field Masters/Hubs Locations, Signal Communications, and Traffic Management Systems	
3.3.5	TASK C-5: Westminster/17th Street BRT Corridor TSS DESIGN FINALIZATION SERVICES – Completed Westminster/17th Street BRT Corridor “Before” Study	
3.3.6	TASK C-6: WESTMINSTER/17TH STREET BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – completed design phase documentation review	
3.3.7	TASK C-7: Westminster/17th Street BRT Corridor TSS DESIGN FINALIZATION SERVICES – Signal Timing Optimization	
3.3.8	TASK C-8: Westminster/17th Street BRT Corridor TSS DESIGN FINALIZATION SERVICES - Project Coordination and Meetings	
4.0	TRAFFIC SIGNAL SYNCHRONIZATION IMPLEMENTATION	
4.1	TASK AND DELIVERABLE REQUIREMENTS	
4.2	PART “A” – Bristol/State College BRT CORRIDOR TSS IMPLEMENTATION SERVICES	
4.2.1	TASK A-1: Bristol/State College BRT Corridor TSS Services – Signal Timing Implementation	
4.2.2	TASK A-2: Bristol/State College BRT Corridor TSS IMPLEMENTATION SERVICES – Equipment Procurement	
4.2.3	TASK A-3: Bristol/State College BRT Corridor TSS IMPLEMENTATION SERVICES - Equipment Installation Scheduling of Work	
4.2.4	TASK A-4: Bristol/State College BRT Corridor TSS IMPLEMENTATION SERVICES - Equipment Installation Coordination, Installation Manpower, and Installation Restrictions	
4.2.5	TASK A-5: Bristol/State College BRT Corridor TSS IMPLEMENTATION SERVICES - Equipment Installation Guarantee	
4.2.6	TASK A-6: Bristol/State College BRT Corridor TSS IMPLEMENTATION SERVICES - “After Study	
4.2.7	4.2.7 TASK A-7: Bristol/State College BRT Corridor TSS IMPLEMENTATION SERVICES - Project Report	

Task	Description	Firm Fixed Price
4.2.8	TASK A-8: Bristol/State College BRT Corridor TSS IMPLEMENTATION SERVICES - Project Coordination and Meetings	
4.3	PART "B" – HARBOR BOULEVARD BRT CORRIDOR TSS IMPLEMENTATION SERVICES	
4.3.1	TASK B-1: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES – Signal Timing Implementation	
4.3.2	TASK B-2: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES – Equipment Procurement	
4.3.3	TASK B-3: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES– Equipment Installation Scheduling of Work	
4.3.4	TASK B-4: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES - Equipment Installation Coordination, Installation Manpower, and Installation Restrictions	
4.3.5	TASK B-5: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES - Equipment Installation Guarantee	
4.3.6	TASK B-6: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES - "After Study"	
4.3.7	TASK B-7: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES - Project Report	
4.3.8	TASK B-8: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION SERVICES - Project Coordination and Meetings	
4.4	PART "C" – WESTMINSTER/17th STREET BRT TSS IMPLEMENTATION SERVICES	
4.4.1	TASK C-1: Westminster/17th Street BRT Corridor TSS IMPLEMENTATION Services – Signal Timing Implementation	
4.4.2	TASK C-2: Westminster/17th Street BRT Corridor TSS IMPLEMENTATION SERVICES – Equipment Procurement	
4.4.3	TASK C-3: Westminster/17th Street BRT TSS IMPLEMENTATION SERVICES - Equipment Installation Scheduling of Work	
4.4.4	TASK C-4: Westminster/17th Street BRT Corridor TSS IMPLEMENTATION SERVICES - Equipment Installation Coordination, Installation Manpower, and Installation Restrictions	
4.4.5	TASK C-5: Westminster/17th Street BRT Corridor TSS IMPLEMENTATION SERVICES - Equipment Installation Guarantee	
4.4.6	TASK C-6: Westminster/17th Street BRT Corridor TSS IMPLEMENTATION SERVICES - "After Study"	
4.4.7	TASK C-7: Westminster/17th Street BRT Corridor TSS IMPLEMENTATION SERVICES - Project Report	
4.4.8	TASK C-8: Westminster/17th Street BRT Corridor TSS IMPLEMENTATION SERVICES - Project Coordination and Meetings	

Task	Description	Firm Fixed Price
5.0	SUPPORT SERVICES	
5.1	PART "A" – Bristol/State College BRT CORRIDOR TSS SUPPORT SERVICES	
5.1.1	TASK A-1: Bristol/State College BRT Corridor TSS Signal Timing Support Services	
5.2	PART "B" – HARBOR BOULEVARD BRT CORRIDOR TSS SUPPORT SERVICES	
5.2.1	TASK B-1: Harbor Boulevard BRT Corridor TSS Signal Timing Support Services	
5.3	PART "C" – WESTMINSTER/17th STREET BRT CORRIDOR TSS SUPPORT SERVICES	
5.3.1	TASK C-1: Westminster/17th Street BRT Corridor TSS Signal Timing Support Services	
	TOTAL FIRM FIXED PRICE PAYMENT	

1. I acknowledge receipt of RFP 0-1398 and Addenda No.(s) _____

2. This offer shall remain firm for _____ days from the date of proposal
(Minimum 120)

COMPANY NAME _____

ADDRESS _____

TELEPHONE _____

SIGNATURE OF PERSON
AUTHORIZED TO BIND OFFEROR _____

SIGNATURE'S NAME AND TITLE _____

DATE SIGNED _____

EXHIBIT C
PROPOSED AGREEMENT

performance of any terms or conditions of this Agreement shall not be construed as a waiver or relinquishment of AUTHORITY's right to such performance or to future performance of such terms or conditions and CONSULTANT's obligation in respect thereto shall continue in full force and effect. Changes to any portion of this Agreement shall not be binding upon AUTHORITY except when specifically confirmed in writing by an authorized representative of AUTHORITY by way of a written amendment to this Agreement and issued in accordance with the provisions of this Agreement.

ARTICLE 2. AUTHORITY DESIGNEE

The Chief Executive Officer of AUTHORITY, or designee, shall have the authority to act for and exercise any of the rights of AUTHORITY as set forth in this Agreement.

ARTICLE 3. SCOPE OF WORK

A. CONSULTANT shall perform the work necessary to complete in a manner satisfactory to AUTHORITY the services set forth in Exhibit A, entitled "Scope of Work," attached to and, by this reference, incorporated in and made a part of this Agreement. All services shall be provided at the times and places designated by AUTHORITY.

B. CONSULTANT shall provide the personnel listed below to perform the above-specified services, which persons are hereby designated as key personnel under this Agreement.

Names

Functions

C. No person named in paragraph B of this Article, or his/her successor approved by AUTHORITY, shall be removed or replaced by CONSULTANT, nor shall his/her agreed-upon function or level of commitment hereunder be changed, without the prior written consent of AUTHORITY. Should the services of any key person become no longer available to

CONSULTANT, the resume and qualifications of the proposed replacement shall be submitted to AUTHORITY for approval as soon as possible, but in no event later than seven (7) calendar days prior to the departure of the incumbent key person, unless CONSULTANT is not provided with such notice by the departing employee. AUTHORITY shall respond to CONSULTANT within seven (7) calendar days following receipt of these qualifications concerning acceptance of the candidate for replacement.

ARTICLE 4. TERM OF AGREEMENT

This Agreement shall commence upon the effective date of this Agreement, and shall continue in full force and effect through, November 8, 2012 unless earlier terminated or extended as provided in this Agreement.

ARTICLE 5. START OF WORK

CONSULTANT shall incur no costs, and shall not perform or furnish any work, services, materials or equipment under this Agreement, unless and until a written Notice to Proceed (NTP) has been given to CONSULTANT by AUTHORITY. Conditions precedent to AUTHORITY issuing said NTP are CONSULTANT furnishing the certificate(s) of insurance as set forth in Article 11 hereunder. CONSULTANT shall furnish said documents within five (5) calendar days (excluding Saturdays, Sundays and legal holidays) after notification of contract award from AUTHORITY. Upon receipt of acceptable insurance certificate(s), AUTHORITY will within five (5) working days thereafter issue the written NTP.

ARTICLE 6. PAYMENT

A. For CONSULTANT's full and complete performance of its obligations under this Agreement, and subject to the maximum cumulative payment obligation provisions set forth in Article 7.A, AUTHORITY shall pay CONSULTANT on a firm fixed price basis in accordance with the following provisions.

B. The following schedule shall establish the firm fixed payment to CONSULTANT by AUTHORITY for each work task set forth in the Scope of Work. The schedule shall not include any

CONSULTANT expenses not approved by AUTHORITY including but not limited to reimbursement for local meals.

<u>Task</u>	<u>Description</u>	<u>Firm Fixed Price</u>
3.0	TRAFFIC SIGNAL SYNCHRONIZATION DESIGN FINALIZATION	
3.1	PART "A" – Bristol/State College BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES	
3.1.1	TASK A-1: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – Kick-Off meeting	
3.1.2	TASK A-2: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – REVIEW Completed TSS Study Alignment Verification	
3.1.3	TASK A-2: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – REVIEW Completed TSS Study Alignment Verification	
3.1.4	TASK A-3: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – review Completed Data Collection	
3.1.5	TASK A-4: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – review Completed Inventory of Existing Traffic Signals, Field Masters/Hubs Locations, Signal Communications, and Traffic Management Systems	
3.1.6	TASK A-5: Bristol/State College BRT Corridor TSS DESIGN FINALIZATION SERVICES – REVIEW Completed Bristol/State College BRT Corridor "Before" Study	
3.1.7	TASK A-6: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS DESIGN FINALIZATION SERVICES – completed design phase documentation review	

- 3.1.8 TASK A-7: Bristol/State College BRT Corridor TSS DESIGN
FINALIZATION SERVICES – Signal Timing Optimization
- 3.2 TASK A-8: Bristol/State College BRT Corridor TSS Design
FINALIZATION Services - Project Coordination and Meetings
- 3.2.1 PART “B” – HARBOR BOULEVARD BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES
- 3.2.2 TASK B-1: Harbor Boulevard BRT Corridor TSS DESIGN
FINALIZATION SERVICES – Kick-Off Meeting
- 3.2.3 TASK B-2: Harbor Boulevard BRT Corridor TSS DESIGN
FINALIZATION SERVICES – Review Completed TSS Study Alignment
Verification
- 3.2.4 TASK B-3: Harbor Boulevard BRT Corridor TSS DESIGN
FINALIZATION SERVICES – review Completed Data Collection
- 3.2.5 TASK B-4: Harbor Boulevard BRT Corridor TSS DESIGN
FINALIZATION SERVICES – review Completed Inventory of Existing
Traffic Signals, Field Masters/Hubs Locations, Signal Communications,
and Traffic Management Systems
- 3.2.6 TASK B-5: Harbor Boulevard BRT Corridor TSS DESIGN
FINALIZATION SERVICES – review Completed Harbor Boulevard BRT
Corridor “Before” Study
- 3.2.7 TASK B-6: Harbor Boulevard BRT CORRIDOR TSS DESIGN
FINALIZATION SERVICES – completed design phase documentation
review
- 3.2.8 TASK B-7: Harbor Boulevard BRT Corridor TSS DESIGN
FINALIZATION SERVICES – Signal Timing Optimization
- 3.3 TASK B-8: Harbor Boulevard BRT Corridor TSS DESIGN

FINALIZATION SERVICES - Project Coordination and Meetings

3.3 PART "C" – WESTMINSTER/17th STREET BRT CORRIDOR TSS

DESIGN FINALIZATION SERVICES

3.3.1 Task C-1: Westminster/17th Street BRT Corridor TSS DESIGN

FINALIZATION SERVICES – Kick-Off Meeting

3.3.2 TASK C-2: Westminster/17th Street BRT Corridor TSS DESIGN

FINALIZATION SERVICES – Review Completed TSS Study Alignment

Verification

3.3.3 TASK C-3: Westminster/17th Street BRT Corridor TSS DESIGN

FINALIZATION SERVICES – Completed Data Collection

3.3.4 TASK C-4: Westminster/17th Street BRT Corridor TSS DESIGN

FINALIZATION SERVICES – Completed Inventory of Existing Traffic

Signals, Field Masters/Hubs Locations, Signal Communications, and

Traffic Management Systems

3.3.5 TASK C-5: Westminster/17th Street BRT Corridor TSS DESIGN

FINALIZATION SERVICES – Completed Westminster/17th Street BRT

Corridor "Before" Study

3.3.6 TASK C-6: WESTMINSTER/17TH STREET BRT CORRIDOR TSS

DESIGN FINALIZATION SERVICES – completed design phase

documentation review

3.3.7 TASK C-7: Westminster/17th Street BRT Corridor TSS DESIGN

FINALIZATION SERVICES – Signal Timing Optimization

3.3.8 TASK C-8: Westminster/17th Street BRT Corridor TSS DESIGN

FINALIZATION SERVICES - Project Coordination and Meetings

4.0 TRAFFIC SIGNAL SYNCHRONIZATION IMPLEMENTATION

4.1 TASK AND DELIVERABLE REQUIREMENTS

4.2 PART "A" – Bristol/State College BRT CORRIDOR

TSS IMPLEMENTATION SERVICES

4.2.1 TASK A-1: Bristol/State College BRT Corridor TSS Services – Signal
Timing Implementation

4.2.2 TASK A-2: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS
IMPLEMENTATION SERVICES – EQUIPMENT PROCUREMENT

4.2.3 TASK A-3: Bristol/State College BRT Corridor TSS IMPLEMENTATION
SERVICES - Equipment Installation Scheduling of Work

4.2.4 TASK A-4: Bristol/State College BRT Corridor TSS IMPLEMENTATION
SERVICES - Equipment Installation Coordination, Installation Manpower,
and Installation Restrictions

4.2.5 TASK A-5: Bristol/State College BRT Corridor TSS IMPLEMENTATION
SERVICES - Equipment Installation Guarantee

4.2.6 TASK A-6: Bristol/State College BRT Corridor TSS IMPLEMENTATION
SERVICES - "After Study

4.2.7 4.2.7 TASK A-7: BRISTOL/STATE COLLEGE BRT CORRIDOR TSS
IMPLEMENTATION SERVICES - PROJECT REPORT

4.2.8 TASK A-8: Bristol/State College BRT Corridor TSS IMPLEMENTATION
SERVICES - Project Coordination and Meetings

4.3 PART "B" – HARBOR BOULEVARD BRT CORRIDOR TSS
IMPLEMENTATION SERVICES

4.3.1 TASK B-1: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION
SERVICES – Signal Timing Implementation

4.3.2 TASK B-2: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION
SERVICES – Equipment Procurement

- 1 4.3.3 TASK B-3: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION
- 2 SERVICES– Equipment Installation Scheduling of Work
- 3 4.3.4 TASK B-4: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION
- 4 SERVICES - Equipment Installation Coordination, Installation Manpower,
- 5 and Installation Restrictions
- 6 4.3.5 TASK B-5: HARBOR BOULEVARD BRT CORRIDOR TSS
- 7 IMPLEMENTATION SERVICES - EQUIPMENT INSTALLATION
- 8 GUARANTEE
- 9 4.3.6 TASK B-6: HARBOR BOULEVARD BRT CORRIDOR TSS
- 10 IMPLEMENTATION SERVICES - “AFTER STUDY”
- 11 4.3.7 TASK B-7: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION
- 12 SERVICES - Project Report
- 13 4.3.8 TASK B-8: Harbor Boulevard BRT Corridor TSS IMPLEMENTATION
- 14 SERVICES - Project Coordination and Meetings
- 15 4.4 PART “C” – WESTMINSTER/17th STREET BRT TSS
- 16 IMPLEMENTATION SERVICES
- 17 4.4.1 TASK C-1: WESTMINSTER/17TH STREET BRT CORRIDOR TSS
- 18 IMPLEMENTATION SERVICES – SIGNAL TIMING IMPLEMENTATION
- 19 4.4.2 TASK C-2: Westminster/17th Street BRT Corridor TSS
- 20 IMPLEMENTATION SERVICES – Equipment Procurement
- 21 4.4.3 TASK C-3: Westminster/17th Street BRT TSS IMPLEMENTATION
- 22 SERVICES - Equipment Installation Scheduling of Work
- 23 4.4.4 TASK C-4: Westminster/17th Street BRT Corridor TSS
- 24 IMPLEMENTATION SERVICES - Equipment Installation Coordination,
- 25 Installation Manpower, and Installation Restrictions
- 26

- 4.4.5 TASK C-5: Westminster/17th Street BRT Corridor TSS
IMPLEMENTATION SERVICES - Equipment Installation Guarantee
- 4.4.6 TASK C-6: Westminster/17th Street BRT Corridor TSS
IMPLEMENTATION SERVICES - "After Study"
- 4.4.7 TASK C-7: Westminster/17th Street BRT Corridor TSS
IMPLEMENTATION SERVICES - Project Report
- 4.4.8 TASK C-8: Westminster/17th Street BRT Corridor TSS
IMPLEMENTATION SERVICES - Project Coordination and Meetings

5.0 **Section 5.0 SUPPORT SERVICES**

5.1 PART "A" – Bristol/State College BRT CORRIDOR TSS SUPPORT SERVICES

- 5.1.1 TASK A-1: Bristol/State College BRT Corridor TSS Signal Timing
Support Services

5.2 PART "B" – HARBOR BOULEVARD BRT CORRIDOR TSS SUPPORT SERVICES

- 5.2.1 TASK B-1: Harbor Boulevard BRT Corridor TSS Signal Timing Support
Services

5.3 PART "C" – WESTMINSTER/17th STREET BRT CORRIDOR TSS SUPPORT SERVICES

- 5.3.1 TASK C-1: Westminster/17th Street BRT Corridor TSS Signal Timing
Support Services

TOTAL FIRM FIXED PRICE PAYMENT

.00

C. CONSULTANT shall invoice AUTHORITY on a monthly basis for payments corresponding to the work actually completed by CONSULTANT. Percentage of work completed shall be documented in a monthly progress report prepared by CONSULTANT, which shall accompany each

1 invoice submitted by CONSULTANT. CONSULTANT shall also furnish such other information as may
2 be requested by AUTHORITY to substantiate the validity of an invoice. At its sole discretion,
3 AUTHORITY may decline to make full payment for any task listed in paragraph 0 of this Article until
4 such time as CONSULTANT has documented to AUTHORITY's satisfaction, that CONSULTANT has
5 fully completed all work required under the task. AUTHORITY's payment in full for any task completed
6 shall not constitute AUTHORITY's final acceptance of CONSULTANT's work under such task; final
7 acceptance shall occur only when AUTHORITY's release of the retention described in paragraph D.

8 D. As partial security against CONSULTANT's failure to satisfactorily fulfill all of its
9 obligations under this Agreement, AUTHORITY shall retain ten percent (10%) of the amount of each
10 invoice submitted for payment by CONSULTANT. All retained funds shall be released by AUTHORITY
11 and shall be paid to CONSULTANT within sixty (60) days of payment of final invoice, unless
12 AUTHORITY elects to audit CONSULTANT's records in accordance with Article 18 of this Agreement.
13 If AUTHORITY elects to audit, retained funds shall be paid to CONSULTANT within thirty (30) calendar
14 days of completion of such audit in an amount reflecting any adjustment required by such audit.
15 CONSULTANT agrees to release subcontractor retention within thirty (30) calendar days after the
16 subconsultants work is satisfactory completed. These prompt payment provisions are required to be
17 incorporated in all subcontract agreements issued by CONSULTANT.

18 E. Invoices shall be submitted by CONSULTANT on a monthly basis and shall be
19 submitted in duplicate to AUTHORITY's Accounts Payable office. Each invoice shall be accompanied
20 by the monthly progress report specified in paragraph C of this Article. AUTHORITY shall remit
21 payment within thirty (30) calendar days of the receipt and approval of each invoice. Each invoice shall
22 include the following information:

- 23 1. Agreement No. C-0-1398;
- 24 2. Specify the task number for which payment is being requested;
- 25 3. The time period covered by the invoice;
- 26 4. Total monthly invoice (including project-to-date cumulative invoice amount) and

retention;

5. Monthly Progress Report;

6. Certification signed by the CONSULTANT or his/her designated alternate that a) The invoice is a true, complete and correct statement of reimbursable costs and progress; b) The backup information included with the invoice is true, complete and correct in all material respects; c) All payments due and owing to subcontractors and suppliers have been made; d) Timely payments will be made to subcontractors and suppliers from the proceeds of the payments covered by the certification and; e) The invoice does not include any amount which CONSULTANT intends to withhold or retain from a subcontractor or supplier unless so identified on the invoice.

7. Any other information as agreed or requested by AUTHORITY to substantiate the validity of an invoice.

ARTICLE 7. PROMPT PAYMENT CLAUSE

A. CONSULTANT agrees to pay each subcontractor for the satisfactory work preformed under this Agreement, no later than ten (10) calendar days from the receipt of each payment CONSULTANT receives from AUTHORITY. CONSULTANT agrees further to return retainage payments to each subcontractor within thirty (30) calendar days after the subcontractor's work is satisfactorily completed. AUTHORITY reserves the right to request the appropriate documentation from CONSULTANT showing payment has been made to the subcontractors. Any delay or postponement of payment from the above referenced time frames may occur only for good cause following written approval by AUTHORITY.

B. Failure to comply with this provision or delay in payment without prior written approval from AUTHORITY will constitute noncompliance, which may result in appropriate administrative sanctions, including, but not limited to a penalty of two percent (2%) of the invoice amount due per month for every month that payment is not made. These prompt payment provisions must be incorporated in all subcontract agreements issued by CONSULTANT under this Agreement.

/

ARTICLE 8. MAXIMUM OBLIGATION

Notwithstanding any provisions of this Agreement to the contrary, AUTHORITY and CONSULTANT mutually agree that AUTHORITY's maximum cumulative payment obligation (including obligation for CONSULTANT's profit) shall be _____Dollars (\$.00) which shall include all amounts payable to CONSULTANT for its subcontracts, leases, materials and costs arising from, or due to termination of, this Agreement.

ARTICLE 9. NOTICES

All notices hereunder and communications regarding the interpretation of the terms of this Agreement, or changes thereto, shall be effected by delivery of said notices in person or by depositing said notices in the U.S. mail, registered or certified mail, returned receipt requested, postage prepaid and addressed as follows:

To CONSULTANT:

To AUTHORITY:

Orange County Transportation Authority

550 South Main Street

P.O. Box 14184

Orange, CA 92863-1584

ATTENTION:

ATTENTION: Lance Wade, Section Manager,

Capital Projects

(714) 560 -5789

ARTICLE 10. INDEPENDENT CONTRACTOR

CONSULTANT's relationship to AUTHORITY in the performance of this Agreement is that of an independent contractor. CONSULTANT's personnel performing services under this Agreement shall at all times be under CONSULTANT's exclusive direction and control and shall be employees of CONSULTANT and not employees of AUTHORITY. CONSULTANT shall pay all wages, salaries and other amounts due its employees in connection with this Agreement and shall be responsible for all reports and obligations respecting them, such as social security, income tax withholding, unemployment

1 compensation, workers' compensation and similar matters.

2 **ARTICLE 11. INSURANCE**

3 A. CONSULTANT shall procure and maintain insurance coverage during the entire term
4 of this Agreement. Coverage shall be full coverage and not subject to self-insurance provisions.

5 CONSULTANT shall provide the following insurance coverage:

6 1. Commercial General Liability, to include Products/Completed Operations,
7 Independent Contractors', Contractual Liability, and Personal Injury, and Property Damage with a
8 minimum limit of \$1,000,000.00 per occurrence and \$2,000,000.00 general aggregate.

9 2. Automobile Liability to include owned, hired and non-owned autos with a combined
10 single limit of \$1,000,000.00 each accident;

11 3. Workers' Compensation with limits as required by the State of California including a
12 waiver of subrogation in favor of AUTHORITY, its officers, directors, employees and agents;

13 4. Employers' Liability with minimum limits of \$1,000,000.00; and

14 5. Professional Liability with minimum limits of \$1,000,000.00 per claim.

15 B. Proof of such coverage, in the form of an insurance company issued policy
16 endorsement and a broker-issued insurance certificate, must be received by AUTHORITY prior to
17 commencement of any work. Proof of insurance coverage must be received by AUTHORITY
18 within ten (10) calendar days from the effective date of this Agreement with the AUTHORITY, its
19 officers, directors, employees and agents designated as additional insured on the general and
20 automobile liability. Such insurance shall be primary and non-contributive to any insurance or self-
21 insurance maintained by AUTHORITY. Furthermore, AUTHORITY reserves the right to request
22 certified copies of all related insurance policies.

23 C. CONSULTANT shall include on the face of the Certificate of Insurance the Agreement
24 Number C-0-1398; and, the Contract Administrator's Name, Lance Wade.

25 D. CONSULTANT shall also include in each subcontract the stipulation that
26 subcontractors shall maintain insurance coverage in the amounts required from CONSULTANT as

provided in this Agreement.

ARTICLE 12. ORDER OF PRECEDENCE

Conflicting provisions hereof, if any, shall prevail in the following descending order of precedence: (1) the provisions of this Agreement, including all exhibits; (2) the provisions of RFP 0-1398 (3) CONSULTANT's proposal dated ; and (4) all other documents, if any, cited herein or incorporated by reference.

ARTICLE 13. CHANGES

By written notice or order, AUTHORITY may, from time to time, order work suspension and/or make changes in the general scope of this Agreement, including, but not limited to, the services furnished to AUTHORITY by CONSULTANT as described in the Scope of Work. If any such work suspension or change causes an increase or decrease in the price of this Agreement or in the time required for its performance, CONSULTANT shall promptly notify AUTHORITY thereof and assert its claim for adjustment within ten (10) calendar days after the change or work suspension is ordered, and an equitable adjustment shall be negotiated. However, nothing in this clause shall excuse CONSULTANT from proceeding immediately with the agreement as changed.

ARTICLE 14. DISPUTES

A. Except as otherwise provided in this Agreement, any dispute concerning a question of fact arising under this Agreement which is not disposed of by supplemental agreement shall be decided by AUTHORITY's Director, Contracts Administration and Materials Management (CAMP), who shall reduce the decision to writing and mail or otherwise furnish a copy thereof to CONSULTANT. The decision of the Director, CAMP, shall be final and conclusive.

B. The provisions of this Article shall not be pleaded in any suit involving a question of fact arising under this Agreement as limiting judicial review of any such decision to cases where fraud by such official or his representative or board is alleged, provided, however, that any such decision shall be final and conclusive unless the same is fraudulent or capricious or arbitrary or so grossly erroneous as necessarily to imply bad faith or is not supported by substantial evidence. In connection with any

1 appeal proceeding under this Article, CONSULTANT shall be afforded an opportunity to be heard and
2 to offer evidence in support of its appeal.

3 C. Pending final decision of a dispute hereunder, CONSULTANT shall proceed diligently
4 with the performance of this Agreement and in accordance with the decision of AUTHORITY's Director,
5 CAMM. This Disputes clause does not preclude consideration of questions of law in connection with
6 decisions provided for above. Nothing in this Agreement, however, shall be construed as making final
7 the decision of any AUTHORITY official or representative on a question of law, which questions shall be
8 settled in accordance with the laws of the state of California.

9 **ARTICLE 15. TERMINATION**

10 A. AUTHORITY may terminate this Agreement for its convenience at any time, in whole or
11 part, by giving CONSULTANT written notice thereof. Upon termination, AUTHORITY shall pay
12 CONSULTANT its allowable costs incurred to date of that portion terminated. Said termination shall be
13 construed in accordance with the provisions of CFR Title 48, Chapter 1, Part 49, of the Federal
14 Acquisition Regulation (FAR) and specific subparts and other provisions thereof applicable to
15 termination for convenience. If AUTHORITY sees fit to terminate this Agreement for convenience, said
16 notice shall be given to CONSULTANT in accordance with the provisions of the FAR referenced above
17 and Article 9, herein. Upon receipt of said notification, CONSULTANT agrees to comply with all
18 applicable provisions of the FAR pertaining to termination for convenience.

19 B. AUTHORITY may terminate this Agreement for CONSULTANT's default if a federal or
20 state proceeding for the relief of debtors is undertaken by or against CONSULTANT, or if
21 CONSULTANT makes an assignment for the benefit of creditors, or for cause if CONSULTANT fails to
22 perform in accordance with the scope of work or breaches any term(s) or violates any provision(s) of
23 this Agreement and does not cure such breach or violation within ten (10) calendar days after written
24 notice thereof by AUTHORITY. CONSULTANT shall be liable for any and all reasonable costs incurred
25 by AUTHORITY as a result of such default or breach including, but not limited to, reprocurement costs
26 of the same or similar services defaulted by CONSULTANT under this Agreement. Such termination

shall comply with CFR Title 48, Chapter 1, Part 49, of the FAR.

ARTICLE 16. INDEMNIFICATION

CONSULTANT shall indemnify, defend and hold harmless AUTHORITY, its officers, directors, employees and agents from and against any and all claims (including attorneys' fees and reasonable expenses for litigation or settlement) for any loss or damages, bodily injuries, including death, damage to or loss of use of property caused by the negligent acts, omissions or willful misconduct by CONSULTANT, its officers, directors, employees, agents, subcontractors or suppliers in connection with or arising out of the performance of this Agreement.

ARTICLE 17. ASSIGNMENTS AND SUBCONTRACTS

A. Neither this Agreement nor any interest herein nor claim hereunder may be assigned by CONSULTANT either voluntarily or by operation of law, nor may all or any part of this Agreement be subcontracted by CONSULTANT, without the prior written consent of AUTHORITY. Consent by AUTHORITY shall not be deemed to relieve CONSULTANT of its obligations to comply fully with all terms and conditions of this Agreement.

B. AUTHORITY hereby consents to CONSULTANT's subcontracting portions of the Scope of Work to the parties identified below for the functions described in CONSULTANT's proposal. CONSULTANT shall include in the subcontract agreement the stipulation that CONSULTANT, not AUTHORITY, is solely responsible for payment to the subcontractor for the amounts owing and that the subcontractor shall have no claim, and shall take no action, against AUTHORITY, its officers, directors, employees or sureties for nonpayment by CONSULTANT.

<u>Subcontractor Name/Addresses</u>	<u>Subcontractor Amounts</u>
	.00
	.00

ARTICLE 18. ACCESS TO RECORDS AND REPORTS

CONSULTANT shall provide AUTHORITY, the U.S. Department of Transportation (DOT), the Comptroller General of the United States, or other agents of AUTHORITY, such access to

CONSULTANT's accounting books, records, payroll documents and facilities of the CONSULTANT which are directly pertinent to this Agreement for the purposes of examining, auditing and inspecting all accounting books, records, work data, documents and activities related hereto. CONSULTANT shall maintain such books, records, data and documents in accordance with generally accepted accounting principles and shall clearly identify and make such items readily accessible to such parties during CONSULTANT's performance hereunder and for a period of four (4) years from the date of final payment by AUTHORITY. AUTHORITY's right to audit books and records directly related to this Agreement shall also extend to all first-tier subcontractors identified in Article 17 of this Agreement. CONSULTANT shall permit any of the foregoing parties to reproduce documents by any means whatsoever or to copy excerpts and transcriptions as reasonably necessary.

ARTICLE 19. CONFLICT OF INTEREST

CONSULTANT agrees to avoid organizational conflicts of interest. An organizational conflict of interest means that due to other activities, relationships or contracts, the CONSULTANT is unable, or potentially unable to render impartial assistance or advice to the Authority; CONSULTANT's objectivity in performing the work identified in the Scope of Work is or might be otherwise impaired; or the CONSULTANT has an unfair competitive advantage. CONSULTANT is obligated to fully disclose to the AUTHORITY in writing Conflict of Interest issues as soon as they are known to the CONSULTANT. CONSULTANT is obligated to fully disclose to the AUTHORITY in writing Conflict of Interest issues as soon as they are known to the CONSULTANT. All disclosures must be submitted in writing to AUTHORITY pursuant to the Notice provision herein. This disclosure requirement is for the entire term of this Agreement.

ARTICLE 19. CODE OF CONDUCT

CONSULTANT agrees to comply with the AUTHORITY's Code of Conduct as it relates to Third-Party contracts which is hereby referenced and by this reference is incorporated herein. CONSULTANT agrees to include these requirements in all of its subcontracts.

ARTICLE 20. FEDERAL, STATE AND LOCAL LAWS

CONSULTANT warrants that in the performance of this Agreement, it shall comply with all applicable federal, state and local laws, statutes and ordinances and all lawful orders, rules and regulations promulgated thereunder.

ARTICLE 21. EQUAL EMPLOYMENT OPPORTUNITY

In connection with its performance under this Agreement, CONSULTANT shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age or national origin. CONSULTANT shall take affirmative action to ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, sex, age or national origin. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

ARTICLE 22. CIVIL RIGHTS ASSURANCE

During the performance of this Agreement, CONSULTANT, for itself, its assignees and successors in interest agree as follows:

A. Compliance with Regulations: CONSULTANT shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Agreement.

B. Nondiscrimination: CONSULTANT, with regard to the work performed by it during the Agreement, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The CONSULTANT shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Agreement covers a program set forth in Appendix B of the Regulations.

C. Solicitations for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the CONSULTANT for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the CONSULTANT of the CONSULTANT's obligations under this Agreement and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

D. Information and Reports: CONSULTANT shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the AUTHORITY to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a CONSULTANT is in the exclusive possession of another who fails or refuses to furnish this information the CONSULTANT shall so certify to the AUTHORITY as appropriate, and shall set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance: In the event of the CONSULTANT's noncompliance with nondiscrimination provisions of this Agreement, the AUTHORITY shall impose Agreement sanctions as it may determine to be appropriate, including, but not limited to:

1. Withholding of payments to the CONSULTANT under the Agreement until the CONSULTANT complies; and/or

2. Cancellation, termination, or suspension of the Agreement, in whole or in part.

F. Title VI of the Civil Rights Act: In determining the types of property or services to acquire, no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity receiving Federal financial assistance in violation of Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. Sections 2000d *et seq.* and DOT regulations, "Nondiscrimination in Federally Assisted Programs of the Department of Transportation—Effectuation of Title VI of the Civil Rights Act of 1964," 49 CFR Part 21. In addition, FTA Circular 4702.1, "Title VI

and Title VI-Dependent Guidelines for FTA Recipients,” 05-13-07, provides FTA guidance and instructions for implementing DOT’s Title VI regulations.

G. The Americans with Disabilities Act of 1990, as amended (ADA), 42 U.S.C. Sections 12101 *et seq.*, prohibits discrimination against qualified individuals with disabilities in all programs, activities, and services of public entities, as well as imposes specific requirements on public and private providers of transportation.

H. Incorporation of Provisions: CONSULTANT shall include the provisions of paragraphs (A) through (H) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The CONSULTANT shall take such action with respect to any subcontract or procurement as the AUTHORITY may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a CONSULTANT becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the CONSULTANT may request the AUTHORITY to enter into such litigation to protect the interests of the AUTHORITY, and, in addition, the CONSULTANT may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 23. DISADVANTAGED BUSINESS ENTERPRISES

Race-Neutral DBE Participation

[INTERNAL NOTE: USE THE FOLLOWING LANGUAGE IF CONSULTANT HAS PROPOSED TO UTILIZE DBES IN THE PERFORMANCE OF THE CONTRACT.]

At the time of contract execution, the CONSULTANT committed to utilize DBE(s) in the performance of this DOT-assisted contract, and further agrees to ensure that DBE subcontractors listed on the ***“DBE Race-Neutral Participation Listing” (Exhibit D-2)*** perform work and/or supply materials in accordance with original commitments, unless otherwise directed and/or approved by the Authority prior to the CONSULTANT effectuating any changes to its race-neutral DBE participation commitment(s) (*Refer to Subsection H: “Performance of DBE Subcontractors”*).

[INTERNAL NOTE: USE THE FOLLOWING LANGUAGE IF CONSULTANT HAS NOT PROPOSED TO UTILIZE DBES IN THE PERFORMANCE OF THE CONTRACT.]

At the time of contract execution, the CONSULTANT did not commit to utilize DBE(s) in the performance of this DOT-assisted contract. However, in the event DBE(s) are utilized in the performance of this contract, the CONSULTANT shall comply with reporting requirements delineated under

Section E: "Race-Neutral DBE Submission and Ongoing Reporting Requirements (Post-Award)".

A. In accordance with federal financial assistance agreements with the U.S. Department of Transportation (U.S. DOT), the Orange County Transportation Authority (AUTHORITY) has adopted a Disadvantaged Business Enterprise (DBE) Policy and Program, in conformance with Title 49 CFR Part 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Programs". The project is subject to these stipulated regulations. In order to ensure that the Authority achieves its overall DBE Program goals and objectives, the Authority encourages the participation of DBEs as defined in 49 CFR 26 in the performance of contracts financed in whole or in part with U.S. DOT funds. Pursuant to the intent of these Regulations, it is also the policy of the Authority to:

1. Fulfill the spirit and intent of the Federal DBE Program regulations published under U.S. DOT Title 49 CFR, Part 26, by ensuring that DBEs have equitable access to participate in all of Authority's DOT-assisted contracting opportunities.
2. Ensure that DBEs can fairly compete for and perform on all DOT-assisted contracts and subcontracts.
3. Ensure non-discrimination in the award and administration of AUTHORITY's DOT-assisted contracts.
4. Create a level playing field on which DBEs can compete fairly for DOT-assisted contracts.
5. Ensure that only firms that fully meet 49 CFR, Part 26 eligibility standards are permitted to participate as DBEs.
6. Help remove barriers to the participation of DBEs in DOT-assisted contracts.
7. Assist in the development of firms that can compete successfully in the marketplace outside the DBE Program.

B. CONSULTANT shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts. Any terms used in this section that are defined in 49 CFR Part 26, or elsewhere in the Regulations, shall have the meaning set forth in the Regulations. In

the event of any conflicts or inconsistencies between the Regulations and the Authority's DBE Program with respect to DOT-assisted contracts, the Regulations shall prevail.

C. AUTHORITY's New Race-Neutral DBE Policy Implementation Directives: Pursuant to recently released Race-Neutral DBE policy directives issued by the U.S. DOT in response to the Ninth Circuit U.S. Court of Appeals decision in *Western States Paving Co. v. Washington State Department of Transportation*, the Authority has implemented a wholly Race-Neutral DBE Program. A Race-Neutral DBE Program is one that, while benefiting DBEs, is not solely focused on DBE firms. Therefore, under a Race-Neutral DBE Program, AUTHORITY does not establish numeric race-conscious DBE participation goals on its DOT-assisted contracts. CONSULTANT shall not be required to achieve a specific level of DBE participation as a condition of contract compliance in the performance of this DOT-assisted contract. However, CONSULTANT shall adhere to race-neutral DBE participation commitment(s) made at the time of contract award.

D. Definitions: The following definitions apply to the terms as used in these provisions:

1. "Disadvantaged Business Enterprise (DBE)" means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

2. "Small Business Concern" means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto, except that a small business concern shall not include any concern or group of concerns controlled by the same socially and economically disadvantaged individual or individuals which has annual average gross receipts in excess of \$19.57 million over the previous three fiscal years.

3. "Socially and Economically Disadvantaged Individuals" means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are Black Americans,

Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans, women and any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8(a) of the Small Business Act, or by the Authority pursuant to 49 CFR part 26.65. Members of the following groups are presumed to be socially and economically disadvantaged:

- a. "Black Americans," which includes persons having origins in any of the Black racial groups of Africa;
- b. "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
- c. "Native Americans," which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
- d. "Asian-Pacific Americans," which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas;
- e. "Asian-Indian Americans," which includes persons whose origins are from India, Pakistan, and Bangladesh; and
- f. Women, regardless of ethnicity or race.

4. "Owned and Controlled" means a business: (a) which is at least 51 percent owned by one or more "Socially and Economically Disadvantaged Individuals" or, in the case of a publicly-owned business, at least 51 percent of the stock of which is owned by one or more "Socially and Economically Disadvantaged Individuals"; and (b) whose management and daily business operations are controlled by one or more such individuals.

5. "Manufacturer" means a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the CONSULTANT.

6. "Regular Dealer" means a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. The firm must

engage in, as its principal business, and in its own name, the purchase and sale of the product in question. A regular dealer in such bulk items as steel, cement, gravel, stone and petroleum products need not keep such products in stock if it owns or operates distribution equipment.

7. "Other Socially and Economically Disadvantaged Individuals" means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who, on a case-by-case basis, are determined by Small Business Administration or AUTHORITY to meet the social and economic disadvantage criteria described below.

a. Social Disadvantage: The individual's social disadvantage must stem from his/her color, national origin, gender, physical handicap, long-term residence in an environment isolated from the mainstream of American society, or other similar cause beyond the individual's control.

i. The individual must demonstrate that he/she has personally suffered social disadvantage.

ii. The individual's social disadvantage must be rooted in treatment, which he/she has experienced in American society, not in other countries.

iii The individual's social disadvantage must be chronic, longstanding and substantial, not fleeting or insignificant.

iv. The individual's social disadvantage must have negatively affected his/her entry into and/or advancement in the business world.

v. A determination of social disadvantage must be made before proceeding to make a determination of economic disadvantage.

b. Economic Disadvantage

i. The individual's ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same line of business and competitive market area that are not socially disadvantaged.

ii. The following criteria will be considered when determining the degree of diminished credit and capital opportunities of a person claiming social and economic disadvantage:

With respect to the individual:

- availability of financing
- bonding capability
- availability of outside equity capital
- available markets

With respect to the individual and the business concern:

- personal and business assets
- personal and business net worth
- personal and business income and profits

E. Race-Neutral DBE Submission and Ongoing Reporting Requirements (Post-Award)

CONSULTANT shall complete and submit the following DBE exhibits (forms) at the times specified: "Monthly Race-Neutral DBE Subcontractors Paid Report Summary and Payment Verification" (Form 103) (Exhibit E, Attachment E-3). If CONSULTANT is a DBE firm and/or has proposed to utilize DBE firms, CONSULTANT will be required to complete and submit a Form 103 to AUTHORITY by the 10th of each month until completion of the contract to facilitate reporting of race-neutral DBE participation, following the first month of contract activity. CONSULTANT shall report the total dollar value paid to DBEs for the applicable reporting period. CONSULTANT shall also report the DBE's scope of work and the total subcontract value of commitment for each DBE reported. CONSULTANT is advised not to report the participation of DBEs toward CONSULTANT's race-neutral DBE attainment until the amount being counted has been paid to the DBE. Upon completion of the contract, CONSULTANT will be required to prepare and submit to the Authority a "Race-Neutral DBE Subcontractors Paid Report Summary and Payment Verification" (Form 103) (Exhibit E, Attachment E-4) clearly marked "Final" to facilitate reporting and capturing actual DBE race-neutral attainments. CONSULTANT shall complete and submit a Final Form 103 whether or not DBEs were utilized in the performance of the contract.

F. DBE Eligibility and Commercially Useful Function Standards : A DBE must be a small

business concern as defined pursuant to Section 3 of the U.S. Small Business Act and relevant regulations promulgated pursuant thereto. A DBE may participate as a prime contractor, subcontractor, joint venture partner with a prime or subcontractor, vendor of material or supplies, or as a trucking company. A DBE joint venture partner must be responsible for specific contract items of work, or clearly defined portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The DBE joint venture partner must share in the capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest. A DBE must perform a commercially useful function in accordance with 49 CFR 26.55 (i.e., must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work). A DBE should perform at least thirty percent (30%) of the total cost of its contract with its own workforce to presume it is performing a commercially useful function. DBEs must be certified by the California Unified Certification Program (CUCP). Listings of DBEs certified by the CUCP are available from the following sources: The CUCP web site, which can be accessed at <http://www.californiaucp.com>; or the Caltrans "Civil Rights" web site at <http://www.dot.ca.gov/hq/bep>. The CUCP DBE Directory, which may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815; Telephone: (916) 445-3520.

G. DBE Crediting Provisions : When a DBE is proposed to participate in the contract, either as a prime CONSULTANT or Subcontractor, only the value of the work proposed to be performed by the DBE with its own forces may be counted towards race-neutral DBE participation. If CONSULTANT is a DBE joint venture participant, only the DBE proportionate interest in the joint venture shall be counted. If a DBE intends to subcontract part of the work of its subcontract to a lower tier Subcontractor, the value of the subcontracted work may be counted toward race-neutral DBE participation only if the DBE Subcontractor is a certified DBE and actually performs the work with their own forces. Services subcontracted to a non-DBE firm may not be credited toward the prime Contractor's race-neutral DBE attainment. CONSULTANT is to calculate and credit participation by

1 eligible DBE vendors of equipment, materials, and suppliers toward race-neutral DBE attainment, as
 2 follows: Sixty percent (60%) of expenditure(s) for equipment, materials and supplies required under the
 3 Contract, obtained from a regular dealer; or One hundred percent (100%) of expenditure(s) for
 4 equipment, materials and supplies required under the Contract, obtained from a DBE manufacturer.
 5 The following types of fees or commissions paid to DBE Subcontractors, Brokers, and Packagers may
 6 be credited toward the prime CONSULTANT's race-neutral DBE attainment, provided that the fee or
 7 commission is reasonable, and not excessive, as compared with fees or commissions customarily
 8 allowed for similar work, including: Fees and commissions charged for providing bona fide professional
 9 or technical services, or procurement of essential personnel, facilities, equipment, materials, or supplies
 10 required in the performance of the Contract; Fees charged for delivery of material and supplies
 11 (excluding the cost of materials or supplies themselves) when the licensed hauler, trucker, or delivery
 12 service is not also the manufacturer of, or a regular dealer in, the material and supplies; Fees and
 13 commissions charged for providing any insurance specifically required in the performance of the
 14 Contract. CONSULTANT may count the participation of DBE trucking companies toward race-neutral
 15 DBE attainment, as follows: The DBE must be responsible for the management and supervision of the
 16 entire trucking operation for which it is responsible on a particular contract. The DBE must itself own
 17 and operate at least one fully licensed, insured, and operational truck used on the Contract. The DBE
 18 receives credit for the total value of the transportation services it provides on the contract using trucks it
 19 owns, insures, and operates using drivers it employs. The DBE may lease trucks from another DBE
 20 firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another
 21 DBE receives credit for the total value of the transportation services the lessee DBE provides on the
 22 contract. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE
 23 who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a
 24 result of the lease arrangement. The DBE does not receive credit for the total value of the
 25 transportation services provided by the lessee, since these services are not provided by a DBE. For
 26 purposes of this paragraph, a lease must indicate that the DBE has exclusive use of and control over

the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE. If CONSULTANT listed a non-certified DBE 1st tier subcontractor to perform work on this contract, and the non-certified DBE subcontractor subcontracts a part of its work or purchases materials and/or supplies from a lower tier DBE certified Subcontractor or Vendor, the value of work performed by the lower tier DBE firm's own forces can be counted toward race-neutral DBE participation on the contract.

H. Performance of DBE Subcontractors: DBE subcontractors listed by CONSULTANT in its "DBE Race-Neutral Participation Listing" (Exhibit D-2) submitted at the time of proposal submittal shall perform the work and supply the materials for which they are listed, unless the CONSULTANT has received prior written authorization from the Authority to perform the work with other forces or to obtain the materials from other sources. CONSULTANT shall provide written notification to the AUTHORITY in a timely manner of any changes to its anticipated DBE participation. This notice should be provided prior to the commencement of that portion of the work.

I. Additional DBE Subcontractors: In the event CONSULTANT identifies additional DBE subcontractors or suppliers not previously identified by CONSULTANT for race-neutral DBE participation under the contract, CONSULTANT shall notify the Authority by submitting Exhibit E, Attachment E-8): "Request for Additional DBE Firm" to enable CONSULTANT to capture all race-neutral DBE participation. CONSULTANT shall also submit, for each DBE identified after contract execution, a written confirmation from the DBE acknowledging that it is participating in the contract for a specified value, including the corresponding scope of work (a subcontract agreement can serve in lieu of the written confirmation).

J. DBE Certification Status: If a listed DBE subcontractor is decertified during the life of the project, the decertified subcontractor shall notify CONSULTANT in writing with the date of decertification. If a non-DBE subcontractor becomes a certified DBE during the life of the project,

the DBE subcontractor shall notify CONSULTANT in writing with the date of certification. CONSULTANT shall furnish the written documentation to AUTHORITY in a timely manner.

K. CONSULTANT's Assurance Clause Regarding Non-Discrimination: In compliance with State and Federal anti-discrimination laws, CONSULTANT shall affirm that they will not exclude or discriminate on the basis of race, color, national origin, or sex in consideration of contract award opportunities. Further, CONSULTANT shall affirm that they will consider, and utilize subcontractors and vendors, in a manner consistent with non-discrimination objectives.

ARTICLE 24. PROHIBITED INTERESTS

A. CONSULTANT covenants that, for the term of this Agreement, no director, member, officer or employee of AUTHORITY during his/her tenure in office or for one (1) year thereafter, shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

B. No member of or delegate to, the Congress of the United States shall have any interest, direct or indirect, in this Agreement or to the benefits thereof.

ARTICLE 25. OWNERSHIP OF REPORTS AND DOCUMENTS

A. The originals of all letters, documents, reports and other products and data produced under this Agreement shall be delivered to, and become the property of AUTHORITY. Copies may be made for CONSULTANT's records but shall not be furnished to others without written authorization from AUTHORITY. Such deliverables shall be deemed works made for hire and all rights in copyright therein shall be retained by AUTHORITY.

B. All ideas, memoranda, specifications, plans, manufacturing, procedures, drawings, descriptions, and all other written information submitted to CONSULTANT in connection with the performance of this Agreement shall not, without prior written approval of AUTHORITY, be used for any purposes other than the performance under this Agreement, nor be disclosed to an entity not connected with the performance of the project. CONSULTANT shall comply with AUTHORITY's policies regarding such material. Nothing furnished to CONSULTANT, which is otherwise known to CONSULTANT or is or becomes generally known to the related industry shall be deemed confidential. CONSULTANT shall

not use AUTHORITY's name, photographs of the project, or any other publicity pertaining to the project in any professional publication, magazine, trade paper, newspaper, seminar or other medium without the express written consent of AUTHORITY.

C. No copies, sketches, computer graphics or graphs, including graphic artwork, are to be released by CONSULTANT to any other person or agency except after prior written approval by AUTHORITY, except as necessary for the performance of services under this Agreement. All press releases, including graphic display information to be published in newspapers, magazines, etc., are to be handled only by AUTHORITY unless otherwise agreed to by CONSULTANT and AUTHORITY.

ARTICLE 26. PATENT AND COPYRIGHT INFRINGEMENT

A. In lieu of any other warranty by AUTHORITY or CONSULTANT against patent or copyright infringement, statutory or otherwise, it is agreed that CONSULTANT shall defend at its expense any claim or suit against AUTHORITY on account of any allegation that any item furnished under this Agreement or the normal use or sale thereof arising out of the performance of this Agreement, infringes upon any presently existing U. S. letters patent or copyright and CONSULTANT shall pay all costs and damages finally awarded in any such suit or claim, provided that CONSULTANT is promptly notified in writing of the suit or claim and given authority, information and assistance at CONSULTANT's expense for the defense of same. However, CONSULTANT will not indemnify AUTHORITY if the suit or claim results from: (1) AUTHORITY's alteration of a deliverable, such that said deliverable in its altered form infringes upon any presently existing U.S. letters patent or copyright; or (2) the use of a deliverable in combination with other material not provided by CONSULTANT when such use in combination infringes upon an existing U.S. letters patent or copyright.

B. CONSULTANT shall have sole control of the defense of any such claim or suit and all negotiations for settlement thereof. CONSULTANT shall not be obligated to indemnify AUTHORITY under any settlement made without CONSULTANT's consent or in the event AUTHORITY fails to cooperate fully in the defense of any suit or claim, provided, however, that said defense shall be at CONSULTANT's expense. If the use or sale of said item is enjoined as a result of such suit or claim,

CONSULTANT, at no expense to AUTHORITY, shall obtain for AUTHORITY the right to use and sell said item, or shall substitute an equivalent item acceptable to AUTHORITY and extend this patent and copyright indemnity thereto.

ARTICLE 27. FINISHED AND PRELIMINARY DATA

A. All of CONSULTANT's finished technical data, including but not limited to illustrations, photographs, tapes, software, software design documents, including without limitation source code, binary code, all media, technical documentation and user documentation, photoprints and other graphic information required to be furnished under this Agreement, shall be AUTHORITY's property upon payment and shall be furnished with unlimited rights and, as such, shall be free from proprietary restriction except as elsewhere authorized in this Agreement. CONSULTANT further agrees that it shall have no interest or claim to such finished, AUTHORITY-owned, technical data; furthermore, said data is subject to the provisions of the Freedom of Information Act, 5 USC 552.

B. It is expressly understood that any title to preliminary technical data is not passed to AUTHORITY but is retained by CONSULTANT. Preliminary data includes roughs, visualizations, software design documents, layouts and comprehensives prepared by CONSULTANT solely for the purpose of demonstrating an idea or message for AUTHORITY's acceptance before approval is given for preparation of finished artwork. Preliminary data title and right thereto shall be made available to AUTHORITY if CONSULTANT causes AUTHORITY to exercise Article 13, and a price shall be negotiated for all preliminary data.

ARTICLE 28. FORCE MAJEURE

Either party shall be excused from performing its obligations under this Agreement during the time and to the extent that it is prevented from performing by an unforeseeable cause beyond its control, including but not limited to: any incidence of fire, flood; acts of God; commandeering of material, products, plants or facilities by the federal, state or local government; national fuel shortage; or a material act or omission by the other party; when satisfactory evidence of such cause is presented to

the other party; and provided further that such nonperformance is unforeseeable, beyond the control and is not due to the fault or negligence of the party not performing.

ARTICLE 29. PRIVACY ACT

CONSULTANT shall comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. §552a. Among other things, CONSULTANT agrees to obtain the express consent of the Federal Government before the CONSULTANT or its employees operate a system of records on behalf of the Federal Government. CONSULTANT understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying Agreement.

ARTICLE 30. INCORPORATION OF FTA TERMS

All contractual provisions required by Department of Transportation (DOT), whether or not expressly set forth in this document, as set forth in Federal Transit Administration (FTA) Circular 4220.1F, as amended, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. CONSULTANT shall not perform any act, fail to perform any act, or refuse to comply with any requests, which would cause AUTHORITY to be in violation of the FTA terms and conditions.

ARTICLE 31. FEDERAL CHANGES

CONSULTANT shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the agreement between the AUTHORITY and FTA , as they may be amended or promulgated from time to time during this Agreement. CONSULTANT's failure to comply shall constitute a material breach of contract.

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ARTICLE 32. NO FEDERAL GOVERNMENT OBLIGATION TO THIRD PARTIES

AUTHORITY and CONSULTANT acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying Agreement, absent the express written consent by the Federal Government, the Federal Government is not a party to this Agreement and shall not be subject to any obligations or liabilities to the AUTHORITY, CONSULTANT, or any other party (whether or not a party to this Agreement) pertaining to any matter resulting from the underlying Agreement. CONSULTANT agrees to include these requirements in all of its subcontracts.

ARTICLE 33. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS

A. CONSULTANT acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this project. Accordingly, by signing this Agreement, CONSULTANT certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying Agreement of the FTA assisted project for which this Agreement's work is being performed. CONSULTANT also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose penalties of the Program Fraud Civil Remedies Act of 1986 on the CONSULTANT to the extent the Federal Government deems appropriate.

B. CONSULTANT also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under an agreement connected with a project that is financed in whole or part with Federal assistance awarded by FTA under the authority of 49 U.S.C. §5307 et seq., the Government reserves the right to impose the penalties of 18 U.S.C. §1001 and 49 U.S.C. §5307(n) (1) et seq. on the CONSULTANT, to the extent the Federal Government deems appropriate. CONSULTANT agrees to include this

requirement in all of its subcontracts.

ARTICLE 34. RECYCLED PRODUCTS

CONSULTANT shall comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in subpart B of 40 CFR Part 247. CONSULTANT agrees to include this requirement in all of its subcontracts.

ARTICLE 35. ENERGY CONSERVATION REQUIREMENTS

CONSULTANT shall comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy Conservation Act.

ARTICLE 36. CLEAN AIR

CONSULTANT shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 et seq. CONSULTANT shall report each violation to AUTHORITY, who will in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office. CONSULTANT agrees to include this requirement in all of its subcontracts.

ARTICLE 37. CLEAN WATER REQUIREMENTS

CONSULTANT shall comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. CONSULTANT shall report each violation to AUTHORITY and understands and agrees that the AUTHORITY who will in turn, report each violation as required to assure notification to FTA and appropriate EPA Regional Office. CONSULTANT agrees to include this requirement in all of its subcontracts.

ARTICLE 38. FLY AMERICA REQUIREMENT

CONSULTANT agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10, which provide that

recipients and subrecipients of Federal funds and their contractors are required to use U.S. Flag air carriers for the U.S. Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. CONSULTANT shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. CONSULTANT agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

ARTICLE 39. BUY AMERICA REQUIREMENTS

CONSULTANT agrees to comply with 49 U.S.C. 5323(j) and 49 CFR Part 661, which provide that Federal funds may not be obligated unless steel, iron and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR 661.7, and include final assembly in the United States, for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, microcomputer equipment, software and small purchases (currently less than \$100,000) made with capital, operating or planning funds. Separate requirements for rolling stock are set out at 5323(j)(2)© and 49 CFR 661.11. Rolling stock not subject to a general waiver must be manufactured in the United States and have a 60 percent domestic content.

ARTICLE 40. DEBARMENT AND SUSPENSION

This contract is a covered transaction for purposes of 49 CFR Part 29. As such, CONSULTANT is required to verify that none of the contractor, its principals, as defined at 49 CFR 29.995, or affiliates, as defined at 49 CFR 29.905, are excluded or disqualified as defined at 49 CFR 29.940 and 29.945.

CONSULTANT is required to comply with 49 CFR 29, Subpart C and must include the requirement to comply with 49 CFR 29, Subpart C in any lower tier covered transaction it enters into.

This Agreement shall be made effective upon execution by both parties.

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EXHIBIT D

FORMS

PARTY DISCLOSURE FORM**Information Sheet****ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

The attached Party Disclosure Form must be completed by applicants for, or persons who are the subject of, any proceeding involving a license, permit, or other entitlement for use pending before the Board of Directors of the Orange County Transportation Authority or any of its affiliated agencies. (Please see next page for definitions of these terms.)

IMPORTANT NOTICE

Basic Provisions of Government Code Section 84308

- A. If you are an applicant for, or the subject of, any proceeding involving a license, permit, or other entitlement for use, you are prohibited from making a campaign contribution of more than \$250 to any board member or his or her alternate. This prohibition begins on the date your application is filed or the proceeding is otherwise initiated, and the prohibition ends three months after a final decision is rendered by the Board of Directors. In addition, no board member or alternate may solicit or accept a campaign contribution of more than \$250 from you during this period.
- B. These prohibitions also apply to your agents, and, if you are a closely held corporation, to your majority shareholder as well. These prohibitions also apply to your subcontractor(s), joint venturer(s), and partner(s) in this proceeding. Also included are parent companies and subsidiary companies directed and controlled by you, and political action committees directed and controlled by you.
- C. You must file the attached disclosure form and disclose whether you or your agent(s) have in the aggregate contributed more than \$250 to any board member or his or her alternate during the 12-month period preceding the filing of the application or the initiation of the proceeding.
- D. If you or your agent have in the aggregate contributed more than \$250 to any individual board member or his/or her alternate during the 12 months preceding the decision on the application or proceeding, that board member or alternate must disqualify himself or herself from the decision. However, disqualification is not required if the board member or alternate returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a party in the proceeding. The Party Disclosure Form should be completed and filed with your proposal, or with the first written document you file or submit after the proceeding commences.

1. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements for use, including all entitlements for land use, all contracts (other than competitively bid, labor or personal employment contracts), and all franchises.
2. Your "agent" is someone who represents you in connection with a proceeding involving a license, permit or other entitlement for use. If an individual acting as an agent is also acting in his or her capacity as an employee or member of a law, architectural, engineering, consulting firm, or similar business entity, both the business entity and the individual are "agents."
3. To determine whether a campaign contribution of more than \$250 has been made by you, campaign contributions made by you within the preceding 12 months must be aggregated with those made by your agent within the preceding 12 months or the period of the agency, whichever is shorter. Contributions made by your majority shareholder (if a closely held corporation), your subcontractor(s), your joint venturer(s), and your partner(s) in this proceeding must also be included as part of the aggregation. Campaign contributions made to different directors or their alternates are not aggregated.
4. A list of the members and alternates of the Board of Directors is attached.

This notice summarizes the major requirements of Government Code Section 84308 of the Political Reform Act and 2 Cal. Adm. Code Sections 18438-18438.8.

ORANGE COUNTY TRANSPORTATION AUTHORITY
AND ITS AFFILIATED AGENCIES

To be completed only if campaign contributions have been made in the preceding 12 months.

Prime Firm's Name: _____

Party's Name: _____

Party's Address: _____

Street

City

State

Zip

Phone

Application or Proceeding

Title and Number: _____

Board Member(s) or Alternate(s) to whom you and/or your agent made campaign contributions and dates of contribution(s) in the preceding 12 months:

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Date: _____

Signature of Party and/or Agent

**ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

Board of Directors

Jerry Amante, Chairman

Patricia Bates, Vice Chairman

Art Brown, Director

Peter Buffa, Director

Bill Campbell, Director

Carolyn V. Cavecche, Director

William J. Dalton, Director

Richard Dixon, Director

Paul G. Glaab, Director

Don Hansen, Director

Allan Mansoor, Director

John Moorlach, Director

Shawn Nelson, Director

Janet Nguyen, Director

Curt Pringle, Director

Miguel Pulido, Director

Gregory T. Winterbottom, Director

PARTICIPANT DISCLOSURE FORM

Information Sheet

**ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

The attached Participant Disclosure Form must be completed by participants in a proceeding involving a license, permit, or other entitlement for use. (Please see next page for definitions of these terms.)

IMPORTANT NOTICE

Basic Provisions of Government Code Section 84308

- A. If you are a participant in a proceeding involving a license, permit, or other entitlement for use, you are prohibited from making a campaign contribution of more than \$250 to any board member or his or her alternate. This prohibition begins on the date you begin to actively support or oppose an application for license, permit, or other entitlement for use pending before the Orange County Transportation Authority or any of its affiliated agencies, and continues until three months after a final decision is rendered on the application or proceeding by the Board of Directors.

No board member or alternate may solicit or accept a campaign contribution of more than \$250 from you and/or your agency during this period if the board member or alternate knows or has reason to know that you are a participant.

- B. The attached disclosure form must be filed if you or your agent has contributed more than \$250 to any board member or alternate for the Orange County Transportation Authority or any of its affiliated agencies during the 12-month period preceding the beginning of your active support or opposition. (The disclosure form will assist the board members in complying with the law.)
- C. If you or your agent have made a contribution of more than \$250 to any board member or alternate during the 12 months preceding the decision in the proceeding, that board member or alternate must disqualify himself or herself from the decision. However, disqualification is not required if the member or alternate returns the campaign contribution within 30 days from the time the director knows, or should have known, about both the contribution and the fact that you are a participant in the proceeding.

The Participant Disclosure Form should be completed and filed with the proposal submitted by a party, or should be completed and filed the first time that you lobby in person, testify in person before, or otherwise directly act to influence the vote of the board members of the Orange County Transportation Authority or any of its affiliated agencies.

1. An individual or entity is a "participant" in a proceeding involving an application for a license, permit or other entitlement for use if:
 - a. The individual or entity is not an actual party to the proceeding, but does have a significant financial interest in the Orange County Transportation Authority's or one of its affiliated agencies' decision in the proceeding.

AND

- b. The individual or entity, directly or through an agent, does any of the following:
 - (1) Communicates directly, either in person or in writing, with a board member or alternate of the Orange County Transportation Authority or any of its affiliated agencies for the purpose of influencing the member's vote on the proposal;
 - (2) Communicates with an employee of the Orange County Transportation Authority or any of its affiliated agencies for the purpose of influencing a member's vote on the proposal; or
 - (3) Testifies or makes an oral statement before the Board of Directors of the Orange County Transportation Authority or any of its affiliated agencies.
 2. A proceeding involving "a license, permit, or other entitlement for use" includes all business, professional, trade and land use licenses and permits, and all other entitlements for use, including all entitlements for land use; all contracts (other than competitively bid, labor, or personal employment contracts) and all franchises.
 3. Your "agent" is someone who represents you in connection with a proceeding involving a license, permit, or other entitlement for use. If an agent acting as an employee or member of a law, architectural, engineering, or consulting firm, or a similar business entity or corporation, both the business entity or corporation and the individual are agents.

4. To determine whether a campaign contribution of more than \$250 has been made by a participant or his or her agent, contributions made by the participant within the preceding 12 months shall be aggregated with those made by the agent within the preceding 12 months or the period of the agency, whichever is shorter. Campaign contributions made to different members or alternates are not aggregated.
5. A list of the members and alternates of the Board of Directors is attached.

This notice summarizes the major requirements of Government Code Section 84308 and 2 Cal. Adm. Code Sections 18438-18438.8.

ORANGE COUNTY TRANSPORTATION AUTHORITY
AND ITS AFFILIATED AGENCIES

To be completed only if campaign contributions have been made in the preceding 12 months.

Prime's Firm Name: _____

Party's Name: _____

Party's Address: _____

Street

City

State

Zip

Phone

Application or Proceeding

Title and Number: _____

Board Member(s) or Alternate(s) to whom you and/or your agent made campaign contributions and dates of contribution(s) in the preceding 12 months:

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Name of Member: _____

Name of Contributor (if other than Party): _____

Date(s): _____

Amount(s): _____

Date: _____

Signature of Party and/or Agent

**ORANGE COUNTY TRANSPORTATION AUTHORITY
AND AFFILIATED AGENCIES**

Board of Directors

Jerry Amante, Chairman

Patricia Bates, Vice Chairman

Art Brown, Director

Peter Buffa, Director

Bill Campbell, Director

Carolyn V. Cavecche, Director

William J. Dalton, Director

Richard Dixon, Director

Paul G. Glaab, Director

Don Hansen, Director

Allan Mansoor, Director

John Moorlach, Director

Shawn Nelson, Director

Janet Nguyen, Director

Curt Pringle, Director

Miguel Pulido, Director

Gregory T. Winterbottom, Director

Status of Past and Present Contracts Form

On the form provided below, Offeror shall list the status of past and present contracts where the firm has either provided services as a prime contractor or a subcontractor during the past five (5) years in which the contract has ended or will end in a termination, settlement or in legal action. A separate form must be completed for each contract. Offeror shall provide an accurate contact name and telephone number for each contract and indicate the term of the contract and the original contract value.

If the contract was terminated, list the reason for termination. Offeror must also identify and state the status of any litigation, claims or settlement agreements related to any of the identified contracts. Each form must be signed by an officer of the Offeror confirming that the information provided is true and accurate.

Project city/agency/other:	
Contact name:	Phone:
Project award date:	Original Contract Value:
Term of Contract:	
1) Status of contract:	
2) Identify claims/litigation or settlements associated with the contract:	

By signing this Form entitled "Status of Past and Present Contracts," I am affirming that all of the information provided is true and accurate.

Name _____
 Title _____

_____ Date

**CERTIFICATION OF
RESTRICTIONS ON LOBBYING**

I, _____, hereby certify on behalf (name of offeror) of
_____ that:
(Firm name)

1. No Federal appropriated funds have been paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds, other than Federal appropriated funds, have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit the attached Standard Form-LLL, "Disclosure of Lobbying Activities", in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in all subcontracts, and that all subcontractors shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Executed this _____ day of _____, 200__

By _____
(Signature of authorized official)

(Title of authorized official)

CERTIFICATION
LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN
FEDERAL TRANSACTIONS

A. DEFINITIONS

B. AUTHORITY, AS USED IN THIS CLAUSE, MEANS THE ORANGE COUNTY TRANSPORTATION AUTHORITY, ACTING ON BEHALF OF THE ORANGE COUNTY TRANSIT DISTRICT.

1. Covered Federal action, as used in this clause, means any of the following Federal actions:
The awarding of any Federal contract.
 - a. The making of any Federal grant.
 - b. The making of any Federal loan.
 - c. The entering into of any cooperative agreement.
 - d. The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. Indian tribe and tribal organization, as used in this clause, have the meaning provided in Section 4 of the Indian self-determination and Education Assistance Act (25 U.S.C. 4508) and include Alaskan Natives.
3. Influencing or attempting to influence, as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.
4. Local government, as used in this clause, means a unit of government in a State and, if chartered, established, or other were recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.
5. Officer or employee of an agency, as used in this clause, includes the following individuals who are employed by an agency:
 - (1) An individual who is appointed to a position in the Government under title 5, United States code, including a position under a temporary appointment.
 - (2) A member of the uniformed services, as defined in the

subsection 101(3), Title 37, United States Code.

- (3) A special Government employee, as defined in Section 202, Title 18, United States Code.
 - (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, Title 5, United States Code, Appendix 2.
- 6. Person, as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization or any other Indian organization with respect to expenditures specifically permitted by other Federal law.
 - 7. Reasonable compensation, as used in this clause, means with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.
 - 8. Reasonable payment, as used in this clause means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.
 - 9. Recipient, as used in this clause, includes the CONSULTANT and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.
 - 10. Regularly employed, as used in this clause, means, with respect to an officer or employee of a person requesting or receiving by such person for at least 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.
 - 11. State, as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-State regional or interstate entity having governmental duties and powers.

C. PROHIBITIONS

1. Section 1352 of Title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or, the modification of any Federal contract, grant, loan, or cooperative agreement.
2. The Act also requires consultant to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan or cooperative agreement.
3. The prohibitions of the Act do not apply under the following conditions:
 - a. Agency and legislative liaison by own employees.
 - (1) The prohibition on the use of appropriated funds, in subparagraph B.1. of this clause, does not apply in the case of payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.
 - (2) For purposes of paragraph B.3.a.(1) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.
 - (3) The following agency and legislative liaison activities are permitted any time where they are not related to a specific solicitation for any covered Federal action:

Discussing with an agency (including individual demonstrations) the qualities and characteristics of the person's products or services, conditions or terms of sale, and service capabilities.

Technical discussions and other activities regarding the application of adaptation of the person's products or services for an agency's use.

- (4) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action:

Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and,

Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Public Law 95-507, and subsequent amendments.

- (5) Only those services expressly authorized by paragraph B.3.a.(1) of this clause are permitted under this clause.

b. Professional and technical services

- (1) The prohibition on the use of appropriated funds, in subparagraph B.1. of this clause, does not apply in the case of:

A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as condition for receiving that Federal action.

Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in

the preparation, submission or negotiation of any bid, proposal, or application or that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include contractors and trade associations.

- (2) For purposes of paragraph B.3.a.(1) of this clause, professional and technical services shall be limited to advise and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission, or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission, or negotiation of a covered Federal action.
- (3) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

- (4) Only those services expressly authorized by paragraph B.3.a.(1) and (2) of this clause are permitted under this clause.
- (5) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

c. Disclosure

- (1) The consultant who requests or receives from an agency a Federal contract shall file with that agency a disclosure form OMB standard form LLL, Disclosure of Lobbying Activities, (Attachment to the bid package) if such person has made or had agreed to made any payment using non appropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph B.1. of this clause, if paid for with appropriated funds.

- (2) The consultant shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph II.A. of this clause. An event that materially affects the accuracy of the information reported includes:

A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

- (3) The consultant shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.
- (4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until

received by the prime CONSULTANT. The prime CONSULTANT shall submit all disclosures to the District at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding CONSULTANT.

d. Agreement

The consultant agrees not to make any payment prohibited by this clause.

e. Penalties

(1) Any person who makes an expenditure prohibited under paragraph a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph d) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Consultants may relay without liability on the representation made by their subcontractors in the certification and disclosure forms.

f. Cost Allowability:

Nothing in this clause is to be interpreted to make allowable or reasonable any costs, which will otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provisions.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action: ☐ a. contract ☐ b. grant ☐ c. cooperative agreement ☐ d. loan ☐ e. loan guarantee ☐ f. loan insurance	2. Status of Federal Action: ☐ a. bid/offer application ☐ b. initial award ☐ c. post-award	3. Report Type: ☐ a. initial filing ☐ b. material changes For Material Change Only: year _____ quarter _____ date of last report _____
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, if known: Congressional District, if known:	5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime: Congressional District, if known:	
6. Federal Department/Agency:	7. Federal Program Name/Description: CFDA number, if applicable: _____	
8. Federal Action Number, if known:	9. Award Amount, if known: \$	
10. a. Name and Address of Lobbying Entity (if individual, last name, first name, MI)	b. Individuals Performing Services (including address if different from No 10a) (last name, first name, MI):	
(attach Continuation Sheet(s) SF - LLL - A if necessary)		
11. Amount of Payment (check all that apply): \$ _____ ☐ actual ☐ planned	13. Type of Payment (check all that apply): ☐ a. retainer ☐ b. one-time fee ☐ c. commission ☐ d. contingent fee ☐ e. deferred ☐ f. other specify: _____	
12. Forum of Payment (check all that apply): ☐ a. cash ☐ b. in-kind; specify nature: _____ value: _____		
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s) or Member(s) contracted for Payment indicated in Item, 11: (attach Continuation Sheet(s) SF-LLL-A if necessary)		
15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No		
16. Information requested through this form is authorized by Code 31 U.S.C. Section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000.00 and not more than \$100,000.00 for each such failure.	Signature: _____ Print name: _____ Title: _____ Telephone No: _____ Date: _____	
Federal Use Only		Authorized for Local Reproduction Standard Form - LLL

L:\CAMMICAROLINA\FPC\FINAL REQUEST FOR PROPOSALS.DOC

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

INSTRUCTIONS FOR COMPLETION OF SF-LLL DISCLOSURE OF LOBBYING ACTIVITIES

This DISCLOSURE FORMS SHALL BE COMPLETED BY the reporting entity, whether Subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be a prime or subaward recipient. Identify the tier of the subawardee e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee" then enter the full name, address city, state, and zip code of the prime Federal recipient. Include Congressional District.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency, name if known. For example, Department of Transportation, United State Coast Guard.
7. Enter the Federal program name for description of the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g. Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract, grant, or loan award number, the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state, and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.

(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a.). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box (es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box (es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Office of Management and Budget Paperwork Reduction Project (0348-0446), Washington, D.C. 20503.

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

DISCLOSURE OF LOBBYING ACTIVITIES CONTINUATION SHEET

Reporting Entity: _____ Page _____ of _____

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EXHIBIT E
DBE PROVISIONS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION (MODIFIED)
FINAL REPORT - UTILIZATION OF DISADVANTAGED BUSINESS ENTERPRISE (DBE), AND FIRST-TIER SUBCONTRACTORS
(FEDERALLY FUNDED PROJECTS)

Contract Number:	County:	Federal Aid Project No: Location:	Administering Agency:	Contract Completion Date:
Prime Contractor:		Business Address:	Federal Share (For local agency to complete) \$	Final Contract Amount: \$

CONTRACT PAYMENTS

Contract Item No.	Description of Work Performed and Materials Provided	Subcontractor Name and Business Address	DBE Certification No. & Exp. Date	Non-DBE	DBE	DBE (Minority)	DBE (Non-minority Women)	DBE (Minority Women)	Date Work Completed	Date of Final Payment
				\$	\$	\$	\$	\$		
TOTAL PAYMENTS				\$	\$	\$	\$	\$		

Contract DBE Goal: _____%

Prime's Original DBE Commitment: \$ _____ % (of Total Contract Value)

DBE GOAL ATTAINMENT: _____

List all First Tier Subcontractors, Disadvantaged Business Enterprises (DBE's) regardless of tier, whether or not the firms were originally listed for goal credit. If actual DBE utilization (or item of work) was different than that approved at time of award, provide comments on a separate page. List actual amount paid to each DBE, even if different than originally listed for goal credit.

I Certify That The Above Information is Complete and Correct

Contractor Representative Signature:	Business Phone Number:	Date:
--------------------------------------	------------------------	-------

To The Best of My Knowledge The Above Information is Complete and Correct

Resident Engineer Signature:	Business Phone Number:	Date:
------------------------------	------------------------	-------

Distribution: (1) Original plus one copy to DLAE included in the Report of Expenditures
(2) Copy - local agency files

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DISADVANTAGED BUSINESS ENTERPRISES (DBE) CERTIFICATION STATUS CHANGE
(FEDERALLY FUNDED PROJECTS)

Contract Number:	County:	Federal Aid Project #: Location:	Administering Agency:	Contract Completion Date:
Prime Contractor:	Business Address:		Final Contract Amount: \$	
			Federal Share (For local agency to complete): \$	

Prime Contractor: List all DBEs with change in certification status (certified/decertified) while in your employ, whether or not firms were originally listed for goal credit. Attach corresponding DBE certification/decertification letters.

Contract Item No.	Subcontractor Name and Business Address	Business Phone	Certification Number	Amount Paid While Certified	Certification/Decertification Date (Letter Attached)
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	

Comments:

I Certify That The Above Information is Complete and Correct

Contractor Representative Signature:	Business Phone Number:	Date:
--------------------------------------	------------------------	-------

To The Best of My Knowledge The Above Information is Complete and Correct

Resident Engineer Signature:	Business Phone Number:	Date:
------------------------------	------------------------	-------

Distribution: (1) Original plus one copy to DLAE included in the Report of Expenditures.
(2) Copy - local agency file

MONTHLY DBE SUBCONTRACTORS PAID REPORT SUMMARY AND PAYMENT VERIFICATION (Form 103)

Reporting Period (month): _____, 200 ____

Contract/Project Number: _____	Report Number: _____	Report prepared by: _____
Project Name: _____	Original Contract Award Amount: _____	Title: _____
Contract Award Date: _____	Current Contract Value: _____	Report reviewed by: _____
Prime Name: _____	% of Project Complete: _____	Signature: _____
Address: _____	OCTA Payment This Month: _____	Title: _____
Telephone Number: () _____	Total \$ Paid to Prime to date: _____	Date of Last Progress Payment rec'd from OCTA: _____
Contract DBE Goal: ____% (% of total Contract)	Total \$ Paid to DBEs this Reporting Period: _____	
Prime's DBE Commitment: ____%	Total \$ Paid to DBEs to date: _____	DBE Goal Attainment to date: ____%

DBE S U B C O N T R A C T O R S	Dollar Amount Paid This Month	Dollar Amount Paid to Date	Type of Work Performed (Scope)	Original Dollar Amount Committed to DBE at Contract Award	\$ +/- resulting from Change Order Activity	% of Work Completed	FOR AUTHORITY] USE ONLY
Name: _____							
Address: _____							
City, State, Zip Code: _____							
Telephone Number: () _____							
Subcontractor Broker _____							
Supplier: Regular Dealer or Manufacturer _____							
Attach verification of payment							
Name: _____							
Address: _____							
City, State, Zip Code: _____							
Telephone Number: () _____							
Subcontractor Broker _____							
Supplier: Regular Dealer or Manufacturer _____							
Attach verification of payment							
Name: _____							
Address: _____							
City, State, Zip Code: _____							
Telephone Number: () _____							
Subcontractor Broker _____							
Supplier: Regular Dealer or Manufacturer _____							
Attach verification of payment							

Comments/Issues and/or documented Good Faith Efforts performed during this reporting period:	

If necessary, this form can be duplicated to list all DBE subcontractors paid in this reporting period.

MONTHLY RACE-NEUTRAL DBE SUBCONTRACTORS PAID REPORT SUMMARY AND PAYMENT VERIFICATION (Form 103)

Reporting Period (month): _____, 200 ____

Contract Number: _____	Form 103 Report No.: _____	Report prepared by: _____
Contract Award Date: _____	Original Contract Award Amount: _____	Title: _____
Prime Name: _____	Current Contract Value: _____ [B]	Report reviewed by: _____
Address: _____	% of Project Complete: _____ [A] divided by [B]	Signature: _____
Telephone No.: _____	#VALUE!	Title: _____
	Total Dollars Paid to DBEs this Reporting Period: _____	Prime's Race-Neutral DBE Attainment to Date: _____
	Total Dollars Paid to DBEs to Date: _____	#DIV/0!
	Total Dollars Paid to Prime to Date: _____ [A]	(Total Dollars Paid to DBEs divided by Total Dollars Paid to Prime)

APPROVED DBE SUBCONTRACTORS/SUBCONSULTANTS	Dollar Amount Paid This Month	Dollar Amount Paid To Date [C]	Type of Work Performed (Scope)	Original Dollar Amount Committed to DBE at Contract Award	\$ +/- Resulting from Change Order Activity	Current Subcontract Value [D]	% of Work Completed [C] divided by [D]	FOR AUTHORITY USE ONLY
Name: _____ Address: _____ City, State, Zip Code: _____ Telephone Number: () _____ Prime Subconsultant Broker _____ Supplier: Regular Dealer or Manufacturer _____ Attach Verification of Payment: YES NO							#DIV/0!	
Name: _____ Address: _____ City, State, Zip Code: _____ Telephone Number: () _____ Prime Subconsultant Broker _____ Supplier: Regular Dealer or Manufacturer _____ Attach Verification of Payment: YES NO							#DIV/0!	
Name: _____ Address: _____ City, State, Zip Code: _____ Telephone Number: () _____ Prime Subconsultant Broker _____ Supplier: Regular Dealer or Manufacturer _____ Attach Verification of Payment: YES NO							#DIV/0!	

Comments/Issues: _____

If necessary, this form can be duplicated to list all DBE subcontractors paid in this reporting period.

**EXHIBIT E-5
RACE-NEUTRAL SOLICITATION PROVISIONS**

DISADVANTAGED BUSINESS ENTERPRISE (DBE)

A. DBE Policy and Applicability

In accordance with federal financial assistance agreements with the U.S. Department of Transportation (U.S. DOT), the Orange County Transportation Authority (Authority) has adopted a Disadvantaged Business Enterprise (DBE) Policy and Program, in conformance with Title 49 CFR Part 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Programs".

This DOT-assisted project is subject to these stipulated regulations. In order to ensure that the Authority achieves its overall DBE Program goals and objectives, the Authority encourages the participation of small businesses, including DBEs as defined in 49 CFR 26, in the performance of contracts financed in whole or in part with U.S. DOT funds. Pursuant to the intent of these Regulations, it is also the policy of the Authority to:

- Fulfill the spirit and intent of the Federal DBE Program regulations published under U.S. DOT Title 49 CFR, Part 26, by ensuring that DBEs have equitable access to participate in all of Authority's DOT-assisted contracting opportunities.
- Ensure that DBEs can fairly compete for and perform on all DOT-assisted contracts and subcontracts.
- Ensure non-discrimination in the award and administration of Authority's DOT-assisted contracts.
- Create a level playing field on which DBEs can compete fairly for DOT-assisted contracts.
- Ensure that only firms that fully meet 49 CFR, Part 26 eligibility standards are permitted to participate as DBEs.
- Help remove barriers to the participation of DBEs in DOT-assisted contracts.
- Assist in the development of firms that can compete successfully in the marketplace outside the DBE Program.

Offerors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts.

Any terms used in this section that are defined in 49 CFR Part 26, or elsewhere in the Regulations, shall have the meaning set forth in the Regulations. In the event of any conflicts or inconsistencies between the Regulations and the Authority's DBE Program with respect to DOT-assisted contracts, the Regulations shall prevail.

B. Authority's New Race-Neutral DBE Policy Implementation Directives

Pursuant to recently released Race-Neutral DBE policy directives issued by the U.S. DOT in response to the Ninth Circuit U.S. Court of Appeals decision in *Western States Paving Co. v. Washington State Department of Transportation*, **the Authority has implemented a wholly Race-Neutral DBE Program.**

A Race-Neutral DBE Program is one that, while benefiting DBEs, is not solely focused on DBE firms. A Race-Neutral Program utilizes measures that can assist a wide variety of small businesses including DBEs, such as arranging solicitations, times for the presentation of proposals, quantities, specifications, and delivery schedules in ways that facilitate DBE and other small business participation (e.g., unbundling large contracts to make them more accessible to small businesses, requiring or encouraging prime Consultants to subcontract portions of work that they might, otherwise, perform with their own forces). However, under a Race-Neutral DBE Program, the Authority may no longer advertise DOT-assisted contracts containing numeric race-conscious goals or require an Offeror to utilize DBEs as a condition of award. Race-neutral DBE participation includes any time a DBE obtains a prime contract through customary competitive procurement procedures or is awarded a subcontract on a prime contract that does not carry a DBE goal.

C. Definitions

The following definitions apply to the terms as used in these provisions:

- i. ***"Disadvantaged Business Enterprise (DBE)"*** means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of any publicly-owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals; and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.
- ii. ***"Small Business Concern"*** means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated

pursuant thereto, except that a small business concern shall not include any concern or group of concerns controlled by the same socially and economically disadvantaged individual or individuals which has annual average gross receipts in excess of \$19.57 million over the previous three fiscal years.

- iii. **"Socially and Economically Disadvantaged Individuals"** means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, or Asian-Indian Americans, women and any other minorities or individuals found to be disadvantaged by the Small Business Administration pursuant to Section 8(a) of the Small Business Act, or by the Authority pursuant to 49 CFR part 26.65. Members of the following groups are presumed to be socially and economically disadvantaged:
- a. "Black Americans," which includes persons having origins in any of the Black racial groups of Africa;
 - b. "Hispanic Americans," which includes persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
 - c. "Native Americans," which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
 - d. "Asian-Pacific Americans," which includes persons whose origins are from Japan, China, Taiwan, Korea, Vietnam, Laos, Cambodia, the Philippines, Samoa, Guam, the U.S. Trust Territories of the Pacific, and the Northern Marianas;
 - e. "Asian-Indian Americans," which includes persons whose origins are from India, Pakistan, and Bangladesh; and
 - f. Women, regardless of ethnicity or race.
- iv. **"Owned and Controlled"** means a business: (a) which is at least 51 percent owned by one or more "Socially and Economically Disadvantaged Individuals" or, in the case of a publicly-owned business, at least 51 percent of the stock of which is owned by one or more "Socially and Economically Disadvantaged Individuals"; and (b) whose management and daily business operations are controlled by one or more such individuals.
- v. **"Manufacturer"** means a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Consultant.

vi. **"Regular Dealer"** means a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. The firm must engage in, as its principal business, and in its own name, the purchase and sale of the product in question. A regular dealer in such bulk items as steel, cement, gravel, stone and petroleum products need not keep such products in stock if it owns or operates distribution equipment.

vii. **"Other Socially and Economically Disadvantaged Individuals"** means those individuals who are citizens of the United States (or lawfully admitted permanent residents) and who, on a case-by-case basis, are determined by Small Business Administration or the Authority to meet the social and economic disadvantage criteria described below.

a. Social Disadvantage

- 1) The individual's social disadvantage must stem from his/her color, national origin, gender, physical handicap, long-term residence in an environment isolated from the mainstream of American society, or other similar cause beyond the individual's control.
- 2) The individual must demonstrate that he/she has personally suffered social disadvantage.
- 3) The individual's social disadvantage must be rooted in treatment, which he/she has experienced in American society, not in other countries.
- 4) The individual's social disadvantage must be chronic, longstanding and substantial, not fleeting or insignificant.
- 5) The individual's social disadvantage must have negatively affected his/her entry into and/or advancement in the business world.
- 6) A determination of social disadvantage must be made before proceeding to make a determination of economic disadvantage.

b. Economic Disadvantage

- 1) The individual's ability to compete in the free enterprise system has been impaired due to diminished capital and credit opportunities, as compared to others in the same line of business and competitive market area that are not socially disadvantaged.

- 2) The following criteria will be considered when determining the degree of diminished credit and capital opportunities of a person claiming social and economic disadvantage:

With respect to the individual:

- availability of financing
- bonding capability
- availability of outside equity capital
- available markets

With respect to the individual and the business concern:

- personal and business assets
- personal and business net worth
- personal and business income and profits

D. DBE Proposal Submission Requirements

1. “DBE Race-Neutral Participation Listing” (Exhibit H-2)

If the Offeror is a DBE or intends to utilize DBE subconsultants and/or purchase goods or services from DBE vendors or DBE suppliers in the performance of this contract, the Offeror shall provide the following information for every DBE firm who will be proposed and/or listed to participate to facilitate capturing race-neutral DBE participation under this contract:

- a. The complete name and address of each DBE who will participate in the contract;
- b. A description of the work that each DBE will perform or provide;
- c. The dollar amount of the work to be performed or provided by the DBE;
- d. Valid DBE Certification eligibility status, in conformance with 49 CFR, Part 26;
- e. The Offeror shall also submit, for each DBE to perform under this contract, a written confirmation from the DBE acknowledging that it is participating in the contract for a specified value, including the corresponding scope of work (a subcontract agreement can serve in lieu of the written confirmation).

The “DBE Race-Neutral Participation Listing” information must be submitted on Exhibit H-2, in a sealed envelope, and should be included with the proposal submittal; however, in the event that the referenced Exhibit is not included, the Exhibit shall be submitted to the Authority no later than 48 hours following proposal submission due date and timeline for the Offeror to be deemed responsive.

In the event that the Offeror is not a DBE and/or does not intend to utilize DBEs in the performance of this contract, the Offeror shall indicate “None” under the column entitled “DBE Firm Name” of the “DBE Race-Neutral Participation Listing” (Exhibit H-2) and submit accordingly.

The “DBE Race-Neutral Participation Listing” form content will not be considered in evaluating the proposal or determining award of any contract.

2. “Bidders List” (Exhibit H-3)

The U.S. Department of Transportation (DOT) requires the Authority to create and maintain a “Bidders List” containing information about all firms (DBE and non-DBE) that bid, propose or quote on the Authority’s DOT-assisted contracts, in accordance with 49 CFR Part 26.11, for use in the Authority’s overall annual DBE goal-setting process. Therefore, the Offeror shall provide the requested information for every firm who submitted a bid, proposal or quote, including the primary Offeror, whether successful or unsuccessful in their attempt to obtain a contract:

- a. Firm name;
- b. Firm address;
- c. Firm’s status as a DBE or non-DBE;
- d. Age of the firm;
- e. Type of services provided by the firm; and
- f. Range of annual gross receipts for the last year.

The “Bidders List” information must be submitted on **Exhibit H-3** and should be included with the proposal submittal; however, in the event that the referenced Exhibit is not included, the Exhibit shall be submitted to the Authority no later than 48 hours following proposal submission due date and timeline for the Offeror to be deemed responsive.

The “Bidders List” content will not be considered in evaluating the proposal or determining award of any contract.

E. DBE Certification

The Authority requires all DBEs listed by Offeror for participation to be certified as eligible DBEs at the time of proposal submission. Only participation by DBEs certified under the DOT regulations published under 49 CFR Part 26 may be credited towards race-neutral DBE participation. It is the responsibility of the Offeror to verify the DBE certification status of all listed DBEs.

The Authority is a Certifying Member Agency of the California Unified Certification Program (UCP). The Authority will accept DBE certification from other certifying member agencies of the UCP, which certify the eligibility of DBEs in accordance with 49 CFR Part 26.81. A listing of California UCP certifying member agencies is available from the UCP website, which can be accessed at <http://www.californiaucp.com>.

F. DBE Eligibility and Commercially Useful Function Standards

- i. A DBE must be a small business concern as defined pursuant to Section 3 of the U.S. Small Business Act and relevant regulations promulgated pursuant thereto.
- ii. A DBE may participate as a prime consultant, subconsultant, joint venture partner with a prime or subconsultant, vendor of material or supplies, or as a trucking company.
- iii. A DBE joint venture partner must be responsible for specific contract items of work, or clearly defined portions thereof. Responsibility means actually performing, managing and supervising the work with its own forces. The DBE joint venture partner must share in the capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest.
- iv. A DBE must perform a commercially useful function in accordance with 49 CFR 26.55 (i.e., must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work). A DBE should perform at least thirty percent (30%) of the total cost of its contract with its own workforce to presume it is performing a commercially useful function.
- v. DBEs must be certified by the California Unified Certification Program (CUCP). Listings of DBEs certified by the CUCP are available from the following sources:
 - a. The CUCP web site, which can be accessed at <http://www.californiaucp.com>; or the Caltrans "Civil Rights" web site at <http://www.dot.ca.gov/hq/bep>.
 - b. The CUCP DBE Directory, which may be obtained from the Department of Transportation, Material Operations Branch, Publication Distribution Unit, 1900 Royal Oaks Drive, Sacramento, California 95815; Telephone: (916) 445-3520.

G. DBE Crediting Provisions

- i. When a DBE is proposed to participate in the contract, either as a prime Consultant or Subconsultant, only the value of the work proposed to be performed by the DBE with its own forces may be counted towards race-neutral DBE participation. If the Consultant is a DBE joint venture participant, only the DBE proportionate interest in the joint venture shall be counted.
- ii. If a DBE intends to subcontract part of the work of its subcontract to a lower tier Subconsultant, the value of the subcontracted work may be counted toward race-neutral DBE participation only if the DBE Subconsultant is a certified DBE and actually performs the work with their own forces. Services subcontracted to a non-DBE firm may not be credited toward the prime Consultant's race-neutral DBE attainment.
- iii. Consultant is to calculate and credit participation by eligible DBE vendors of equipment, materials, and suppliers toward race-neutral DBE attainment, as follows:
 - a. Sixty percent (60%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained from a regular dealer; or
 - b. One hundred percent (100%) of expenditure(s) for equipment, materials and supplies required under the Contract, obtained from a DBE manufacturer.
- iv. The following types of fees or commissions paid to DBE Subconsultants, Brokers, and Packagers may be credited toward the prime Consultant's race-neutral DBE attainment, provided that the fee or commission is reasonable, and not excessive, as compared with fees or commissions customarily allowed for similar work, including:
 - a. Fees and commissions charged for providing bona fide professional or technical services, or procurement of essential personnel, facilities, equipment, materials, or supplies required in the performance of the Contract;
 - b. Fees charged for delivery of material and supplies (excluding the cost of materials or supplies themselves) when the licensed hauler, trucker, or delivery service is not also the manufacturer of, or a regular dealer in, the material and supplies;

- c. Fees and commissions charged for providing any insurance specifically required in the performance of the Contract.
- v. Consultant may count the participation of DBE trucking companies toward race-neutral DBE attainment, as follows:
 - a. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract.
 - b. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.
 - c. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
 - d. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
 - e. The DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit only for the fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE.
 - f. For purposes of this paragraph, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.
- vi. If the Consultant listed a non-certified DBE 1st tier Subconsultant to perform work on this contract, and the non-certified DBE subconsultant subcontracts a part of its work or purchases materials and/or supplies from a lower tier DBE certified Subconsultant or Vendor, the value of work performed by the lower tier DBE firm's own forces can be counted toward race-neutral DBE participation on the contract.

H. DBE "Frauds" and "Fronts"

RFP 0-1398
EXHIBIT E
ATTACHMENT E-5

Only legitimate DBEs are eligible to participate as DBEs in DOT-assisted contracts. Therefore, Offerors are hereby cautioned against knowingly and willfully using “fronts”. The use of “fronts” and “pass through” subcontracts to non-disadvantaged firms constitute criminal violations. Further, any indication of fraud, waste, abuse or mismanagement of Federal funds should be immediately reported to the Office of Inspector General, U.S. Department of Transportation at the toll-free hotline: (800) 424-9071; or to the following field office: FTA Special Agent-in-Charge, 210 Mission Street, Room 2210, San Francisco, CA 94105-1839; Telephone: (415) 744-3133; Fax: (415) 744-2726.



Project Name:

**TRAFFIC SIGNAL
SYNCHRONIZATION
IMPLEMENTATION**

**RFP 0-1398
EXHIBIT E
ATTACHMENT E-6**

**BIDDERS LIST
[EXHIBIT E-6]**

Bidder/Offeror: _____ **IFB/RFP No.:** _____

The Department of Transportation requires the AUTHORITY to create and maintain a "Bidders List" containing information about all firms (DBE and Non-DBE) that bid, propose or quote on the Authority's DOT-assisted contracts, in accordance with 49 CFR Part 26.11. The "Bidders List" is intended to be a count of all firms that are participating, or attempting to participate, on DOT-assisted contracts, whether successful or unsuccessful in their attempt to obtain a contract.

The Bidder/Offeror is to complete all requested information on **Exhibit E-6: "Bidders List"** for every firm who submitted a bid, proposal or quote, including the primary Bidder/Offeror, and submit this information at the time of bid submission. However, if not elected to do so at the time of bid submission, Bidders/Offerors must submit such information at the request of the Authority within the prescribed timeline set forth in the solicitation. The AUTHORITY will utilize this information to assist in the AUTHORITY's overall annual DBE goal-setting process. ***The "Bidders List" content will not be considered in evaluating the bid/proposal or determining award of any contract.***

Prime Bidder's/Offeror's Information:

Name of Prime's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"):	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million
☐ African American ☐ Asian Pacific American	
☐ Native American ☐ Woman	
☐ Hispanic American ☐ Subcontinent Asian American	
☐ Other	

**TRAFFIC SIGNAL
SYNCHRONIZATION
IMPLEMENTATION**

Provide the following information for every firm (DBE and non-DBE) that submitted a bid, proposal or quote on this DOT-assisted project, whether successful or unsuccessful in their attempt to obtain a contract:

Name of Prime's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"): ☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American ☐ Other	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million

Provide the following information for every firm (DBE and non-DBE) that submitted a bid, proposal or quote on this DOT-assisted project, whether successful or unsuccessful in their attempt to obtain a contract:

Name of Prime's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"): ☐ African American ☐ Asian Pacific American ☐ Native American ☐ Woman ☐ Hispanic American ☐ Subcontinent Asian American ☐ Other	☐ Less than \$1 million
	☐ Less than \$5 million
	☐ Less than \$10 million
	☐ Less than \$15 million
	☐ More than \$15 million

Project Name: **TRAFFIC SIGNAL
SYNCHRONIZATION
IMPLEMENTATION**

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Provide the following information for every firm (DBE and non-DBE) that submitted a bid, proposal or quote on this DOT-assisted project, whether successful or unsuccessful in their attempt to obtain a contract:

Name of Prime's Firm:	Phone: ()
Firm Address:	Fax: ()
	E-mail:
	Type of work/services/materials provided:
Number of years in business:	
Contact Person:	Title:
Is the firm currently certified as a DBE under 49 CFR Part 26? ☐ Yes ☐ No	Check the box below for your firm's annual gross receipts last year:
DBE Certification Eligibility (place an "X"):	☐ Less than \$1 million
☐ African American ☐ Asian Pacific American	☐ Less than \$5 million
☐ Native American ☐ Woman	☐ Less than \$10 million
☐ Hispanic American ☐ Subcontinent Asian American	☐ Less than \$15 million
☐ Other	☐ More than \$15 million

If necessary, this "Bidders List" form can be duplicated to include all firms (DBE and non-DBE) that have submitted a bid, proposal or quote on this DOT-assisted project, whether successful or unsuccessful in their attempt to obtain a contract.

Failure of the Bidder/Offeror to submit the required "Bidders List" form will deem the Bidder/Offeror non-responsive.

DBE RACE-NEUTRAL PARTICIPATION LISTING

Bidder/Offeror shall complete and submit **Exhibit E-7: “DBE Race-Neutral Participation Listing”** in a **sealed envelope** with the bid/proposal, but no later than 48 hours following bid opening or proposal due date and timeline. (NOTE: In the event of no race-neutral DBE participation, Bidder/Offeror shall mark “None” under the column entitled “DBE Firm Name”.) The Bidder/Offeror shall refer to **IFB Section IV.G: “DBE Crediting Provisions”** for guidelines relative to DBE participation crediting. (Additional sheets may be duplicated as necessary.)

The DBE information and content provided under Exhibit D-2: “DBE Race-Neutral Participation Listing” will not be considered in evaluating the bid/proposal or determining award of any contract.

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing Subcontractor/Supplier Activity:		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:				

*DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing Subcontractor/Supplier Activity:		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:				

*DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.

DBE Firm Name*:	DBE Certification No. and Expiration Date:	Provide Complete Description of Work to be Performed: _____ _____ _____ _____		
Business Address:		Check Appropriate Box Describing Subcontractor/Supplier Activity:		
Contact Person:		Subcontractor (100%)	Supplier (60%)	
Telephone:	Fax:	Regular Dealer (60%)	Broker	
License No., Classification and Expiration:		Manufacturer (100%)	Trucker	
Subcontract Amount:				

*DBE certification letter must be attached for each listed DBE firm. DBEs must be certified on the date bids/proposals are opened.

Bidder/Offeror:

Business Address:	
Contact Name:	Title:
Phone: ()	Fax: ()

Total Contract Amount:		\$	
DBE Race-Neutral Participation Value (% of Total Contract Value): <i>(NOTE: Mark "NONE" if no DBEs will be utilized.)</i>	%	DBE Race-Neutral Participation Dollar (\$) Value: <i>(NOTE: Mark "NONE" if no DBEs will be utilized.)</i>	\$

Signature of Authorized Representative	Printed Name
Date	Title



ORANGE COUNTY TRANSPORTATION AUTHORITY

REQUEST FOR ADDITIONAL DBE SUBCONTRACTOR/SUPPLIER

Request for additional DBE(s) shall be in accordance with the Contract specifications and is subject to approval by the Authority. The Prime Contractor/Consultant shall provide Authority with the information requested below upon identification of any DBE subcontractor/subconsultant/supplier firm not previously listed to perform under the Contract. The Prime Contractor/Consultant shall also provide a written confirmation from the DBE that it is participating in the contract for a specified value, including the corresponding scope of work (a subcontract agreement can serve in lieu of the written confirmation).

Contract No.:		Contract Name:	
Prime Contractor/Consultant:			
Business Address:			
Please provide the following information for the proposed additional DBE subcontractor/subconsultant/supplier firm:			
DBE Firm Name:		DBE Certification Number:	
Business Address:			
Contact Person:	Phone Number: ()	Email Address:	
Description of Work (Scope):			
Contract Item Number(s):		Proposed DBE Subcontract Value:	
Copy of DBE Certification Letter attached (Required) ? ☐ Yes ☐ No			

Prime Contractor/Consultant Representative Signature	Title
Business Phone Number	Date

FOR AUTHORITY USE ONLY:			
Date Request Received: _____	Approve Request for Additional DBE? ☐ Yes ☐ No		
If no, please state reason: _____			
Reviewed by: _____	Title: _____		
Signature: _____	Date: _____		

EXHIBIT F
CERTIFICATION OF COMPLIANCE

OFFEROR'S CERTIFICATE OF COMPLIANCE
REGARDING
"BUY AMERICA" REQUIREMENTS (SECTION 165(a))
FOR
STEEL, IRON, OR MANUFACTURED PRODUCTS

The _____
Firm name/principal

hereby certifies that it will comply with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1987 and the applicable regulations in 49 CFR Part 661.

Signature

Title

Date

The _____
Firm name/principal

hereby certifies that it cannot comply with the requirements of Section 165(a) of the Surface Transportation Assistance Act of 1987 but it may qualify for an exception to the requirement pursuant to Section 165(b)(2) or (b)(4) of the Surface Transportation Assistance Act and Regulations in 49 CFR Part 661.7.

Signature

Title

Date

EXHIBIT G
SAFETY SPECIFICATIONS

LEVEL 1 SAFETY SPECIFICATIONS

PART I – GENERAL

1.1 GENERAL HEALTH, SAFETY & ENVIRONMENTAL REQUIREMENTS

- A. The Consultants, its sub-tier Consultants, suppliers, and employees have the obligation to comply with all Authority HSEC policies, as well as all federal, state, and local regulations pertaining to scope of work, contracts or agreements with the Authority. Additionally, manufacturer requirements are considered incorporated by reference as applicable to this scope of work.
- B. Observance of repeated unsafe acts or conditions, serious violation of safety standards, non-conformance of Authority health, safety and environmental compliance (HSEC) requirements, or disregard for the intent of these safety specifications to protect people and property, by Consultants or its sub-tier contractors may be cause for termination of scope, contracts, or agreements with the Authority, at the sole discretion of the Authority.
- C. The health, safety, and environmental requirements, and references contained within this scope of work shall not be considered all-inclusive as to the hazards that might be encountered. Safe work practices shall be planned and performed, and safe conditions shall be maintained during the course of this work scope.
- D. The Authority Project Manager shall be responsible to ensure a safety orientation is conducted for all Consultant personnel, sub-tier Consultants, suppliers, vendors, and new employees assigned to the project prior to commencement of the project.
- E. The Consultant shall ensure that all Consultant vehicles, including those of its sub-tier Consultants, suppliers, vendors and employees are parked in designated parking areas, and comply with traffic routes, and posted traffic signs in areas other than the employee parking lots.
- F. California Code of Regulations (CCR) Title 8 Standards are minimum requirements, each Consultant is encouraged to exceed minimum requirements. When the Consultant safety requirements exceed statutory standards, the more stringent requirements shall be achieved for the safeguard of public and workers.

1.2 HAZARD COMMUNICATION

- A. Consultant shall comply with CCR Title 8, Section 5194, Hazard Communication Standard. Prior to use on Authority property and/or project work areas Consultant shall provide the Authority Project Manager copies of MSDS for all chemical products used if any.

- B. All chemicals including paint, solvents, detergents and similar substances shall comply with South Coast Air Quality Management District (SCAQMD) rules 103, 1113, and 1171.

1.3 ACCIDENT INVESTIGATION

- A. The Authority shall be promptly notified of any damage to the Authority's property, or incidents involving third party property damage, or reportable and/or recordable injuries (as defined by the U. S. Occupational Safety and Health Administration) to Authority employees and agents; Contractor, vendor employees or visitors and members of the general public that occurs or arises from the performance of Authority contract work. A comprehensive investigation and written report shall be submitted to Authority's Project Manager within 24 hours of the incident.
- B. A serious injury or incident may require a formal incident review at the discretion of the Authority's Project Manager. The incident review shall be conducted within 7 calendar days of the incident. The serious incident presentation shall include action taken for the welfare of the injured, a status report of the injured, causation factors leading to the incident, a root cause analysis, and a detailed recovery plan that identifies corrective actions to prevent a similar incident, and actions to enhance safety awareness.

1.4 PERSONAL PROTECTIVE EQUIPMENT

- A. The Consultant, its sub-tier Consultants, suppliers, and employees are required to comply with the Authority's personal protective equipment (PPE) policy while performing work at any Authority facility, i.e. eye protection policy, hearing protection policy, head protection, safety vests, work shoe policy.
- B. The Consultant, its sub-tier Consultants, suppliers, and employees are required to provide their own PPE, including eye, head, foot, and hand protection, safety vests, or other PPE required to perform their work safely on Authority projects. The Authority requires eye protection on construction projects and work areas that meet ANSI Z-87.1 Standards.