City Council Staff Report

Date: June 2, 2010 NEW BUSINESS

Subject: APPROVAL OF A PROFESSIONAL SERVICES AGREEMENT WITH RBF CONSULTING FOR THE TRAFFIC MANAGEMENT CENTER AND CITYWIDE TRAFFIC SIGNAL INTERCONNECT PROJECT, CITY PROJECT NO. 08-04, FEDERAL-AID PROJECT NO. CML-5282(031)

From: David H. Ready, City Manager

Initiated by: Public Works and Engineering Department

SUMMARY

Award of this contract will allow the City to proceed with professional services to analyze all of the City's arterial corridors to upgrade the traffic signal interconnect systems with current technology, and to create a modern traffic management center at City Hall.

RECOMMENDATION:

1) Approve Agreement No. _____ with RBF Consulting, in the amount of $247,521 for environmental and traffic engineering design services for the Traffic Management Center and Citywide Traffic Signal Interconnect Project (City Project 08-04), Federal Aid Project No. CML-5282(031); and

2) Authorize the City Manager to execute all necessary documents.

STAFF ANALYSIS:

On April 30, 2007, the Coachella Valley Association of Governments ("CVAG") Executive Committee approved a Call for Projects for CVAG and its member jurisdictions using CVAG's allocation of Congestion Mitigation and Air Quality ("CMAQ") funds made available through the current highway funding bill, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

In July 2007, the Public Works and Engineering Department responded to CVAG's Call for Projects for CMAQ funding, requesting consideration of funding to analyze all of the City's arterial corridors to upgrade the traffic signal interconnect systems with current technology, and to create a modern traffic management center at City Hall. The

purpose of the City's request is to repair and improve all of the existing traffic signal interconnect systems with modern systems that are capable of being remotely monitored and have greater reliability. Associated with the project is traffic engineering analysis to obtain existing traffic volume turning counts at key major intersections along the interconnected corridors from which new updated traffic signal interconnect timing plans can be prepared and implemented.

The Public Works Department's request to CVAG was for $1,843,000 in CMAQ federal funds for an estimated $2,082,000 project, consistent with the CMAQ federal program reimbursement rate of 88.53% of project costs.

CVAG received 28 requests for CMAQ funding from its member jurisdictions, requesting a total of $30,610,112 in funding. The requests were evaluated by a Review Panel, and the City's request was ranked in 8th place of the 28 requests received. The CVAG Executive Committee subsequently approved the list of projects to receive CMAQ funding, and the projects were later added to the Regional Transportation Improvement Plan.

The Traffic Management Center and Citywide Traffic Signal Interconnect Project requires the services of a professional traffic engineering firm to provide the analysis required to upgrade the traffic signal interconnect systems and create a modern traffic management center. The project budget estimated a design phase cost of $225,000 of which the CMAQ funds will cover $199,000. Staff submitted a request for authorization to proceed with the preliminary engineering phase to Caltrans who administers the federal aid funds awarded to the City. The City's request was approved July 23, 2009.

Subsequently, staff prepared a Request for Proposals (RFP), to solicit proposals from firms interested in working on this project. On November 2, 2009, the RFP was released for public review and distributed to firms registered with the City.

Local Business Preference Compliance

Section 7.09.030 of the Palm Springs Municipal Code, "Local Business Preference Program," indicates that in awarding contracts for services, including consultant services, preference to Local Business shall be given whenever practicable, and that the consultant shall solicit proposals from sub-consultants from local firms. However, in accordance with the exceptions in the Code, given the federal funding associated with this project local preferences are not allowed, and the provisions of the City's Local Business Preference Program were not included in the City's RFP.[1]

[1] The primary basis behind the prohibition of local hiring preferences is that they are inconsistent with the principles of free and open competition, which is required in the federal-aid program pursuant to federal law found at 23 USC 112, "Letting of Contracts".

On December 10, 2009, the following 4 firms submitted Proposals in reply to the City's solicitation (in alphabetical order):

Iteris, Inc.; Santa Ana, CA
Kimley-Horn and Associates; Orange, CA
Minagar & Associates, Inc.; Irvine, CA
RBF Consulting; Irvine, CA

Given the technical nature of this project, with its emphasis on traffic signal operations and traffic engineering design, the City's Evaluation Committee for this project consisted of: David Barakian, Director of Public Works/City Engineer; Marcus Fuller, Asst. Dir. of Public Works/Asst. City Engineer; and Richard Jenkins, Engineering Assistant (Traffic & Development). The Committee reviewed the 4 proposals, and unanimously agreed that Iteris, Inc., was the most qualified firm to provide the services for this project.

Staff met with representatives from Iteris to review their cost proposal and begin contract negotiations. Although the City's RFP clearly identified the City's budget for the environmental and engineering phase of the project at $225,000, Iteris' original cost proposal was $793,289 for this phase. Staff had further meetings with Iteris to discuss their scope of work and fees, and ultimately was unable to resolve the significant disparity in the consultant's cost proposal and the City's budget for this project without compromising the overall scope of work for this phase of the project.

As a result of staff's unsuccessful contract negotiations with Iteris, staff pursued contract negotiations with the next most qualified firm, RBF Consulting. RBF's original cost proposal was $276,109 for this phase of the project, and in an effort to negotiate a reduced contract fee, staff requested RBF to consider a further reduction of 10% similar to requests made by the City to its vendors last year. RBF agreed to staff's request, and reduced their fee by $28,588 to a new contract fee of $247,521.

Staff recommends that the City Council approve the agreement with RBF Consulting, at the negotiated contract fee of $247,521.

FISCAL IMPACT:

This project is federally funded with CMAQ federal-aid funds. The environmental and engineering phase of this project has been programmed with $199,000 in CMAQ funds, with the balance funded with local Gas Tax funds. Sufficient funding is available in the CMAQ federal grant account 261-4491-50266 (Signal Synch Study), and 133-4298-50266 (Signal Synch Study). No local miscellaneous General Funds will be required for this project.

SUBMITTED:

Prepared by:

Marcus L. Fuller
Assistant Director of Public Works

Recommended by:

David J. Barakian
Director of Public Works/City Engineer

Approved by:

Thomas J. Wilson, Asst. City Manager

David H. Ready, City Manager

ATTACHMENTS:

1. Agreement

CITY OF PALM SPRINGS
PROFESSIONAL SERVICES AGREEMENT
CITYWIDE TRAFFIC SIGNAL INTERCONNECT UPGRADE &
TRAFFIC MANAGEMENT CENTER
CITY PROJECT NO. 08-04
FEDERAL AID PROJECT NO. CML 5282 (031)

THIS PROFESSIONAL SERVICES AGREEMENT (hereinafter "Agreement") is made and entered into, to be effective this _____ day of _____, 200__, by and between the **CITY OF PALM SPRINGS**, a California charter city and municipal corporation, (hereinafter referred to as "City") and **RBF Consulting**, (hereinafter referred to as "Consultant"). City and Consultant are sometimes hereinafter individually referred to as "Party" and are hereinafter collectively referred to as the "Parties."

RECITALS

A. City has determined that there is a need for environmental, traffic engineering design, and construction administration services for the Citywide Traffic Signal Interconnect Upgrade & Traffic Management Center project, City Project No. 08-04, Federal Aid Project No. CML 5252 (031), (hereinafter the "Project").

B. Consultant has submitted to City a proposal to provide environmental, traffic engineering design, and construction administration services to City for the Project pursuant to the terms of this Agreement.

C. Consultant is qualified by virtue of its experience, training, education, reputation, and expertise to provide these services and has agreed to provide such services as provided herein.

D. City desires to retain Consultant to provide such professional services.

NOW, THEREFORE, in consideration of the promises and mutual obligations, covenants, and conditions contained herein, and other valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1.0 SERVICES OF CONTRACTOR

1.1 Scope of Services. In compliance with all terms and conditions of this Agreement, Consultant agrees to perform the professional services set forth in the Scope of Services described in Exhibit "A," which is attached hereto and is incorporated herein by reference (hereinafter referred to as the "Services" or "Work"). As a material inducement to the City entering into this Agreement, Consultant represents and warrants that Consultant is a provider of first class work and professional services and that Consultant is experienced in performing the Work and Services contemplated herein and, in light of such status and experience, Consultant covenants that it shall follow the highest professional standards in performing the Work and Services required hereunder. For purposes of this Agreement, the phrase "highest professional standards" shall mean those standards of practice recognized as high quality among well-qualified and experienced professionals performing similar work under similar circumstances.

1.2 Contract Documents. The Agreement between the Parties shall consist of the following: (1) this Agreement and the supplemental "Special Requirements" identified on Exhibit "B"; (2) the Scope of Services; (3) the City's Request for Proposals; and, (4) the Consultant's signed, original proposal submitted to the City ("Consultant's Proposal"), which shall all be referred to collectively hereinafter as the "Contract Documents." The City's Request for Proposals and the Consultant's Proposal, which are both attached hereto as Exhibits "C" and "D," respectively, are hereby incorporated by reference and are made a part of this Agreement. The Scope of Services shall include the Consultant's Proposal. All provisions of the Scope of Services, the City's Request for Proposals, and the Consultant's Proposal shall be binding on the Parties. Should any conflict or inconsistency exist in the Contract Documents, the conflict or inconsistency shall be resolved by applying the provisions in the highest priority document, which shall be determined in the following order of priority: (1st) the provisions of the Scope of Services (Exhibit "A"); (2nd) the provisions of the City's Request for Proposals (Exhibit "C"); (3rd) the terms of this Agreement and the supplemental "Special Requirements" identified on Exhibit "B"; and, (4th) the provisions of the Consultant's Proposal (Exhibit "D").

1.3 Compliance with Law. Consultant warrants that all Services rendered hereunder shall be performed in accordance with all applicable federal, state, and local laws, statutes, and ordinances and all lawful orders, rules, and regulations promulgated thereunder.

1.4 Licenses, Permits, Fees and Assessments. Consultant represents and warrants to City that it has obtained all licenses, permits, qualifications, and approvals of whatever nature that are legally required to practice its profession and perform the Work and Services required by this Agreement. Consultant represents and warrants to City that Consultant shall, at its sole cost and expense, keep in effect at all times during the term of this Agreement, any license, permit, qualification, or approval that is legally required for Consultant to perform the Work and Services under this Agreement. Consultant shall have the sole obligation to pay for any fees, assessments, and taxes, plus applicable penalties and interest, which may be imposed by law and arise from or are necessary for the Consultant's performance of the Work and Services required by this Agreement, and shall indemnify, defend, and hold harmless City against any such fees, assessments, taxes penalties, or interest levied, assessed, or imposed against City hereunder.

1.5 Familiarity with Work. By executing this Agreement, Consultant warrants that Consultant (a) has thoroughly investigated and considered the Scope of Services to be performed, (b) has carefully considered how the Services should be performed, and (c) fully understands the facilities, difficulties, and restrictions attending performance of the Services under this Agreement. If the Services involve work upon any site, Consultant warrants that Consultant has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of any Services hereunder. Should the Consultant discover any latent or unknown conditions that will materially affect the performance of the Services hereunder, Consultant shall immediately inform the City of such fact and shall not proceed except at Consultant's risk until written instructions are received from the City.

1.6 Care of Work. Consultant shall adopt reasonable methods during the term of the Agreement to furnish continuous protection to the Work and the equipment, materials,

papers, documents, plans, studies, and/or other components thereof to prevent losses or damages, and shall be responsible for all such damages, to persons or property, until acceptance of the Work by the City, except such losses or damages as may be caused by City's own negligence.

1.7 Further Responsibilities of Parties. Both Parties agree to use reasonable care and diligence to perform their respective obligations under this Agreement. Both Parties agree to act in good faith to execute all instruments, prepare all documents, and take all actions as may be reasonably necessary to carry out the purposes of this Agreement.

1.8 Additional Services. City shall have the right at any time during the performance of the Services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Services or make changes by altering, adding to, or deducting from such Work. No such extra work may be undertaken unless a written order is first given by the City to the Consultant, incorporating therein any adjustment in (i) the Maximum Contract Amount, as defined below, and/or (ii) the time to perform this Agreement, which adjustments are subject to the written approval of the Consultant. Any increase in compensation of up to twenty-five percent (25%) of the Maximum Contract Amount or $25,000, whichever is less, or in the time to perform of up to thirty (30) days, may be approved by the City Manager, or his designee, as may be needed to perform any extra work. Any greater increases, occurring either separately or cumulatively, must be approved by the Palm Springs City Council. It is expressly understood by Consultant that the provisions of this section shall not apply to the services specifically set forth in the Scope of Services or reasonably contemplated therein, regardless of whether the time or materials required to complete any work or service identified in the Scope of Services exceeds any time or material amounts or estimates provided therein.

1.9 Special Requirements. Additional terms and conditions of this Agreement, if any, which are made a part hereof are set forth in the "Special Requirements" attached hereto as Exhibit "B" and incorporated herein by this reference. In the event of a conflict between the provisions of Exhibit "B" and any other provisions of this Agreement, the provisions in Exhibit "B" shall govern.

2.0 COMPENSATION

2.1 Maximum Contract Amount. For the Services rendered pursuant to this Agreement, Consultant shall be compensated by City in accordance with the Schedule of Compensation, which is attached hereto as Exhibit "E" and is incorporated herein by reference, but not exceeding the maximum contract amount of **Two Hundred Forty-Seven Thousand Five Hundred Twenty-One Dollars, ($247,521.00)** (hereinafter referred to as the "Maximum Contract Amount"), except as may be provided pursuant to Section 1.8 above. The method of compensation shall be as set forth in Exhibit "E." Compensation for necessary expenditures for reproduction costs, telephone expenses, and transportation expenses must be approved in advance by the Contract Officer designated pursuant to Section 4.2 and will only be approved if such expenses are also specified in the Schedule of Compensation. The Maximum Contract Amount shall include the attendance of Consultant at all Project meetings reasonably deemed necessary by the City. Consultant shall not be entitled to any increase in the Maximum Contract Amount for attending these meetings. Consultant hereby acknowledges that it accepts the risk that the services identified in the Scope of Services may be more costly and/or

time-consuming than Consultant anticipates, that Consultant shall not be entitled to additional compensation therefore, and that the provisions of Section 1.8 shall not be applicable to the services identified in the Scope of Services. The maximum amount of city's payment obligation under this section is the amount specified herein. If the City's maximum payment obligation is reached before the Consultant's Services under this Agreement are completed, consultant shall nevertheless complete the Work without liability on the City's part for further payment beyond the Maximum Contract Amount.

2.2 Method of Payment. Unless some other method of payment is specified in the Schedule of Compensation (Exhibit "E"), in any month in which Consultant wishes to receive payment, no later than the tenth (10) working day of such month, Consultant shall submit to the City, in a form approved by the City's Finance Director, an invoice for services rendered prior to the date of the invoice. Such requests shall be based upon the amount and value of the services performed by Consultant and accompanied by such reporting data including an itemized breakdown of all costs incurred and tasks performed during the period covered by the invoice, as may be required by the City. City shall use reasonable efforts to make payments to Consultant within forty-five (45) days after receipt of the invoice or a soon thereafter as is reasonably practical. There shall be a maximum of one payment per month.

2.3 Changes in Scope. In the event any change or changes in the Scope of Services is requested by the City, the Parties shall execute a written amendment to this Agreement, setting forth with particularity all terms of such amendment, including, but not limited to, any additional professional fees. An amendment may be entered into: (a) to provide for revisions or modifications to documents or other work product or work when documents or other work product or work is required by the enactment or revision of law subsequent to the preparation of any documents, other work product, or work; and/or (b) to provide for additional services not included in this Agreement or not customarily furnished in accordance with generally accepted practice in Consultant's profession.

2.4 Appropriations. This Agreement is subject to and contingent upon funds being appropriated therefore by the Palm Springs City Council for each fiscal year covered by the Agreement. If such appropriations are not made, this Agreement shall automatically terminate without penalty to the City.

3. SCHEDULE OF PERFORMANCE

3.1 Time of Essence. Time is of the essence in the performance of this Agreement. The time for completion of the services to be performed by Consultant is an essential condition of this Agreement. Consultant shall prosecute regularly and diligently the Work of this Agreement according to the agreed upon Schedule of Performance (Exhibit "F").

3.2 Schedule of Performance. Consultant shall commence the Services pursuant to this Agreement upon receipt of a written notice to proceed and shall perform all Services within the time period(s) established in the Schedule of Performance, which is attached hereto as Exhibit "F" and is incorporated herein by reference. When requested by Consultant, extensions to the time period(s) specified in the Schedule of Performance may be approved in writing by the Contract Officer, but such extensions shall not exceed one hundred eighty (180) days cumulatively; however, the City shall not be obligated to grant such an extension.

3.3 Force Majeure. The time period(s) specified in the Schedule of Performance for performance of the Services rendered pursuant to this Agreement shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of the Consultant (financial inability excepted), including, but not limited to, acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine restrictions, riots, strikes, freight embargoes, wars, and/or acts of any governmental agency, including the City, if Consultant, within ten (10) days of the commencement of such delay, notifies the City Manager in writing of the causes of the delay. The City Manager shall ascertain the facts and the extent of delay, and extend the time for performing the Services for the period of the enforced delay when and if in the judgment of the City Manager such delay is justified. The City Manager's determination shall be final and conclusive upon the Parties to this Agreement. In no event shall Consultant be entitled to recover damages against the City for any delay in the performance of this Agreement, however caused, Consultant's sole remedy being extension of the Agreement pursuant to this section.

3.4 Term. Unless earlier terminated as provided elsewhere in this Agreement, this Agreement shall commence upon the effective date of this Agreement and continue in full force and effect until completion of the Services but not exceeding three (3) years from the date hereof, except as otherwise provided in the Schedule of Performance (Exhibit "F") and pursuant to Section 3.2 above, unless extended by mutual written agreement of the Parties.

4. COORDINATION OF WORK

4.1 **Representative of Consultant.** The following principal of Consultant is hereby designated as being the principal and representative of Consultant authorized to act in its behalf with respect to the Services to be performed under this Agreement and make all decisions in connection therewith: **Carlos Ortiz, PE, TE, PTOE, Vice President/Project Manager**. It is expressly understood that the experience, knowledge, education, capability, expertise, and reputation of the foregoing principal is a substantial inducement for City to enter into this Agreement. Therefore, the foregoing principal shall be responsible during the term of this Agreement for directing all activities of Consultant and devoting sufficient time to personally supervise the services performed hereunder. The foregoing principal may not be changed by Consultant without prior written approval of the Contract Officer.

4.2 Contract Officer. The Contract Officer shall be such person as may be designated by the City Manager of City, and is subject to change by the City Manager. It shall be the Consultant's responsibility to ensure that the Contract Officer is kept fully informed of the progress of the performance of the Services, and the Consultant shall refer any decisions which must be made by City to the Contract Officer. Unless otherwise specified herein, any approval of City required hereunder shall mean the approval of the Contract Officer. The Contract Officer shall have authority to sign all documents on behalf of the City required hereunder to carry out the terms of this Agreement.

4.3 Prohibition Against Subcontracting or Assignments. The experience, knowledge, capability, expertise, and reputation of Consultant, its principals and employees, were a substantial inducement for City to enter into this Agreement. Therefore, Consultant shall not assign the performance of this Agreement, nor any part thereof, nor any monies due

hereunder, voluntarily or by operation of law, without the prior written consent of City. Consultant shall not contract with any other entity to perform the Services required under this Agreement without the prior written consent of City. If Consultant is permitted to subcontract any part of this Agreement by City, Consultant shall be responsible to City for the acts and omissions of its subcontractor(s) in the same manner as it is for persons directly employed. Nothing contained in this Agreement shall create any contractual relationships between any subcontractor and City. All persons engaged in the Work will be considered employees of Consultant. City will deal directly with and will make all payments to Consultant. In addition, neither this Agreement nor any interest herein may be transferred, assigned, conveyed, hypothecated, or encumbered voluntarily or by operation of law, whether for the benefit of creditors or otherwise, without the prior written consent of City. Transfers restricted hereunder shall include the transfer to any person or group of persons acting in concert of more than twenty five percent (25%) of the present ownership and/or control of Consultant, taking all transfers into account on a cumulative basis. In the event of any such unapproved transfer, including any bankruptcy proceeding, this Agreement shall be void. No approved transfer shall release Consultant or any surety of Consultant from any liability hereunder without the express written consent of City.

4.4 Independent Contractor.

A. The legal relationship between the Parties is that of an independent contractor, and nothing herein shall be deemed to make Consultant a City employee. During the performance of this Agreement, Consultant and its officers, employees, and agents shall act in an independent capacity and shall not act as City officers or employees. The personnel performing the Services under this Agreement on behalf of Consultant shall at all times be under Consultant's exclusive direction and control. Neither City nor any of its officers, employees, or agents shall have control over the conduct of Consultant or any of its officers, employees, or agents, except as set forth in this Agreement. Consultant, its officers, employees, or agents shall not maintain an office or any other type of fixed business location at City's offices. City shall have no voice in the selection, discharge, supervision, or control of Consultant's employees, servants, representatives, or agents, or in fixing their number, compensation, or hours of service. 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, including but not limited to social security income tax withholding, unemployment compensation, workers' compensation, and other similar matters. City shall not in any way or for any purpose be deemed to be a partner of Consultant in its business or otherwise a joint venturer or a member of any joint enterprise with Consultant.

B. Consultant shall not incur or have the power to incur any debt, obligation, or liability against City, or bind City in any manner.

C. No City benefits shall be available to Consultant, its officers, employees, or agents in connection with any performance under this Agreement. Except for professional fees paid to Consultant as provided for in this Agreement, City shall not pay salaries, wages, or other compensation to Consultant for the performance of Services under this Agreement. City shall not be liable for compensation or indemnification to Consultant, its officers, employees, or agents, for injury or sickness arising out of performing Services hereunder. If for any reason any court or governmental agency determines that the City has financial obligations, other than

pursuant to Section 2 and Subsection 1.8 herein, of any nature relating to salary, taxes, or benefits of Consultant's officers, employees, servants, representatives, subcontractors, or agents, Consultant shall indemnify City for all such financial obligations.

5. INSURANCE

5.1 Types of Insurance. Consultant shall procure and maintain, at its sole cost and expense, in a form and content satisfactory to City, the insurance described herein for the duration of this Agreement, including any extension thereof, or as otherwise specified herein, against claims which may arise from or in connection with the performance of the Work hereunder by Consultant, its agents, representatives, or employees. In the event the City Manager determines that the Work or Services to be performed under this Agreement creates an increased or decreased risk of loss to the City, the Consultant agrees that the minimum limits of the insurance policies may be changed accordingly upon receipt of written notice from the City Manager or his designee. Consultant shall immediately substitute any insurer whose A.M. Best rating drops below the levels specified herein. Except as otherwise authorized below for professional liability (errors and omissions) insurance, all insurance provided pursuant to this Agreement shall be on an occurrence basis. The minimum amount of insurance required hereunder shall be as follows:

A. Errors and Omissions Insurance. Consultant shall obtain and maintain in full force and effect throughout the term of this Agreement, standard industry form professional liability (errors and omissions) insurance coverage in an amount of not less than one million dollars ($1,000,000.00) per occurrence and two-million dollars ($2,000,000.00) annual aggregate, in accordance with the provisions of this section.

(1) Consultant shall either: (a) certify in writing to the City that Consultant is unaware of any professional liability claims made against Consultant and is unaware of any facts which may lead to such a claim against Consultant; or (b) if Consultant does not provide the certification pursuant to (a), Consultant shall procure from the professional liability insurer an endorsement providing that the required limits of the policy shall apply separately to claims arising from errors and omissions in the rendition of services pursuant to this Agreement.

(2) If the policy of insurance is written on a "claims made" basis, the policy shall be continued in full force and effect at all times during the term of this Agreement, and for a period of three (3) years from the date of the completion of the Services provided hereunder. In the event of termination of the policy during this period, Consultant shall obtain continuing insurance coverage for the prior acts or omissions of Consultant during the course of performing Services under the terms of this Agreement. The coverage shall be evidenced by either a new policy evidencing no gap in coverage, or by obtaining separate extended "tail" coverage with the present or new carrier or other insurance arrangements providing for complete coverage, either of which shall be subject to the written approval by the City Manager.

(3) In the event the policy of insurance is written on an "occurrence" basis, the policy shall be continued in full force and effect during the term of this Agreement, or until completion of the Services provided for in this Agreement, whichever is later. In the event of termination of the policy during this period, new coverage shall immediately be obtained to

ensure coverage during the entire course of performing the Services under the terms of this Agreement.

B. Workers' Compensation Insurance. Consultant shall obtain and maintain, in full force and effect throughout the term of this Agreement, workers' compensation insurance in at least the minimum statutory amounts, and in compliance with all other statutory requirements, as required by the State of California. Consultant agrees to waive and obtain endorsements from its workers' compensation insurer waiving subrogation rights under its workers' compensation insurance policy against the City and to require each of its subcontractors, if any, to do likewise under their workers' compensation insurance policies. If Consultant has no employees, Consultant shall complete the City's Request for Waiver of Workers' Compensation Insurance Requirement form.

C. Commercial General Liability Insurance. Consultant shall obtain and maintain, in full force and effect throughout the term of this Agreement, a policy of commercial general liability insurance written on a per occurrence basis with a combined single limit of at least one million dollars ($1,000,000.00) and two million dollars ($2,000,000.00) general aggregate for bodily injury and property damage including coverages for contractual liability, personal injury, independent contractors, broad form property damage, products and completed operations.

D. Business Automobile Insurance. Consultant shall obtain and maintain, in full force and effect throughout the term of this Agreement, a policy of business automobile liability insurance written on a per occurrence basis with a single limit liability in the amount of one million dollars ($1,000,000.00) bodily injury and property damage. The policy shall include coverage for owned, non-owned, leased, and hired cars.

E. Employer Liability Insurance. Consultant shall obtain and maintain, in full force and effect throughout the term of this Agreement, a policy of employer liability insurance written on a per occurrence basis with a policy limit of at least one million dollars ($1,000,000.00) for bodily injury or disease.

5.2 Deductibles and Self-Insured Retentions. Any deductibles or self-insured retentions must be declared to and approved by the City Manager prior to commencing any work or services under this Agreement. Consultant guarantees payment of all deductibles and self-insured retentions. City reserves the right to reject deductibles or self-insured retentions in excess of $10,000, and the City Manager may require evidence of pending claims and claims history as well as evidence of Consultant's ability to pay claims for all deductible amounts and self-insured retentions proposed in excess of $10,000.

5.3 Other Insurance Requirements. The following provisions shall apply to the insurance policies required of Consultant pursuant to this Agreement:

5.3.1 For any claims related to this Agreement, Consultant's coverage shall be primary insurance as respects City and its officers, council members, officials, employees, agents, and volunteers. Any insurance or self-insurance maintained by the City and its officers, council members, officials, employees, agents, and volunteers shall be in excess of Consultant's insurance and shall not contribute

with it.

5.3.2 Any failure to comply with reporting or other provisions of the policies, including breaches of warranties, shall not affect coverage provided to City and its officers, council members, officials, employees, agents, and volunteers.

5.3.3 All insurance coverage and limits provided by Consultant and available or applicable to this Agreement are intended to apply to each insured, including additional insureds, against whom a claim is made or suit is brought to the full extent of the policies. Nothing contained in this Agreement or any other agreement relating to the City or its operations shall limit the application of such insurance coverage.

5.3.4 None of the insurance coverages required herein will be in compliance with these requirements if they include any limiting endorsement which substantially impairs the coverages set forth herein (e.g., elimination of contractual liability or reduction of discovery period), unless the endorsement has first been submitted to the City Manager and approved in writing.

5.3.5 Consultant agrees to require its insurer to modify insurance endorsements to delete any exculpatory wording stating that failure of the insurer to mail written notice of cancellation imposes no obligation, or that any party will "endeavor" (as opposed to being required) to comply with the requirements of the endorsements. Certificates of insurance will not be accepted in lieu of required endorsements, and submittal of certificates without required endorsements may delay commencement of the Project. It is Consultant's obligation to ensure timely compliance with all insurance submittal requirements as provided herein.

5.3.6 Consultant agrees to ensure that subcontractors, and any other parties involved with the Project who are brought onto or involved in the Project by Consultant, provide the same minimum insurance coverage required of Consultant. Consultant agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this section. Consultant agrees that upon request, all agreements with subcontractors and others engaged in the Project will be submitted to the City for review.

5.3.7 Consultant acknowledges and agrees that any actual or alleged failure on the part of the City to inform Consultant of non-compliance with any insurance requirement in no way imposes any additional obligations on the City nor does it waive any rights hereunder in this or any other regard.

5.3.8 Consultant shall provide proof that policies of insurance required herein expiring during the term of this Agreement have been renewed or replaced with other policies providing at least the same coverage. Proof that such coverage has been ordered shall be submitted prior to expiration. Endorsements as required in this Agreement applicable to the renewing or new coverage shall be provided to City no later than ten (10) days prior to expiration of the lapsing coverage.

5.3.9 Requirements of specific insurance coverage features or limits contained in this section are not intended as limitations on coverage, limits, or other requirements nor as a waiver of any coverage normally provided by any given policy. Specific reference to a given coverage feature is for purposes of clarification only as it pertains to a given issue, and is not intended by any party or insured to be limiting or all-inclusive.

5.3.10 The requirements in this section supersede all other sections and provisions of this Agreement to the extent that any other section or provision conflicts with or impairs the provisions of this section.

5.3.11 Consultant agrees to provide immediate notice to City of any claim or loss against Consultant arising out of the Work performed under this Agreement and for any other claim or loss which may reduce the insurance available to pay claims arising out of this Agreement. City assumes no obligation or liability by such notice, but has the right (but not the duty) to monitor the handling of any such claim or claims if they are likely to involve City, or to reduce or dilute insurance available for payment of potential claims.

5.3.12 Consultant agrees that the provisions of this section shall not be construed as limiting in any way the extent to which the Consultant may be held responsible for the payment of damages resulting from the Consultant's activities or the activities of any person or person for which the Consultant is otherwise responsible.

5.4 Sufficiency of Insurers. Insurance required herein shall be provided by authorized insurers in good standing with the State of California. Coverage shall be provided by insurers admitted in the State of California with an A.M. Best's Key Rating of B++, Class VII, or better, unless such requirements are waived in writing by the City Manager or his designee due to unique circumstances.

5.5 Verification of Coverage. Consultant shall furnish City with both certificates of insurance and endorsements, including additional insured endorsements, affecting all of the coverages required by this Agreement. The certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. All proof of insurance is to be received and approved by the City before work commences. City reserves the right to require Consultant's insurers to provide complete, certified copies of all required insurance policies at any time. Additional insured endorsements are not required for Errors and Omissions and Workers' Compensation policies.

Verification of Insurance coverage may be provided by: (1) an approved General and/or Auto Liability Endorsement Form for the City of Palm Springs or (2) an acceptable Certificate of Liability Insurance Coverage with an approved Additional Insured Endorsement with the following endorsements stated on the certificate:

1. *"The City of Palm Springs, its officials, employees, and agents are named as an additional insured..." ("as respects City of Palm Springs Contract No.___"* or *"for any and all work performed with the City"* may be included in this statement).

2. "*This insurance is primary and non-contributory over any insurance or self-insurance the City may have...*" ("*as respects City of Palm Springs Contract No.___*" or "*for any and all work performed with the City*" may be included in this statement).

3. "*Should any of the above described policies be canceled before the expiration date thereof, the issuing company will mail 30 days written notice to the Certificate Holder named.*" Language such as, "endeavor to" mail and "but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representative" is not acceptable and must be crossed out.

4. Both the Workers' Compensation and Employers' Liability policies shall contain the insurer's waiver of subrogation in favor of City, its elected officials, officers, employees, agents, and volunteers.

In addition to the endorsements listed above, the City of Palm Springs shall be named the certificate holder on the policies. All certificates of insurance and endorsements are to be received and approved by the City before work commences. All certificates of insurance must be authorized by a person with authority to bind coverage, whether that is the authorized agent/broker or insurance underwriter. Failure to obtain the required documents prior to the commencement of work shall not waive the Consultant's obligation to provide them.

6. INDEMNIFICATION

To the fullest extent permitted by law, Consultant shall indemnify, defend (at Consultant's sole cost and expense), protect and hold harmless City and its officers, council members, officials, employees, agents and volunteers and all other public agencies whose approval of the Project is required, (individually "Indemnified Party"; collectively "Indemnified Parties") against any and all liabilities, claims, judgments, arbitration awards, settlements, costs, demands, orders, and penalties (collectively "Claims"), including but not limited to Claims arising from injuries or death of persons (Consultant's employees included) and damage to property, which Claims arise out of, pertain to, or are related to the negligence, recklessness, or willful misconduct of Consultant, its agents, employees, or subcontractors, or arise from Consultant's negligent, reckless, or willful performance of or failure to perform any term, provision, covenant, or condition of this Agreement ("Indemnified Claims"), but Consultant's liability for Indemnified Claims shall be reduced to the extent such Claims arise from the negligence, recklessness, or willful misconduct of the City, its officers, council members, officials, employees, or agents.

Consultant shall reimburse the Indemnified Parties for any reasonable expenditures, including reasonable attorneys' fees, expert fees, litigation costs, and expenses that each Indemnified Party may incur by reason of Indemnified Claims. Upon request by an Indemnified Party, Consultant shall defend with legal counsel reasonably acceptable to the Indemnified Party all Claims against the Indemnified Party that may arise out of, pertain to, or relate to Indemnified Claims, whether or not Consultant is named as a party to the Claim proceeding.

The determination whether a Claim "may arise out of, pertain to, or relate to Indemnified Claims" shall be based on the allegations made in the Claim and the facts known or subsequently discovered by the Parties. In the event a final judgment, arbitration award, order, settlement, or other final resolution expressly determines that Claims did not arise out of, pertain to, nor relate to the negligence, recklessness, or willful misconduct of Consultant to any extent, then City shall reimburse Consultant for the reasonable costs of defending the Indemnified Parties against such Claims, except City shall not reimburse Consultant for attorneys' fees, expert fees, litigation costs, and expenses that were incurred defending Consultant or any parties other than Indemnified Parties against such Claims.

Consultant's indemnification obligation hereunder shall survive the expiration or earlier termination of this Agreement until all actions against the Indemnified Parties for such matters indemnified hereunder are fully and finally barred by the applicable statute of limitations or, if an action is timely filed, until such action is final. This provision is intended for the benefit of third party Indemnified Parties not otherwise a party to this Agreement.

7. REPORTS AND RECORDS

7.1 Accounting Records. Consultant shall keep complete, accurate, and detailed accounts of all time, costs, expenses, and expenditures pertaining in any way to this Agreement. Consultant shall keep such books and records as shall be necessary to properly perform the Services required by this Agreement and to enable the Contract Officer to evaluate the performance of such Services. The Contract Officer shall have full and free access to such books and records at all reasonable times, including the right to inspect, copy, audit, and make records and transcripts from such records.

7.2 Reports. Consultant shall periodically prepare and submit to the Contract Officer such reports concerning the performance of the Services required by this Agreement as the Contract Officer shall require. Consultant hereby acknowledges that the City is greatly concerned about the cost of the Work and Services to be performed pursuant to this Agreement. For this reason, Consultant agrees that if Consultant becomes aware of any facts, circumstances, techniques, or events that may or will materially increase or decrease the cost of the Work or Services contemplated herein or, if Consultant is providing design services, the cost of the project being designed, Consultant shall promptly notify the Contract Officer of such fact, circumstance, technique, or event and the estimated increased or decreased cost related thereto and, if Consultant is providing design services, the estimated increased or decreased cost estimate for the project being designed.

7.3 Ownership of Documents. All drawings, specifications, reports, records, documents, memoranda, correspondence, computations, and other materials prepared by Consultant, its employees, subcontractors, and agents in the performance of this Agreement shall be the property of City and shall be promptly delivered to City upon request of the Contract Officer or upon the termination of this Agreement, and Consultant shall have no claim for further employment or additional compensation as a result of the exercise by City of its full rights of ownership of the documents and materials hereunder. Any use of such completed documents for other projects and/or use of incomplete documents without specific written authorization by the Consultant will be at the City's sole risk and without liability to Consultant, and the City shall indemnify the Consultant for all damages resulting therefrom. Consultant

may retain copies of such documents for its own use. Consultant shall have an unrestricted right to use the concepts embodied therein. Consultant shall ensure that all its subcontractors shall provide for assignment to City of any documents or materials prepared by them, and in the event Consultant fails to secure such assignment, Consultant shall indemnify City for all damages resulting therefrom.

7.4 Release of Documents. All drawings, specifications, reports, records, documents, and other materials prepared by Consultant in the performance of services under this Agreement shall not be released publicly without the prior written approval of the Contract Officer. All information gained by Consultant in the performance of this Agreement shall be considered confidential and shall not be released by Consultant without City's prior written authorization.

7.5 Audit and Inspection of Records. After receipt of reasonable notice and during the regular business hours of City, Consultant shall provide City, or other agents of City, such access to Consultant's books, records, payroll documents, and facilities as City deems necessary to examine, copy, audit, and inspect all accounting books, records, work data, documents, and activities directly related to Consultant's performance under this Agreement. 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 the term of this Agreement and for a period of three (3) years from the date of final payment by City hereunder.

8. ENFORCEMENT OF AGREEMENT

8.1 California Law and Venue. This Agreement shall be construed and interpreted both as to validity and as to performance of the Parties in accordance with the laws of the State of California. Legal actions concerning any dispute, claim, or matter arising out of or in relation to this Agreement shall be instituted in the Superior Court of the County of Riverside, State of California, or any other appropriate court in such County, and Consultant covenants and agrees to submit to the personal jurisdiction of such court in the event of such action.

8.2 Interpretation. This Agreement shall be construed as a whole according to its fair language and common meaning to achieve the objectives and purposes of the Parties. The terms of this Agreement are contractual and the result of negotiation between the Parties. Accordingly, any rule of construction of contracts (including, without limitation, California Civil Code Section 1654) that ambiguities are to be construed against the drafting party, shall not be employed in the interpretation of this Agreement. The caption headings of the various sections and paragraphs of this Agreement are for convenience and identification purposes only and shall not be deemed to limit, expand, or define the contents of the respective sections or paragraphs.

8.3 Termination. City may terminate this Agreement for its convenience at any time, without cause, in whole or in part, upon giving Consultant thirty (30) days written notice. Upon such notice, City shall pay Consultant for Services performed through the date of termination. Upon receipt of such notice, Consultant shall immediately cease all work under this Agreement, unless the notice provides otherwise. Thereafter, Consultant shall have no further claims against the City under this Agreement. Upon termination of the Agreement pursuant to

this section, Consultant shall submit to the City an invoice for work and services performed prior to the date of termination. In addition, the Consultant reserves the right to terminate this Agreement at any time, with or without cause, upon sixty (60) days written notice to the City, except that where termination is due to material default by the City, the period of notice may be such shorter time as the Consultant may determine.

8.4 Default of Consultant.

A. Consultant's failure to comply with any provision of this Agreement shall constitute a default.

B. If the City Manager, or his designee, determines that Consultant is in default in the performance of any of the terms or conditions of this Agreement, he/she shall notify Consultant in writing of such default. Consultant shall have ten (10) days, or such longer period as City may designate, to cure the default by rendering satisfactory performance. In the event Consultant fails to cure its default within such period of time, City shall have the right, notwithstanding any other provision of this Agreement, to terminate this Agreement without further notice and without prejudice of any remedy to which City may be entitled at law, in equity, or under this Agreement. Consultant shall be liable for any and all reasonable costs incurred by City as a result of such default. Compliance with the provisions of this section shall not constitute a waiver of any City right to take legal action in the event that the dispute is not cured, provided that nothing herein shall limit City's right to terminate this Agreement without cause pursuant to Section 8.3.

C. If termination is due to the failure of the Consultant to fulfill its obligations under this Agreement, City may, after compliance with the provisions of Section 8.4.B, take over the work and prosecute the same to completion by contract or otherwise, and the Consultant shall be liable to the extent that the total cost for completion of the Services required hereunder exceeds the Maximum Contract Amount (provided that the City shall use reasonable efforts to mitigate such damages), and City may withhold any payments to the Consultant for the purpose of set-off or partial payment of the amounts owed the City as previously stated. The withholding or failure to withhold payments to Consultant shall not limit Consultant's liability for completion of the Services as provided herein.

8.5 Waiver. No waiver of any provision of this Agreement shall be effective unless in writing and signed by a duly authorized representative of the Party against whom enforcement of a waiver is sought. Any waiver by the Parties of any default or breach of any covenant, condition, or term contained in this Agreement, shall not be construed to be a waiver of any subsequent or other default or breach, nor shall failure by the Parties to require exact, full, and complete compliance with any of the covenants, conditions, or terms contained in this Agreement be construed as changing the terms of this Agreement in any manner or preventing the Parties from enforcing the full provisions hereof.

8.6 Rights and Remedies Cumulative. Except with respect to rights and remedies expressly declared to be exclusive in this Agreement, the rights and remedies of the Parties are cumulative and the exercise by either Party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other Party.

8.7 Legal Action. In addition to any other rights or remedies, either Party may take legal action, in law or in equity, to cure, correct or remedy any default, to recover damages for any default, to compel specific performance of this Agreement, to obtain declaratory or injunctive relief, or to obtain any other remedy consistent with the purposes of this Agreement.

8.8 Attorney Fees. In the event any dispute between the Parties with respect to this Agreement results in litigation or any non-judicial proceeding, the prevailing Party shall be entitled, in addition to such other relief as may be granted, to recover from the non-prevailing Party all reasonable costs and expenses, including but not limited to reasonable attorney fees, expert consultant fees, court costs and all fees, costs, and expenses incurred in any appeal or in collection of any judgment entered in such proceeding. To the extent authorized by law, in the event of a dismissal by the plaintiff or petitioner of the litigation or non-judicial proceeding within thirty (30) days of the date set for trial or hearing, the other Party shall be deemed to be the prevailing Party in such litigation or proceeding.

9. CITY OFFICERS AND EMPLOYEES: NON-DISCRIMINATION

9.1 Non-liability of City Officers and Employees. No officer or employee of the City shall be personally liable to the Consultant, or any successor-in-interest, in the event of any default or breach by the City or for any amount which may become due to the Consultant or to its successor, or for breach of any obligation of the terms of this Agreement.

9.2 Conflict of Interest. No officer or employee of the City shall have any financial interest, direct or indirect, in this Agreement nor shall any such officer or employee participate in any decision relating to the Agreement which effects his financial interest or the financial interest of any corporation, partnership, or association in which he/she is, directly or indirectly, interested in violation of any state statute or regulation. Consultant warrants that it has not paid or given and will not pay or give any third party any money or other consideration in exchange for obtaining this Agreement.

9.3 Covenant Against Discrimination. 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, marital status, ancestry, or national origin. Consultant shall ensure that applicants are employed, and that employees are treated during their employment, without regard to their race, religion, color, sex, age, marital status, ancestry, 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.

10. MISCELLANEOUS PROVISIONS

10.1 Patent and Copyright Infringement.

A. To the fullest extent permissible under law, and in lieu of any other warranty by City 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 City 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, and provided such suit or claim arises out of, pertains to, or is related to the negligence, recklessness or willful misconduct of Consultant. However, Consultant will not indemnify City if the suit or claim results from: (1) City's alteration of a deliverable, such that City's alteration of such deliverable created the infringement 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 it is such use in combination which 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 City under any settlement made without Consultant's consent or in the event City fails to cooperate in the defense of any suit or claim, provided, however, that such defense shall be at Consultant's expense. If the use or sale of such item is enjoined as a result of the suit or claim, Consultant, at no expense to City, shall obtain for City the right to use and sell the item, or shall substitute an equivalent item acceptable to City and extend this patent and copyright indemnity thereto.

10.2 Notices. All notices or other communications required or permitted hereunder shall be in writing, and shall be personally delivered, sent by pre-paid First Class U.S. Mail, registered or certified mail, postage prepaid, return receipt requested, or delivered or sent by facsimile with attached evidence of completed transmission, and shall be deemed received upon the earlier of (i) the date of delivery to the address of the person to receive such notice if delivered personally or by messenger or overnight courier; (ii) five (5) business days after the date of posting by the United States Post Office if by mail; or (iii) when sent if given by facsimile. Any notice, request, demand, direction, or other communication sent by facsimile must be confirmed within forty-eight (48) hours by letter mailed or delivered. Other forms of electronic transmission such as e-mails, text messages, instant messages are not acceptable manners of notice required hereunder. Notices or other communications shall be addressed as follows:

To City:
City of Palm springs
Attention: City Manager & City Clerk
3200 E. Tahquitz Canyon Way
Palm springs, California 92262
Telephone: (760) 323-8204
Facsimile: (760) 323-8332

To Consultant:
RBF Consulting
Attention: Carlos Ortiz, PE, TE, PTOE
14725 Alton Parkway
Irvine, CA 92618-2027
Telephone: (949) 472-3505
Facsimile: (949) 472-8373

10.3 Entire Agreement. This Agreement constitutes the entire agreement between the Parties and supersedes all prior negotiations, arrangements, agreements, representations, and understandings, if any, made by or among the Parties with respect to the subject matter hereof. No amendments or other modifications of this Agreement shall be binding unless executed in writing by both Parties hereto, or their respective successors, assigns, or grantees.

10.4 Severability. Whenever possible, each provision of this Agreement shall be interpreted in such a manner as to be effective and valid under applicable law, but if any provision of this Agreement shall be determined to be invalid by a final judgment or decree of a court of competent jurisdiction, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the reminder of that provision, or the remaining provisions of this Agreement unless the invalid provision is so material that its invalidity deprives either Party of the basic benefit of their bargain or renders this Agreement meaningless.

10.5 Successors in Interest. This Agreement shall be binding upon and inure to the benefit of the Parties' successors and assignees.

10.6 Third Party Beneficiary. Except as may be expressly provided for herein, nothing contained in this Agreement is intended to confer, nor shall this Agreement be construed as conferring, any rights, including, without limitation, any rights as a third-party beneficiary or otherwise, upon any entity or person not a party hereto.

10.7 Recitals. The above-referenced Recitals are hereby incorporated into the Agreement as though fully set forth herein and each Party acknowledges and agrees that such Party is bound, for purposes of this Agreement, by the same.

10.8. Corporate Authority. Each of the undersigned represents and warrants that (i) the Party for which he or she is executing this Agreement is duly authorized and existing, (ii) he or she is duly authorized to execute and deliver this Agreement on behalf of the Party for which he or she is signing, (iii) by so executing this Agreement, the Party for which he or she is signing is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which the Party for which he or she is signing is bound.

(SIGNATURES ON FOLLOWING PAGE)

IN WITNESS WHEREOF, the City and the Consultant have caused this Agreement to be executed the day and year first above written.

ATTEST:
CITY OF PALM SPRINGS, CA

By _____
City Clerk

Date: _____

CONTENTS APPROVED:

By _____
City Manager

Date: _____

By _____
City Engineer

Date: _____

APPROVED AS TO FORM:

By_____
City Attorney

Date: _____

APPROVED BY CITY COUNCIL:

Date: _____ Agreement No. _____

CONSULTANT

Name: **RBF CONSULTING**

Check one: __Individual __Partnership X Corporation

Corporations require two notarized signatures: One signature must be from Chairman of Board, President, or any Vice President. The second signature must be from the Secretary, Assistant Secretary, Treasurer, Assistant Treasurer, or Chief Financial Officer.

Address: 14725 Alton Parkway
Irvine, CA 92618-2027

By:_____
Signature (notarized)

Name:_____

Title:_____

By:_____
Signature (notarized)

Name:_____

Title:_____

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of _____ }

On _____ (Date) before me, _____ (Here Insert Name and Title of the Officer)

personally appeared _____ (Name(s) of Signer(s))

_____,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Place Notary Seal Above

Signature _____ (Signature of Notary Public)

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: _____

☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

EXHIBIT "A"
SCOPE OF SERVICES

General Scope: Evaluate the City of Palm Springs' existing isolated "local" traffic signals and existing interconnected corridors; recommend and design an improved communications system; implement updated traffic signal timing; and specify a central software system. All services shall be provided in compliance with ITS regulations per Caltrans' Local Assistance Program Guidelines, Chapter 12.6 Intelligent Transportation Systems. This project is considered a Minor ITS Project and will follow the traditional Preliminary Engineering procedures. The System Engineering Review Form (SERF) and the Systems Engineering Management Plan (SEMP) will not be subject to Federal Highway Administration review and approval.

Phase One – Environmental Approval and Project Development Services

Environmental Approval – Consultant shall coordinate preparation and approval of a combined CEQA/NEPA Environmental Document. The following technical approach shall be completed following standard City, FHWA, and Caltrans District 8 environmental procedures:

Task 1.1 – Project Kick-Off and Project Description
A work program shall be initiated with an early coordination Environmental Kick-Off Meeting that will define the parameters of the analysis, scheduling and understanding of this project. Based upon concept plan information and supporting data developed under separate engineering tasks, the Consultant shall draft a preliminary project description for review and approval by City and Caltrans District 8 staff.

Deliverables: Project Kick-Off and Project Description

Task 1.2 – Research and Investigation
The Consultant shall evaluate the necessary information with respect to the proposed project. Project research will include coordination with appropriate City departments to acquire relevant environmental data, previous studies for the area and other available files, exhibits, maps and reference documents.

Deliverables: Research and Investigation

Task 1.3 – Preliminary Environmental Study (PES)
In accordance with current Caltrans Guidelines, the Consultant shall prepare a PES Form in support of the engineering and design services. The Consultant shall meet with City staff and Caltrans District 8 to define the project description and schedule and to develop a mutual understanding of the issues and impacts of the project.

The Consultant shall prepare a draft PES Form using the standard Caltrans form. The draft PES Form will be reviewed amongst the project team including City staff, and revised, if necessary. The PES Form will be submitted to Caltrans for signature and distribution to the

project team. Consultant shall attend one field meeting (site visit) as required by Caltrans to discuss possible environmental issues with its staff.

Deliverables: Preliminary Environmental Study (PES)

Task 1.4 – Initial Study / Categorical Exclusion (IS / CatEx)
Through the preparation of an Initial Study, the Consultant shall evaluate the environmental concerns and identify necessary measures to mitigate impacts of the project. Consultant shall utilize the City's standard CEQA forms, making any legislative updates, as necessary under CEQA. The scope of work under this task is for the level of a Mitigated Negative Declaration. Consultant shall also prepare the Categorical Exclusion Form in compliance with NEPA to submit for approval by Caltrans.

Deliverables: Initial Study / Categorical Exclusion

Task 1.5 – Technical Studies
The following reports will be required if ground disturbing activities commence. If Caltrans District 8 determines additional studies beyond what is referenced below as part of the PES form approval, a detailed scope of work will be submitted:

Biological Resources/Natural Environment Study - Minimal Impacts (NES-MI) - A Natural Environment Study (Minimal Impacts) (NES-MI), consistent with current Caltrans guidelines, will be developed based on the results of biological surveys, analyses and data compilation that will be conducted as part of a general plant and wildlife survey. The report will describe (1) the methodology used to conduct the biological surveys; (2) a qualitative description of the existing vegetation types and associated wildlife surveys found within the overall project site; (3) a table with the vegetation types present at each intersection and any potential resource issues; (4) a qualitative impact discussion identifying any potentially significant impacts and the project's relationship to the Coachella Valley Multiple Species Habitat Conservation Plan; and (5) recommend mitigation measures to reduce identified impacts.

Noise Analysis - A preliminary noise analysis will be prepared as part of the Initial Study to support the conclusions that the project will not have a significant environmental impact or that the impacts can be mitigated to a "Less Than Significant" or "No Impact" level. These proposed improvements do the change horizontal and vertical alignments of the roadway network or increase the traffic volumes in the project area. However changes in traffic flow may occur which can have an effect on noise levels generated by the traffic network in the project area near sensitive receiver locations. As part of the noise analysis, a background document review will be conducted of the project vicinity and a windshield survey. A summary will be presented of the results of the background research and fieldwork. It will describe the project setting, identify and describe sensitive receptors, and discuss possible impacts, and potential abatement measures. The documentation will also identify anticipated interagency coordination.

EXHIBIT "A"
SCOPE OF SERVICES

Initial Site Assessment Checklist - An Initial Site Assessment (ISA) checklist will be prepared in accordance with ASTM Standard Practice 1527-00 and the Department's Project Development Manual to determine if the proposed project area has the potential to be compromised by hazardous materials or wastes. The ISA checklist will be prepared based on the following objectives: (1) evaluate the potential for hazardous materials on the site based upon readily discernible and/or documented present and historic uses of the property and uses immediately adjacent to the site, and (2) generally characterize the expected nature of hazardous materials that may be present as a result of such uses. Materials that may constitute a hazardous waste include, but are not limited to petroleum products, pesticides, organic compounds, heavy metals, or other compounds injurious to human health and the environment. Field samples and laboratory analysis are not proposed, although they will be recommended where appropriate.

Cultural Resource Assessment - According to the General Scope of Work in Section III of the RFP, only Task 2 (Fiber Optic Communications) would require ground-disturbing activities and an investigation of the potential impact of the project on cultural and paleontological resources. As described, Task 2 would require approximately 1,800 feet of new conduit and 2,200 feet of new fiber optic cable between the Traffic Management Center and IT Hub. All cultural resources work will be performed in accordance with NEPA, CEQA, Section 106 of the National Historic Preservation Act (NHPA), and Caltrans guidelines and recommended procedures for prehistoric archaeological, historical archaeological, built-environmental, and paleontological resources. Cultural work would include literature searches at the Eastern Information Center (EIC) at the University of California, Riverside, and the San Bernardino County Museum and online databases, as well as archival research, Sacred Lands file searches from the Native American Heritage Commission (NAHC), letters to local Native Americans as recommended by the NAHC, an intensive-level pedestrian survey, recordation and preparation of Department of Parks and Recreation series 523 forms for any finds, and technical report preparation in compliance with Volume 2 of Caltrans' Environmental Handbook. Unless otherwise directed by Caltrans, this inventory will not include collection of cultural material. All technical reports will be submitted for Caltrans' review, and finals filed with District 8 and the EIC. Technical cultural and paleontological resources will include a Historic Property Survey Report (HPSR), an Archaeological Survey Report (ASR), and a combined Paleontological Identification Report (PIR) and Paleontological Evaluation Report (PER).

Deliverables: Technical Studies

Task 2.1 – Existing System Inventory and Evaluation

Existing System Inventory – The Consultant shall obtain all existing reference documentation from the City of Palm Springs, including improvement plans (street, street lights, traffic signals, signal communication, timing plans, signing/striping, etc.), aerial photographs, right-of-way information and other applicable data. The inventory will also include traffic signals/signal communication projects currently underway or planned projects by the

City. It is anticipating that field inventory will be conducted for the 79 signalized intersections and seven (7) project corridors.

The Consultant shall use its standard field form for this purpose that accounts for each piece of intersection data required. Using this form ensures accuracy and completeness during the field review process. For the purpose of the needs assessment, the field review for each intersection will document location and type of existing traffic signal controller/cabinet, signal communication equipment, detection equipment, EVPE system, and signal mast-arm pole location, signal operation and phasing characteristics.

In addition, Inventory of the communication system will also be conducted along the City's corridors including type of communication and location. In addition, a thorough investigation and evaluation of the communication hardware/software at the master controller locations, TMC, and other facilities will be conducted where future connections may be anticipated.

The field review to verify the existing communication equipment at the City's TMC, IT Hub, Police Department, and other building facilities will be conducted along with city staff including staff from the City's IT Department. Field notes and a photo log of the intersections, project corridors, ITS field elements, master controller locations, TMC and other proposed communication facility will be maintained.

Technical Memorandum – A Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize existing system inventory, findings and deficiencies at the signalized intersections, master controller locations/TMC, video detection systems, and communication systems. A citywide map will be included showing the existing signal controller/cabinet locations, video detection systems, and communications systems types, location and routes. Graphics, photos, and field notes will be included.

Deliverables: Existing System Inventory, Technical Memorandum

Task 2.2 – Evaluation of Surrounding Systems

Surrounding Systems Evaluation – The Consultant shall evaluate current and proposed signal system, signal communication systems, and ITS systems with local agencies, including the adjacent cities, and County of Riverside. In addition, the Consultant shall evaluate Caltrans District 8 signal and communication system and provide recommendations for communication with Caltrans on-street master controllers and Caltrans District 8 TMC.

Technical Memorandum – A Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize existing system inventory and evaluation of the surrounding signal systems, signal communication systems and ITS systems. Equipment type, location, and communication protocol will be included. Graphics, photos, and field notes will be included.

Deliverables: Evaluation of Surrounding Systems, Technical Memorandum

Task 2.3 – Assessment of Intelligent Transportation System (ITS) Opportunities

ITS Steering Committee Needs and Opportunities – The Consultant shall establish and coordinate an internal ITS Steering Committee with the stakeholders. It is anticipated that bi-weekly meetings will be held to establish a complete understanding of ITS applications among the stakeholders. It is anticipated that, at a minimum, the following items will be discussed:

- Establish vision, goals, and objectives of the project
- Share information on ITS purpose, benefits, and opportunities
- Identify current and foreseeable problems that can be addressed through ITS
- Provide dialogue regarding transportation and development institutional restrictions and obligations
- Recommend strategies through ITS solutions
- Provide benefit/cost ratios, impacts on current and future staffing, construction precedence, and other relevant issues
- Discuss operations and maintenance of ITS elements

Assessment of Current ITS Needs and Opportunities – The Consultant shall attend meetings with the stakeholders. The Consultant shall prepare and distribute meeting agendas, meeting minutes and an action item matrix to the project team as appropriate.

The Consultant shall address current and future ITS needs using proven and available technology. It is anticipated that under this task, the following will be conducted:

- Review of wireless communications currently deploy between local agencies and Caltrans for signal synchronization
- Review of ITS technology currently use or in the planning stage by adjacent agencies
- Review of current ITS technology
- Development of recommendations incorporating flexibility to adopt and migrate to future technology

The Consultant shall discuss the City's ITS needs including the integration of new and existing ITS components. The following items will be discussed under this Task:

- Communication architecture
- Communication options including DSL, fiber-optics, wireless
- Internet Protocol (IP) based ATMS
- Existing/future video surveillance systems needs
- Future CMS systems needs
- Existing/future other ITS field elements needs
- Upgrade/replacement of traffic management system
- Upgrade of existing signal controllers
- Next generation of 2070 signal controllers
- Upgrade of signal controller software

- Hardware/software needs at the communication hubs
- Hardware/software needs at the City's TMC

Connectivity options with regional stakeholders (Police Department/IT Department/Fire Department, etc.), fiber-optic and wireless communication systems, including Wi-Fi and Wi-Max or 802.16 technologies will be addressed and the communication network topologies will be described in detail. It will also include the recommended communication network topology/topologies for the City of Palm Springs.

Development of ITS Opportunities and Solutions – The Consultant shall develop ITS opportunities and solutions and at minimum will include the following:

- Document issues that need to be addressed with current system
- Define and prioritize future ITS requirements to address stakeholders needs
- Develop specifications for the signal system equipment and communication infrastructure, if it is recommended that the upgrade/replacement of the existing equipment is necessary
- Provide alternatives and recommended solutions to the stakeholders
- Provide combined solutions to stakeholder problems
- Explore communication compatibility issues and needed updates

Technical Memorandum – An ITS Solutions Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Stakeholders needs and opportunities
- Assessment of Current ITS Needs and Opportunities
- Development of ITS Opportunities and Solutions
- List of short term, medium term, and long term solutions

Graphics will be included.

Deliverables: ITS Steering Committee Needs and Opportunities, Assessment of Current ITS Needs and Opportunities, Development of ITS Opportunities and Solutions, Technical Memorandum

Task 2.4 – Assessment of Video Detection Integration

The Consultant shall coordinate closely with City staff to compile all relevant documentation on existing fiber, hardwired, and wireless connection points throughout the affected traffic intersections. In addition, the Consultant shall discuss with City staff the location and the communication infrastructure for the three (3) weather cameras to monitor flood and wind conditions in real time at the White Water River crossings at Indian Canyon Drive, Gene Autry Trail, and Vista Chino. The Consultant shall recommend analyzing the existing communication infrastructure for quality of corridor segments from the furthest reach inward to the TMC.

It is anticipated that City staff will test the fiber optic segments using an optical time domain reflectometer and double-ended loss measurement methodology to document quality of individual cables and dB loss across fiber splices. The Consultant shall evaluate test results and provide recommendations. It is anticipated that City staff will test copper pairs with a megger to perform ground resistance testing of all conductors including the shield, conductor-to-conductor and individual conductors to shield. The resistance continuity reading will determine performance capabilities and maximum bandwidth availability for copper. The Consultant shall evaluate test results and provide recommendations. The Consultant shall recommend that only existing wireless infrastructure in the form of mast installations and antennas be reviewed for usefulness should a modern wireless Ethernet design be considered by the city for the network redesign. Wireless design should be considered for locations that have no existing underground communication infrastructure and it will be not cost effective to provide a hardwired/fiber optic solution.

Based on the existing communication system and recommendations to migrate to an Ethernet based System, the Consultant shall provide the city with a project ITS architecture plan showing the project communication improvements from the field elements to the TMC.

Technical Memorandum – An Assessment Video Detection Integration Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Evaluation Test Results
- Integration Recommendations

Deliverables: Assessment of Video Detection Integration, Technical Memorandum

Task 2.5 – Assessment of Traveler Information: Link Integration

The Consultant shall work with City staff to design a cost effective web based solution for distribution of traffic detection camera based video to multiple destinations.

The Consultant shall work with the City's IT Department to provide an assessment of city's network and provide recommendations to integrate real time information to the public via the City's web and public channel. The project assessment includes combining video and data in scalable applications based on project's requirements for simultaneous display on the City's new TMC video wall, as a source for web based visualization and for public access. The Consultant anticipates building a system based on ITS and NTCIP standards, with design elements to regionally display traffic while building framework that can be replicated to future traffic intersections in a very cost effective manner.

Technical Memorandum – An Assessment of Traveler Information:Link Integration Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Evaluation of City's Network
- Integration Recommendations

Deliverables: Assessment of Traveler Information:Link Integration, Technical Memorandum

Task 2.6 – Project Deployment and Maintenance Plan

Detailed Recommended Technology – Under this section, the Consultant shall provide the system level communications design for the City of Palm Springs. It will indicate detailed traffic signal systems requirements, and communication requirements for the field devices, hub locations and TMC, and requirements for upgrade or replacement of the City's TMC. It will include the City of Palm Springs recommended ITS architecture. This section will identify the recommended technology at each intersection, hub and TMC based on recommendations developed. If a specific communication system is recommended, this section will identify the routing and corridors, device site location, hub locations and the selected transmission technology to be deployed. Recommendations for video surveillance system locations will be included. It will also include a design guideline for communication deployment. This will provide the necessary information on the initial phase of the project to facilitate the deployment of future projects. A communication corridor system architecture exhibit that will show existing communication systems, proposed and future communications systems will be included. The exhibit will show locations of existing, proposed and future controller cabinets, hubs, video detection/surveillance systems, CMS systems, conduit/communication alignments, advanced traveler information system (ATIS), and other future ITS elements.

Recommended Project Priority and Deployment – The Consultant shall provide a specific strategy to implement the ITS elements. This section will present the framework for the deployment of the City of Palm Springs ATMS. Project priorities will be discussed and recommendation will be provided under this section. Priorities will be provided based on preliminary cost estimates, agency needs, local and regional benefits, and associate maintenance levels. Priority ratings (high, medium, low) will be based on the stakeholders feedback on needs and benefits gained. Maps and exhibits will be provided.

Recommended Priority Corridors – The Consultant shall discuss the priority corridors throughout the City of Palm Springs. ITS solutions will be proposed for the City's corridors determined by the City. A project implementation list will be developed by the stakeholders. Based on cost, agency needs, local and regional benefits, time to implement, and associated operations and benefits levels, a priority and implementation plan will be developed. This project priority list will provide the City of Palm Springs with a road map for ITS project deployment. A cost breakdown by implementation phase will be provided. If required, a project implementation schedule will be provided.

Outline of Potential Environmental Documentation Requirements – The Consultant shall identify federal, state, and local environmental requirements for implementation of ITS Projects.

Projected Life Cycle Issues and Costs – The Consultant shall identify projected life cycles of the proposed ITS elements including equipment warranty, maintenance issues and costs

Technical Memorandum – An ITS Solutions Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Detailed Recommended Technology
- Recommended Project Priority and Deployment
- Recommended Priority Corridors
- Recommended Short and Long Term Phasing
- Outline of Potential Environmental Requirements
- Projected Life Cycle Issues and Costs

Deliverables: Detailed Recommended Technology, Recommended Project Priority and Deployment, Recommended Priority Corridors, Outline of Potential environmental Documentation Requirements, Projected Life Cycle Issues and Cost, Technical Memorandum

Task 2.7 – Prepare / Develop System Engineering Management Plan (SEMP)

Develop Systems Engineering Management Plan (SEMP) – The Consultant shall discuss the goals and objectives of the SEMP with City staff. The Consultant shall prepare the SEMP based on the guidelines and requirements developed by the Federal Highway Administration.

The SEMP will address the requirements for the video detection integration design plan, for network elements associated with redesigning the underlying communication infrastructure required to support video data, for the hardware and software required of the Traveler Information upgrade, and for the needs that will be required for the new TMC.

The SEMP will establish a high level description of the systems engineering effort needed for development. The SEMP will be signed and sealed by our Project Manager, a licensed Civil Engineer in the State of California.

Deliverables: System Engineering Plan (SEMP)

Phase Two – Engineering Design (Plans, Specifications, and Engineer's Estimates)

Task 3.1 – Utility Research and Coordination

Utility notifications to the various utility owners within the sphere of the Project will be prepared. The Consultant shall request utility maps from the various utility owners to locate existing

underground and overhead utilities. The Consultant shall interface with the utility owners to horizontally locate the utilities that are located within the right-of-way limits, and identify potential conflicts between existing underground and overhead utility lines and the proposed improvements.

The Consultant shall compile the utility information into a matrix format to include dates of notification, persons/utility notified and responses from utility. Copies of this information will be updated periodically and provided to the City of Palm Springs. It is anticipated that utility research and coordination will be only for the proposed improvements between the City's IT Hub and the TMC.

Deliverables: Utility Research and Coordination

Task 3.2 – Signal Communication Plans

The Consultant shall prepare the following communication plans.

- TYPE 1: Fiber Optic signal communication plans to connect the City's IT Hub with the TMC. The plans will show approximately 1,800 feet of new conduit and 2,200 feet of new fiber optic cable and associated improvements.
- TYPE 2: Signal communication plans along East Palm Canyon and Ramon Road to replace the existing microwave system with an Ethernet communication system.
- TYPE 3: Signal communication plans along N. Palm Canyon Drive, S. Palm Canyon Drive, and Tahquitz Canyon Way to show controller cabinet improvements, video detection system improvements, and signal communication improvements.
- TYPE 4: Intersection improvement plans for improvements at signalized intersections along Indian Canyon Drive, Sunrise Way, Farrell Drive, and isolated signalized intersections. The plans will show improvements at the intersections only to show controller cabinet improvements and video detection system improvements. Communication improvements between signalized intersections will be shown using a construction note only. It is anticipated that up to six (6) intersections ca be shown per sheet.

The signal communication plans design will show signal communication improvements at seventy-nine (79) signalized intersections in order to connect the controller system and video detection/surveillance systems to the TMC via existing/proposed communication system. Preparation of a total of 25 sheets is estimated to be prepared for this project.

All new field elements and field element upgrades will be shown on the plans. Additional equipment upgrades, modifications, termination hardware and related improvements necessary for an effective and efficient communication system will be shown on the plans.

A title sheet for the project plans will be prepared in accordance with City of Palm Springs standards. The signal communication plans will be prepared based on record drawings, City

GIS maps, aerial drawings, and site visits, at 1"=40' scale and in accordance with standards set forth by the City of Palm Springs and Caltrans.

Three (3) Communication detail sheets will be included showing details for pull boxes, conduit sweeps, trenching, video detection/surveillance installation, TMC equipment upgrades, and general notes. The plans will be prepared in AutoCAD.

Deliverables: Signal Communication Plans (25), Title Sheet (1), Details (3)

Task 3.3 - Technical Specifications

The Consultant shall prepare Bid-ready Technical Specifications for inclusion in the City's construction bid documents. The Technical Specifications will include specifications for all the required traffic signal equipment (including controllers, cabinets, video detection/surveillance systems, etc.), signal communication system, communication system at the hubs and TMC, hardware/software communication improvements at the TMC, and any additional item that may be required for a complete communication system (cabinet upgrades, testing requirements, system integration, training, etc.). The specifications will conform to the applicable standards and specifications from the City of Palm Springs and Caltrans.

Deliverables: Project Technical Specifications

Task 3.4 - Engineer's Estimates

The Consultant shall prepare construction quantity take-offs and construction cost estimates in accordance with City and Caltrans requirements for the proposed traffic signal upgrades, signal communication system improvements, TMC improvements, and related improvements. The cost estimate will be based on cost data from similar current projects. The engineer's construction cost estimates will be prepared in MS Excel format for use by the City to advertise for bids.

Deliverables: Engineer's Estimates

Task 3.5 –Signal Timing Data Collection

The collection of various types of data will be required in this Task to adequately develop the network model and complete intersection and arterial analysis. The data collection effort will be wide ranging and each piece of data needs to be accounted for to proceed successfully. Data collection will focus on the following four areas:

- Traffic Count Data
  - 24-hour machine counts (using 2010 CVAG data)
  - Turning movement counts
- Intersection Data
  - Signal phasing & minimum timing values (using existing City timing sheets)

  - Lane configurations
  - Intersection measurements
  - Photo logs
- System Data
  - Intersection spacing
  - Existing crossing arterial synchronization
- Before/After Study Data

Traffic Count Data – The Consultant shall analyze 2010 CVAG 24-hour traffic volume data to determine the peak periods for each of the five project corridors. After approval of the recommended peak periods, turning movement counts will be manually collected at 15-minute intervals over a 4-hour period for each of the 75 project intersections (excluding pedestrian traffic services) during a weekday a.m. and p.m. peak periods.

Intersection Data – *Signal phasing and timing values.* Existing traffic signal timing sheets for each project intersection will be collected from the City. To facilitate accessibility to this information and streamline the coding of the corridor model in Synchro 7.0, Consultant shall prepare phasing summary worksheets that contain the basic information collected from each signal-timing sheet.

Lane configurations and measurements. The Consultant shall perform an intersection field review using a standard field form that accounts for each piece of intersection data required for the intersection analysis. Using this form ensures uniformity and completeness during the field review process. The field review for each intersection will document the posted approach speeds; intersection geometric conditions including lane configurations, lane widths, turning lane storage length, and medians; signal operation and phasing characteristics, i.e., split-phasing, left turn phasing or right turn overlaps. Special turn restrictions or controls that may be present will also be noted. A photo log will be completed for each intersection.

System Data - *Intersection Spacing.* Initial distances for intersection spacing will be obtained from geographic coordinates (latitude and longitude) that will be collected for each project intersection. The distances will then be calibrated to reflect the actual horizontal roadway alignment using the average of the travel distances collected with a GPS receiver (and recorded in the Tru-Traffic software) during the collection of travel-time data.

Crossing Arterial Synchronization. Existing or proposed synchronized arterials that cross other project arterials will have optimized timing for vehicle platoon progression developed that mutually benefits each arterial. Cycle length, offset and splits that have been assigned to one synchronized crossing arterial will be maintained to preserve the synchronization on the second corridor if the cycle lengths of the two arterials are compatible. However, if the cycle lengths between the two routes are not compatible, then synchronization for one of the arterials may be compromised.

Before Study with Measures of Effectiveness (MOE) Report – A Before Study will be conducted under this task to gather travel-time, delay, and free-flow speed data for each of the project corridors listed in Table 1 during a typical weekday peak period—a.m. and p.m. This measured free-flow speed information will be used in the timing analysis and development. Additionally, the Before Study will identify the base Measure of Effectiveness (MOE) conditions (arterial LOS, fuel savings, stops, delays, travel time, noxious air emissions) from which the effects of the synchronization plans will be evaluated.

The travel-time data will be collected using the floating car method, a laptop computer, a GPS receiver unit, and the Tru-Traffic (TS/PP Draft) software. Using this method to collect travel–time data requires each project intersection to be georeferenced in the Tru-Traffic software. For project verification an After Study mirroring the Before Study will be conducted immediately following Task 3.7, "Implementation", and submitted to the City at project completion. An After Study will gather travel-time, delay, and running-speed data for the project corridor between the project limits during the a.m. and p.m. peak periods. The After Study will identify the post Measure of Effectiveness (MOE) conditions (arterial LOS, fuel savings, stops, delays, travel time, noxious air emissions) which will be compared to the Before Study baseline. This comparison will be utilized to determine the effectiveness of the final proposed timing plans.

Deliverables: Field review and signal timing summary worksheets, AM and PM Peak Hour turning movement counts (4-hours/int.; 75 intersections), Before/After study for two (2) weekday periods – AM and PM for seven project corridors

Task 3.6 – Network Modeling

Intersection and Arterial Analysis – Consultant shall prepare a network model using Synchro 7.0 that includes each of the project corridors listed in Table 1 and each of the 61 interconnected project intersections using the data collected in Task 3.5. Following the preparation of the network model, peak-hour volume totals for each intersection will be coded into the model for each timing plan. Two (2) timing plans – a.m. and p.m. – for a typical weekday will be developed. The specific time periods for these timing plans will be determined based on the identified peaks from the 24-hour machine counts, and field observation.

TABLE 1
BEFORE/AFTER STUDY CORRIDORS

PROJECT CORRIDOR	LIMITS
North Palm Canyon Drive	Tachevah Drive to Desert Fashion Plaza
South Palm Canyon Drive	Tahquitz Canyon Way to Camino Real
East Palm Canyon Drive	Camino Real to Cherokee Way
Indian Canyon Drive	Tachevah Drive to Ramon Road
Sunrise Way	Tachevah Drive to Mesquite Avenue
Tahquitz Canyon Way	Calle Encilia to El Cielo Road
Ramon Road	Calle Encilia to Crossley Road

EXHIBIT "A"
SCOPE OF SERVICES

At the eighteen (18) isolated "local" traffic signals identified in the RFP, Consultant shall evaluate critical signal timing parameters and settings for optimal and safe traffic signal operation during "free" operation. This evaluation includes using peak hour turning movement counts to complete a critical movement analysis for these intersections. This analysis will determine the allocation of green time to the critical movements in proportion to their flow ratios. The maximum green settings for the traffic-actuated signal controllers will be established by applying a factor to the green-time allocation. This factor accounts for fluctuations in traffic flow and the operation of the traffic-actuated signal controller. Items to be reviewed include the following:

- Pedestrian clearance intervals
- Yellow times
- All-red times
- Maximum green times

The timing optimization process will began with the cycle length evaluation process that will identify timing anchor points in the system that will influence and control the synchronization on the project corridors. Timing anchor points for this project will be existing synchronized corridors, intersections with large pedestrian clearance times, and intersections with high volume-to-capacity ratios for the critical movements.

Cycle length will be determined by completing a critical movement analysis at each project intersection that considers the degree of saturation (volume-to-capacity) for each lane group while considering the constraints imposed by minimum phase time requirements such as total pedestrian intervals. Consultant shall discuss the results of the network analysis, the cycle evaluation, and the time-space diagrams and the anticipated improvements with the City's Project Manager.

Consultant shall develop an operational microscopic model within SimTraffic. The microscopic model will be used to understand the effects of existing and proposed corridor operations, to adjust timing plans prior to implementation. Consultant shall identify operational deficiencies at each project intersection through the course of the arterial analysis. These operational deficiencies could include: A lack of queue storage for turning movements; signal phasing issues; closely spaced intersections with limited queue storage; or intersections with highly saturated vehicle movements. Consultant shall provide the City with a list of the identified deficiencies and a list of potential corrective actions which may be taken.

Once the cycle length is determined the green allocation for vehicle movements will be calculated. The intersection synchronization timing will include cycle, offset, splits and phase sequencing, which will be graphically represented on the time-space diagrams. Time-space diagrams will be prepared using the Tru-Traffic software. The provided diagrams will be to scale (horizontally and vertically), in color and 11" x 17" in size. The Tru-Traffic software allows for the direct import of Synchro 7.0 files thereby removing any program input redundancy.

Deliverables: Synchro 7.0 corridor model, Time-space diagrams for two (2) weekday timing plans – AM and PM

Task 3.7 – Implementation and Verification

Upon approval of the network model and cycle evaluation by the City, the Consultant shall proceed to organize and convert the synchronization timing parameters—cycle, offset, splits and phase sequencing—from the Synchro model into a format for entry into the signal controllers.

New timing will be provided to the City in an Excel format and the Consultant shall work with City staff to input the synchronization timing parameters directly into the City's Advanced Traffic Management System (ATMS) for download to the Model 170E controllers. Observation and evaluation of the signal timing will occur during periods applicable to the new timing plans will immediately follow implementation. The Consultant shall closely observe traffic flow and make recommendations for adjustments, as needed, to the intersection timing.

The fine-tuning process will involve using a floating car, a laptop computer, and the Tru-Traffic software connected to a portable GPS receiver unit that provides a real-time, dynamic display of the time-distance trajectory on the time-space diagram. Following the syncing of the Tru-Traffic software with the signal system in the field, the floating car can travel through the system observing and predicting, with great precision, the operation of the system and pinpoint problem areas that need attention.

The project corridors are expected to be observed and fine-tuned over a one week period. Platoon progression and any impacts to left-turning and side-street traffic will be observed and adjusted.

Deliverables: Network model timing plans (MS Excel format), Timing implementation, Observe and evaluate timing

Task 3.8 –Intersection Graphics

The Consultant shall prepare custom intersection graphics for the City's new ATMS for each of the 79 project intersections. The intersection graphics will be based on the completed Consultant field review forms and signal timing sheets, only.

The graphics prepared for each location will include the basic geometric configuration (i.e., intersection angles, number of lanes and unique intersection features), movement indications, and detection. Integration of the intersection graphics into the ATMS software is not proposed as part of this work effort. Consultant shall provide one preliminary submittal to the City of sample intersection graphics for review and discussion purposes. Specific discussion items will include the color, fonts, and other display information. Following approval of the final graphic scheme by the City, production of intersection graphics will proceed. Consultant shall submit

the intersection graphics to the City at the 90% level of completion for review and comment. After incorporating comments received during the 90% review, final intersection graphics will be submitted to the City.

Deliverables: Custom ATMS intersection graphics for 79 locations

Task 3.9 - Project Management and Coordination

Consultant shall actively coordinate the Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project with all involved agencies to facilitate project delivery. The Consultant shall coordinate with City staff, and City Departments including Information Technology Services; and Caltrans. Management support will be provided to resolve any project design scope and scheduling changes. To ensure timely delivery of the project deliverables, Consultant shall actively be involved at all levels to direct the day-to-day design activities and to identify and resolve critical design issues early on. Project coordination with the City Project Manager will include progress reports and regular communication via email and telephone.

Deliverables: Project Management and Coordination

Task 3.10 - Meetings

The Consultant shall attend meetings with the City of Palm Springs, Caltrans and others as directed by the City to discuss design issues, progress schedule, conduct field analysis and provide technical design clarification. Meetings will also consist of any specific meeting called by the City, or other agency, at which Consultant's attendance is requested.

The Consultant shall prepare and distribute meeting minutes and an action item matrix to the project team as appropriate. The Consultant shall provide progress report and schedules that will include completion and milestones for each task including meetings. The progress report and schedule will be provided to the City on a monthly basis.

For budgetary purposes, six (6) meetings have been allocated to this task.

Deliverables: Attendance at Meetings (6) Meetings

Phase Three -- Construction Administration Services

Construction administration services shall be incorporated herein upon authorization and approval by the City, subject to a contract amendment to incorporate the associated contract fees for this phase.

END OF EXHIBIT "A"

EXHIBIT "B"
SPECIAL REQUIREMENTS

Add the following to Section 2.0, Compensation:

Section 2.5, Cost Principles. The Cost Principles and Procedures, 48 CFR, Federal Acquisition Regulations System, Chapter 1, Part 31 et seq., are the governing factors regarding allowable elements of cost. The administrative requirements set forth in 49 CFR, Part 18, Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments, is hereby included by reference. The provisions of this section shall apply to all subcontracts in excess of $25,000.

Add the following to Section 2.0, Compensation:

Section 2.6, General Compliance with Laws and Wage Rates. Consultant warrants that its cost proposal, approved by City and identified on the Schedule of Compensation as set forth in Exhibit "E", complies with all federal, state and local laws and ordinances applicable to the work, including compliance with prevailing wage rates and their payment in accordance with California Labor Code, Section 1775.

Add the following to Section 4.0, Coordination of Work:

Section 4.5, Subcontracts. Any subcontracts or contractual arrangements ("subcontracts") between the Consultants and other parties ("subcontractors") entered into in the performance of this Agreement to which the City is not named shall include all applicable provisions of this Agreement and the Consultant shall require that its subcontractors thereby comply with all such applicable provisions.

Section 7.5, Audit and Inspection of Records, the following sentence shall be added at the end of the paragraph:

Consultant's records shall be available for inspection by City, the state of California Department of Transportation, and the Federal Highway Administration, or their duly authorized representatives. This section shall also apply to all subcontracts in excess of $25,000.

Add the following to Section 10.0, Miscellaneous Provisions:

Section 10.9, Covenant Against Contingent Fees. The Consultant warrants that he/she has not employed or retained any company or person, other than a bona fide employee working for the consultant; to solicit or secure this agreement; and that he/she has not paid or agreed to pay any company or person other than a bona fide employee, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award, or formation of this agreement. For breach or violation of this warranty, the City shall have the right to annul this agreement without liability, or at its discretion; to deduct from

the agreement price or consideration, or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

Add the following to Section 10.0, Miscellaneous Provisions:

Section 10.10, Patent Rights. This agreement includes herein by reference applicable patent rights provisions described in 41 CFR 1-9.1 regarding rights to inventions.

Add the following to Section 10.0, Miscellaneous Provisions:

Section 10.11, Endorsement. The responsible consultant/engineer shall sign all plans, specifications, estimates (PS&E) and engineering data furnished by him/her, and where appropriate, indicate his/her California registration number.

Add the Following to Section 10.0, Miscellaneous Provisions:

Section 10.12, Disadvantaged Business Enterprise (DBE) Requirements.

The City has established an Underutilized DBE goal for this Agreement of 1.25%.

1. **TERMS AS USED IN THIS DOCUMENT**

- The term "Disadvantaged Business Enterprise" or "DBE" means a for-profit small business concern owned and controlled by a socially and economically disadvantaged person(s) as defined in Title 49, Part 26.5, Code of Federal Regulations (CFR).
- The term "Underutilized Disadvantaged Business Enterprise" or "UDBE." DBE classes that have been determined in the 2007 Caltrans Disparity Study to have a statistically significant disparity in their utilization in previously awarded transportation contracts. UDBEs include: African Americans, Native Americans, Asian-Pacific Americans, and Women.
- The term "Agreement" also means "Contract."
- Agency also means the local entity entering into this contract with the Contractor or Consultant.
- The term "Small Business" or "SB" is as defined in 49 CFR 26.65.
- The term "Department" means the "California Department of Transportation" or "Caltrans"

2. **AUTHORITY AND RESPONSIBILITY**

A. DBEs and other small businesses are strongly encouraged to participate in the performance of Agreements financed in whole or in part with federal funds (See 49 CFR 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs"). The Contractor should ensure that DBEs and other small businesses have the opportunity to participate in the performance of the work that is the subject of this solicitation and should take all necessary and reasonable steps for this

assurance. The proposer shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts.

B. Proposers are encouraged to use services offered by financial institutions owned and controlled by DBEs.

3. **SUBMISSION OF UDBE AND DBE INFORMATION**

A "Local Agency Proposer UDBE Commitment (Consultant Contract)" (Exhibit 10-O1) form is included with required contract forms in Exhibit "G". The Consultant warrants that it has either met the UDBE goal, or has demonstrated good faith efforts to meet the goal established for the contract. Only UDBE participation will be counted towards the contract goal; however, all DBE participation shall be collected and reported. Consultant shall submit a completed Exhibit 10-O1 form to City prior to commencing work.

A "Local Agency Proposer DBE Information (Consultant Contract)" (Exhibit 10-O2) form is included with required contract forms in Exhibit "G". The purpose of the form is to collect data required under 49 CFR 26. For contracts with UDBE goals, this form collects DBE participation by DBEs owned by Hispanic American and Subcontinent Asian Americans males (persons whose origin are from India, Pakistan, Bangladesh, Bhutan, Maldives Islands, Nepal or Sri Lanka).

4. **DBE PARTICIPATION GENERAL INFORMATION**

It is the Consultant's responsibility to be fully informed regarding the requirements of 49 CFR, Part 26, and the Department's DBE program developed pursuant to the regulations. Particular attention is directed to the following:

A. A DBE must be a small business firm defined pursuant to 13 CFR 121 and be certified through the California Unified Certification Program (CUCP).

B. A certified DBE may participate as a prime contractor, subcontractor, joint venture partner, as a vendor of material or supplies, or as a trucking company.

C. A UDBE firm not proposing as a joint venture with a non-DBE, will be required to document one or a combination of the following:

   1. The firm is a UDBE and will meet the goal by performing work with its own forces.
   2. The firm will meet the goal through work performed by UDBE subcontractors, suppliers or trucking companies.
   3. The firm, prior to proposing, made adequate good faith efforts to meet the goal.

D. 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.

E. A DBE must perform a commercially useful function pursuant to 49 CFR 26.55, that is, a DBE firm 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.

F. The firm shall list only one subcontractor for each portion of work as defined in their proposal and all DBE subcontractors should be listed in the bid/cost proposal list of subcontractors.

G. A firm acting as the prime consultant who is a certified DBE is eligible to claim all of the work in the Agreement toward the DBE participation except that portion of the work to be performed by non-DBE subcontractors.

5. RESOURCES

A. The CUCP database includes the certified DBEs from all certifying agencies participating in the CUCP. If you believe a firm is certified that cannot be located on the database, please contact the Caltrans Office of Certification toll free number 1-866-810-6346 for assistance. Firms may call (916) 440-0539 for web or download assistance.

B. Access the CUCP database from the Department of Transportation, Civil Rights, Business Enterprise Program web site at: http://www.dot.ca.gov/hq/bep/.

- Click on the link in the left menu titled Disadvantaged Business Enterprise
- Click on Search for a DBE Firm link
- Click on Access to the DBE Query Form located on the first line in the center of the page
- Searches can be performed by one or more criteria
- Follow instructions on the screen

C. How to Obtain a List of Certified DBEs without Internet Access

D. DBE Directory: If you do not have Internet access, Caltrans also publishes a directory of certified DBE firms extracted from the online database. A copy of the directory of certified DBEs may be ordered at: http://caltrans-opac.ca.gov/publicat.htm

6. MATERIALS OR SUPPLIES PURCHASED FROM DBES COUNT TOWARDS DBE CREDIT, AND IF A DBE IS ALSO A UDBE, PURCHASES WILL COUNT TOWARDS THE UDBE GOAL UNDER THE FOLLOWING CONDITIONS:

A. If the materials or supplies are obtained from a DBE manufacturer, count 100 percent of the cost of the materials or supplies. A DBE manufacturer is a firm that operates or maintains a factory, or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Agreement and of the general character described by the specifications.

B. If the materials or supplies purchased from a DBE regular dealer, count 60 percent of the cost of the materials or supplies. A DBE regular dealer is a firm that owns, operates or

maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Agreement are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a DBE regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a DBE regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business provided in this section.

7. STANDARD AGREEMENT FOR SUBCONTRACTOR/DBE PARTICIPATION

1. Subcontractors

A. Nothing contained in this Agreement or otherwise, shall create any contractual relation between the City and any subcontractors, and no subcontract shall relieve the Consultant of his/her responsibilities and obligations hereunder. The Consultant agrees to be as fully responsible to the City for the acts and omissions of its subcontractors and of persons either directly or indirectly employed by any of them as it is for the acts and omissions of persons directly employed by the Consultant. The Consultant's obligation to pay its subcontractors is an independent obligation from the Agency's obligation to make payments to the Consultant.

B. Any subcontract in excess of $25,000, entered into as a result of this Agreement, shall contain all the provisions stipulated in this Agreement to be applicable to subcontractors.

C. Consultant shall pay its subcontractors within ten (10) calendar days from receipt of each payment made to the Consultant by the Agency.

D. Any substitution of subcontractors must be approved in writing by the Agency's Contract Manager in advance of assigning work to a substitute subcontractor.

2. Disadvantaged Business Enterprise (DBE) Participation

A. This Agreement is subject to 49 CFR, Part 26 entitled "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs." Firms who obtain DBE participation on this contract will assist Caltrans in meeting its federally mandated statewide overall DBE goal.

B. If the contract has an underutilized DBE (UDBE) goal, the Consultant must meet the UDBE goal by committing UDBE participation or document a good faith effort to meet the goal. If a UDBE subconsultant is unable to perform, the Consultant must make a good faith effort to replace him/her with another UDBE subconsultant, if the goal is not otherwise met. A UDBE is a firm meeting the definition of a DBE as specified in 49 CFR and is one of the following groups: African Americans, Native Americans, Asian-Pacific Americans, or Women.

C. DBEs and other small businesses, as defined in 49 CFR, Part 26 are encouraged to participate in the performance of agreements financed in whole or in part with federal funds. The Consultant, sub-recipient or subconsultant shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Agreement. The Consultant

shall carry out applicable requirements of 49 CFR, Part 26 in the award and administration of US DOT- assisted agreements. Failure by the Consultant to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the recipient deems appropriate.

D. Any subcontract entered into as a result of this Agreement shall contain all of the provisions of this section.

3. **Performance of DBE Consultant and other DBE Subconsultants/Suppliers**

A. A DBE performs a commercially useful function when it is responsible for execution of the work of the Agreement and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible with respect to materials and supplies used on the Agreement, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether a DBE is performing a commercially useful function, evaluate the amount of work subcontracted, industry practices; whether the amount the firm is to be paid under the Agreement is commensurate with the work it is actually performing; and other relevant factors.

B. A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, Agreement, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, examine similar transactions, particularly those in which DBEs do not participate.

C. If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its Agreement with its own work force, or the DBE subcontracts a greater portion of the work of the Agreement than would be expected on the basis of normal industry practice for the type of work involved, it will be presumed that it is not performing a commercially useful function.

4. **Prompt Payment of Funds Withheld to Subcontractors**

A. No retainage will be held by the City from progress payments due the prime Consultant. Any retainage held by the prime Consultant or subconsultants from progress payments due subconsultants shall be promptly paid in full to subconsultants within 30 days after the subconsultant's work is satisfactorily completed. Federal law (49 CFR26.29) requires that any delay or postponement of payment over the 30 days may take place only for good cause and with the City's prior written approval. Any violation of this provision shall subject the violating prime consultant or subconsultant to the penalties, sanctions and other remedies specified in Section 7108.5 of the Business and Professions Code. These requirements shall not be construed to limit or impair any contractual, administrative, or judicial remedies, otherwise available to the prime consultant or subconsultant in the event of a dispute involving late payment or nonpayment by the prime consultant, deficient subconsultant performance, or noncompliance by a subconsultant. This provision applies to both DBE and non-DBE prime consultant and subconsultants.

B. Any subcontract entered into as a result of this Agreement shall contain all of the provisions of this section.

5. **DBE Records**

A. The Consultant shall maintain records of materials purchased and/or supplied from all subcontracts entered into with certified DBEs. The records shall show the name and business address of each DBE or vendor and the total dollar amount actually paid each DBE or vendor, regardless of tier. The records shall show the date of payment and the total dollar figure paid to all firms. DBE prime consultants shall also show the date of work performed by their own forces along with the corresponding dollar value of the work.

B. Upon completion of the Agreement, a summary of these records shall be prepared and submitted on the form entitled, "Final Report-Utilization of Disadvantaged Business Enterprise (DBE), First-Tier Subcontractors," CEM-2402F (Exhibit 17-F, Chapter 17, of the LAPM), certified correct by the Consultant or the Consultant's authorized representative and shall be furnished to the Contract Manager with the final invoice. Failure to provide the summary of DBE payments with the final invoice will result in 25% of the dollar value of the invoice being withheld from payment until the form is submitted. The amount will be returned to the Consultant when a satisfactory "Final Report-Utilization of Disadvantaged Business Enterprises (DBE), First-Tier Subcontractors" is submitted to the Contract Manager.

C. Prior to the fifteenth of each month, the Consultant shall submit documentation to the Agency's Contract Manager showing the amount paid to DBE trucking companies. The Consultant shall also obtain and submit documentation to the Agency's Contract Manager showing the amount paid by DBE trucking companies to all firms, including owner-operators, for the leasing of trucks. If the DBE leases trucks from a non-DBE, the Consultant may count only the fee or commission the DBE receives as a result of the lease arrangement.

6. **DBE Certification and Decertification Status**

If a DBE subconsultant is decertified during the life of the Agreement, the decertified subconsultant shall notify the Consultant in writing with the date of decertification. If a subconsultant becomes a certified DBE during the life of the Agreement, the subconsultant shall notify the Consultant in writing with the date of certification. Any changes should be reported to the City's Contract Manager within 30 days

Materials or supplies purchased from DBEs will count towards DBE credit, and if a DBE is also a UDBE, purchases will count towards the UDBE goal under the following conditions:

A. If the materials or supplies are obtained from a DBE manufacturer, 100 % of the cost of the materials or supplies will count toward the DBE participation. A DBE manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Agreement and of the general character described by the specifications.

EXHIBIT "B"
SPECIAL REQUIREMENTS

B. If the materials or supplies purchased from a DBE regular dealer, count 60% of the cost of the materials or supplies toward DBE goals. A regular dealer is a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Agreement, are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business provided in this section.

C. If the person both owns and operates distribution equipment for the products, any supplementing of regular dealers' own distribution equipment, shall be by a long-term lease agreement and not an ad hoc or Agreement-by-Agreement basis. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this section.

D. Materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, will be limited to the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on the job site, provided the fees are reasonable and not excessive as compared with fees charged for similar services.

END OF EXHIBIT "B"

EXHIBIT "C"
CITY'S REQUEST FOR PROPOSALS

CITY'S REQUEST FOR PROPOSALS FOLLOWS THIS PAGE

CITY OF PALM SPRINGS, CA
REQUEST FOR PROPOSALS (RFP) #07-10
CITYWIDE TRAFFIC SIGNAL INTERCONNECT UPGRADE &
TRAFFIC MANAGEMENT CENTER
CITY PROJECT NO. 08-04
FEDERAL AID PROJECT NO. CML 5282 (031)

Requests for Proposals (RFP #07-10), for professional services related to the Citywide Traffic Signal Interconnect Upgrade & Traffic Management Center for the City of Palm Springs, CA, (hereinafter the "RFP") will be received at the Office of Procurement & Contracting, 3200 East Tahquitz Canyon Way, Palm Springs, California, until **2:00 P.M. LOCAL TIME, THURSDAY, DECEMBER 10, 2009.** It is the responsibility of the respondent to see that any submittal sent through the mail, or any other delivery method, shall have sufficient time to be received by this specified date and time. The receiving time in the Procurement Office will be the governing time for acceptability of RFP submittals. Telegraphic, telephonic, faxed or emailed RFP submittals will not be accepted. Late RFP submittals will be returned unopened. Failure to register as a Respondent to this RFP process per the instructions in the Notice Inviting Requests for Proposals (under "Obtaining RFP Documents") may result in not receiving Addenda or other important information pertaining to this process. Failure to acknowledge Addenda may render a submittal as being non-responsive. We **strongly advise** that interested firms officially register per the instructions.

1. PURPOSE AND SCHEDULE: The City of Palm Springs is requesting proposals from qualified professional firms to provide the City with traffic engineering design services related to the Citywide Traffic Signal Interconnect Upgrade & Traffic Management Center, City Project No. 08-04, Federal Aid Project No. CML 5282 (031) (hereinafter the "Project"). The selected firm will be expected to provide required professional services (including environmental services) to prepare plans, specifications and estimates ("PS&E"), and turn-key construction inspection and administration services for implementing the Project.

The Project is considered a Minor Intelligent Transportation System ("ITS") project and the consultant shall comply with the federal ITS regulations, in accordance with the Code of Federal Regulations, Chapter 23, Section 940 (23 CFR 940), entitled "Intelligent Transportation System Architecture and Standards".

The Project is made possible by funding through the Congestion Mitigation and Air Quality ("CMAQ") federal aid program provided through the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users ("SAFETEA-LU"). All federal aid funds programmed on local agency projects are coordinated through the California Department of Transportation ("Caltrans"), and the selected firm will be expected to provide all necessary coordination with Caltrans required to successfully implement the Project through all phases of work.

The selected firm will be required to demonstrate adequate experience coordinating federally funded projects through Caltrans – District 8 (San Bernardino/Riverside counties), including the time and personnel commitments required to pursue federal environmental approvals with Caltrans District 8 staff. Staff from the selected firm assigned to work on this Project must have relevant experience with Caltrans District 8, including knowledge of and experience with the Caltrans Local Assistance Procedures Manual and other related guidelines.

SCHEDULE:
Notice requesting Statements of Qualifications posted and issued ..... November 2, 2009
Deadline for receipt of Questions..... Monday, November 30, 2009, 2:00 P.M.
Deadline for receipt of RFP Submittals .....**Thursday, December 10, 2009, 2:00 P.M.**
Short List / Interviews/Technical & Cost Proposals ..... to be determined
Contract awarded by City Council..... to be determined

2. BACKGROUND: On April 30, 2007, the Coachella Valley Association of Governments ("CVAG") approved a Call for Projects for CVAG and its member jurisdictions using CVAG's allocation of CMAQ funds made available through SAFETEA-LU.

In July 2007, the Public Works and Engineering Department responded to CVAG's Call for Projects for CMAQ funding, requesting consideration of funding to analyze all of the City's arterial corridors to upgrade the traffic signal interconnect systems with current technology, and to create a modern traffic management center at City Hall. The purpose of the City's request is to upgrade selected isolated "local" traffic signals with video detection, and to repair and improve all of the existing interconnected corridors with modern communication systems that are capable of being remotely monitored and have greater reliability. Associated with the project is traffic engineering analysis to obtain existing traffic volume turning counts at key major intersections along the interconnected corridors from which new updated traffic signal interconnect timing plans can be prepared and implemented; and to evaluate existing traffic signal timing at isolated "local" traffic signals. A list of the City's signalized intersections and interconnected corridors is included as Attachment 1.

The City's application to CVAG requested $1,843,000 in CMAQ federal funds for an estimated $2,082,000 project, consistent with the CMAQ federal program reimbursement rate of 88.53% of project costs. A copy of the City's application is included as Attachment 2.

As a federally funded project, the Project requires environmental clearance pursuant to both the California Environmental Quality Act ("CEQA") and the National Environmental Policy Act ("NEPA"). The City is the Lead Agency with regard to CEQA, and the Federal Highway Administration ("FHWA") has delegated its authority for NEPA to Caltrans. The selected firm will be required to provide professional services necessary to obtain CEQA and NEPA approvals. Given the scope of the Project, it is anticipated that the Project will require an Initial Study leading to a Mitigated Negative Declaration ("IS / MND") in accordance with CEQA regulations; and the Project will require a Categorical Exclusion in accordance with NEPA regulations.

The City has established a budget of approximately $225,000 for this phase of the Project.

3. SCOPE OF WORK:

The scope of work will consist of the preparation of Environmental Documents and Technical Studies and all other related documents and/or reports to comply with applicable local, state and federal regulations, policies, procedures, manuals and standards necessary to obtain CEQA/NEPA environmental approvals; preparation of Plans, Specifications and Estimates (PS&E) for the Project; and turn-key construction inspection and administration. The Project will be divided into the following three phases:

Phase One: Environmental Approval & Project Development
Phase Two: Engineering Design (Plans, Specifications and Estimates [PS&E])
Phase Three: Construction Administration

Please refer to Attachment 3 for a General Scope of Work for each phase of the Project.

4. PROPOSAL REQUIREMENTS:

Disadvantaged Business Enterprise (DBE) Requirements:

As this project is funded in part by federal funds, the selected firm's final contract is subject to applicable provisions of the Caltrans Disadvantaged Business Enterprise (DBE) Program Plan as it relates to local agencies. The DBE Program Plan is prepared in accordance with U.S. Department of Transportation (DOT), 49 CFR, Part 26 regulations.

Firms replying to this RFP shall review the Notice to Proposers – Disadvantaged Business Enterprise Information (Exhibit 10-I), included as Attachment 4 to this RFP. Additionally, firms should review the Caltrans Local Assistance Procedures Manual ("LAPM"), Chapter 10 "Consultant Selection", to be aware of the Caltrans regulations and requirements if being selected for the Project. The City will be utilizing the "One Step RFP" process as identified in the Chapter 10 of the LAPM, which is available on the Caltrans website at: http://www.dot.ca.gov/hq/LocalPrograms/lam/prog_p/p10consult.pdf.

It is the policy of the City of Palm Springs to ensure that DBE's, as defined in 49 CFR, Part 26, have an equal opportunity to receive and participate in federal-aid contracts. It is also the City's policy:

- To ensure nondiscrimination in the award and administration of DOT-assisted contracts.
- To create a level playing field on which DBE's can compete fairly for DOT-assisted contracts.
- To ensure that the City's annual overall DBE participation percentage is narrowly tailored, in accordance with applicable law.
- To ensure that only firms that fully meet 49 CFR, Part 26 eligibility standards are permitted to participate as DBE's.
- To help remove barriers to the participation of DBE's in DOT-assisted contracts.
- To assist the development of firms that can compete successfully in the market place outside the DBE Program.

DBE's and other small businesses are strongly encouraged to participate in the performance of Agreements financed in whole or in part with federal funds (See 49 CFR, Part 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs"). Firms submitting a proposal in reply to this RFP should ensure that DBE's and other small businesses have the opportunity to participate in the performance of the work that is

the subject of this solicitation and should take all necessary and reasonable steps for this assurance. Firms shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of its subcontracts.

Firms are encouraged to use services offered by financial institutions owned and controlled by DBE's.

The City of Palm Springs has established an Annual Anticipated DBE Participation Level (AADPL), which is the level of participation that the City would expect DBEs to achieve in the absence of discrimination and the effects of past discrimination on federal-aid contracts awarded by the City in a given Federal Fiscal Year (FFY).

The City of Palm Springs operates under a state-wide DBE Program administered by Caltrans. Effective February 27, 2009, Caltrans implemented the race-conscious component of its DBE program. Federal-aid contracts will contain varying percentages of Underutilized Disadvantaged Business Enterprises (UDBE) participation goals that selected firms will be required to meet or, alternatively, perform a good-faith effort to meet as a condition of award of a contract. Under the race-neutral component of the program, Caltrans will continue to encourage the use of DBEs. Only UDBEs will count toward the contract participation goal.

For Fiscal Year 2009/2010, the City's total DBE participation level is **2.63%**. The race neutral portion is **1.38%** and the race conscious portion (UDBE) is **1.25%**. Therefore, if portions of the work required by the Project are not assigned by sub-contract to DBE or UDBE firms equal to or exceeding the participation levels, the selected firm will be required to demonstrate that appropriate good faith efforts were made.

A "Local Agency Proposer UDBE Commitment (Consultant Contracts)" Exhibit 10-O1 form and a "Local Agency Proposer DBE Information (Consultant Contracts)" Exhibit 10-O2 form will be included in the Agreement documents to be executed by the successful firm. A copy of these forms is included as part of the City's standard Professional Services Agreement (see Attachment 5). The purpose of these forms is to collect data required under 49 CFR, Part 26. Even if no DBE participation will be reported, the successful firm must execute and return the forms.

Firms replying to this RFP are advised to read more about the Caltrans race-conscious DBE Program by visiting the Caltrans DBE website at: www.dot.ca.gov/hq/LocalPrograms/DBE_CRLC.html.

General Requirements:

The firm's proposal should describe the methodology to be used to accomplish each of the project tasks. The proposal should also describe the work which shall be necessary in order to satisfactorily complete the task requirements.

Please note: this RFP can not identify each specific, individual task required to successfully and completely implement this project. The City of Palm Springs relies on the professionalism and competence of the selected firm to be knowledgeable of the general areas identified in the scope of work and to include in its proposal all required tasks and subtasks, personnel commitments, man-hours, direct and indirect costs, etc. The City of Palm Springs will not approve addenda to the selected firm's agreement which do not involve a substantial change from the general scope of work identified in this RFP.

Important Note: Firms replying to this RFP must be knowledgeable of the processes and procedures to obtain CEQA/NEPA environmental approvals through Caltrans District 8. In submitting a Proposal, firms must recognize that project delays are expected to occur, and the selected firm will be expected to remain committed to the successful completion of the Project, despite potential delays related to obtaining NEPA environmental approval of the Project through Caltrans District 8.

5. SELECTION PROCESS: The City of Palm Springs is utilizing a Qualifications Based Selection process to select a firm to provide the services requested by this RFP. The City shall review the proposals submitted in reply to this RFP, and a limited number of firms may be invited to make a formal presentation at a future date. The format, selection criteria and date of the presentation will be established at the time of short listing. Preparation of proposals in reply to this RFP, and participation in any future presentation is at the sole expense of the firms responding to this RFP.

6. PROPOSAL EVALUATION CRITERIA: This solicitation has been developed in the "Request for Proposals" (RFP) format. Accordingly, firms should take note that the City will consider multiple criteria in selecting the most qualified firm. Price is NOT evaluated as part of the evaluation criteria. Cost proposals submitted in separate envelopes are not opened, nor considered during proposal evaluations. Upon selection of the most qualified firm, the associated cost proposal will be used as a basis for contract negotiations. A contract shall be negotiated on the basis of the submitted Cost Proposal, and in consideration of reasonable and mutually agreed project costs and time requirements.

An Evaluation Committee, using the following evaluation criteria for this RFP, will evaluate all responsive submittals to this RFP. The Evaluation Committee may request formal presentations/interviews from the short listed firms at a future date of which the format and presentation evaluation criteria shall be provided at the time of short listing. **Participation in any phase of this RFP process, including the interview phase is at the sole expense of the firms replying to this RFP.** The City shall NOT be responsible for any costs incurred by any firm in response to, or participation in, this RFP.

Firms are requested to submit their qualifications submittals so that they correspond to and are identified with the following specific evaluation criteria:

A. Project Understanding (25 POINTS):
The firm's proposal adequately demonstrates an understanding of the Project and familiarity with the project area; familiarity with federally funded projects, related requirements, and processing projects through Caltrans District 8.

Note: Firms should not simply restate the information contained in this RFP; this evaluation criteria requires that the proposal identify "critical issues" to the Project, identify an approach to resolving any critical issues, and otherwise provide additional information regarding the Project which supports the firm's ability to perform if selected.

B. Scope of Work (25 POINTS):
Proposed approach to the Project including the expected time commitment of key personnel, technical approach to the Project, and the emphasis placed on project phases.

Note: As this RFP has identified a General Scope of Work, evaluation criteria requires that the proposal identify a detailed scope of work to successfully implement the Project. The detailed scope of work must be identical to the format in which the Cost Proposal has been submitted – each sub-task must be identified in the firm's separately sealed Cost Proposal with a corresponding fee.

C. **Staff Qualifications (25 POINTS):**
Qualifications of the staff assigned to manage and provide services related to the Project; experience with federally funded projects, related requirements, and processing projects through Caltrans District 8.

Note: This evaluation criteria requires that the proposal identify specific experience with federally funded projects coordinated through Caltrans District 8. Relevant experience must be demonstrated.

D. **Firm Qualifications (15 POINTS):**
Past experience with projects related to the outlined Scope of Work; experience with federally funded projects, related requirements, and processing projects through Caltrans District 8.

E. **Project Schedule (10 POINTS):**
Thoroughness and reasonableness of the project schedule with emphasis on processing requirements through Caltrans District 8; ability to maintain the project within the selected time frame.

7. **PROPOSAL CONTENTS:** Firms are requested to format their proposals so that responses correspond directly to, and are identified with, the specific evaluation criteria stated in Section 6 above. **The submittals must be in an 8 ½ X 11 format, may be no more than a total of thirty (30) pages (*sheets of paper, double sided*),** including an organization chart, staff resumes and appendices, and cover letter. **NOTE:** Dividers, Attachments included in this RFP to be submitted with the proposal, and Addenda acknowledgments do NOT count toward the 30 page limit. Interested firms shall **submit EIGHT (8) copies (one original plus seven copies)** of its submittal by the deadline.

All submittals shall be sealed within one package and be clearly marked, "RFP #07-10, REQUESTS FOR PROPOSALS FOR CITYWIDE TRAFFIC SIGNAL INTERCONNECT UPGRADE & TRAFFIC MANAGEMENT CENTER". **Submittals not meeting the above criteria may be found to be non-responsive.**

Within the package shall be included two envelopes, a "Technical Proposal" and a separately sealed "Cost Proposal".

Envelope #1, clearly marked "Technical Proposal", shall include the following items:

At a minimum, firms must provide the information identified below. All such information shall be presented in a format that directly corresponds to the numbering scheme identified here.

SECTION A: PROJECT UNDERSTANDING

A.1 Without reciting the information regarding the Project verbatim as contained in this RFP, convey an understanding of the intent of the Project and an understanding of the City's expectations upon implementation of the Project.

A.2 Identify "key" or "critical" issues that may be encountered on the Project based on the firm's prior experiences; provide steps to be taken to ensure the issues do not affect the successful delivery of the Project.

A.3 Discuss processing federally funded projects coordinated by Caltrans District 8 and generally convey an understanding of why Caltrans District 8 is involved and the partnering role the City and Caltrans have with the Project.

SECTION B: SCOPE OF WORK

B.1 Provide a detailed technical scope of work identifying all tasks and sub-tasks required to successfully implement all phases of the project. The outline of tasks and sub-tasks must be thorough and complete, and will be used as the scope of work included in the selected firm's contract.

SECTION C: STAFF QUALIFICATIONS

C.1 List the name and qualifications of the key staff/team members that will be assigned to the Project. Provide detailed qualifications of the Project Manager that will be assigned to the Project.

C.2 List specific and relevant experience for the key staff/team members assigned to the Project with federally funded projects coordinated by Caltrans District 8. Detailed project information, including dates project started and completed, federal aid project number, local agency contact information, Caltrans Local Assistance staff contact information, and other appropriate supporting information shall be provided.

C.3 List relevant experience with traffic signal interconnect and traffic management center projects. Experience with Intelligent Transportation System ("ITS") projects and federal ITS regulations, in accordance with the Code of Federal Regulations, Chapter 23, Section 940 (23 CFR 940), entitled "Intelligent Transportation System Architecture and Standards" shall be indicated.

SECTION D: FIRM QUALIFICATIONS

D.1 List the firm's complete name, type of firm (individual, partnership, corporation or other), telephone number, FAX number, contact person and E-mail address. If a corporation, indicate the state the corporation was organized under.

D.2 List the name and title of the firm's principal officers with the authority to bind your company in a contractual agreement.

D.3 Describe the firm's background and qualifications in the type of effort that this project will require, specifically identifying experience with federally funded projects coordinated by Caltrans District 8 for other public agencies.

D.4 Indicate the name of any sub-consultant firms that will be utilized to make up your team. Describe each sub-consultant's background and specific expertise that they bring to the Project.

SECTION E: PROJECT SCHEDULE

E.1 Provide a thorough project schedule identifying all tasks and sub-tasks identified in the detailed scope of work submitted with the Proposal, showing a schedule to deliver the Project in consideration of all reasonable and expected time frames necessary to coordinate the Project through Caltrans District 8. The schedule should include all phases of the project, including construction administration. For purposes of consistency between schedules, firms shall assume that a Notice to Proceed is issued to the firm on January 4, 2010.

DEADLINE FOR SUBMISSION OF RFPs: All submittals must be received in the City of Palm Springs, Office of Procurement and Contracting by **2:00 P.M., LOCAL TIME, THURSDAY, DECEMBER 10, 2009**. Proof of receipt before the deadline is a City of Palm Springs, Office of Procurement and Contracting time/date stamp. It is the responsibility of the firms replying to this RFP to see that any submittal sent through the mail, or any other delivery method, shall have sufficient time to be received by the Procurement Office prior to the proposal due date and time. Late submittals will be returned to the firm unopened. **Submittals shall be clearly marked and identified and must be submitted to:**

City of Palm Springs
Division of Procurement and Contracting
3200 E. Tahquitz Canyon Way
Palm Springs, CA 92262
Attn: Cheryl Martin

QUESTIONS: Firms, their representatives, agents or anyone else acting on their behalf are specifically directed **NOT** to contact any city employee, commission member, committee member, council member, or other agency employee or associate for any purpose related to this RFP other than as directed below. **Contact with anyone other than as directed below WILL be cause for rejection of a submittal.**

Any questions, technical or otherwise, pertaining to this RFP **must be submitted IN WRITING and directed ONLY to:**

Cheryl Martin
Procurement Administrative Coordinator
3200 East Tahquitz Canyon Way
Palm Springs, CA 92262
via FAX (760) 323-8238
or **via EMAIL**: Cheryl.Martin@palmspringsca.gov

Interpretations or clarifications considered necessary in response to such questions will be resolved by the issuance of formal Addenda to the RFP. **The deadline for all questions is 2:00 P.M., Local Time, Monday, November 30, 2009.** Questions received after this date and time may not be answered. Only questions that have been resolved by formal written Addenda via the Division of Procurement and Contracting will be binding. Oral and other interpretations or clarifications will be without legal or contractual effect.

FORM OF AGREEMENT: The selected firm will be required to enter into a contractual agreement, inclusive of insurance requirements, with the City of Palm Springs in accordance with the standard Professional Services Agreement (see Attachment 5). Please note that Exhibits A, C, D E, and F are intentionally not complete in the attached document; (Exhibit B is completed and includes all appropriate federal regulations to be included in the Agreement). These exhibits will be negotiated with the selected firm, and will appear in the final Professional Services Agreement executed between the parties. Requested changes to the Professional Services Agreement may not be approved, and the selected firm must ensure that the attached document will be executed.

Failure or refusal to enter into an Agreement or to conform to any of the stipulated requirements in connection therewith shall be just cause for an annulment of the award.

AWARD OF CONTRACT: It is the City's intent to award a contract to the firm that can provide all of the services identified in the RFP document. ***However, the City reserves the right to award a contract to multiple Respondents or to a single Respondent, or to make no award, whichever is in the best interest of the City.*** It is anticipated that award of the contract will occur at the next regularly scheduled City Council meeting after the evaluation committee has made its final selection of the firm to be recommended for award and a contract has been negotiated and agendized for consideration. The decision of the City Council will be final.

RESPONSIBILITY OF OFFEROR: All firms responding to this RFP shall be responsible. If it is found that a firm is irresponsible (e.g., has not paid taxes, is not a legal entity, submitted an RFP without an authorized signature, falsified any information in the submittal package, etc.), the submittal shall be rejected.

PUBLIC RECORD: All documents submitted in response to this solicitation will become the property of the City of Palm Springs and are subject to the California Code Section 6250 et seq., commonly known as the Public Records Act. Information contained in the documents, or any other materials associated with the solicitation, may be made public after the review process has been completed, negotiations have concluded and a recommendation for award has been officially agendized for City Council consideration, and/or following award of contract to a specific firm, if any, by the City Council.

COST RELATED TO SUBMITTAL PREPARATION: The City will NOT be responsible for any costs incurred by any firm responding to this RFP in the preparation of their submittal or participation in any presentation if requested, development of any technical proposal if requested, or any other aspects of the entire RFP process.

BUSINESS LICENSE: The selected firm will be required to be licensed in accordance with the City of Palm Springs Business License Ordinance, Municipal Code Chapter 3.40 through 3.96, entitled "Business Tax".

SUBMITTAL INFORMALITIES OR DEFECTS: The City of Palm Springs reserves the right to waive any informality or technical defect in an RFP submittal and to accept or reject, in whole or in part, any or all submittals and to seek new RFP's, as best serves the interests of the City.

INVESTIGATIONS: The City reserves the right to make such investigations as it deems necessary to determine the ability of the firms responding to this RFP to perform the Work and

the firm shall furnish to the City all such information and data for this purpose as the City may request. The City reserves the right to reject any submittal if the evidence submitted by or investigation of such firm fails to satisfy the City that such firm is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein.

SIGNED SUBMITTAL AND EXCEPTIONS: Submission of a signed submittal will be interpreted to mean that the firm responding to this RFP has hereby agreed to all the terms and conditions set forth in all of the sheets which make up this Request for Proposals, and any attached sample agreement. Exceptions to any of the language in either the RFP documents or attached sample agreement, including the insurance requirements, must be included in the submittal and clearly defined. Exceptions to the City's RFP document or standard boilerplate language, insurance requirements, terms or conditions may be considered in the evaluation process; however, the City makes no guarantee that any exceptions will be approved.

ATTACHMENT "A"

NOTE: THIS FORM MUST BE COMPLETED AND INCLUDED WITH YOUR PROPOSAL

REQUESTS FOR PROPOSALS (RFP) # 07-10
FOR
CITYWIDE TRAFFIC SIGNAL INTERCONNECT UPGRADE &
TRAFFIC MANAGEMENT CENTER
CITY PROJECT NO. 08-04
FEDERAL AID PROJECT NO. CML 5282 (031)

SIGNATURE AUTHORIZATION

PROPOSER: _____

A. I hereby certify that I have the authority to submit this Proposal to the City of Palm Springs for the above listed individual or company. I certify that I have the authority to bind myself/this company in a contract should I be successful in my submittal.

_____
SIGNATURE

B. The following information relates to the legal contractor listed above, whether an individual or a company. Place check marks as appropriate:

1. If successful, the contract language should refer to me/my company as:

   ____ An individual;
   ____ A partnership, Partners' names:_____
   _____
   _____
   ____ A company;
   ____ A corporation

2. My tax identification number is: _____

ADDENDA ACKNOWLEDGMENT:

Acknowledgment of Receipt of any Addenda issued by the City for this RFP is required by including the acknowledgment with your proposal. Failure to acknowledge the Addenda issued may result in your submittal being deemed non-responsive.

In the space provided below, please acknowledge receipt of each Addenda:

Addendum(s) # _____ is/are hereby acknowledged.

ATTACHMENT "B"

NOTE: THIS FORM MUST BE COMPLETED AND INCLUDED WITH YOUR SUBMITTAL

REQUESTS FOR PROPOSALS (RFP) # 07-10
FOR
CITYWIDE TRAFFIC SIGNAL INTERCONNECT UPGRADE &
TRAFFIC MANAGEMENT CENTER
CITY PROJECT NO. 08-04
FEDERAL AID PROJECT NO. CML 5282 (031)

DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The Consultant, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, and manager:

- Is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any federal agency;
- Has not been suspended, debarred, voluntarily excluded or determined ineligible by any federal agency within the past 3 years;
- Does not have a proposed debarment pending; and
- Has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.

Consultant Name: _____

_____ (Date)

_____ (Signature)

_____ (Name & Title)

ATTACHMENT 1
CITY OF PALM SPRINGS
TRAFFIC SIGNALS & INTERCONNECTED CORRIDORS

Table "A" – Traffic Signal Locations		
	Intersection	**Video Detection**
1.	N. Palm Canyon Drive at Tachevah Drive	**No (To be upgraded)**
2.	N. Palm Canyon Drive at Tamarisk Road	**No (To be upgraded)**
3.	N. Palm Canyon Drive at Granvia Valmonte	Yes
4.	N. Palm Canyon Drive at Alejo Road	Yes
5.	N. Palm Canyon Drive at Amado Center (Pedestrian Signal)	No
6.	N. Palm Canyon Drive at Amado Road	**No (To be upgraded)**
7.	N. Palm Canyon Drive at Andreas Road	No
8.	N. Palm Canyon Drive at Desert Fashion Plaza (Pedestrian Signal)	No
9.	Palm Canyon Drive at Tahquitz Canyon Way	Yes
10.	S. Palm Canyon Drive at La Plaza	Yes
11.	S. Palm Canyon Drive at Arenas Road	**No (To be upgraded)**
12.	S. Palm Canyon Drive at The Village Green (Pedestrian Signal)	No
13.	S. Palm Canyon Drive at Baristo Road	**No (To be upgraded)**
14.	S. Palm Canyon Drive at Ramon Road	**No (To be upgraded)**
15.	S. Palm Canyon Drive at Camino Parocela	**No (To be upgraded)**
16.	S. Palm Canyon Drive at Sunny Dunes Road	**No (To be upgraded)**
17.	S. Palm Canyon Drive at Mesquite Avenue	**No (To be upgraded)**
18.	S. Palm Canyon Drive at Morongo Road	**No (To be upgraded)**
19.	S. Palm Canyon Drive at E. Palm Canyon Drive	**No (To be upgraded)**
20.	E. Palm Canyon Drive at Camino Real	**No (To be upgraded)**
21.	E. Palm Canyon Drive at Sunrise Way	**No (To be upgraded)**
22.	E. Palm Canyon Drive at Cerritos Road/Smoke Tree Lane	Yes
23.	E. Palm Canyon Drive at Smoke Tree Commons	Yes
24.	E. Palm Canyon Drive at Farrell Drive/Barona Road	Yes
25.	E. Palm Canyon Drive at Araby Drive/Escoba Drive	Yes
26.	E. Palm Canyon Drive at Auto Center	Yes
27.	E. Palm Canyon Drive at Cherokee Way	**No (To be upgraded)**
28.	N. Indian Canyon Drive at Garnet Avenue	No[1]
29.	N. Indian Canyon Drive at San Rafael Drive	**No (To be upgraded)**
30.	N. Indian Canyon Drive at Racquet Club Road	Yes
31.	N. Indian Canyon Drive at Tachevah Drive	**No (To be upgraded)**
32.	N. Indian Canyon Drive at Tamarisk Road	Yes
33.	N. Indian Canyon Drive at Alejo Road	Yes
34.	N. Indian Canyon Drive at Amado Road	Yes
35.	N. Indian Canyon Drive at Andreas Road	Yes
36.	Indian Canyon Drive at Tahquitz Canyon Way	Yes
37.	S. Indian Canyon Drive at La Plaza	Yes
38.	S. Indian Canyon Drive at Arenas Road	Yes
38.	S. Indian Canyon Drive at Baristo Road	Yes
39.	S. Indian Canyon Drive at Ramon Road	Yes
40.	Sunrise Way at San Rafael Drive	Yes

[1] This intersection will be upgraded as part of a separate project.

ATTACHMENT 1
CITY OF PALM SPRINGS
TRAFFIC SIGNALS & INTERCONNECTED CORRIDORS

41.	Sunrise Way at Racquet Club Road	Yes
42.	Sunrise Way at Via Escuela	Yes
43.	Sunrise Way at Tachevah Drive	Yes
44.	Sunrise Way at Alejo Road	Yes
45.	Sunrise Way at Amado Road	Yes
46.	Sunrise Way at Tahquitz Canyon Way	Yes
47.	Sunrise Way at Baristo Road	Yes
48.	Sunrise Way at Ramon Road	**No (To be upgraded)**
49.	Sunrise Way at Sunny Dunes Road	Yes
50.	Sunrise Way at Mesquite Avenue	Yes
51.	Farrell Drive at Via Escuela	**No (To be upgraded)**
52.	Farrell Drive at Tamarisk Road	Yes
53.	Farrell Drive at Alejo Road	**No (To be upgraded)**
54.	Farrell Drive at Tahquitz Canyon Way	Yes
55.	Farrell Drive at Baristo Road	Yes
56.	Farrell Drive at Ramon Road	**No (To be upgraded)**
57.	Farrell Drive at Mesquite Country Club (Golf Cart / Ped. Signal)	No
58.	Farrell Drive at Mesquite Avenue	**No (To be upgraded)**
59.	Tahquitz Canyon Way at Calle Encilia	Yes
60.	Tahquitz Canyon Way at Calle El Segundo	Yes
61.	Tahquitz Canyon Way at Avenida Caballeros	Yes
62.	Tahquitz Canyon Way at Sunset Way	Yes
63.	Tahquitz Canyon Way at El Cielo Road	Yes
64.	Ramon Road at Calle Encilia	**No (To be upgraded)**
65.	Ramon Road at Avenida Caballeros	**No (To be upgraded)**
66.	Ramon Road at Compadre Road	**No (To be upgraded)**
67.	Ramon Road at El Cielo Road	**No (To be upgraded)**
68.	Ramon Road at El Placer	Yes
69.	Ramon Road at Paseo Dorotea	**No (To be upgraded)**
70.	Ramon Road at Vella Road	Yes
71.	Ramon Road at San Luis Rey Drive	Yes
72.	Ramon Road at Crossley Road	**No (To be upgraded)**
73.	Dinah Shore Drive at San Luis Rey Drive	Yes
74.	Dinah Shore Drive at Crossley Road	Yes
75.	Racquet Club Road at Avenida Caballeros	Yes
76.	Gene Autry Trail at Via Escuela	Yes
77.	Vista Chino at Greens Way	Yes
78.	El Cielo Road at Baristo Road	Yes
79.	Baristo Road at PSHSI / Palm Springs Mall	Yes

ATTACHMENT 1
CITY OF PALM SPRINGS
TRAFFIC SIGNALS & INTERCONNECTED CORRIDORS

Table "B" – Synchronized Corridors	
Corridor Name	**Existing Communications Technology** (number of locations)
North Palm Canyon Drive Tachevah Drive to Desert Fashion Plaza	Signal Interconnect Cable (7)
South Palm Canyon Drive Tahquitz Canyon Way to Camino Real	Signal Interconnect Cable (12)
East Palm Canyon Drive Camino Real to Cherokee Way	Combination of: Microwave (1) 900 MHz Spread Spectrum (6)
Indian Canyon Drive Tachevah Drive to Ramon Road	900 MHz Spread Spectrum (10)
Sunrise Way Tachevah Drive to Mesquite Ave	900 MHz Spread Spectrum (6)
Tahquitz Canyon Way Calle Encilia to El Cielo	Signal Interconnect Cable (7)
Ramon Road Calle Encilia to Crossley Road	Combination of: Signal Interconnect Cable (1) Microwave (7) 900 MHz Spread Spectrum (4)

ATTACHMENT 2
CITY OF PALM SPRINGS
CMAQ GRANT APPLICATION

COPY OF CITY'S GRANT APPLICATION FOLLOWS THIS PAGE

APPLICATION FORMAT

I. APPLICANT INFORMATION

Lead Agency:	City of Palm Springs		
Address:	3200 Tahquitz Canyon Way, Palm Springs, CA 92262		
Contact Person:	Richard B. Jenkins	Title:	Traffic Engineering Assistant
Telephone #:	760-323-8253-8739	Fax #:	760-322-8371
E-mail Address:	Richard.jenkins@palmsprings-ca.gov		

If Joint Project, include partner agency name, contact person, and phone number:

Project Name:	Palm Springs Traffic Management Center (TMC)
Project Description:	This project will advance the interconnected signal timing to be unified citywide, coordinate the communications equipment bringing them all onto the same communications platform for the transmission of complete data and the dissemination of information to the public.
Project Limits:	Citywide Palm Springs with provision for expansion into neighboring cities as a regional Traffic Management Center.

Amount CMAQ Requested:	$1,843,046	Source(s) of Match: **Gas Tax**
Amount of Match:	$238,786	
Total Project Cost:	$ 2,081,832	

II. SCHEDULE AND BUDGET

NOTE: CMAQ Funds will be made available as soon as the project is included in the FTIP. Non-capacity enhancing projects or projects that do not require modeling can be included as an Administrative Amendment to the FTIP and will take approximately 4-6 months to process after CVAG's adoption of the program. Capacity Enhancing and/or projects that require transportation modeling would be included in the 2008 FTIP, which would be processed and federally approved in October 2008.

	Amount (In 000's)			Projected Start Date (Mo/Yr)	Projected End Date (Mo/Yr)
Components	**CMAQ $**	**Other $**	**Other $**		
Environmental	$10,624	$1,376		09/08	09/09
Design & Engineering	$188,101	$24,371		09/09	03/10
ROW/Site Acquisition	$0	$0		N/A	N/A
Construction	$590,460	$76,500		03/10	03/11
Equipment to be purchased	$1,053,861	$136,539		Included in construction	
Project Completion					03/11
TOTAL	$1,843,046	$238,786			

III. SCOPE OF WORK

A. Fully describe the proposed project. Include details on the tasks involved with project design, development and implementation.

The City of Palm Springs will implement the proposed improvements through a series of related tasks as noted below.

1. **Citywide Needs Assessment:** The City of Palm Springs has several interconnected corridors that are coordinated independently of one another. This task would evaluate and adjust current timing plans, communications technologies and identify revisions needed to bring the system into a more unified approach to managing traffic flows and fluctuations on a citywide basis rather than corridor by corridor. The goal is to use peer to peer technology to allow the corridor to operate in a more symbiotic method. The needs assessments will investigate ways to provide staff with a more accurate and complete picture of traffic conditions than is currently in operation. The needs assessment will also look at methods for disseminating real time traffic information to the public, allowing drivers to make intelligent decisions about their routes. The needs assessments study will determine a way of replacing the current method of providing information to the media with more accurate and timely broadcasts of traffic information. It is expected that the needs assessment will make recommendations that closely represent the tasks that follow.
2. **Fiber Optic Communications:** The City currently has a wireless LAN connection that supports communications from the City's Information Technology (IT) communications room to the central computer located at the Communications Tower. However, there is a deficiency in the communications network for this system. The City proposes to cure this deficiency by connecting the City's IT hub to the Traffic Management Center that will complete the communication link from the Traffic Management Center to the field devices. This requires approximately 1800 feet of new conduit and 2200 feet of new fiber optic cable and associated communications hardware.
3. **Palm Springs Traffic Management Center:** The City has an existing Traffic Management Center comprised of one workstation and a monitor. For improved overall transportation management, the City proposes to expand the Traffic Management Center to include a new workstation and a video wall comprised of multiple video displays. The Traffic Management Center upgrades will provide the City with added capability to monitor traffic and improve response times to traffic congestion or other issues. Additionally, the communication network will be re-designed to allow for the transmission of video images and detection data from the video detection in the field to the Traffic Management Center allowing for real time monitoring and data collection.
4. **Upgrade the City's Traffic Signal System:** The City currently uses QuicNet/4 and serial communications software in the traffic signal controllers. This software only displays vehicle activations or a lack of activations, and does not display the number of vehicles in a queue. It is impossible to determine from the data transmitted to the Traffic Management Center whether or not the vehicle detection has failed. As a way to improve response time to traffic congestion, the City proposes to upgrade the technology currently used on the traffic signal and interconnect systems of the City's major arterials, such that video images and other data may be transmitted from the existing video detection cameras. New video detection systems will be added at major arterial intersections that currently use old or outdated inductive vehicle detection systems. Upgraded video detection and software systems that can transmit real-time data to the Traffic Management Center will allow City staff to monitor congestion and modify timing quickly and efficiently, as needed. The City's existing traffic signal interconnect software will also be upgraded to the latest version of QuicNet, and

communications will be updated to an Ethernet based system. Two of the City's major arterial corridors, East Palm Canyon Drive and Ramon Road, currently use outdated Microwave technology to transmit controller data to the Traffic Management Center. Microwave system equipment is not compatible with current data transmission technology, is unreliable, and is no longer supported by the manufacturer. Microwave system technology does not adequately synchronize the traffic flow as originally envisioned 15 to 20 years ago. This technology is antiquated. Upgrade of traffic signal interconnect technology to an Ethernet based system allows for the transmission of real-time data on multiple data strings and real time video data over the same radio system which will improve the overall reliability of communications with the traffic signal controllers, and provide the City with additional features for the operation of the traffic signal system. Only two of the existing controller cabinets will require replacement. All other controller equipment in the field will need minor programming work to be upgraded to an Ethernet based system.

5. **Traveler Information:** The City proposes to disseminate real-time traffic information data to the public over the City's existing web site and public access television channel. The combined dissemination of traffic data over the Internet and on public access television will allow the City to provide up to date traffic information to the public including traffic conditions, construction, accidents, and congestion. An ability to disseminate real-time traffic data information will increase the timeliness and accuracy of traffic data reported to the public. The current method of disseminating traffic data information to the public requires information being collected from various sources and the information being distributed by e-mail through the Police Department dispatch center, media outlets and staff. A problem with the current method is misinterpretation of the traffic data information, lack of timeliness to disseminate the information to the public, and inability to disseminate the information in a timely manner that is consistent with the television broadcast schedule. The installation of three weather cameras at key areas and the transmission of video images to the Internet and public access television will allow for the public to view real-time traffic conditions.

B. Describe in detail who will manage the project and how the work will be carried out (in-house or contract labor). Discuss the procedure for purchase of any equipment required.

Specific study and design services will be completed by contracting with qualified consultants in the traffic engineering field. Contract administration for all phases of this project will be overseen by City staff.

Much of the specific communications and data collection equipment will require compatible equipment with existing hardware or software. The needs assessment study will specifically identify the type of hardware and software for the upgraded traffic signal interconnect communication system, to allow for the most efficient use of CMAQ funding.

All hardware and software equipment obtained for this project will be obtained through the City's standard procurement process, ensuring that the lowest possible price is identified in the acquisition of the equipment.

Contract services will be solicited by way of a request for proposal, and an evaluation process will be established to ensure the most qualified firms are contracted. Construction of the upgraded traffic signal interconnect system will occur using the City's standard public bid process, ensuring an open and transparent procurement process and receipt of the lowest, responsible bid.

Maintenance and operations staff will be intimately involved in each step of the process to ensure that staff acquires the knowledge needed to operate and maintain all elements of the upgraded traffic signal interconnect system.

C. Indicate the Environmental Document type for the project (Neg. Declaration, CE, EIR, etc.) and the estimated approval date: Negative Declaration, Sept. 2009

IV. STATEMENT OF BENEFIT

Specifically address the project benefits according to the following Project Selection Criteria. (Remarks in parentheses request specific additional information or provide clarification to criteria).

By starting the project with an in-depth review of existing conditions by an engineering firm that specializes in coordinated, interconnected systems, staff and the CMAQ grant program can ensure that grant funding is being spent in as efficient a manner as possible.

Major arterials that are currently operating individual synchronized timing plans do not consider platoons of traffic coming from an intersecting major arterial. Each major arterial is timed with the emphasis on the progression of traffic along that specific major arterial. This results in a progression of traffic on one of the major arterials, while traffic progression on the intersecting major arterial is delayed. In some cases, major intersections have significant progression issues. Traffic progression is sometimes lost as traffic reaches critical intersections.

Current methods of managing traffic signal timing and operational issues require that City staff travel to an intersection to adjust and observe traffic signal timing. Complaints received by the City must be verified by driving to the location and verifying the problem. Complaints received at night or on weekends require that City staff visit the intersection the following business day. As a result, these complaints are not responded to in a timely fashion, and staff is required to duplicate the specific problem during daytime traffic signal operation. Traffic data surveys, i.e. turning movement counts and average daily traffic (ADT) can only be obtained by contracting the services with data collection companies, which can take several months to complete.

The proposed updated traffic signal interconnect system, and an ability to transmit real-time video detection data will allow staff to review more intersections quickly. Intersections at which the City receives complaints at night or on weekends can be recorded and reviewed the next business day. Greater efficiency to review previous problems encountered in the field is made possible by obtaining actual field data from the intersection and reviewing the data at the Traffic Management Center.

Because the video detection systems already used by the City can obtain several types of traffic data, this data can be surveyed at multiple intersections at the same time and the traffic data can be transmitted to the Traffic Management Center on a more frequent basis. Time spent performing traffic studies can be significantly reduced. Split monitor event studies, which are rarely done now, can be completed from the Traffic Management Center with great speed and accuracy. When the public has a concern regarding traffic delay, staff can corroborate the issue and respond more quickly. Traffic volume changes can be analyzed and timing adjusted more frequently.

Being able to view locations in real-time will give staff an instantaneous picture of current traffic conditions and will significantly improvement staff's ability to adapt traffic signal timing and operations accordingly.

A. Air Quality *Projects that will result in improved air quality. (Discuss and document how the project will contribute to attainment of the NAAQS and/or demonstrate consistency with the California Clean Air Act or 2003 Air Quality Management Plan.)*

Although the City currently has traffic signal interconnect systems on most of its major arterials, much of the interconnect system technology is outdated and inefficient. The intended improvement to traffic progression along the major arterial does not occur. Significant improvements with the hardware and software of traffic signal interconnect systems allows traffic progression to be maintained, resulting in reduced traffic congestion and delay. The net result is the avoidance of queues of vehicles stopped at intersections further contributing to degradation of air quality.

Please complete the appropriate Air Quality Assessment Input Data Sheet and attach it to your project application.

B. Congestion Mitigation *Discuss and document how the project/program will result in congestion reduction. Complete both 1 and 2.*

1) Qualitative Analysis:
Current Level of Service (LOS) at most of the City's major intersections varies from LOS C to LOS D with a few locations operating near a LOS E. A more unified approach to traffic signal coordination, rather than an individual corridor by corridor approach, will reduce traffic delays especially where two major arterials intersect.

A unified approach will improve air quality by reducing pollutants created during traffic congestion and delays.

2) Quantitative Analysis: *Recommended methodology – Highway Capacity Manual*

Indicators	Existing	After Improvement
Average Daily Traffic (all corridors)	150,000	150,000
Level of Service	D	C
Vehicle Miles or Hours of Travel saved per year	N/A	N/A
Hours of Delay saved per year		912,500

C. Safety *Projects which will result in improved safety. (Discuss and document how the project will improve safety. Include data on the number of accidents and/or fatalities in the area over the last 3 years as wells as other factual information.)*

One of the components of this project is the installation of three video cameras to monitor flood and wind conditions at our three major White Water River crossings at Indian Canyon Drive, Gene Autry Trail, and Vista Chino. These crossings are subject to frequent closures due to flooding or blowing sand. When inclement weather occurs, City staff is required to assess the need to close these at-grade river crossings by driving to the site to verify flooding or visibility conditions. The installation of video cameras for weather monitoring will allow City staff to view the locations in real-time, allowing for an immediate assessment of the need to close or re-open the at-grade river crossings. An ability to react in real-time reduces delay to traffic by allowing these roads to be closed only when absolutely necessary and to be re-opened as soon as is reasonably safe.

By transmitting the video data from these cameras to the public information system, the general public can view the condition of the at-grade river crossings to determine an appropriate route to their destination. It also allows the local media to view the at-grade crossings and to report inclement weather conditions to drivers over the radio. By viewing real-time data through the public information system, the public and media need not rely on City staff to send reports on road closures that are delayed due to the time required to drive to the site to verify the condition, and return to City Hall and disseminate the information.

D. Project Readiness *Projects ready and as close to construction as possible and leveraging other funds to support the project. (Discuss timeframe for project implementation and any anticipated barriers in project completion. Address other funds used to match/support the project. If the project requires on-going funding, include discussion on what funding will be used for continuing operation.)*

The basic infrastructure is already in place. The existing corridor timing can continue to operate as modified timing plans and strategies are developed for the remainder of the City. The controllers, video detection systems and most of the traffic signal interconnect hardware exists and requires only minor work to be upgraded with traffic signal interconnect technology compatible with the improved communications network. Matching Gas Tax funds for the needs assessment study have been included in the City's approved 2007/2008 budget.

E. Cost Effectiveness *Projects which will results in cost effectiveness. (Discuss and document how the project will be cost effective in emission reductions.)*

This project is effective in that for $2 million dollars nearly 1 million hours of delay will be saved annually along with the improved air quality from reduced vehicle delay. Much of the infrastructure such as controllers, controller cabinets, video cameras and communications conduit runs already exist and are sufficient to handle the improved communications equipment. Only a conduit run between the Communications tower and City Hall is required.

The city is planning on using numerous existing detection cameras as traffic surveillance units giving us citywide deployment without the cost of cameras and their associated hardware and mounting platforms.

Traffic Management Center software (BiTran) is in place and will only require some reprogramming to handle the modified data format and video data to be transmitted to the existing Traffic Management Center.

City staff training will be minimal as staff is currently familiar with both the hardware and software components of the upgraded traffic signal interconnect system.

V. Please attach an 8 ½ x 11 Site Map/Plan

VI. CERTIFICATION

I certify that the information presented herein is complete and accurate and if this agency receives funding it will be used solely for the purposes stated in this application. Additionally, I certify that these funds will not supplant other federal, state or local funding available for the same purposes as the project/program.

Signature	Title	Date
	Public Works Director	7/12/07

AIR QUALITY ASSESSMENT INPUT DATA

(Return applicable page(s) as part of your CMAQ application)

A. **PROJECT AIR QUALITY BENEFIT DESCRIPTION**: In the space below, please provide a concise description of how the proposed CMAQ project will contribute to air quality improvement. A separate sheet can be attached if desired. Please label the attached sheet **"Air Quality Assessment Input Data"**.

The proposed project will decrease traffic delay citywide by taking a unified approach to signal timing. The project will provide the City of Palm Springs with the latest technology available to allow the local controllers to analyze conditions and choose the best timing plan for conditions at that location and the adjacent signals. The system will use a peer to peer approach with the central system supervising the timing plan changes. This allows the citywide system to fluctuate the timing based on conditions rather than by time of day.

The inclusion of video image and data transmission will allow for real time monitoring of conditions so that operations staff can ensure smooth traffic flows and manage unexpected events and conditions that the central system may not have the ability to adapt to.

Broadcasting conditions to the public, including those at river crossings, will provide for a more educated public and allow motorists to plan trips based on congestion and other traffic events.

The web based application will permit motorists traveling into the area to plan trips based on expected conditions due to long term closures from construction or special events. Commercial traffic will be able to view conditions via the internet and plan for the delivery of goods and help them avoid unnecessary idling time, reducing congestion emission of pollutants into the atmosphere and reducing fuel consumption.

B. **QUANTITATIVE ANALYSIS**: CVAG staff will calculate the emissions reductions attributable to each proposed CMAQ project. **Proposers do not need to submit arithmetic calculations as part of their proposal.** However, to assist CVAG and the Technical Advisory Committee members in accurately assessing the air quality benefits of your proposed project please provide all requested input data, as applicable to your project category.

CVAG staff will analyze each proposed project using emission calculation methodologies recommended by Caltrans and the California Air Resources Board.

Input Data templates are provided on the following pages for the eleven project categories:

1. State Highway/Local Roads – Capacity Increasing
2. State Highway/Local Roads – Traffic Congestion and Delay Reduction
3. State Highway/Local Roads – [redacted]
4. Public Transit – Purchase of Buses
5. Public Transit – Operation of New Transit Bus Service
6. Inter-city Rail Service
7. Bicycle Facilities
8. Pedestrian Facilities
9. Grade Separations
10. Transportation Demand Management
11. Intermodal Facilities

AIR QUALITY ASSESSMENT INPUT DATA – continued

PLEASE RETURN THE APPLICABLE EMISSIONS REDUCTION DATA INPUT FORM(S) WITH YOUR PROPOSAL. The eleven listed categories do not encompass all eligible CMAQ project categories. Should your project fall outside of the eleven listed categories, please provide the necessary air quality improvement input data as a separate attachment and label this attachment "Supplemental Air Quality Assessment Input Data".

Please note that proposers are not precluded from submitting their own emissions reduction calculations. Any calculations submitted will, however, be reviewed by CVAG staff and are subject to revision to insure consistency in evaluation among all candidate projects.

PROJECT CATEGORY 1:

STATE HIGHWAY/LOCAL ROADS – CAPACITY INCREASING

Category Definition: This category includes projects that increase the carrying capacity of a state or local roadway. This includes, but is not limited to, HOV lane construction, mixed-flow lane construction, roadway widening, etc.

Please Provide the Following Input Data for the Road Segment Affected by the Proposed Capacity Enhancement Project:

Length of Roadway Segment (miles)	
Traffic Volume – "Before Project" Traffic Count Data OR Before Project Average Daily Traffic (ADT)	
Traffic Volume – "After Project" Traffic Count Data OR After Project Average Daily Traffic (ADT)	
"Before Project" Average Vehicle Speed (determined by "floater car" data or other measurement)	
"After Project" Estimated Average Vehicle Speed (determined by transportation simulation, volume/capacity ratios, Level of Service (LOS) tables, or other methods)	

PROJECT CATEGORY 2:

STATE HIGHWAY/LOCAL ROADS – TRAFFIC CONGESTION AND DELAY REDUCTION (NON-CAPACITY INCREASING)

Category Definition: This category includes projects that improve traffic flow by reducing delays at intersections, on ramps, etc. This includes, but is not limited to: auxiliary lanes between adjacent intersections, intersection reconstruction, two-way left turn lanes, channelization, ramp reconstruction, roadway realignments, etc.

AIR QUALITY ASSESSMENT INPUT DATA – continued

Please Provide the Following Input Data for the Road Segment and Congested Period (i.e., AM Peak Hours and PM Peak Hours) Affected by the Traffic Congestion/Delay Reduction Project:

Traffic Volume – "Before Project" Traffic Count Data OR Before Project Average Daily Traffic (ADT)	
Traffic Volume – "After Project" Traffic Count Data OR After Project Average Daily Traffic (ADT)	
Duration of Congested AM Peak Period (number of a.m. hours that significant delay occurs)	
Duration of Congested PM Peak Period (number of p.m. hours that significant delay occurs)	
"Before Project" Average Vehicle Delay (average vehicle delay at intersection, turning lane queuing, onramp, etc.)	
"After Project" Estimated Average Vehicle Delay (average vehicle delay at intersection, turning lane queuing, onramp, etc.)	

PROJECT CATEGORY 4:

STATE HIGHWAY/LOCAL ROADS – TRAFFIC SIGNAL INSTALLATION/ INTERCONNECT

Category Definition: This category includes projects that propose to: a) replace an existing stop sign or four-way stop with a traffic signal; b) interconnect and coordinate newly implemented traffic signals with other signals along the corridor; and c) improvements to signal timing that reduce overall vehicle stops and delays.

NOTE: Signal timing and other actions that increase traffic speeds and flows to the detriment of overall traffic performance or that offer a significant inducement to travel by automobile are not air quality beneficial. Speed improvements to greater than 30 mph increase NO_x emissions and may be counterproductive to improving air quality.

Emissions reductions in Reactive Organic Gases (ROG) and NOx are associated with increasing average traffic speeds to up to 30 mph.

- NO_x emissions start increasing when average vehicle speeds are greater than **30 mph**
- Carbon monoxide emissions start increasing when average vehicle speeds are greater than **45 mph**
- ROG emissions start increasing when average vehicle speeds are greater than **50 mph**

AIR QUALITY ASSESSMENT INPUT DATA – continued

Please Provide the Following Input Data for Each Road Segment and Congested Period (i.e., AM peak and PM peak) Affected by the Proposed Signalization/Signal Interconnect Project:

	North Palm Cyn	Indian	Sunrise	Ramon	Tahquitz	East Palm Cyn
Length of Roadway Segment (miles)	3	2	3	3	2	3
Traffic Volume During Congested Period -"Before Project" Traffic Count Data OR Before Project Average Daily Traffic (ADT) (thousands)	23	17	19	39	16	36
Traffic Volume During Congested Period - "After Project" Traffic Count Data OR After Project Average Daily Traffic (ADT) (thousands)	23	17	19	39	16	36
"Before Project" Average Vehicle Speed During Congested Period (determined by "floater car" data or other measurement)	35	31	39	39	35	40
"After Project" Estimated Average Vehicle Speed During Congested Period (determined by transportation simulation, volume/capacity ratios, Level of Service (LOS) tables, or other methods)	35	35	45	45	40	45
"Before Project" Average Vehicle Delay (average vehicle delay due to stop sign queuing, etc.) (seconds per vehicle)	30	30	20	35	15	30
"After Project" Average Delay (average vehicle delay due to stop sign queuing, etc.) (seconds per vehicle)	20	15	15	25	15	20

PROJECT CATEGORY 4:

PUBLIC TRANSIT – PURCHASE OF BUSES

Category Definition: The purchase of transit buses that are certified to be less polluting than a typical new bus or an engine replacement that converts the bus into a less polluting vehicle (cleaner re-power). For emissions reductions to be credited to the project, the vehicle(s) purchased must emit less pollution than conventional new diesel buses meeting current emissions standards.

Please Provide the Following Input Data for Each New or Re-powered Transit Bus Proposed:

Vehicle Type, Make, and Model	
New Engine Make and Model	
Old Engine Make and Model (if re-power)	
New Engine Fuel Type (CNG, LNG, LPG, etc.)	
Old Engine Fuel Type (if re-power)	
Estimated Vehicle Life (years)	
Annual Vehicle Miles Traveled (VMT)	
Annual Vehicle Hours of Operation	

AIR QUALITY ASSESSMENT INPUT DATA – continued

PROJECT CATEGORY 5:

OPERATION OF NEW TRANSIT BUS SERVICE

Category Definition: New, extended, and increased-frequency provide additional hours of bus service per year and serve additional people. These are fixed-route services implemented by transit agencies. *(Cleaner, alternative-fuel buses should be used in the bus service expansions in order to offset the additional emissions created from the new transit service and achieve an overall project net emissions reduction.)*

Please Provide the Following Input Data for Each New Transit Service Route Proposed:

Number of Operating Days per Year	
Average Daily Ridership of New Service	
Average Length of Automobile Trips Replaced (miles)	
Percent of Riders Who Drive to the Bus Service	
Annual Vehicle Miles Traveled (VMT) for the New Transit Service	
Percent of Riders Who are Transit Dependent	

PROJECT CATEGORY 6:

INTER-CITY RAIL SERVICE

Category Definition: New, extended, and/or increased-frequency of commuter rail services.

Please Provide the Following Input Data for Each New Transit Service Route Proposed:

Number of Operating Days per Year	
Average Daily Ridership of New Service	
Average Length of Automobile Trips Replaced (miles)	
Percent of Riders Who Drive to the Rail Station	
Percent of Riders Who are Transit Dependent	

AIR QUALITY ASSESSMENT INPUT DATA – continued

PROJECT CATEGORY 7:

BICYCLE FACILITIES

Category Definition: Bicycle paths (Class 1) or bicycle lanes (Class 2) are targeted to reduce commute and other non-recreational automobile travel. Class 1 facilities are paths that are physically separated from motor vehicle traffic. Class 2 facilities are striped bicycle lanes giving preferential or exclusive use to bicycles. Bicycle lanes should meet Caltrans' full-width standard depending on street facility type.

Please Provide the Following Input Data for Each New Bicycle Facility Proposed:

Type of Bicycle Facility (Class 1 or Class 2)	
Length of Bicycle Path or Lane (miles)	
Average Length of Bicycle Trip (miles)	
Average Daily Traffic Volume on Roadway Parallel to Bicycle Facility (ADT)	
City Population (number of residents)	
List Types of Activity Centers in the Vicinity of the Bicycle Facility (e.g., bank, church, hospital, park & ride lot, office park, light rail station, post office, public library, shopping center, grocery store, university, community college, elementary school, etc.)	

PROJECT CATEGORY 8:

PEDESTRIAN FACILITIES

Category Definition: Pedestrian facilities replace automobile trips by providing or improving pedestrian access. An example is a pedestrian over crossing over several lanes of heavy traffic providing a safe walking access to adjacent activity centers.

Please Provide the Following Input Data for Each New Pedestrian Facility Proposed:

Estimated Number of Weekly One-Way Automobile Trips Eliminated	

AIR QUALITY ASSESSMENT INPUT DATA - continued

PROJECT CATEGORY 9:

GRADE SEPARATIONS

Category Definition: Includes construction of rail or roadway over crossings, under crossings, etc. to eliminate traffic flow interruptions at grade crossings.

Please Provide the Following Input Data for Each Grade Separation Proposed:

Traffic Volume – "Before Project" Traffic Count Data OR Before Project Average Daily Traffic (ADT)	
Traffic Delays – "Before Project" Average Daily Delay (i.e., average amount of time, on a daily basis, that trains block the roadway)	

PROJECT CATEGORY 10:

TRANSPORTATION DEMAND MANAGEMENT

Category Definition: Programs that reduce and/or eliminate automobile trips and vehicle miles traveled.

Please Provide the Following Input Data for the Proposed Transportation Demand Management Project:

Number of Weekly One-Way Automobile Trips Eliminated	
Average Length of Automobile Trips Eliminated	

PROJECT CATEGORY 11:

INTERMODAL FACILITIES

Category Definition: Facilities that support the movement of goods into and through the region, including transfer facilities, cargo terminals, freight distribution facilities, etc. Intermodal facilities can improve the efficiency and effectiveness of goods movement and result in a net reduction in vehicle miles traveled.

Please Provide the Following Input Data for the Proposed Intermodal Facility Project:

Estimated Total Annual Reduction in Truck Vehicle Miles Traveled (e.g., truck VMT eliminated by using rail for goods movement)	

2007 CMAQ GRANT APPLICATION - FUNDING ITEMIZATION

Equipment

Product	Unit Price	Unit	Quant	Extension
Encom Ethernet Radio	$5,000.00	EA	47	$235,000.00
QuicNet	$19,000.00	LS	1	$19,000.00
Iteris Systems Hardware / Software	$50,000.00	LS	1	$50,000.00
Fiber Optic Cable	$25.00	LF	2200	$55,000.00
Video Transmission Equipment	$1,500.00	EA	90	$135,000.00
Video Detection Equipment	$22,000.00	LS	20	$440,000.00
170 controller chip set	$250.00	EA	80	$20,000.00
170E controller and cabinet	$10,000.00	LS	2	$20,000.00
Weather monitoring cameras	$6,000.00	EA	3	$18,000.00

Equipment Sub Total	$992,000.00	
Equipment Contingency	$198,400.00	(20%)
[redacted]	[redacted]	(11.47%)
CMAQ	$1,053,861.12	(88.53%)
Equipment Total	$1,190,400.00	

Labor

Activity	Unit Price	Unit	Quant	Extension
Citywide needs assessment	$75,000.00	LS	1	$75,000.00
Encom Ethernet Radio	$700.00	EA	47	$32,900.00
Rewire for video detection*	$25,000.00	EA	5	$125,000.00
QuicNet/ Set Up	$9,900.00	LS	1	$9,900.00
Iteris Systems Software	$15,000.00	LS	1	$15,000.00
Fiber Optic Cable	$55.00	FT	1800	$99,000.00
Video Transmission Equipment	$500.00	EA	90	$45,000.00
Video Detection Installations	$5,000.00	EA	20	$100,000.00
170 controller reprogramming	$200.00	EA	80	$16,000.00
170E controller and cabinet	$13,000.00	EA	2	$26,000.00
Weather monitoring cameras	$4,000.00	LS	3	$12,000.00

Labor Subtotal	$555,800.00	
Labor Contingency	$111,160.00	(20%)
Labor Total	$666,960.00	
[redacted]	[redacted]	(11.47%)
Labor CMAQ	$590,459.69	(88.53%)

*Assumes new conductors for the entire intersection.

Enviromental Subtotal	$10,000.00	
Enviromental Contingency	$2,000.00	(20%)
Enviromental Total	$12,000.00	
[redacted]	[redacted]	(11.47%)
Enviromental CMAQ	$10,623.60	(88.53%)

Design & Eng'ing Subtotal	$177,060.00	
Design & Eng'ing Contingency	$35,412.00	(20%)
[redacted]	[redacted]	
Design & Eng'ing CMAQ	$188,101.46	
Design & Eng'ing Total	$212,472.00	

Project Total	**$2,081,832.00**	
[redacted]	[redacted]	(11.47%)
CMAQ Funding Requested	$1,843,045.87	(88.53%)

ATTACHMENT 3
GENERAL SCOPE OF WORK

General Scope: Evaluate the City of Palm Springs' existing isolated "local" traffic signals and existing interconnected corridors; recommend and design an improved communications system; implement updated traffic signal timing; and specify a central software system. All services shall be provided in compliance with ITS regulations per Caltrans' Local Assistance Program Guidelines, Chapter 12.6 Intelligent Transportation Systems. This project is considered a Minor ITS Project and will follow the traditional Preliminary Engineering procedures. The System Engineering Review Form (SERF) and the Systems Engineering Management Plan (SEMP) will not be subject to Federal Highway Administration review and approval.

PHASE 1: ENVIRONMENTAL APPROVAL & PROJECT DEVELOPMENT

- **Project Management –** Coordinate and attend meetings; perform all project management coordination necessary to maintain the Project Schedule.
- **Environmental Approval** – Perform all required environmental research and analysis necessary for the project, pursuant to CEQA and NEPA requirements, as well as the policies and procedures contained in Caltrans' Environmental Handbook and Local Assistance Procedures Manual. Prepare an Initial Study leading to a Mitigated Negative Declaration ("IS / MND") in accordance with CEQA regulations; and a Categorical Exclusion in accordance with NEPA regulations.
- **System Survey –** Survey the existing traffic signal interconnect systems and obtaining all necessary documents, studies, reports, as-built plans, record drawings, record maps and surveys, and any other pertinent data required to complete the project.
- **Systems Engineering Management Plan (SEMP) –** Develop a SEMP for the project.
- **Recommendations** – Identify improvements to all isolated "local" traffic signals and existing interconnected corridors to allow simultaneous communications with multiple pieces of traffic signal hardware within the traffic signal cabinets through the use of a new traffic signal centralized coordination software system; recommend improvements to facilitate video detection system transmission to centralized Traffic Management Center; develop a Traffic Management Center at City Hall; evaluate Wi-Fi web / intranet system for City use on Wi-Fi enabled computers; identify methods of providing real-time traffic information to the public; and other recommendations necessary to implement the Project.

PHASE 2: ENGINEERING DESIGN – PLANS, SPECIFICATIONS, AND ESTIMATES (PS&E)

- **Design** – Prepare plans, specifications, and estimates (PS&E) for implementing the Project.
- **Traffic Signal Timing –** Obtain required traffic data and develop traffic signal timing plans for all isolated "local" intersections, and coordinated timing plans for all interconnected corridors.
- **Software Graphics** – Prepare intersection graphics for all existing signalized intersections as required for new traffic signal centralized coordination software system.
- **Construction Authorization** – Prepare all necessary applications and forms ("Request for Authorization package") required to obtain authorization from Caltrans District 8 to proceed with construction of the Project.

ATTACHMENT 3
GENERAL SCOPE OF WORK

PHASE 3: CONSTRUCTION ADMINISTRATION

- **Caltrans Coordination** – Provide all necessary coordination with Caltrans District 8 to ensure compliance with all state and federal regulations applicable to the Project. Prepare "Award Package" and federal grant reimbursement invoices for submittal to Caltrans District 8. Ensure all DBE forms are prepared and completed, and all DBE requirements are satisfied.
- **Pre-Construction Meeting** - Organize and coordinate a pre-construction conference with the construction contractor and sub-contractors, City staff, project designer, utility companies, and any other agencies required to attend. Prepare an outline for the pre-construction conference, reviewed and approved by the City.
- **Construction Meetings** - Regularly scheduled coordination and status meetings to review project status and budget; facilitate decision making; and discuss issues that have the potential of adversely affecting the project budget, schedule, or product. Consultant shall prepare meeting agenda in consultation with City project manager, distribute agenda prior to meeting, arrange for appropriate participants to attend, and distribute meeting notes for regular project status meetings and public meetings.
- **Contract Documents** - Implement the plans and specifications as necessary to protect the City against defects and deficiencies on the part of the contractor, and maintain the project budget and schedule.
- **Labor Compliance** - Perform state and federal labor compliance tasks, including verifying certified payrolls, subcontractor utilization, and labor interviews.
- **Progress Reports** - Prepare weekly and monthly progress reports and submit to the City. The reports will address the progress of the work, the project schedule, information/decisions required to maintain the schedule and complete deliverables, problems encountered that may affect schedule, budget, work products, anticipated work for the following week and month, and should contain photographs documenting the progress of the work.
- **Utility Coordination** - Coordinate with the appropriate utility companies for work that affects its specific utility.
- **Shop Drawings** - Coordinate, document, and make engineering recommendations regarding shop drawings and their compliance with the plans and specifications for the City's approval.
- **Project Submittals** - Coordinate, document, and make engineering recommendations regarding submittals and their compliance with the plans and specifications for the City's approval.
- **Materials Testing** - Coordinate, conduct, interpret, and supervise all required material tests in accordance with applicable standards.
- **Surveying** - Provide review and approval of construction surveying and staking to ensure adequacy and accuracy. Construction surveying and staking will be the responsibility of the Contractor.
- **Test Data** - Review and make recommendations on manufacturer's shop or mill tests (or reports from independent testing laboratories) relative to materials, equipment, performance ratings, and concrete data as necessary to ensure conformance with the project specifications.

ATTACHMENT 3
GENERAL SCOPE OF WORK

- **Traffic Control** - Review and make recommendations regarding all traffic control proposals, and inspect construction contractor's traffic control to ensure compliance with specifications and City standards.
- **Safety** - Conduct and document project safety meetings in accordance with the project requirements. Report all accidents, including property damage, and notify proper authorities. Document all incidents with photographs and written reports. Enforce Federal and State regulations for occupational safety and health standards for all construction activities.
- **Construction Inspection** – Perform as Resident Engineer on the project; coordinate all required inspections necessary for the project, in accordance with Caltrans Standard Specifications and Plans, Work Area Traffic Control Handbook (WATCH), State of California Construction Safety Orders (CalOSHA), and the Standard Specifications for Public Works Construction (Greenbook). Inspectors will be required to perform daily on-site observations of the progress and quality of construction to determine if the work being performed is in general conformance with the contract documents and all applicable laws, codes and ordinances. Inspectors will prepare complete and accurate daily reports, calculations, project records, progress payment quantities, reports and correspondence related to the project activities.
- **Progress Payments** - Review monthly payment applications submitted by the construction contractor, determine whether the amount requested reflects the progress of the construction contractor's work. Prepare progress payment reports and submit to the City for approval prior to distribution to the construction contractor. The reports will contain the total construction contract amount, payments to date, current requested payment, retainage, and the amounts owed this pay period.
- **Project Records** - Maintain at the project site all correspondence, memoranda, contract documents, change orders, claims, City and engineer directives, meeting minutes, shop drawings, supplementary drawings, and request for payment. Consultant will also maintain a current list of names, addresses and telephone numbers of the construction contractors, subcontractors, and principle material suppliers associated with the projects. Project records shall be maintained using the Caltrans Construction Manual as a guideline. Provide the City with the original complete set of construction documents upon project close-out.
- **Construction Schedules** - Review the construction contractor's baseline and monthly up dated schedules. Monitor the progress of the construction contractor's work and compare on a continual basis how the overall project schedule is being affected. Notify the City immediately as to any events or conditions which may cause delays to the completion date of the project.
- **Contract Change Orders** - Evaluate the construction contractor's request for a change or substitution. Acceptable contract changes will be submitted to the City for approval and will be accompanied by the Resident Engineer's recommendation.
- **Claims** - Identify all potential claims, track and monitor unresolved claims and implement claims avoidance processes at all times. Assist the City, as requested, in the identification, resolution, and final disposition of claims filed by the construction contractor or third parties against the City or the project.
- **Cost and Schedule** - Track and monitoring contract pay item quantities and payments, contract change orders, supplemental work items, agency furnished materials, contingency balance, and overall project budget.

ATTACHMENT 4
NOTICE TO PROPOSERS
DISADVANTAGED BUSINESS ENTERPRISE INFORMATION
EXHIBIT 10-I

ATTACHMENT 4 TO THE CITY'S REQUEST FOR PROPOSAL HAS BEEN DELETED, AS IT IS INCORPORATED INTO THE PROFESSIONAL SERVICES AGREEMENT AS SECTION 10.12, (SEE EXHIBIT "B", SPECIAL REQUIREMENTS).

ATTACHMENT 5
SAMPLE PROFESSIONAL SERVICES AGREEMENT

ATTACHMENT 5 TO THE CITY'S REQUEST FOR PROPOSAL HAS BEEN DELETED, AS IT IS A DUPLICATE OF THIS PROFESSIONAL SERVICES AGREEMENT.

EXHIBIT "D"
CONSULTANT'S PROPOSAL

CONSULTANT'S PROPOSAL FOLLOWS THIS PAGE

RBF CONSULTING

December 9, 2009 JN10-107234

Ms. Cheryl Martin
City of Palm Springs, Division of Procurement and Contracting
3200 E. Tahquitz Canyon Way
Palm Springs, CA 92262

Subject: Technical Proposal: RFP #07-10, Proposal for Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center

Dear Ms. Martin:

RBF Consulting (RBF) is eager to demonstrate to the City of Palm Springs the high quality, timely and turnkey service we consistently provide to our clients. We have thoroughly reviewed the Request For Proposal (RFP) and the project site to ensure that we will exceed the City's expectations. As partners in improving your traffic signal and video surveillance systems, we offer the City of Palm Springs the following benefits:

- **Exceptionally Qualified Project Manager with a Proven Track Record**
  RBF's proposed Project Manager, Mr. Carlos Ortiz, PE, TE, PTOE, has over 20 years of experience in the planning and design of traffic signals, legacy/Ethernet traffic signal communication systems, in-pavement lighted crosswalk systems, traffic management centers (TMC), closed circuit television (CCTV) systems, dynamic message sign systems (DMS), video detection systems, transit priority system (TSP), red-light camera photo enforcement system, lighting systems, and traffic surveillance systems.

- **Extensive Experience in the Coachella Valley**
  RBF has maintained an office in the Coachella Valley for over 20 years, and the proposed Project Team is available to fulfill their time commitments in accordance with the project schedule.

- **Extensive Experience with Caltrans and Federally Funded Projects**
  RBF has provided planning, design, and construction administration services for many federally funded projects throughout California requiring extensive coordination with Caltrans, including District 8.

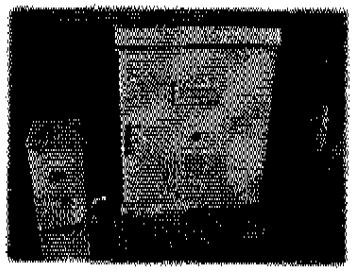
- **Similar Services Experience**
  RBF has provided traffic signal, signal communication systems, and/or traffic management center services including planning, design, and construction support for various agencies including Caltrans, and the Cities of Palm Springs, Palm Desert, La Quinta, Rancho Mirage, Indio, Indian Wells, Temecula, Garden Grove, Orange, Irvine, Beverly Hills, Culver City, and Santa Monica.

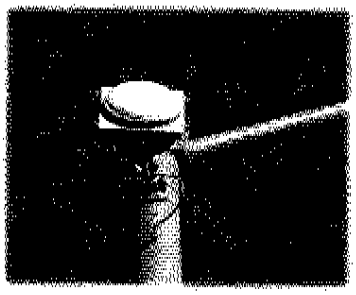
- **Committed to Your Project's Success**
  The RBF Team is ready to start immediately upon notice to proceed and will work aggressively to meet the City's design, budget, and schedule goals for this project.

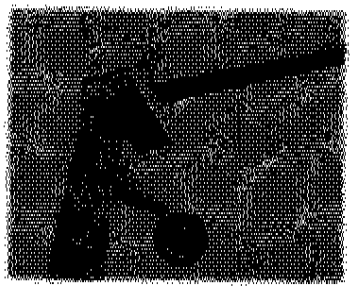
Respectfully Submitted,

Brad Mielke, SE, PE
Senior Vice President, Principal in Charge

Carlos Ortiz, PE, TE, PTOE
Vice President, Project Manager







Technical Proposal, RFP #07-10

Cost Proposal, RFP #07-10

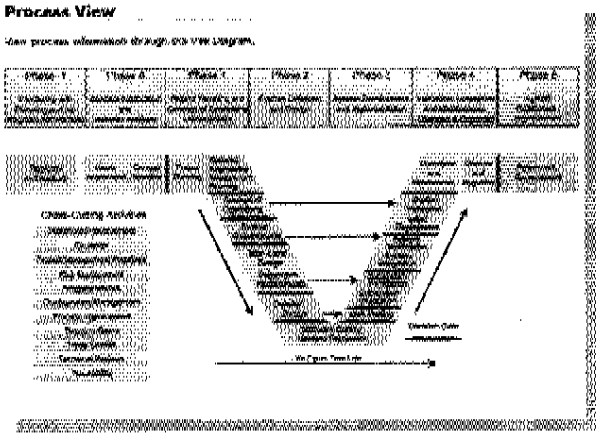
Section A: Project Understanding

PROJECT UNDERSTANDING

The City of Palm Springs has received a federal grant to upgrade and expand their Intelligent Transportation System (ITS) in order to facilitate the communications from the signalized intersections and corridors to the City of Palm Springs Traffic Management Center (TMC).

The objective of the project is to analyze the City's arterial corridors to upgrade the traffic signal communication systems with current technology, and to create a state-of-the-art TMC at City Hall. The City's goal is to bring the benefits of enhanced signal synchronization and operational effectiveness along the signalized intersections and project corridors and thereby increasing mobility and reducing travel times. The proposed improvements will provide two-way data and video communications from the field elements to the TMC. The City's goal is to have a citywide reliable and consistent communication system that uses the latest technology that will assist them in managing the traffic at the intersections and roadway segments; enhance staff efficiency through remote monitoring, provide troubleshooting capabilities, and system adjustments; and compliment the City's existing traffic signal surveillance, control and monitoring program. The City also desires is to have a state-of-the-art system that can disseminate real time traffic information to the public via the City's web site and public access channel.

The project is funded through the Congestion Mitigation and Air Quality (CMAQ) federal aid program provided through the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The project is considered a Minor Intelligent Transportation System "ITS" Project and the project shall comply with regular federal ITS regulations, in accordance with the Code of Federal Regulations, Chapter 23, Section 940 (23 CFR 940), entitled "Intelligent Transportation System Architecture and Standards".



The Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project consist of the following three phases:

- Phase One – Environmental Approval and Project Development
- Phase Two – Engineering Design (Plans, Specifications, and Engineer's Estimates)
- Phase Three – Construction Administration

It is very important that the proposed improvements not only provide an effective communication between the field elements and the TMC, but it is highly recommended that the proposed improvements take into consideration future signal/video detection/CCTV/DMS communication improvements that will provide minimum disruption to the proposed communication infrastructure. Therefore, the proposed communication system should be capable of providing communications from the project field elements, and also be expandable and scalable in order to link future field elements in the City of Palm Springs.

The proposed communication system should be capable of providing communications from the project field elements, and also be expandable and scalable in order to link future field elements in the City of Palm Springs.

PROJECT APPROACH

In order to assist the City of Palm Springs with the most efficient delivery of professional services within the project schedule, the RBF Project Team will implement a management and technical approach that has been successfully used on similar ITS state and federally funded Projects for various public agencies. The Project will be presented to the City in three phases.

Phase One – Environmental Approval and Project Development Services

Environmental Approval Services

As a federally funded project, the Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project require environmental clearance pursuant to both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). As a grantee of FHWA's CMAQ Program, the City of Palm Springs is required to address the requirements of NEPA. The RBF Project Team will process the necessary NEPA and CEQA environmental clearances and related studies to secure federal environmental approval through the California Department of Transportation (Caltrans) – District 8, for the proposed project. Based upon our understanding of the proposed project, knowledge of current NEPA/CEQA regulations and significant previous experience with the Department, including knowledge of and experience with Caltrans Local Assistance Procedures Manual and other related guidelines, will be necessary. The City of Palm Springs will act as the Lead Agency with regard to CEQA, and Caltrans District 8 will act as the Lead Agency with regard to NEPA, through FHWA delegation.

It is anticipated that the project will require the preparation of a Preliminary Environmental Study (PES) form, followed by preparation of an Initial Study leading to a Mitigated Negative Declaration (IS/MND) in compliance with CEQA, and a Categorical Exclusion (CatEx) in compliance with NEPA.

Phase One of the proposed project will include environmental approval and project development for 79 traffic signals and nine corridors included in the project area. The project proposes to upgrade and improve the City's existing Traffic Management Center, communications, and traffic signal system. The project will install 1,800 feet of new conduit and 2,200 feet of new fiber optic cable to connect the IT hub to the Traffic Management Center. Therefore, it is anticipated that this aspect of the project is the only one requiring ground disturbance.

Types of Environmental Documents and Permits - RBF understands its objective as approval of this project with an Initial Study/Mitigated Negative Declaration under CEQA, and a Categorical Exclusion (CatEx) under NEPA. For qualification of this approach, the criteria identified in Table 1: *CEQA/NEPA Compliance*, will be met for all projects. If the projects do not conform to the criteria referenced in Table 1, the appropriate environmental documentation will be determined and a new scope will be prepared.

Table 1
CEQA/NEPA Compliance

CEQA Compliance	NEPA Compliance
Based on an examination of this proposal, supporting information, and the following statements (See 14 CCR 15300 et seq.):	In accordance with 23 CFR 771.117, and based on an examination of this proposal and supporting information, the State has determined that this project:
• If this project falls within exempt class 3, 4, 5, 6 or 11, it does not impact an environmental resource of hazardous or critical concern where designated, precisely mapped and officially adopted pursuant to law. • There will not be a significant cumulative effect by this project and successive projects of the same type in the same place, over time.	• Does not individually or cumulatively have a significant impact on the environment as defined by NEPA and is excluded from the requirements to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS); and • Has considered unusual circumstances pursuant to 23 CFR 771.117(b) (http://www.fhwa.dot.gov/legsregs/23cfr771.html#sec771.117).

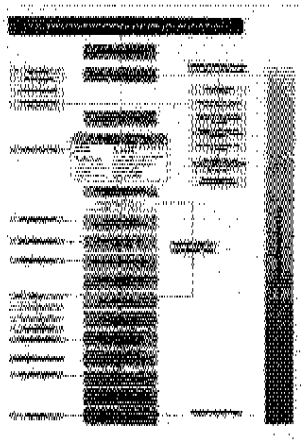
CEQA Compliance	NEPA Compliance
• There is not a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances. • This project does not damage a scenic resource within an officially designated state scenic highway. • This project is not located on a site included on any list compiled pursuant to Govt. Code § 65962.5 ("Cortese List"). • This project does not cause a substantial adverse change in the significance of a historical resource.	• In non-attainment or maintenance areas for Federal air quality standards, the project is either exempt from all conformity requirements, or conformity analysis has been completed pursuant to 42 USC 7506(c) and 40 CFR 93.

The RBF Project Team will initiate the environmental tasks by preparing a Preliminary Environment Study (PES) Form for the project to obtain Caltrans and/or FHWA approval. To support the environmental documents, The RBF Project Team will determine the appropriate exemption under NEPA. It is anticipated that this can be accomplished without preparing technical studies. However, if technical studies are required during the scoping process, the following studies have been included as optional tasks: Biological Resources/Natural Environment Study - Minimal Impacts (NES-MI); Noise Analysis; Geotechnical Assessment; and Cultural Resource Assessment.

The initial and most critical steps involve the successful preparation of a PES Form. The PES Form will identify the necessary level of technical assessment required to support the environmental documentation for the project and generally summarize specific critical environmental issues that may affect project approval, programming, scheduling, design considerations, and project costs. On a broad level, the PES Form examines potential environmental issues associated with the project, including traffic, historic resources, visual resources, water quality, air quality, and noise (including air quality conformity review with the Regional Transportation Plan [RTP] and Regional Transportation Improvement Plan [RTIP]), hazardous materials, temporary and long-term effects upon local streets and circulation, and construction-related effects. The resultant PES Form becomes the work scope for the required CEQA/NEPA compliance documentation.

RBF's initial effort will focus on the development leading to an approved PES Form and initiation of the recommended studies identified in the PES. Environmental issues that may require further detailed study or that may delay or affect the viability of the proposed project will also be identified through our initial efforts.

All technical documentation will be prepared in conformance with the NEPA of 1969, pertinent FHWA regulations, the DOT's Environmental Handbook, CEQA, and the regulations requirements and procedures of any other responsible Public Agency with jurisdiction by law. A number of agencies, organizations and consultant will be involved in this project. An important consideration is to ensure that the key players are well coordinated and kept informed regarding issues status, resolution, and schedule progress. RBF will lead the environmental effort and interface with agencies and other interested parties to facilitate project delivery.



Project Development Services - Existing Systems Inventory and Evaluation
The City of Palm Springs Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project will be prepared using the guidelines provided in the National Intelligent Transportation System (ITS) Architecture using the System Engineering Process approach as indicated in the System Engineering "V" diagram.

After the Project kick-off meeting, the RBF Project Team will prepare a project roadmap diagram showing the process for the design and deployment of the Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project. The diagram will facilitate the RBF Project Team, City staff, and other stakeholders to understand our project approach. We have used this approach on similar ITS projects.

The City of Palm Springs Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project will include the inventory and evaluation of the traffic signal controller hardware and software systems, hardwired communication system, microwave system, radio communication system, video detection system, and CCTV system, and other existing field elements.

Inventory and evaluation of the communication systems will also be conducted including type of communication, size, and location. In addition, a thorough investigation and evaluation of the communication hardware/software at the master controller locations, Traffic Management Center (TMC), and other facilities including the Police Department where future connections may be anticipated.

Under this task, the RBF Project Team will provide the City of Palm Springs a citywide existing traffic signal systems map that the City can use as a tool to reference all existing traffic signal systems and communication elements. As part of the system inventory and evaluation, the following items will be addressed under this Phase.

- Street Network
- Existing Traffic Signal Controller type, model
- Existing Traffic Signal Master Controller type, model
- Existing signal communication conduit type, size and location
- Existing spread spectrum radio communications
- Existing microwave systems
- Existing communication lines (T-1)
- Existing communication bandwidth
- Number of pairs of the existing copper communication system
- Existing communication devices at the field elements
- Existing communication devices at the master controller locations and TMC
- Existing ITS field elements
- Existing vehicle detection systems
- Existing emergency vehicle pre-emption systems
- Existing communication topology
- Architecture of the City's WANs
- Location of the City's WAN communication lines
- Communication antennas at City Hall and Parks

A Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize findings and deficiencies at the signalized intersections, video detection system, other field elements locations, hubs/TMC, and communication systems. Graphics, photos, and field notes will be included.

Project Development Services - Assessment of Surrounding Systems

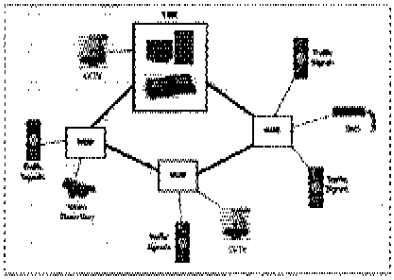
The City of Palm Springs may desire to share signal communications with adjacent agencies and Caltrans District 8. The RBF Project Team will evaluate the current and proposed traffic signal systems and communication systems with the Cities of Cathedral City, Desert Hot Springs, County of Riverside and Caltrans. As part of the evaluation, the RBF Project Team will investigate the following:

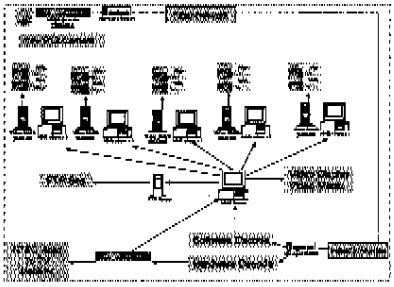
- Type of existing and proposed traffic signal controller hardware and software
- Type of existing communication system along the major corridors shared with the City of Palm Springs
- Existing and proposed traffic management system
- Type of Legacy or Ethernet communication system
- Existing and proposed signal communication topology
- Existing and proposed ITS field elements including Closed Circuit Television (CCTV) systems and Changeable Message Signs (CMS)

A Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize findings and identify opportunities for communication between the agencies. Graphics, photos, and field notes will be included.

Project Development Services - Assessment of Intelligent Transportation System (ITS) Opportunities
A key factor of the ITS planning process is the extensive involvement and participation of project stakeholders. Under this task, the RBF Project Team will establish and coordinate an internal City ITS Steering Committee. The purpose of the committee will be to provide complete understanding of ITS applications among internal City's departments and other local stakeholders. It is anticipated that the following items will be discussed with the ITS Steering Committee. These are:

- Establish vision, goals, and objectives of the Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project
- Share information on ITS purpose, benefits, and opportunities
- Identify current and foreseeable problems that can be addressed through ITS
- Provide dialogue regarding transportation and development institutional restrictions and obligations
- Recommend strategies through ITS solutions
- Discuss operations and maintenance of ITS elements

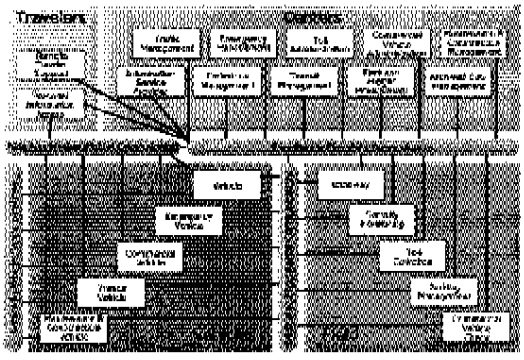




It is anticipated that staff from the City's Public Works Department, Traffic Signal Maintenance Department, and Information Technology Department will participate on the Steering Committee. In addition, staff from the Police Department, Fire Department, Transit Department, Special Events Coordinator, and other stakeholders can be invited to participate in the Steering Committee. All stakeholders should be involved in the process in order to provide them with a thorough understanding of the purpose, benefits, and opportunities of ITS technology. Each stakeholder will be provided with the opportunity to participate in the development of the Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project. They will be allow to provide input on issues, prioritizing possible solutions and their feasibility based on needs, available technology, and funding opportunities.

The RBF Project Team will address current and future ITS needs using proven and available technology. It is anticipated that under this task, the following will be discussed:

- Review of wireless communications currently deploy between local agencies and Caltrans for signal synchronization
- Review of ITS technology currently use or in the planning stage by adjacent agencies
- Review of current ITS technology
- Development of recommendations incorporating flexibility to adopt and migrate to future technology

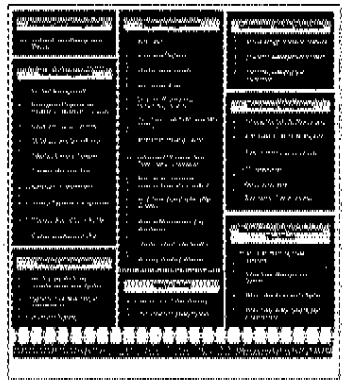


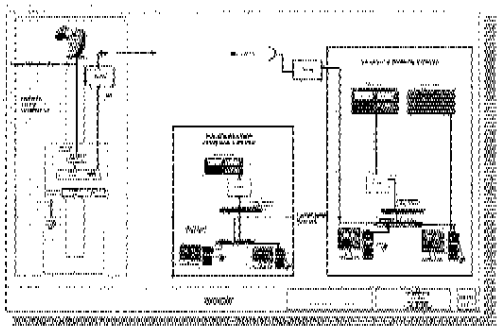
The assessment of ITS needs and opportunities will be based on ***national and regional ITS architecture*** with input from members of the Steering Committee and it will based primarily on current and future ITS needs. Key elements of the assessment process are as follows:

- Review of High Level Architectural Diagram
- Select Applicable/Priority System, Sub-System, and Communication
- Understanding of Regional Architecture

The RBF Project Team will discuss the City's ITS needs including the integration of new and existing ITS components. The following items will be discussed:

- Communication architecture
- Communication options including DSL, fiber-optics, wireless
- Internet Protocol (IP) based ATMS
- Existing/future video detection system/CCTV systems needs
- Future CMS systems needs
- Existing/future other ITS field elements needs
- Upgrade/replacement of traffic management system
- Upgrade of existing signal controllers
- Next generation of signal controllers
- Upgrade of signal controller software
- Hardware/software needs at the communication hubs
- Hardware/software needs at the City's TMC
- Connectivity options with regional stakeholders (Police Department/IT Department/Fire Department, Caltrans, etc.)





Fiber-optic and wireless communication systems, including Wi-Fi and Wi-Max or 802.16 technologies will be addressed and the communication network topologies will be described in detail. It will also include the recommended communication network topology/topologies for the City of Palm Springs.

Ethernet communications will be discussed with the City of Palm Springs. An advantage of Ethernet based networks is the maturity and acceptance of ITS edge devices (traffic controllers, CCTV systems, CMS systems, video detection, etc.). These devices provide an Ethernet/IP connection on their devices for communication. The RBF Project Team will discuss video technologies that can be transmitted via an Ethernet communication network, including video compression formats (MPEG-2, MPEG-4, H.264, etc.) for video surveillance. Specific information and assessment of new ITS equipment will be provided to City staff. Component specifications, functionality, and requirements of each system will be provided. The technology assessment of the following systems will be provided to City staff.

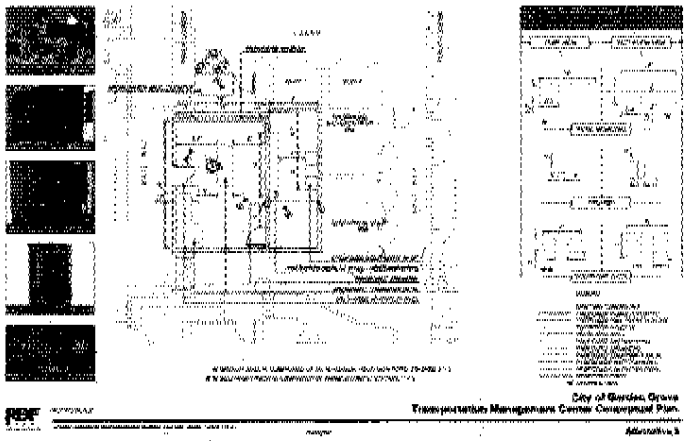
- CCTV systems
- CMS systems
- Signal Controllers
- Video Detection Systems
- Emergency Vehicle Pre-Emption Systems
- Ethernet Devices
- Hub Equipment
- TMC Equipment
- Construction Work Zone ITS Management Systems
- Parking Management ITS Systems
- Advanced Traveler Information Systems
- Transit Traveler Information Systems
- Incident Detection Systems
- Incident Response Systems

Currently, the City of Palm Springs communicates to the City's signalized intersections via McCain QuicNet/4 traffic management system. As part of this project, the RBF Project Team will discuss with the City of Palm Springs migration to the latest version of QuicNet or a new centralized traffic management system that can provide full Ethernet capabilities.

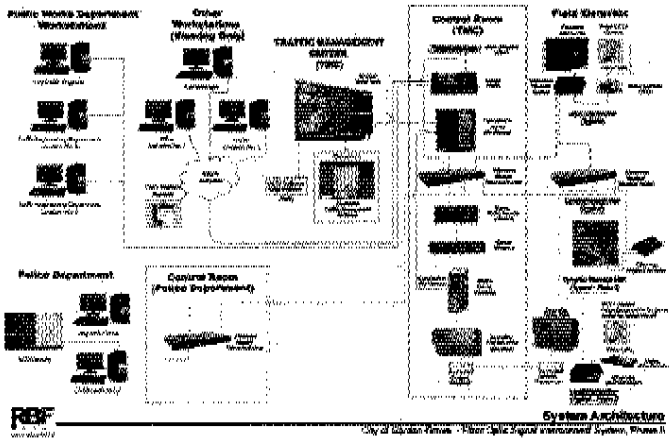
The technology evaluation at the TMC will include the transition from the current traffic management system to the selected centralized traffic management system that can be integrated with minimum disruption to the existing signalized intersections and can be maintained concurrently with the City's signalized intersections that are not part of the project.

Currently, the City of Palm Springs TMC consists of one workstation and a monitor. The City desires to expand the TMC to include a new workstation and a state-of-the-art video wall that can display multiple video images. The new TMC will be link to the field elements to provide real time traffic control data and video surveillance via the video detection systems. The proposed TMC shall be design as a scalable and expandable system for integration of future ITS components and inter-agency coordination.

The RBF Project Team will provide the City of Palm Springs with two alternative TMC Conceptual Plans that will show graphically the City's needs at the expanded TMC including video wall requirements and location, TMC operator workstations and furniture, equipment rack, and TMC equipment control hardware requirements.

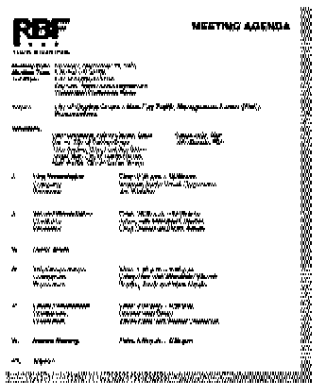


In order to bring data and video communications from the field elements to the TMC, it is necessary to develop a system architecture that will show the hardware/software and communication infrastructure at the field elements, TMC Control Room, and the TMC. In addition, it can be expanded to show the communication infrastructure to link department workstations, other City facilities, and the public via the City's web site.



If necessary, the RBF Project Team will arraign presentations with manufacturers/distributors representatives to present City staff their latest ITS and traffic management system technology including communication hardware and

software.


RBF MEETING AGENDA

The objective of these meetings is to provide different technologies to facilitate City's decision on a technology that will fit their current and future needs, can effectively communicate with the traveling public, and can provide a highest return of investment. If necessary, the RBF Project Team can also arraign site visits to similar agencies that have installed recently new video surveillance systems and/or traffic management system using the latest state-of-the-art technology. RBF arraigned similar presentations for the City of Garden Grove staff to facilitate their selection for a new TMC and also arraigned visits to other TMCs in Southern California. This approach has been used on previous projects in order to assist cities' staff in the understanding and selection of new technology.

Project Development Services - Assessment of Video Detection Integration

The RBF Project Team understands the primary component and consumer of bandwidth on the redesigned ITS network will be video detection cameras providing video feeds to the expanded TMC.

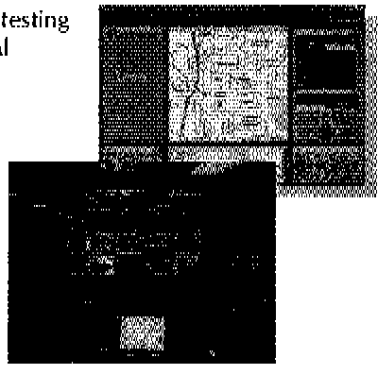
Success of interconnecting traffic signal intersections to the TMC will rely heavily on a redesigned communication network optimized for video data transmissions. The foundation for expanding the reach of video surveillance within City of Palm Springs traffic corridors requires a structured methodology of discovery, analysis, design and finally construction:

- **Discovery**. The RBF Project Team will coordinate closely with City staff to compile all relevant documentation on existing fiber, hardwired, and wireless connection points throughout the affected traffic intersections. In addition, the RBF will discuss with City staff the location and the communication infrastructure for the three (3) weather cameras to monitor flood and wind conditions in real time at the White Water River crossings at Indian Canyon Drive, Gene Autry Trail, and Vista Chino.

- **Needs Assessment Analysis.** The RBF Project Team recommends analyzing the existing communication infrastructure for quality of corridor segments from the furthest reach inward to the TMC.

  Fiber optic segments should be tested using an optical time domain reflectometer and double-ended loss measurement methodology to document quality of individual cables and dB loss across fiber splices.

  Copper pairs should be tested with a megger to perform ground resistance testing of all conductors including the shield, conductor-to-conductor and individual conductors to shield. The resistance continuity reading will determine performance capabilities and maximum bandwidth availability for copper.



  The RBF Project Team recommends that only existing wireless infrastructure in the form of mast installations and antennas be reviewed for usefulness should a modern wireless Ethernet design be considered by the city for the network redesign. Wireless design should be considered for locations that have not existing underground communication infrastructure and it will be not cost effective to provide a hardwired/fiber optic solution.

Based on the existing communication system and recommendations to migrate to an Ethernet based System, The RBF Project Team will provide the city with a project ITS architecture plan showing the project communication improvements from the field elements to the TMC.

- **Design.** Upon approval of the project ITS architecture plan, the RBF Project Team will provide final plans, technical specifications, and engineer's estimates showing the proposed communication improvements from the traffic signal systems and video detection system, and video surveillance cameras to the TMC.

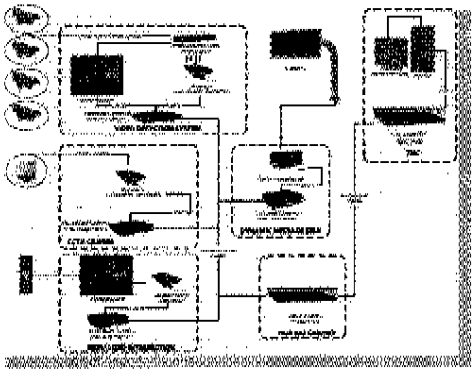
- **Construction Administration. Upon award of contract to a qualified integrator, the RBF Project** Team will, as part of its overall responsibility for administration, ensure the video detection and network redesign will be implemented as designed.

  In particular, the RBF Project Team will be stringent in the review of drawings and submittals by the integrator to verify performance standards will be met in regard to bandwidth, data quality and calculated video performance. After construction is complete, the RBF Project Team will review the performance measurement test data to verify the network meets design requirements. The RBF Project Team has the technical expertise to work with the integrator to resolve network or video application issues should they occur during any phase of the contract implementation.

Project Development Services – Assessment of Traveler Information: Link Integration
The City desires is to have a state-of-the-art system that can disseminate real time traffic information to the public via the City's web site and public access channel. The RBF Project Team will work with City staff to design a cost effective web based solution for distribution of traffic detection camera based video to multiple destinations.

The RBF Project Team is experienced in combining video and data in scalable applications for this project's requirements of simultaneous display on the City's new TMC video wall, as a source for web based visualization and for public access. The RBF Project Team anticipates building a system based on ITS and NTCIP standards, with design elements to regionally display traffic while building framework that can be replicated to future traffic intersections in a very cost effective manner.

Project Development Services - Project Deployment and Maintenance Plan
The RBF Project Team will provide the system level communications design for the City of Palm Springs. It will indicate detailed communication requirements for the field devices, hub locations, and TMC. It will include the City's recommended traffic signal system and ITS architecture. The RBF Project Team will identify the recommended technology at each intersection, hub and TMC based on recommendations developed. If a specific communication system is recommended, the RBF Project Team will identify the routing and corridors, device site location, hub locations and the selected transmission technology to be deployed. Recommendations for video detection system locations will be included. It will also include a design guideline for communication deployment. This will provide the necessary information to facilitate the development of plans, specifications and engineer's estimates for future deployments.



A communication system architecture plan that will show existing communication systems, proposed and future communications systems will be included. The exhibit will show locations of existing, proposed, and future field elements including controller cabinets, hubs, CCTV systems, CMS systems, conduit/communication alignments, video detection systems, advanced traveler information system (ATIS), and other future ITS elements. The communication system architecture plan will show the proposed segment

between the City's IT hub and the TMC. **Figure 1** shows the City of Garden Grove ITS Master Plan exhibit and consists of a fiber optic communication system along major corridors, CCTV systems, and CMS systems with Amber Alert capabilities, linking traffic signals and other field elements to the City's TMC via the City's Traffic Department communication network. In addition, it provides a communication link to the Police Dispatch and Command Center in order to disseminate messages to the CMS and have capabilities to view/control the CCTV cameras.

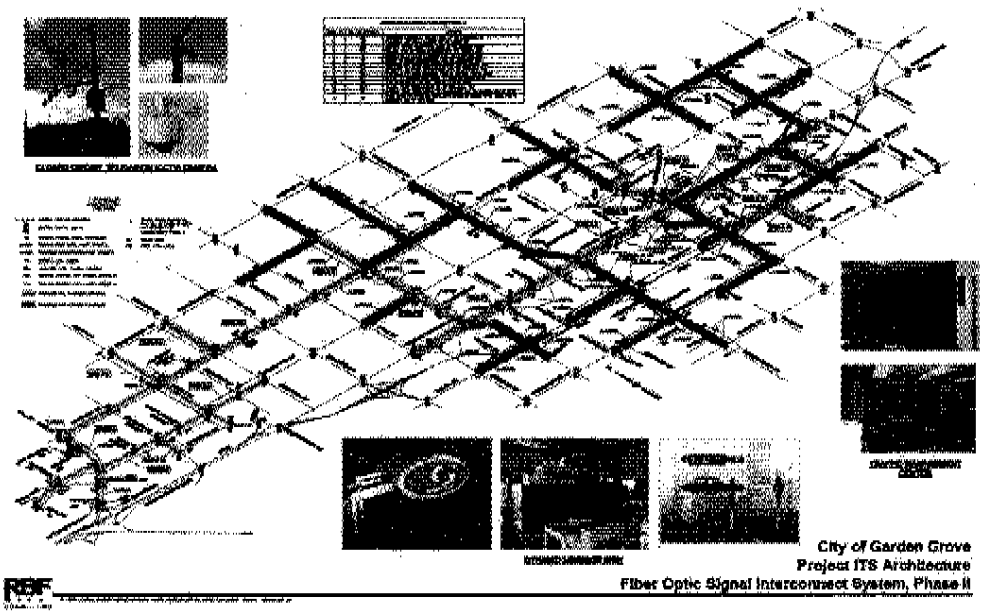
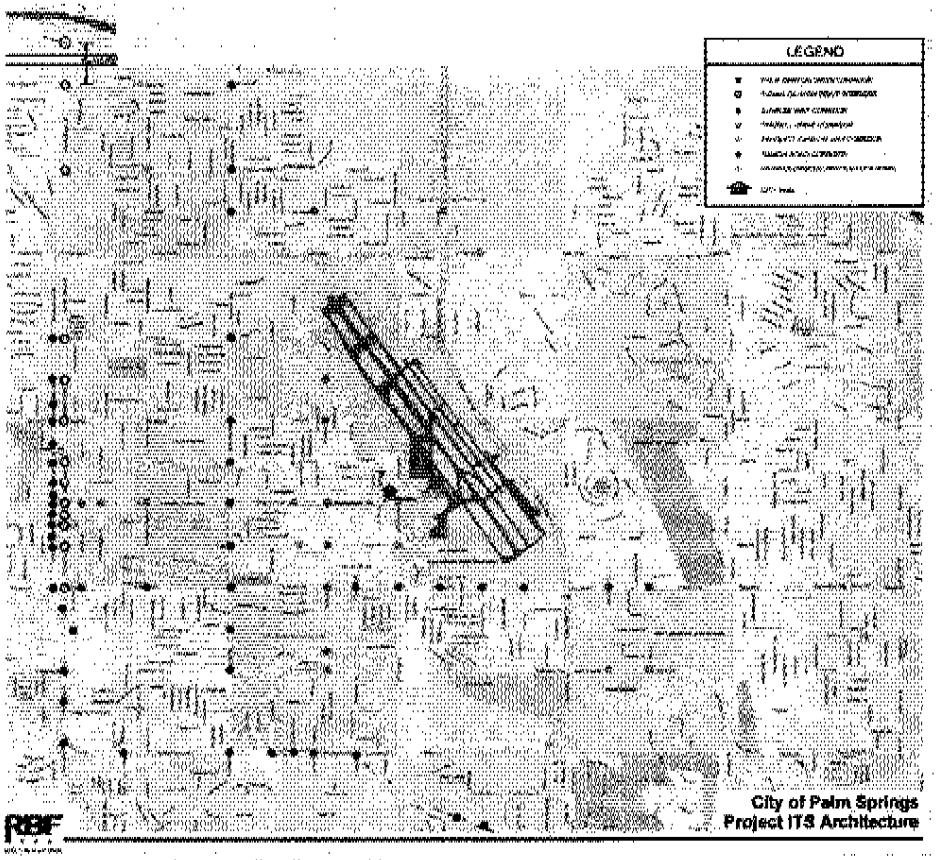


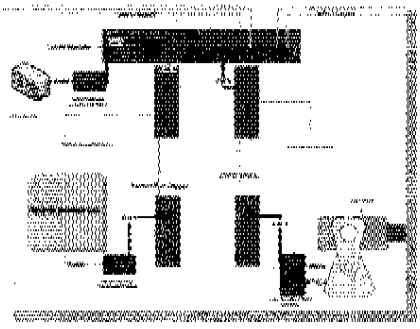
FIGURE 1: INTELLIGENT TRANSPORTATION SYSTEM (ITS) MASTER PLAN – CITY OF GARDEN GROVE

As part of the City of Garden Grove ITS Phase II Project, RBF is preparing final fiber optic communications and CCTV plans, specifications, and engineer's estimate for signal controller upgrade, CCTV systems, and fiber optic communication. In addition, RBF is assisting the City of Garden Grove on the design and deployment of the new TMC.

For the City of Palm Springs Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project, the RBF Project Team will provide a specific strategy to implement the ITS elements. The RBF Project Team will present the framework for the deployment of the City of Palm Springs ATMS. The core of the implementation plan revolves around creating a communication backbone utilizing existing and/or new communication lines along major corridors.



The RBF Project Team will discuss the priority corridors throughout the City of Palm Springs. A project implementation list will be developed by the stakeholders. Based on cost, agency needs, local and regional benefits, time to implement, and associated operations and benefits levels, a priority and implementation plan will be developed. This project priority list will provide the City of Palm Springs with a road map for traffic signal system and ITS project deployment. A cost breakdown by implementation phase will be provided.



Project Development Services - System engineering Management Plan

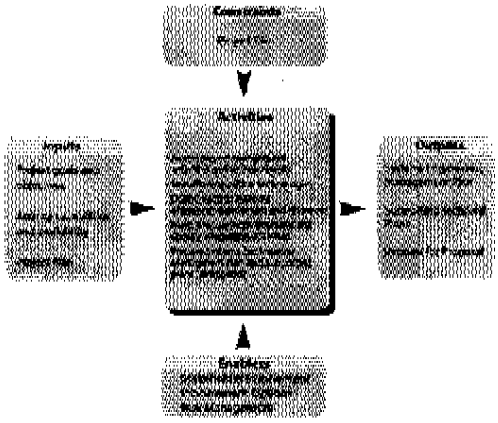
The RBF Project Team will develop a System Engineering Management Plan (SEMP) that will serve as guidelines for the development, design, and deployment of the City's ATMS including the methodology for the implementation of the City's traffic signal system and communication to the City's TMC.

Prior to the preparation of the SEMP, the RBF project Team will discuss with City staff if the System Engineering Review Form (SERF) has been prepared and submitted for approval to the Federal Highway Administration. The RBF Project Team will discuss the goals and objectives of the SEMP. It should be noted

that the simplest ITS projects may not need a SEMP; an Intelligent Transportation System Master Plan may be sufficient. Among the project complexities that make preparation of a SEMP desirable are:

- Inexperience of the system's owner's project team in the systems engineering tasks and processes
- A larger number of stakeholders and the degree of their involvement in the various systems engineering processes and tasks
- The need to develop custom software applications
- A project where the solution is not well understood and is not generally obvious

The RBF Project Team will work with City staff to define the scope for work items that will be provided in regard to network design, construction, test and acceptance. The RBF Project Team will address the requirements for the video detection integration design plan, for network elements associated with redesigning the underlying communication infrastructure required to support video data, and for the hardware and software required of the Traveler Information upgrade. The SEMP will prepare based on the guidelines and requirements developed by the Federal Highway Administration and can be include as an attachment to the City's Intelligent Transportation System Master Plan.

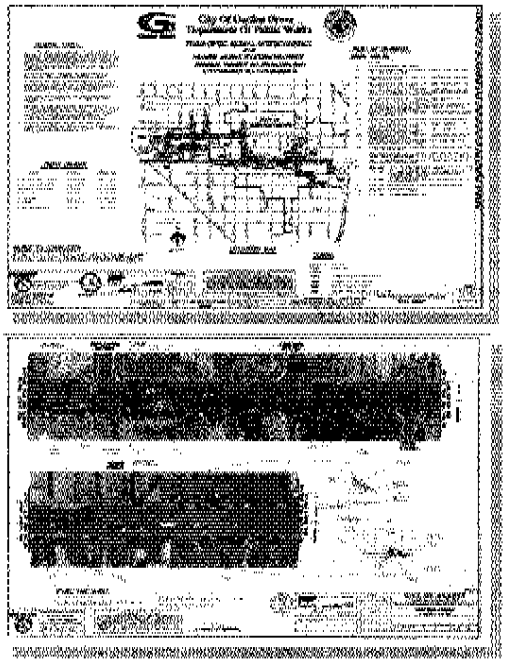


SEMP will establish a high level description of the systems engineering effort needed for development. The SEMP will identify what items are to be developed, delivered, integrated, installed, verified, and supported. It will identify when these tasks will be implemented, agency responsibility, and how the products will be accepted and managed. Finally, it will define the technical processes to be used to produce each of the project's products.

Phase Two – Engineering Design (Plans, Specifications, and Engineer's Estimates)

Plans, Specifications, and Engineer's Estimates

Final plans, specifications and construction quantity take-offs and construction cost estimates will be prepared in accordance with the City of Palm Springs, California Manual of Uniform Traffic Control Devices (MUTCD), and Caltrans requirements.

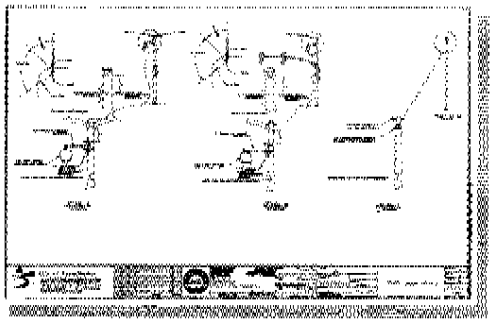


The signal communication plans will show the existing or proposed video detection system, communication conduit and hardwired/fiber optic cable, pull boxes, vaults, Ethernet switch, and controller upgrades at each project location. The plans will show the installation of the proposed signal communication equipment and any additional equipment in order to provide a complete system.

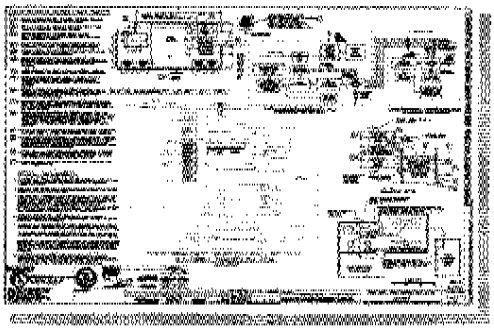
If required, signal communication system plans will show replacement of the existing pull boxes with number 6 pull boxes or fiber optic vaults, existing conduit within the vicinity of each pull box will be replaced to allow proper sweeps for

the fiber optic system, and installation of new conduit in areas where is needed. If the city desires to pursue using fiber optic cable, fiber optic drops will be made at each signalized intersection inside a splice vault adjacent to the controller cabinet or per city's requirements. The final plans will detail the splicing and termination schematics for each intersection and hub locations.

Proposed video detection systems and associated improvements can be included on the signal communication system plans with specific details to show the proposed improvements at each signal mast arm pole and at the controller cabinet locations.

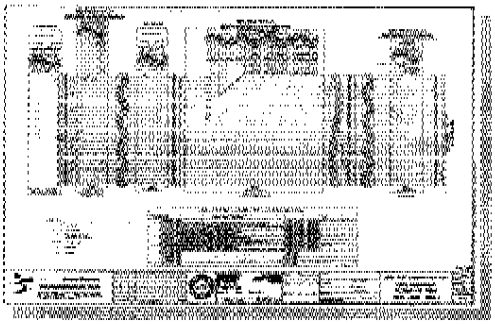


Details will be included for specific equipment that will be required at the signalized intersections and communication hub(s). All new field elements and field element upgrades will be shown on the plans. Additional equipment upgrades, modifications, termination hardware, and related improvements necessary for an effective and efficient communication system will be shown on the plans.



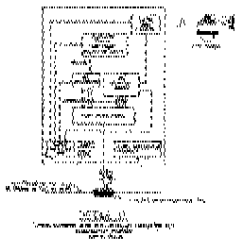
Details will be included for proposed video detection surveillance systems including mounting details, and hardware components inside the cabinet to link the video surveillance cameras to the TMC via the proposed communication system.

The signal communication system plans will be prepared in AutoCAD at 1"=40' scale and in accordance with standards set forth by the City of Palm Springs and Caltrans.



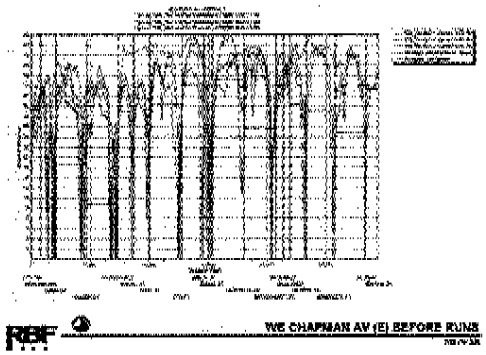
The technical specifications will include traffic signal, hardwired/fiber optic/wireless communication, video detection/surveillance system, other ITS components, specific hardware and software requirements, installation requirements, testing, and training requirements in order to implement a complete network system. Also, the technical specifications will include requirements to provide system integration that will link the proposed field elements to the TMC via the proposed hardwired/fiber optic communication system and/or wireless communication system.

Construction quantity take-offs and construction cost estimates will be provided for proposed traffic signal upgrades, communication system, video detection/surveillance systems, other ITS systems, and related improvements. The engineer's construction cost estimates will be prepared for use by the City to advertise for bids.



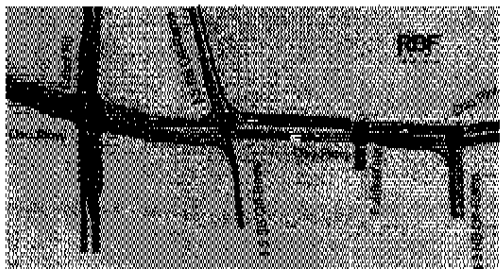
Signal Timing and Coordination

Field visits will be conducted along the Project intersections and corridors to verify lane geometry and signal phasing.



Morning, and evening peak hour traffic counts will be collected to review existing traffic conditions along the Project intersections. The RBF Project Team will perform floating car before study to establish the free flow speed traffic conditions. Travel-time data will be collected during the evaluation of the Project Corridors using a Global Position System (GPS) unit and the Tru-Traffic (TS/PP Draft) software.

The RBF Project Team will identify deficiencies with the existing intersection operations and provide recommendations towards simple, low-cost solutions that may be implemented to correct such deficiencies, with a view of assisting the traffic operations along each corridor. The RBF Project Team will develop an operational microscopic model within SimTraffic. The operational analysis will be used to understand the dynamics of the network and corridor operation. The RBF Team will calibrate the model based on the travel time study and field observation of queue lengths, and saturation flows for heavy movements at key intersections. Once calibrated, the timing optimization process will begin for the selected project corridor.



The timing optimization process will began with the cycle length evaluation process that will identify timing anchor points in the system that will influence and control the synchronization on the corridor. Timing anchor points for this project will be intersections with high volume-to-capacity ratios for the critical movements.

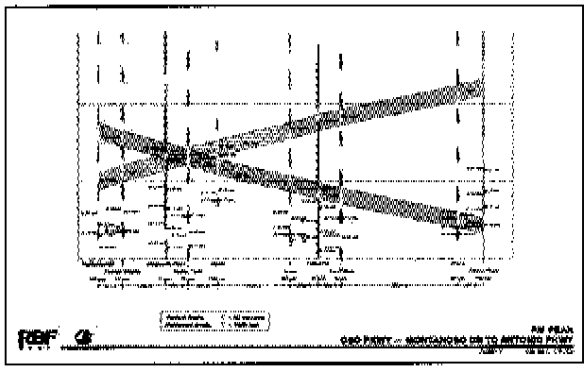
A key element for this signal coordination project is the development of a grid network that accounts for multiple synchronized corridors crossing each other. Crossing arterial synchronization is where two synchronized routes intersect each other where synchronization timing is optimized for progression along each route. In order for the two synchronized routes to cross each other their cycle lengths must be compatible to ensure uncompromised coordination on the two corridors.

The RBF Project Team will evaluate signal timing and synchronization parameters that will include the following items:

- Intersection phase sequencing schemes
- Cycle length, intersection offsets, and movement splits
- Appropriate Cycle Length selection using critical movement analysis
- Appropriate splits that equalize the degree of saturation for the critical movements
- Timing parameters that can accommodate full pedestrians clearance within the split time, or if required, timing parameters that can provide minimum pedestrian activity

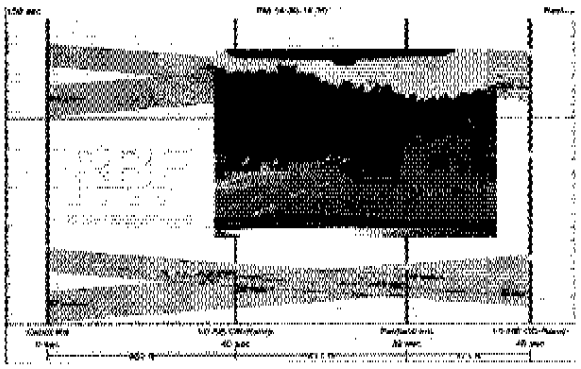
At the eighteen (18) isolated "local" traffic signals identified in the RFP, RBF will evaluate critical signal timing parameters and settings for optimal and safe traffic signal operation during "free" operation. This evaluation includes using peak hour turning movement counts to complete a critical movement analysis for these intersections. This analysis will determine the allocation of green time to the critical movements in proportion to their flow ratios. The maximum green settings for the traffic-actuated signal controllers will be established by applying a factor to the green-time allocation. This factor accounts for fluctuations in traffic flow and the operation of the traffic-actuated signal controller. Items to be reviewed include the following:

- ✓ Pedestrian clearance intervals
- ✓ Yellow times
- ✓ All-red times
- ✓ Maximum green times



The RBF Project Team will provide optimization and implementation of the traffic signal timing using Synchro and SimTraffic and the Tru-Traffic (TS/PP Draft) software.

The RBF Project Team will incorporate approved recommendations of changes to the signal phasing and signal time parameters that will improve the efficiency of the intersection operations.



After City's approval of the analysis and recommendations, it is anticipated that the RBF Project Team will work with City staff to implement the optimized timing plans directly into the City's advanced traffic management system (ATMS) for downloading to the intersection signal controllers. The RBF Project Team will observe, evaluate and fine tune the timing parameters by driving the corridor during the periods when the timing plans are operating.

A final project notebook will be provided to the City. The notebook will include the traffic volumes collected, field review worksheets, signal phasing summaries, before and after data, Synchro analyses, and other pertinent information that was obtained and/or developed.

Construction Authorization

As leading Agency of the federal grant, it is anticipated that the plans, technical specifications, and engineer's estimates and proper project documentation will be submitted to Caltrans District 8 for their review and approval. Additional back-up information required as part of the federal grant process will be provided to Caltrans.

Under this Phase, the RBF Project Team will also prepare all the necessary application forms (Request for Authorization Package) required to obtain authorization from Caltrans District 8 to proceed with construction of the Project.

Phase Three – Construction Administration Services

The RBF Project Team understands the need for a quality oriented team approach to the City of Palm Springs Citywide Traffic Signal Interconnect & Traffic Management. We further understand the responsibility of tracking obligations relevant to the UDBE or DBE guidelines, and the coordination with Caltrans and Federal grant reimbursement procedures.

RBF shall perform comprehensive Construction Management, Administration and Inspection Services and report directly to the City of Palm Springs staff during the pre-construction, construction, and close-out phases of the work as required to insure the Contractor's work is being performed in accordance with the requirements of the contract documents and endeavor to guard the City against defects and deficiencies in the work.

Construction Management, Administration, and Inspection Services

Under this Phase, The RBF Project Team will provide construction management, administration, and inspection services including:

- **Caltrans Coordination** – Provide all necessary coordination with Caltrans District 8 to ensure compliance with all state and federal regulations applicable to the Project. Prepare "Award Package" and federal grant reimbursement invoices for submittal to Caltrans District 8. Ensure all DBE forms are prepared and completed, and all DBE requirements are satisfied.
- **Pre-Construction Meeting** – Organize and coordinate a pre-construction with the construction Contractor and sub-contractors, City staff, project designer, utility companies, and any other agencies required to attend. Prepare an outline for the pre-construction conference reviewed and approved by the City.
- **Construction Meetings** – Regularly scheduled coordination and status meetings to review project status and budget; facilitate decision making; and discuss issues that have the potential of adversely affecting the project budget, schedule, or project. Prepare meeting agendas in consultation with City Project Manager, distribute agenda prior to meetings, arrange for appropriate participants to attend, and distribute meeting notes for regular project status meetings and public meetings.
- **Contract Documents** – Implement the plans and specifications as necessary to protect the City against defects and deficiencies on the part of the Contractor, and maintain the project budget and schedule.
- **Labor Compliance** – Perform state and federal labor compliance tasks, including, verifying certified payroll, subcontractor utilization, and labor interviews.
- **Progress Reports** – Prepare weekly and monthly progress reports and submit to the City. The reports will address the progress of the work, the project schedule, information/decisions required to maintain the schedule and complete deliverables, problems encountered that may affect schedule, budget, work products, anticipated work for the following week and month, and should contain photographs documenting the progress of the work.
- **Utility Coordination** – Coordinate with the appropriate utility companies for work that affects its specific utility.
- **Shop Drawings** – Coordinate, document, and make engineering recommendations regarding shop drawings and their compliance with the plans and specifications for the City's approval.
- **Project Submittals** – Coordinate, document, and make engineering recommendations regarding submittals and their compliance with the plans and specifications for the City's approval.
- **Materials Testing** – Coordinate, conduct, interpret, and supervise all required material tests in accordance with applicable standards.
- **Surveying** – Provide review and approval of construction surveying and staking to ensure adequacy and accuracy. Construction surveying and staking will be the performed by the Contractor.
- **Test Data** – Review and make recommendations on manufacturer's shop or mill tests (or reports from independent testing laboratories) relative to materials, equipment, performance ratings, and concrete data as necessary to ensure conformance with the project specifications.
- **Traffic Control** – Review and make recommendations regarding all traffic control proposals, and inspect construction Contractor's traffic control to ensure compliance with specifications and City standards.
- **Safety** – Conduct and document project safety meeting in accordance with the project requirements. Report all accidents, including property damage, and notify proper authorities. Document all incidents with photographs and written reports. Enforce Federal and State regulations for occupational safety and health standards for all construction activities.
- **Construction Inspection** – Perform as Resident Engineer on the project, coordinate all required inspections necessary for the project, in accordance with Caltrans Standard Specifications and Plans, Work Area Traffic Control Handbook (WATCH), State of California Construction Safety Orders (CalOSHA), and the Standard Specifications for Public Works Construction (Greenbook). Perform daily on-site observations of the progress and quality of construction to determine if the work being performed is in general conformance with the contract documents and all applicable laws, codes and ordinances. Prepare complete and accurate daily reports, calculations, project records, progress payment quantities, reports and correspondence related to the project activities.
- **Progress Payments** – Review monthly payment applications submitted by the construction contractor, determine whether the amount requested reflects the progress of the construction contractor's work. Prepare progress payment reports and submit to the City for approval prior to distribution to the construction contractor. The reports will contain the total construction contract amount, payments to date, current requested payment, retainage, and the amounts owed this pay period.
- **Project Records** – Maintain at the project site all correspondence, memoranda, contract documents, change orders, claims, City and engineer directives, meeting minutes, shop drawings, supplementary drawings, and request for payment. Maintain a current list of names, addresses and telephone numbers of the construction contractor, subcontractors, and principle material suppliers associated with the project. Project records shall be maintained using the Caltrans Construction Manual as a guideline. Provide the City with the original complete set of construction documents upon project close-out.
- **Construction Schedules** – Review the construction Contractor's baseline and monthly up dated schedules. Monitor the progress of the construction Contractor's work and compare on a continual basis how the overall project schedule is being affected. Notify the City immediately as to any events or conditions which may cause delays to the completion date of the project.
- **Contract Change Orders** – Evaluate the construction Contractor's request for a change or substitution. Acceptable contract changes

- will be submitted to the City for approval and will be accompanied by the Resident Engineer's recommendation.
- **Claims** – Identify all potential claims, track and monitor unresolved claims and implement claims avoidance processes at all times. Assist the City, as requested, in the identification, resolution, and final disposition of claims filed by the construction contractor or third parties against the City or the project.
- **Cost and Schedule** – Track and monitoring contract pay item quantities and payments, contract change orders, supplemental work items, agency furnished materials, contingency balance, and overall project budget.
- **Record Drawings** – Coordinate preparation by the construction contractor one set of record drawings with "As built" corrections. The record drawings will be prepared on original, full size mylars, by the engineer responsible for the work.
- **Punchlist** – Maintain an active list of items which need to be completed or corrected by the construction Contractor for final completion of the project. This list will need to be completed before the Resident Engineer will approve a final payment for the Contractor. Coordinate the final walk through with the City, Contractor, and design engineer after the punchlist items have been satisfactorily completed.
- **Training** – Coordinate with the Contractor to provide all necessary training for City staff as required to operate and maintain the new traffic signal centralized coordination software system and Traffic Management Center.

KEY ISSUES AND SOLUTIONS

The RBF Project Team has thoroughly reviewed the list of the proposed improvements and performed field reconnaissance of the proposed traffic signal locations, video detection surveillance locations, and communication alignment to better understand the existing infrastructure and the proposed improvements of the project. Based on the background information our team has compiled, we have identified some key technical issues and solutions related to the project. It is essential to understand the following key technical issues prior to and during the design process. These technical issues may develop into potential delaying factors on the projects if not properly address in the planning and design process.

Environmental Assessment

Key Issue: as indicated in the RFP, the project will install 1,800 feet of new conduit and 2,200 feet of new fiber optic cable to connect the IT hub to the TMC. This aspect of the project is the only one requiring ground disturbance anticipated in the project.

If new conduit, pull boxes, vaults are required to improve the communication between the field elements (traffic signal controllers, video detection surveillance system, etc) and the TMC, most likely ground disturbance will occurred at some intersections and roadway segments.

☑ **Solution:** the RBF Project Team will provide the City of Palm Springs all the necessary communication recommendations that will be required to provide a complete solution during the citywide needs assessment that will be included under Phase One. Based on the recommendations, if additional ground disturbance is anticipated, the RBF Project Team will expand the environmental assessment to include these locations.

☑ **Solution:** another alternative solution will be the use of wireless communications. Agencies in Southern California are using wireless communication technology as an alternative solution to link video surveillance systems and traffic controllers to their TMC.

Hardwired Communication System

Key Issue: it is essential to understand the source of communication that will be used to bring data and video communication from the field elements to the TMC in real time. Using of existing hardwired cable and microwave system as the source of communication has some limitations including video quality, performance capabilities, and maximum bandwidth availability. In addition, transmission limitation is critical for communicating long distances.

☑ **Solution:** Success of interconnecting traffic signal intersections to the TMC will rely heavily on a redesigned communication network optimized for video and data transmissions. The basis then for expanding the reach

of video surveillance within City of Palm Springs traffic corridors requires a structured methodology of discovery, analysis and design.

The RBF Project Team recommends analyzing the existing communication infrastructure for quality of corridor segments from the furthest reach inward to the TMC. The existing communication system shall be tested to determine performance capabilities and maximum bandwidth availability. Many Agencies are using wireless solutions for similar applications. Therefore, modern wireless Ethernet design should be considered by the City for the network redesign.

☑ **Solution:** another alternative solution will be the use of fiber optic and/or wireless communications. The RBF Project Team will provide the City of Palm Springs all the necessary communication recommendations that will be required to provide a complete solution during the citywide needs assessment. The use of fiber optic and/or wireless systems are more reliable system, can provide more bandwidth, and can be use for longer distances.

Communication Alignment

Key Issue: the City of Palm Springs existing communication topology will need to be considered as part of the needs assessment. In the past, most agencies used a point-to-point communication topology to link their field elements to their TMC. If the cable got damaged, a loss of communication between the field elements and the TMC will occurred.

☑ **Solution:** the RBF Project Team will discuss with City staff the existing and proposed communication topology during the citywide needs assessment. The RBF Project Team will evaluate the communication topology and infrastructure and provide recommendations where dual-ring communication topologies can be provided with this project in order to provide dual path communications to the field elements.

Existing Video Detection Systems

Key Issue: Evaluation of the existing video detection systems will be necessary to determine reliability and performance requirements of the systems.

☑ **Solution:** the RBF Project Team working with City staff will evaluate the performance of the existing video detection systems and provide recommendations to upgrade the existing hardware/software or replacement with new video detection system.

New Traffic Management Center

Key Issue: Evaluation of the existing Traffic Management Center, including hardware and software, components will be performed during the citywide needs assessment. Migration from the existing traffic management system to a new centralized traffic management system will require close coordination with the selected platform manufacturer during all three phases of the project. The selected centralized traffic management system shall be scalable and expandable.

☑ **Solution:** the RBF Project will conduct meetings with the selected centralized traffic management system representatives to understand the existing system, requirements to migrate to the new system, and other necessary hardware and software improvements that will be required at the TMC and at the traffic signal controllers.

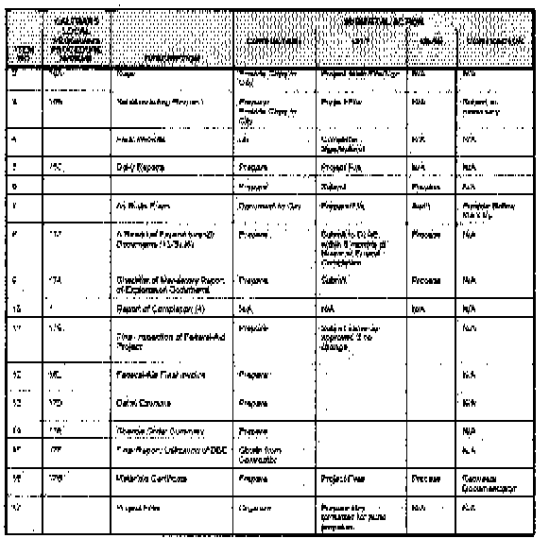
CALTRANS DISTRICT 8 / FEDERALLY FUNDED PROJECTS

RBF has extensive experience in completing and processing the numerous federal funding authorization forms through the Caltrans District Local Assistance Engineer (DLAE) and the Federal Highway Administration, as well as incorporating all required special provisions in the project specifications to ensure that federal funding is not jeopardized. RBF has performed this task for several Cities and Agencies throughout Southern California. RBF has developed a comprehensive table summarizing the various authorization forms required in a matrix format that can be used to clearly identify the steps to be followed and the responsible parties. The RBF Project Team shall prepare submittals for the City of Palm Springs processing with DLAE. It is anticipated that submittals will be required for the final PS&E submittal process as follows:

- Authorization to begin Right-of-Way Work
- Authorization to Advertise

Additional processing will be required during construction and will be provided at the request of the City during the construction phase of the project. It is anticipated that submittals will be required construction submittal process as follows:

- Award Submittal Process
- Progress Payment Requests; and
- Final Invoice/Closeout Submittals



For ease of reference, a summary of the items to be prepared for submittal for both the design phase and construction phase along with the responsibility for preparation is included in the tables shown on this page.

If the proposed work will directly impact state highway facilities and require a Caltrans encroachment permit, RBF's extensive and continuous track record over the past 20 years working with Caltrans District 8 on numerous state highway projects will help facilitate the process. RBF's staff maintains an on-going dialogue with local, regional, and state jurisdictional agencies and continually keeps abreast of the changing requirements and procedures of the Federal, State and local agencies. For several years, RBF has participated on various Caltrans District and Headquarters Professional Liaison committees, which promotes an effective communication exchange between Caltrans, cities, counties, transportation authorities and consultants.

Section B: Scope of Work

WORK PROGRAM

We have divided our Work Program into three (3) Phases as described below.

Phase One – Environmental Approval and Project Development Services

Environmental Approval - Combined CEQA/NEPA Environmental Document - Based upon RBF's current project understanding, the following technical approach shall be completed following standard City, FHWA, and Caltrans District 8 environmental procedures:

Task 1.1 – Project Kick-Off and Project Description

Our work program will be initiated with an early coordination Environmental Kick-Off Meeting that will define the parameters of the analysis, scheduling and understanding of this project. Based upon concept plan information and supporting data developed under separate engineering tasks, the RBF Project Team will draft a preliminary project description for review and approval by City and Caltrans District 8 staff.

Product	✓ Project Kick Off and Project Description

Task 1.2 – Research and Investigation

The RBF Project Team will evaluate the necessary information with respect to the proposed project. Project research will include coordination with appropriate City departments to acquire relevant environmental data, previous studies for the area and other available files, exhibits, maps and reference documents.

Product	✓ Research and Investigation

Task 1.3 – Preliminary Environmental Study (PES)

In accordance with current Caltrans Guidelines, the RBF Project Team will prepare a PES Form in support of the engineering and design services. The RBF Project Team will meet with City staff and Caltrans District 8 to define the project description and schedule and to develop a mutual understanding of the issues and impacts of the project.

The RBF Project Team will prepare a draft PES Form using the standard Caltrans form. The draft PES Form will be reviewed amongst the project team including City staff, and revised, if necessary. The PES Form will be submitted to Caltrans for signature and distribution to the project team. RBF's Project Team will attend one field meeting (site visit) as required by Caltrans to discuss possible environmental issues with its staff.

Product	✓ Preliminary Environmental Study

Task 1.4 – Initial Study / Categorical Exclusion (IS / CatEx)

Through the preparation of an Initial Study, the RBF Project Team will evaluate the environmental concerns and identify necessary measures to mitigate impacts of the project. RBF will utilize the City's standard CEQA forms, making any legislative updates, as necessary under CEQA. This scope of work has been completed for a Mitigated Negative Declaration, assuming that all impacts of the proposed project can be mitigated to less than significant levels. Should the City determine that impacts cannot all be mitigated and would require preparation of an EIR, a separate scope of work and budget can be prepared for alternative environmental documentation. RBF will also prepare the Categorical Exclusion Form in compliance with NEPA to submit for approval by Caltrans.

Product	✓ Initial Study / Categorical Exclusion

Task 1.5 – Technical Studies
The following reports will be required if ground disturbing activities commence. If Caltrans District 8 determines additional studies beyond what is referenced below as part of the PES form approval, a detailed scope of work will be submitted:

Biological Resources/Natural Environment Study - Minimal Impacts (NES-MI) - A Natural Environment Study (Minimal Impacts) (NES-MI), consistent with current Caltrans guidelines, will be developed based on the results of biological surveys, analyses and data compilation that will be conducted as part of a general plant and wildlife survey. The report will describe (1) the methodology used to conduct the biological surveys; (2) a qualitative description of the existing vegetation types and associated wildlife surveys found within the overall project site; (3) a table with the vegetation types present at each intersection and any potential resource issues; (4) a qualitative impact discussion identifying any potentially significant impacts and the project's relationship to the Coachella Valley Multiple Species Habitat Conservation Plan; and (5) recommend mitigation measures to reduce identified impacts.

Noise Analysis - A preliminary noise analysis will be prepared as part of the Initial Study to support the conclusions that the project will not have a significant environmental impact or that the impacts can be mitigated to a "Less Than Significant" or "No Impact" level. These proposed improvements do the change horizontal and vertical alignments of the roadway network or increase the traffic volumes in the project area. However changes in traffic flow may occur which can have an effect on noise levels generated by the traffic network in the project area near sensitive receiver locations. As part of the noise analysis, a background document review will be conducted of the project vicinity and a windshield survey. A summary will be presented of the results of the background research and fieldwork. It will describe the project setting, identify and describe sensitive receptors, and discuss possible impacts, and potential abatement measures. The documentation will also identify anticipated interagency coordination.

Initial Site Assessment Checklist - An Initial Site Assessment (ISA) checklist will be prepared in accordance with ASTM Standard Practice 1527-00 and the Department's *Project Development Manual* to determine if the proposed project area has the potential to be compromised by hazardous materials or wastes. The ISA checklist will be prepared based on the following objectives: (1) evaluate the potential for hazardous materials on the site based upon readily discernible and/or documented present and historic uses of the property and uses immediately adjacent to the site, and (2) generally characterize the expected nature of hazardous materials that may be present as a result of such uses. Materials that may constitute a hazardous waste include, but are not limited to petroleum products, pesticides, organic compounds, heavy metals, or other compounds injurious to human health and the environment. Field samples and laboratory analysis are not proposed, although they will be recommended where appropriate.

Cultural Resource Assessment - According to the General Scope of Work in Section III of the RFP, only Task 2 (Fiber Optic Communications) would require ground-disturbing activities and an investigation of the potential impact of the project on cultural and paleontological resources. As described, Task 2 would require approximately 1,800 feet of new conduit and 2,200 feet of new fiber optic cable between the Traffic Management Center and IT Hub. All cultural resources work will be performed in accordance with NEPA, CEQA, Section 106 of the National Historic Preservation Act (NHPA), and Caltrans guidelines and recommended procedures for prehistoric archaeological, historical archaeological, built-environmental, and paleontological resources. Cultural work would include literature searches at the Eastern Information Center (EIC) at the University of California, Riverside, and the San Bernardino County Museum and online databases, as well as archival research, Sacred Lands file searches from the Native American Heritage Commission (NAHC), letters to local Native Americans as recommended by the NAHC, an intensive-level pedestrian survey, recordation and preparation of Department of Parks and Recreation series 523 forms for any finds, and technical report preparation in compliance with Volume 2 of Caltrans' Environmental Handbook. Unless otherwise directed by Caltrans, this inventory will not include collection of cultural material. All technical reports will be submitted for Caltrans' review, and finals filed with District 8 and the EIC. Technical cultural and paleontological resources will include a Historic Property Survey Report (HPSR), an Archaeological

Survey Report (ASR), and a combined Paleontological Identification Report (PIR) and Paleontological Evaluation Report (PER).

Product	✓ Technical Studies

Phase Two – Engineering Design (Plans, Specifications, and Engineer's Estimates)

Task 2.1 – Existing System Inventory and Evaluation

Existing System Inventory - The RBF Project Team will obtain all existing reference documentation from the City of Palm Springs, including improvement plans (street, street lights, traffic signals, signal communication, timing plans, signing/striping, etc.), aerial photographs, right-of-way information and other applicable data. The inventory will also include traffic signals/signal communication projects currently underway or planned projects by the City. It is anticipating that field inventory will be conducted for the 79 signalized intersections and seven (7) project corridors.

The RBF Project Team will use a standard RBF field form for this purpose that accounts for each piece of intersection data required. Using this form ensures accuracy and completeness during the field review process. For the purpose of the needs assessment, the field review for each intersection will document location and type of existing traffic signal controller/cabinet, signal communication equipment, detection equipment, EVPF system, and signal mast-arm pole location, signal operation and phasing characteristics.

In addition, Inventory of the communication system will also be conducted along the City's corridors including type of communication and location. In addition, a thorough investigation and evaluation of the communication hardware/software at the master controller locations, TMC, and other facilities where future connections may be anticipated.

The field review to verify the existing communication equipment at the City's TMC, IT Hub, Police Department, and other building facilities will be conducted along with city staff including staff from the City's IT Department. Field notes and a photo log of the intersections, project corridors, ITS field elements, master controller locations, TMC and other proposed communication facility will be maintained.

Technical Memorandum - A Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize existing system inventory, findings and deficiencies at the signalized intersections, master controller locations/TMC, video detection systems, and communication systems. A citywide map will be included showing the existing signal controller/cabinet locations, video detection systems, and communications systems types, location and routes. Graphics, photos, and field notes will be included.

Products	✓ Existing System Inventory ✓ Technical Memorandum

Task 2.2 – Evaluation of Surrounding Systems

Surrounding Systems Evaluation - The RBF Project Team will evaluate current and proposed signal system, signal communication systems, and ITS systems with local agencies, including the adjacent cities, and County of Riverside. In addition, the RBF Project Team will evaluate Caltrans District 8 signal and communication system and provide recommendations for communication with Caltrans on-street master controllers and Caltrans District 8 TMC.

Technical Memorandum - A Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize existing system inventory and evaluation of the surrounding signal systems, signal communication systems and ITS systems. Equipment type, location, and communication protocol will be included. Graphics, photos, and field notes will be included.

Products	✓ Evaluation of Surrounding Systems ✓ Technical Memorandum

Task 2.3 – Assessment of Intelligent Transportation System (ITS) Opportunities

ITS Steering Committee Needs and Opportunities – The RBF Project Team will establish and coordinate an internal ITS Steering Committee with the stakeholders. It is anticipated that bi-weekly meetings will be held to establish a complete understanding of ITS applications among the stakeholders. It is anticipated that, at a minimum, the following items will be discussed:

- Establish vision, goals, and objectives of the project
- Share information on ITS purpose, benefits, and opportunities
- Identify current and foreseeable problems that can be addressed through ITS
- Provide dialogue regarding transportation and development institutional restrictions and obligations
- Recommend strategies through ITS solutions
- Provide benefit/cost ratios, impacts on current and future staffing, construction precedence, and other relevant issues
- Discuss operations and maintenance of ITS elements

The RBF Project Team will attend meetings with the stakeholders. The RBF Project Team will prepare and distribute meeting agendas, meeting minutes and an action item matrix to the project team as appropriate.

Assessment of Current ITS Needs and Opportunities – The RBF Project Team will address current and future ITS needs using proven and available technology. It is anticipated that under this task, the following will be conducted:

- Review of wireless communications currently deploy between local agencies and Caltrans for signal synchronization
- Review of ITS technology currently use or in the planning stage by adjacent agencies
- Review of current ITS technology
- Development of recommendations incorporating flexibility to adopt and migrate to future technology

The RBF Project Team will discuss the City's ITS needs including the integration of new and existing ITS components. The following items will be discussed under this Task:

- Communication architecture
- Communication options including DSL, fiber-optics, wireless
- Internet Protocol (IP) based ATMS
- Existing/future video surveillance systems needs
- Future CMS systems needs
- Existing/future other ITS field elements needs
- Upgrade/replacement of traffic management system
- Upgrade of existing signal controllers
- Next generation of 2070 signal controllers
- Upgrade of signal controller software
- Hardware/software needs at the communication hubs
- Hardware/software needs at the City's TMC

Connectivity options with regional stakeholders (Police Department/IT Department/Fire Department, etc.) Fiber-optic and wireless communication systems, including Wi-Fi and Wi-Max or 802.16 technologies will be addressed and the communication network topologies will be described in detail. It will also include the recommended communication network topology/topologies for the City of Palm Springs.

Development of ITS Opportunities and Solutions – The RBF Project Team will develop ITS opportunities and solutions and at minimum will include the following:

- Document issues that need to be addressed with current system

- Define and prioritize future ITS requirements to address stakeholders needs
- Develop specifications for the signal system equipment and communication infrastructure, if it is recommended that the upgrade/replacement of the existing equipment is necessary
- Provide alternatives and recommended solutions to the stakeholders
- Provide combined solutions to stakeholder problems
- Explore communication compatibility issues and needed updates

Technical Memorandum – An ITS Solutions Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Stakeholders needs and opportunities
- Assessment of Current ITS Needs and Opportunities
- Development of ITS Opportunities and Solutions
- List of short term, medium term, and long term solutions

Graphics will be included.

Products	✓ ITS Steering Committee Needs and Opportunities ✓ Assessment of Current ITS Needs and Opportunities ✓ Development of ITS Opportunities and Solutions ✓ Technical Memorandum

Task 2.4 – Assessment of Video Detection Integration

The RBF Project Team will coordinate closely with City staff to compile all relevant documentation on existing fiber, hardwired, and wireless connection points throughout the affected traffic intersections. In addition, the RBF will discuss with City staff the location and the communication infrastructure for the three (3) weather cameras to monitor flood and wind conditions in real time at the White Water River crossings at Indian Canyon Drive, Gene Autry Trail, and Vista Chino. The RBF Project Team recommends analyzing the existing communication infrastructure for quality of corridor segments from the furthest reach inward to the TMC.

It is anticipated that City staff will test the fiber optic segments using an optical time domain reflectometer and double-ended loss measurement methodology to document quality of individual cables and dB loss across fiber splices. The RBF Project Team will evaluate test results and provide recommendations. It is anticipated that City staff will test copper pairs with a megger to perform ground resistance testing of all conductors including the shield, conductor-to-conductor and individual conductors to shield. The resistance continuity reading will determine performance capabilities and maximum bandwidth availability for copper. The RBF Project Team will evaluate test results and provide recommendations. The RBF Project Team recommends that only existing wireless infrastructure in the form of mast installations and antennas be reviewed for usefulness should a modern wireless Ethernet design be considered by the city for the network redesign. Wireless design should be considered for locations that have not existing underground communication infrastructure and it will be not cost effective to provide a hardwired/fiber optic solution.

Based on the existing communication system and recommendations to migrate to an Ethernet based System, The RBF Project Team will provide the city with a project ITS architecture plan showing the project communication improvements from the field elements to the TMC.

Technical Memorandum – An Assessment Video Detection Integration Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Evaluation Test Results
- Integration Recommendations

Products	✓ Assessment of Video Detection Integration ✓ Technical Memorandum

Task 2.5 – Assessment of Traveler Information: Link Integration
The RBF Project Team will work with City staff to design a cost effective web based solution for distribution of traffic detection camera based video to multiple destinations.

The RBF Project Team will work with the City's IT Department to provide an assessment of city's network and provide recommendations to integrate real time information to the public via the City's web and public channel. The project assessment includes combining video and data in scalable applications based on project's requirements for simultaneous display on the City's new TMC video wall, as a source for web based visualization and for public access. The RBF Project Team anticipates building a system based on ITS and NTCIP standards, with design elements to regionally display traffic while building framework that can be replicated to future traffic intersections in a very cost effective manner.

Technical Memorandum – An Assessment of Traveler Information:Link Integration Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Evaluation of City's Network
- Integration Recommendations

Products	✓ Assessment of Traveler Information: Link Integration ✓ Technical Memorandum

Task 2.6 – Project Deployment and Maintenance Plan
Detailed Recommended Technology – Under this section, the RBF Project Team will provide the system level communications design for the City of Palm Springs. It will indicate detailed traffic signal systems requirements, and communication requirements for the field devices, hub locations and TMC, and requirements for upgrade or replacement of the City's TMC. It will include the City of Palm Springs recommended ITS architecture. This section will identify the recommended technology at each intersection, hub and TMC based on recommendations developed. If a specific communication system is recommended, this section will identify the routing and corridors, device site location, hub locations and the selected transmission technology to be deployed. Recommendations for video surveillance system locations will be included. It will also include a design guideline for communication deployment. This will provide the necessary information on the initial phase of the project to facilitate the deployment of future projects. A communication corridor system architecture exhibit that will show existing communication systems, proposed and future communications systems will be included. The exhibit will show locations of existing, proposed and future controller cabinets, hubs, video detection/surveillance systems, CMS systems, conduit/communication alignments, advanced traveler information system (ATIS), and other future ITS elements.

Recommended Project Priority and Deployment – The RBF Project Team will provide a specific strategy to implement the ITS elements. This section will present the framework for the deployment of the City of Palm Springs ATMS. Project priorities will be discussed and recommendation will be provided under this section. Priorities will be provided based on preliminary cost estimates, agency needs, local and regional benefits, and associate maintenance levels. Priority ratings (high, medium, low) will be based on the stakeholders feedback on needs and benefits gained. Maps and exhibits will be provided.

Recommended Priority Corridors – The RBF Project Team will discuss the priority corridors throughout the City of Palm Springs. ITS solutions will be proposed for the City's corridors determined by the City. A project implementation list will be developed by the stakeholders. Based on cost, agency needs, local and regional benefits, time to implement, and associated operations and benefits levels, a priority and implementation plan will be developed. This project priority list will provide the City of Palm Springs with a road map for ITS project deployment. A cost breakdown by implementation phase will be provided. If required, a project implementation schedule will be provided.

Outline of Potential Environmental Documentation Requirements – The RBF Project Team will identify federal, state, and local environmental requirements for implementation of ITS Projects.

Projected Life Cycle Issues and Costs – The RBF Project Team will identify projected life cycles of the proposed ITS elements including equipment warranty, maintenance issues and costs

Technical Memorandum – An ITS Solutions Technical Memorandum Report will be provided to the City of Palm Springs. The report will summarize the following:

- Detailed Recommended Technology
- Recommended Project Priority and Deployment
- Recommended Priority Corridors
- Recommended Short and Long Term Phasing
- Outline of Potential Environmental Requirements
- Projected Life Cycle Issues and Costs

Products	
	✓ Detailed Recommended Technology
	✓ Recommended Project Priority and Deployment
	✓ Recommended Priority Corridors
	✓ Outline of Potential environmental Documentation Requirements
	✓ Projected Life Cycle Issues and Cost
	✓ Technical Memorandum

Task 2.7 – Prepare / Develop System Engineering Management Plan (SEMP)
Develop Systems Engineering Management Plan (SEMP) – The RBF Project Team will discuss the goals and objectives of the SEMP with City staff. The RBF Project Team will prepare the SEMP based on the guidelines and requirements developed by the Federal Highway Administration.

The SEMP will address the requirements for the video detection integration design plan, for network elements associated with redesigning the underlying communication infrastructure required to support video data, for the hardware and software required of the Traveler Information upgrade, and for the needs that will be required for the new TMC.

The SEMP will establish a high level description of the systems engineering effort needed for development. The SEMP will be signed and sealed by our Project Manager, a licensed Civil Engineer in the State of California.

Product	
	✓ System Engineering Plan (SEMP)

Phase Three – Construction Administration

Task 3.1 – Utility Research and Coordination
Utility notifications to the various utility owners within the sphere of the Project will be prepared. The RBF Project Team will request utility maps from the various utility owners to locate existing underground and overhead utilities. The RBF Project Team will interface with the utility owners to horizontally locate the utilities that are located within the right-of-way limits, and identify potential conflicts between existing underground and overhead utility lines and the proposed improvements.

The RBF Project Team will compile the utility information into a matrix format to include dates of notification, persons/utility notified and responses from utility. Copies of this information will be updated periodically and provided to the City of Palm Springs. It is anticipated that utility research and coordination will be only for the proposed improvements between the City's IT Hub and the TMC.

Product	
	✓ Utility Research and Coordination

Task 3.2 – Signal Communication Plans
Based on the information indicated in the RFP, the RBF Project Team will prepare the following communication plans.

- TYPE 1: Fiber Optic signal communication plans to connect the City's IT Hub with the TMC. The plans will show approximately 1,800 feet of new conduit and 2,200 feet of new fiber optic cable and associated improvements.
- TYPE 2: Signal communication plans along East Palm Canyon and Ramon Road to replace the existing microwave system with an Ethernet communication system.
- TYPE 3: Signal communication plans along N. Palm Canyon Drive, S. Palm Canyon Drive, and Tahquitz Canyon Way to show controller cabinet improvements, video detection system improvements, and signal communication improvements.
- TYPE 4: Intersection improvement plans for improvements at signalized intersections along Indian Canyon Drive, Sunrise Way, Farell Drive, and isolated signalized intersections. The plans will show improvements at the intersections only to show controller cabinet improvements and video detection system improvements. Communication improvements between signalized intersections will be shown using a construction note only. It is anticipated that up to six (6) intersections ca be shown per sheet.

The signal communication plans design will show signal communication improvements at seventy-nine (79) signalized intersections in order to connect the controller system and video detection/surveillance systems to the TMC via existing/proposed communication system. The following summary table details each project segment, type of plan, and estimated number of sheets.

CORRIDOR	PROJECT LIMITS	EXISTING/PROPOSED COMMUNICATIONS	NO. OF SIGNALIZED INTERSECTIONS	TYPE OF PLAN	ESTIMATED NO. OF SHEETS
New Segment	IT Hub to TMC	Fiber Optic	–	1	1
N. Palm Canyon Dr.	Tachevah Dr to Desert Fashion Plaza	SIC	8	3	3
S. Palm Canyon Dr.	Tahquitz Canyon Wy to Camino Real	SIC	12	3	3
E. Palm Canyon Dr.	Camino Real to Cherokee Wy	Microwave and 900Mhz Spectrum	7	2	2
Indian Canyon Dr.	San Rafael Dr to Ramon Rd	900Mhz Spectrum	11	4	2
Sunrise Wy.	San Rafael Dr to Mesquite Ave	900Mhz Spectrum	11	4	2
Tahquitz Canyon Wy	Calle Encilia to El Cielo Rd	SIC	7	3	3
Ramon Rd	Calle Encilia to Crosley Rd	SIC Microwave and 900Mhz Spectrum	9	2	2
Farell Dr	Via Escuela to Mesquite Ave		8	4	1
Isolated Signalized Intersections			7	4	2
TOTAL NUMBER OF SHEETS					25

All new field elements and field element upgrades will be shown on the plans. Additional equipment upgrades, modifications, termination hardware and related improvements necessary for an effective and efficient communication system will be shown on the plans.

A title sheet for the project plans will be prepared in accordance with City of Palm Springs standards. The signal communication plans will be prepared based on record drawings, City GIS maps, aerial drawings, and site visits, at 1"=40' scale and in accordance with standards set forth by the City of Palm Springs and Caltrans.

Three (3) Communication detail sheets will be included showing details for pull boxes, conduit sweeps, trenching, video detection/surveillance installation, TMC equipment upgrades, and general notes. The plans will be prepared in AutoCAD.

Products	✓ Signal Communication Plans (25 Sheets) ✓ Title Sheet (1 Sheet) ✓ Details (3 Sheets)

Task 3.3 - Technical Specifications
The RBF Project Team will prepare Bid-ready Technical Specifications for inclusion in the City's construction bid documents. The Technical Specifications will include specifications for all the required traffic signal equipment (including controllers, cabinets, video detection/surveillance systems, etc.), signal communication system, communication system at the hubs and TMC, hardware/software communication improvements at the TMC, and any additional item that may be required for a complete communication system (cabinet upgrades, testing requirements, system integration, training, etc.). The specifications will conform to the applicable standards and specifications from the City of Palm Springs and Caltrans.

Product	✓ Project Technical Specifications

Task 3.4 - Engineer's Estimates
The RBF Project Team will prepare construction quantity take-offs and construction cost estimates in accordance with City and Caltrans requirements for the proposed traffic signal upgrades, signal communication system improvements, TMC improvements, and related improvements. The cost estimate will be based on cost data from similar current projects. The engineer's construction cost estimates will be prepared in MS Excel format for use by the City to advertise for bids.

Product	✓ Engineer's Estimates

Task 3.5 –Signal Timing Data Collection
The collection of various types of data will be required in this Task to adequately develop the network model and complete intersection and arterial analysis. The data collection effort will be wide ranging and each piece of data needs to be accounted for to proceed successfully. Data collection will focus on the following four areas:

- **Traffic Count Data**
  - 24-hour machine counts (City of Palm Springs)
  - Turning movement counts (RBF)
- **Intersection Data**
  - Signal phasing & minimum timing values (City of Palm Springs)
  - Lane configurations (RBF)
  - Intersection measurements (RBF)
  - Photo logs (RBF)
- **System Data**
  - Intersection spacing (RBF)
  - Existing crossing arterial synchronization
- **Before/After Study Data (RBF)**

Traffic Count Data - The RBF Project Team will analyze 24-hour machine count data provided by the City of Palm Springs to determine the peak periods for each of the five project corridors. After approval of the recommended peak periods, turning movement counts will be manually collected at 15-minute intervals over a 4-hour period for each of the 75 project intersections (excluding pedestrian traffic services) during a weekday a.m. and p.m. peak periods.

Intersection Data - ***Signal phasing and timing values.*** Existing traffic signal timing sheets for each project intersection will be collected from the City. To facilitate accessibility to this information and streamline the coding of the corridor model in Synchro 7.0, RBF will prepare phasing summary worksheets that contain the basic information collected from each signal-timing sheet.

Lane configurations and measurements. The Project Team will perform an intersection field review using a standard field form that accounts for each piece of intersection data required for the intersection analysis. Using this form ensures uniformity and completeness during the field review process. The field review for each intersection will document the posted approach speeds; intersection geometric conditions including lane configurations, lane widths, turning lane storage length, and medians; signal operation and phasing characteristics, i.e., split-phasing, left turn phasing or right turn overlaps. Special turn restrictions or controls that may be present will also be noted. A photo log will be completed for each intersection.

System Data - *Intersection Spacing.* Initial distances for intersection spacing will be obtained from geographic coordinates (latitude and longitude) that will be collected for each project intersection. The distances will then be calibrated to reflect the actual horizontal roadway alignment using the average of the travel distances collected with a GPS receiver (and recorded in the Tru-Traffic software) during the collection of travel-time data.

Crossing Arterial Synchronization. Existing or proposed synchronized arterials that cross other project arterials will have optimized timing for vehicle platoon progression developed that mutually benefits each arterial. Cycle length, offset and splits that have been assigned to one synchronized crossing arterial will be maintained to preserve the synchronization on the second corridor if the cycle lengths of the two arterials are compatible. However, if the cycle lengths between the two routes are not compatible, then synchronization for one of the arterials may be compromised.

Before Study with Measures of Effectiveness (MOE) Report - A Before Study will be conducted under this task to gather travel-time, delay, and free-flow speed data for each of the project corridors listed in **Table 1** during a typical weekday peak period—a.m. and p.m. This measured free-flow speed information will be used in the timing analysis and development. Additionally, the Before Study will identify the base Measure of Effectiveness (MOE) conditions (arterial LOS, fuel savings, stops, delays, travel time, noxious air emissions) from which the effects of the synchronization plans will be evaluated.

The travel-time data will be collected using the floating car method, a laptop computer, a GPS receiver unit, and the Tru-Traffic (TS/PP Draft) software. Using this method to collect travel-time data requires each project intersection to be georeferenced in the Tru-Traffic software. For project verification an After Study mirroring the Before Study will be conducted immediately following Task 3.7, "Implementation", and submitted to the City at project completion. An After Study will gather travel-time, delay, and running-speed data for the project corridor between the project limits during the a.m. and p.m. peak periods. The After Study will identify the post Measure of Effectiveness (MOE) conditions (arterial LOS, fuel savings, stops, delays, travel time, noxious air emissions) which will be compared to the Before Study baseline. This comparison will be utilized to determine the effectiveness of the final proposed timing plans.

Products		
	✓	Field review and signal timing summary worksheets
	✓	AM and PM Peak Hour turning movement counts (24-hour for 73 intersections)
	✓	Before/After study for two (2) weekday periods—AM and PM—for seven project corridors

Task 3.6 – Network Modeling

Intersection and Arterial Analysis - RBF will prepare a network model using Synchro 7.0 that includes each of the project corridors listed in **Table 1** and each of the 61 interconnected project intersections using the data collected in Task 3.5. Following the preparation of the network model, peak-hour volume totals for each intersection will be coded into the model for each timing plan. Two (2) timing plans—a.m. and p.m.—for a typical weekday will be developed. The specific time periods for these timing plans will be determined based on the identified peaks from the 24-hour machine counts, and field observation.

TABLE 1 BEFORE/AFTER STUDY CORRIDORS			
PROJECT CORRIDOR	LIMITS		
North Palm Canyon Drive	Tachevah Drive	to	Desert Fashion Plaza
South Palm Canyon Drive	Tahquitz Cyn. Way	to	Camino Real
East Palm Canyon Drive	Camino Real	to	Cherokee Way
Indian Canyon Drive	Tachevah Drive	to	Ramon Road
Sunrise Way	Tachevah Drive	to	Mesquite Avenue
Tahquitz Canyon Way	Calle Encilia	to	El Cielo
Ramon Road	Calle Encilia	to	Crossley Road

At the eighteen (18) isolated "local" traffic signals identified in the RFP, RBF will evaluate critical signal timing parameters and settings for optimal and safe traffic signal operation during "free" operation. This evaluation includes using peak hour turning movement counts to complete a critical movement analysis for these intersections. This analysis will determine the allocation of green time to the critical movements in proportion to their flow ratios. The maximum green settings for the traffic-actuated signal controllers will be established by applying a factor to the green-time allocation. This factor accounts for fluctuations in traffic flow and the operation of the traffic-actuated signal controller. Items to be reviewed include the following:

- Pedestrian clearance intervals
- Yellow times
- All-red times
- Maximum green times

The timing optimization process will began with the cycle length evaluation process that will identify timing anchor points in the system that will influence and control the synchronization on the project corridors. Timing anchor points for this project will be existing synchronized corridors, intersections with large pedestrian clearance times, and intersections with high volume-to-capacity ratios for the critical movements.

Cycle length will be determined by completing a critical movement analysis at each project intersection that considers the degree of saturation (volume-to-capacity) for each lane group while considering the constraints imposed by minimum phase time requirements such as total pedestrian intervals. RBF will discuss the results of the network analysis, the cycle evaluation, and the time-space diagrams and the anticipated improvements with the City's Project Manager.

RBF will develop an operational microscopic model within SimTraffic. The microscopic model will be used to understand the effects of existing and proposed corridor operations, to adjust timing plans prior to implementation. RBF will identify operational deficiencies at each project intersection through the course of the arterial analysis. These operational deficiencies could include: A lack of queue storage for turning movements; signal phasing issues; closely spaced intersections with limited queue storage; or intersections with highly saturated vehicle movements. RBF will provide the City with a list of the identified deficiencies and a list of potential corrective actions which may be taken.

Once the cycle length is determined the green allocation for vehicle movements will be calculated. The intersection synchronization timing will include cycle, offset, splits and phase sequencing, which will be graphically represented on the time-space diagrams. Time-space diagrams will be prepared using the Tru-Traffic software. The provided diagrams will be to scale (horizontally and vertically), in color and 11" x 17" in size. The Tru-Traffic software allows for the direct import of Synchro 7.0 files thereby removing any program input redundancy.

Product	✓ Synchro 7.0 corridor model ✓ Time-space diagrams for two (2) weekday timing plans—AM and PM

Task 3.7 – Implementation and Verification
Upon approval of the network model and cycle evaluation by the City, the RBF Team will proceed to organize and convert the synchronization timing parameters—cycle, offset, splits and phase sequencing—from the Synchro model into a format for entry into the signal controllers.

New timing will be provided to the City in an Excel format and the RBF Team will work with City staff to input the synchronization timing parameters directly into the City's Advanced Traffic Management System (ATMS) for download to the Model 170E controllers. Observation and evaluation of the signal timing will occur during periods applicable to the new timing plans will immediately follow implementation. The RBF Team will closely observe traffic flow and make recommendations for adjustments, as needed, to the intersection timing.

The fine-tuning process will involve using a floating car, a laptop computer, and the Tru-Traffic software connected to a portable GPS receiver unit that provides a real-time, dynamic display of the time-distance trajectory on the time-space diagram. (See Figure 1) Following the syncing of the Tru-Traffic software with the signal system in the field, the floating car can travel through the system observing and predicting, with great precision, the operation of the system and pinpoint problem areas that need attention.

The project corridors are expected to be observed and fine-tuned over a one week period. Platoon progression and any impacts to left-turning and side-street traffic will be observed and adjusted.

Products	✓ Network model timing plans (MS Excel format) ✓ Timing implementation ✓ Observe and evaluate timing

Task 3.8 –Intersection Graphics
The RBF Team will prepare custom intersection graphics for the City's new ATMS for each of the 79 project intersections. The intersection graphics will be based on the completed RBF field review forms and signal timing sheets, only.

The graphics prepared for each location will include the basic geometric configuration (i.e., intersection angles, number of lanes and unique intersection features), movement indications, and detection. Integration of the intersection graphics into the ATMS software is not proposed as part of this work effort. RBF is proposing one preliminary submittal to the City of sample intersection graphics for review and discussion purposes. Specific discussion items will include the color, fonts, and other display information. Following approval of the final graphic scheme by the City, production of intersection graphics will proceed. RBF will submit the intersection graphics to the City at the 90% level of completion for review and comment. After incorporating comments received during the 90% review, final intersection graphics will be submitted to the City.

Product	✓ Custom ATMS intersection graphics for 79 locations

Task 3.9 - Project Management and Coordination
RBF will actively coordinate the Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project with all involved agencies to facilitate project delivery. The RBF Project Management Team will coordinate with City staff, and City Departments including Information Technology Services; and Caltrans. Management support will be provided to resolve any project design scope and scheduling changes. To ensure timely delivery of the project deliverables, RBF's Project Manager will actively be involved at all levels to direct the day-to-day design activities and to identify and resolve critical design issues early on. Project coordination

with the City Project Manager will include progress reports and regular communication via email and telephone.

Product	✓ Project Management and Coordination

Task 3.10 - Meetings
The RBF Project Team will attend meetings with the City of Palm Springs, Caltrans and others as directed by the City to discuss design issues, progress schedule, conduct field analysis and provide technical design clarification. Meetings will also consist of any specific meeting called by the City, or other agency, at which Consultant's attendance is requested.

The RBF Project Team will prepare and distribute meeting minutes and an action item matrix to the project team as appropriate. The RBF Project Team will provide progress report and schedules that will include completion and milestones for each task including meetings. The progress report and schedule will be provided to the City on a monthly basis.

For budgetary purposes, six (6) meetings have been allocated to this task.

Product	✓ Attendance at Meetings (6) Meetings

Task 4.1 - Construction Management, Administration, and Inspection
The RBF Project Team shall perform comprehensive Construction Management, Administration and Inspection Services and report directly to the City of Palm Springs Staff during the pre-construction, construction, and close-out phases of the work as required to insure the Contractor's work is being performed in accordance with the requirements of the contract documents and endeavor to guard the City against defects and deficiencies in the work, including the following:

- Review contract documents and coordinate permit requirements
- Schedule and attend a field walk with the construction Inspector, Project Design Engineer, City and Caltrans representatives
- Provide a pre-construction agenda for review and comment. Schedule a pre-construction meeting and notify attendees and prepare pre-construction meeting notes
- Provide coordination of project activities and prepare reports and documents, as necessary, for City's review and action
- Review and process all shop drawings, project date, sample, and other submittals
- Maintain at the project side, on a current basis, a record copy of all contracts, drawings, specifications, addenda, change orders and other modifications, in good order and marked to record all changes made during construction, including the shop drawings, product data shop and mill test reports of materials and equipment, samples, submittals, purchases, materials, equipment, applicable handbooks, maintenance and operating manuals and instructions, and other related documents and revisions relevant to the contract work
- Monitor Contractor and Subcontractor certified payrolls
- Conduct bi-weekly construction progress meets with Project Design Engineer, Contractor, Subcontractors, City Staff, other affected outside Agencies, utilities, general public, and other consultants to discuss maters such as procedures, progress, problems, and scheduling and distribute meeting agenda and minutes
- Monitor all inspection activities
- Coordinate submittal review with the RBF Project Manager
- Coordinate with the Construction Inspector, Surveyor, Materials/Soils Testing
- Provide on-site inspection and testing services of hardware and software installed by the Integrator/Contractor as they relate to video detection equipment, microwave radios, network appliances installed as part of the communication redesign and the hardware and software associated with the Traveler Information upgrade.
- Validate that work of the Integrator/Contractor meets the design criteria of the Phase Two engineering design.
- Validate the performance criteria of all system components by using third party hardware and software testing tools to ensure bandwidth, performance and data QOS performance standards have been met by the Integrator/Contractor
- Document all claims and maintain reports for account records

- Coordinate and schedule construction inspection activities
- Coordinate and schedule construction surveying
- Review and analyze the Contractor's schedule (monthly) including activity sequences and duration, schedule of submittal and schedule of delivery for products with long lead times
- Work with Contractor to maintain the project schedule to show current conditions and suggest revisions as required
- Recommend necessary or desirable changes in the Construction Contractor's scope of work
- Review and evaluate Contractor's request for changes. Submit recommendations supported by field data related to any additional work
- If change orders are accepted by the City, prepare change orders for signature and authorization by the City
- Maintain a log of change requests
- Create and maintain "Record Drawings" (As-Built" plans)
- Review pay requests and provide recommendation for contractor payments
- Monitor and enforce construction noticing requirements
- Prepare and maintain field diaries (bound workbooks) during construction, including a cumulative record of quantities constructed, daily and weekly reports, working day reports, change order documentation and other documentation
- Monitor the Contractor's PM 10 Fugitive dust control plan and ensure the Contractor is using approved haul routes and that they are kept clean
- Ensure compliance with the construction contract by continuously monitoring, evaluating, approving or rejecting the Contractor's work in accordance with the approved construction contract documents
- Maintain a photographic history of the project. Photos shall also be taken of the following: Existing conditions prior to construction; and disputed work items; and Work that has to be duplicated, replaced or removed; and Complete work; and Extra Work
- Record the progress of the project by maintaining one set of plans with markings and dimensions in red ink to denote field changes or other corrections
- Maintain copies of all permits needed to construction the project and enforce special requirements of each
- The Construction Administrator shall coordinate final inspections with inspector
- Notify the City when the project, or a designated portion thereof, is substantially complete
- Prepare for district a summary of the status of the work of Contractor, listing changes in the previously issued certificates of substantial completion of the work, and recommending the times within which Contractor shall complete uncompleted items on their certificate of substantial completion of the work
- Obtain evidence of certification of all lien releases
- Secure and transmit to the City, all required guarantees and warranties in the form of an Operation and Maintenance workbook
- Coordinate training with City staff

For budgetary purposes, it is estimated that sixty (60) working days will be required for the proposed improvements.

Product	Construction Management, Administration, and Inspection

Exclusions

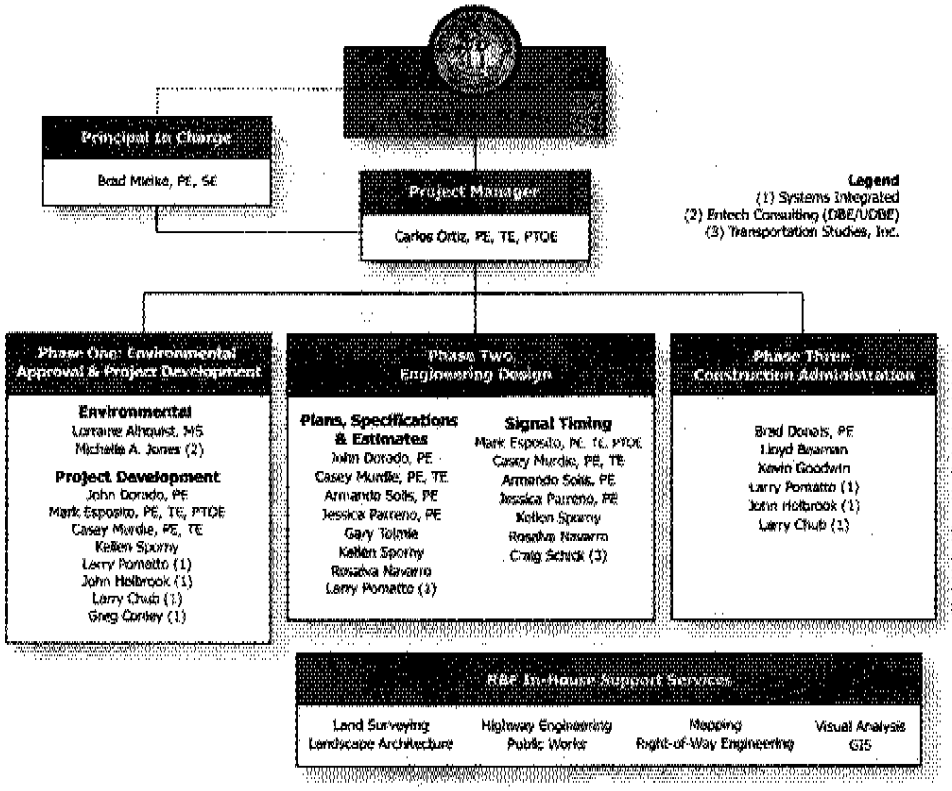
Consulting services relating to any of the following tasks may be completed by RBF Consulting if negotiated under a separate contract for an additional fee; but are presently excluded from this Agreement:

- Geotechnical Studies
- Additional Environmental Studies Due to Changes in Ground Disturbance Limits
- Additional Communication Plans, Fiber Assignments, and Details
- Encroachment Permit Fees
- Engineering Reports
- Traffic Signal Plans
- Traffic Control Plans
- Signing and Striping Plans
- Utility Potholing
- Additional Traffic Counts
- Additional Timing and Coordination Plans
- Additional Intersection Graphics

Section C: Staff Qualifications

ORGANIZATION CHART

The RBF Project Team is pleased to present a team of highly qualified professionals to provide the City of Palm Springs with environmental planning, engineering design, and construction administration services for the Citywide Traffic Signal Interconnect Upgrade and Traffic Management Center Project, as outlined below.



THE RIGHT TEAM!

RBF understands that a project's success depends upon quality personnel being available to our clients. Key to maintaining a project schedule is assignment of permanent and local staff with the appropriate level of availability to commit to their respective roles. RBF's proposed key personnel and support staff are available to fulfill their time commitments in accordance with the project schedule. Our proposed key personnel will remain in their designated positions for the duration of your project. We take great pride in our track record for maintaining our staff in their designated positions for the duration of the project.

PROJECT MANAGER - CARLOS ORTIZ, PE, TE, PTOE

RBF recognizes that the successful delivery of a high quality transportation improvement project starts with assigning a Project Manager that possesses superior technical, management and leadership skills. **Mr. Carlos Ortiz, PE, TE, PTOE** will serve as your Project Manager. All projects or tasks associated with this contract will be under the direction of Mr. Ortiz. As Project Manager, Mr. Ortiz will be the single point of contact and will direct the personnel and resources necessary to successfully complete the project.

Mr. Ortiz's professional experience includes signal operations, planning and design of traffic signals, legacy/Ethernet traffic signal communication systems, in-pavement lighted crosswalk systems, traffic management centers (TMC), closed circuit television (CCTV) systems, dynamic message sign systems (DMS), transit priority system (TSP), Bus Rapid Transit (BRT) systems, red-light camera photo enforcement system, lighting systems, ramp metering systems, traffic surveillance systems, stage construction/traffic handling, and signing and striping. Mr. Ortiz has designed and managed various types of traffic signals and ITS projects for numerous agencies in southern California. Mr. Ortiz's signal communication experience includes hardwired, hybrid, fiber optic and wireless communication systems. Mr. Ortiz has completed several similar projects, including:

Registration:
1997, Civil Engineer, CA, C057535
1999, Traffic Engineer, CA, 2026
1999, Civil Engineer, AZ, 34333
1999, Professional Traffic Operations Engineer, US, 426
Years of Experience: 20
Education:
B.S., 1989, Civil Engineering, California State Polytechnic University, Pomona

- SR-22/I-405 West County Connectors ITS – OCTA/Caltrans
- Wi-Fi/Wi-Max Master Plan – City of Indio
- Fiber Optic Signal Interconnect Phase II and Traffic Management Center – City of Garden Grove
- Orange County Transportation Authority (OCTA) Bus Rapid Transit (BRT) Program – OCTA
- Fiber Optic Signal Interconnect and Amber Alert – City of Garden Grove
- Traffic Management System Operations Study (TMSOS - ITS Master Plan) – City of Irvine
- Chapman Avenue, Katella Avenue, Tustin Street, Main Street and La Veta Avenue Fiber Optic and CCTV Communication Systems – City of Orange
- Traffic Signals, CCTV, and communication improvements various locations – City of Anaheim
- Design/Develop a City-Wide Traffic Control System / Transit Priority System – City of Beverly Hills
- Ocean Avenue/Santa Monica Boulevard Traffic Signal Upgrades, and Fiber Optic and CCTV Communication Systems – City of Santa Monica
- Culver City Video Surveillance (CCTV) Integration Gap Closure Project – Culver City
- I-710 ITS (CCTV/DMS/Traffic Signals) Mitigation Improvements – City of Pasadena

Brief resumes for key team members under Mr. Ortiz' direction are provided below:

LORRAINE ALHQUIIST, MS
Environmental Manager

Ms. Ahlquist will serve as our Environmental Manager. Ms. Ahlquist has over 15 years of experience in the preparation and review of environmental documents such as Environmental Impact Reports (EIR), Mitigated Negative Declarations (MND), Negative Declarations (ND), environmental documents Addendums, Categorical Exemptions (CE) and Initial Studies under CEQA. Other federal (NEPA) transportation projects have included the preparation, review and coordination of Environmental Assessments (EA) and Categorical Exclusions (CadEx.), as well as coordinating reviews of technical studies for state and federal compliance. Recent projects include:

Registration:
2007, Certified Environmental Manager, #7332
Years of Experience: 16
Education:
M.S., 2003, Biological Sciences, Florida International University

- Adams Street Bridge Replacement, La Quinta, CA
- State Route 57/60 At Grand Overcrossing, Diamond Bar, CA
- Garnet Street Bridge Replacement, Mentone, CA
- Interstate 880 Operational and Safety Improvements at 29th Avenue and at 23rd Avenue, Oakland, CA
- Worthington Road Turn Lane and Intersection Improvements, El Centro, CA

Registration:
2006, Civil Engineer, CA, C69921
2003, Traffic Engineer, CA, TR2169
2007, Professional Traffic Operations Engineer, US, 2137

Years of Experience: 19

Education:
Coursework, Engineering Technology, California State Polytechnic University, Pomona

MARK ESPOSITO, PE, TE, PTOE
Project Engineer

Mr. Mark Esposito will serve as our project engineer in the project development and engineering design phases. Mr. Esposito is highly experienced in traffic signal design, signal communications and signal operations, including the development, implementation and calibration of coordination timing. Mr. Esposito has worked on several Intelligent Transportation Systems including legacy/Ethernet fiber optic communication systems and CCTV Systems. Mr. Esposito is currently working on a major ITS Project associated with the widening of the SR-57 in Orange County. The project involves preparation of PS&E for temporary and final fiber optic communications, ramp metering systems, CCTV systems, DMS systems, and temporary wireless communications. In addition, Mr. Esposito has extensive knowledge of signal controller's hardware and software. He has been involved on projects that have required extensive coordination with signal controller manufacturers and distributors. His recent project experience includes:

- SR-57 Freeway Widening ITS - OCTA
- Oso Parkway/Pacific Drive Traffic Signal Synchronization Project – OCTA
- Alicia Parkway Traffic Signal Synchronization Project – OCTA
- Traffic Signal, Signal Communications, Signal Timing/Coordination Project – City of Simi Valley
- Chapman Avenue (Santiago Canyon Road) and Jamboree Road (New Traffic Signals/Modifications and Fiber Optic Communication/CCTV Systems) – City of Orange

Registration:
2009, Civil Engineer, CA, 74405

Years of Experience: 10

Education:
B.S., 1999, Civil Engineering, California State University, Fullerton

JOHN DORADO, PE
Project Engineer

Mr. John Dorado will also serve as our project engineer in the project development and engineering design phases. Mr. Dorado has provided ITS planning and design services for many agencies in Southern California. Mr. Dorado has been involved in system inventory, system evaluation, assessment of ITS technologies, and preparation of system architecture plans for various agencies, including OCTA, Caltrans, and the cities of Indio, Garden Grove, Orange and Santa Monica. Mr. Dorado assisted in the OCTA BRT planning phase that included ITS and Transit Signal Priority (TSP) technology assessment, and development of system architectures for OCTA and the local agencies. Mr. Dorado was the Project Engineer for the City of Garden Grove Fiber Optic and Amber Alert Project, and Video Integration Project for the City of Culver City. These projects included planning and design services for Traffic Management Centers, public works work stations, traffic signal modifications, fiber optic communication system, video detection systems, and CCTV systems at various locations throughout the Cities. Mr. Dorado has prepared specifications, cost estimates, and designed various traffic signals, traffic signal modifications, CCTV systems, DMS systems, communication hub upgrades and installations, fiber optic communications, signing and striping, and traffic control plans for various agencies in Southern California. Key projects include:

- SR-22/I-405 West County Connectors ITS – OCTA
- WI-Fi/Wi-Max Master Plan – City of Indio
- Fiber Optic Signal Interconnect Phase II and Traffic Management Center – City of Garden Grove
- Orange County Transportation Authority (OCTA) Bus Rapid Transit (BRT) Program – OCTA
- Fiber Optic Signal Interconnect and Amber Alert – City of Garden Grove
- Ocean Avenue/Santa Monica Boulevard Traffic Signal Upgrades, and Fiber Optic and CCTV Communication Systems – City of Santa Monica

- Culver City Video Surveillance (CCTV) Integration Gap Closure Project – Culver City

Registration:
2005, Civil Engineer, CA, 68828
Years of Experience: 15
Education:
B.S., 1994, Civil Engineering, University of North Dakota, Grand Forks

BRAD DONAIS, PE
Project Engineer
Mr. Donais will serve as our project liaison and assist in the Construction Administration Phase. Mr. Donais has completed over 25 projects in the past five years for many of the municipalities within the Coachella Valley totaling over $100 million in construction costs. Brad's primary responsibility is for oversight of the public facility improvement process, including project initiation, project management, agency coordination, environmental clearance and preparation of plans, specifications and estimates. Mr. Donais has attended training session on Signal Design (University of California Berkley – Tech Transfer), Advanced Project Management (Advanced Management Institute), Context Sensitive Design (FHWA and Mn/DOT), Roadside Design (AASHTO), Design of System and Service Interchanges (ASCE) and Improving Effectiveness of Public Meetings and Hearing (FHWA).

- Transportation Center Public Improvements, City of Indio, CA
- Jefferson Street Widening/Reconstruction Project - Phase II, Cities of La Quinta and Indio, CA
- Downtown Infrastructure Improvements, City of Indio, CA
- University Park CFD, Palm Desert, CA

Years of Experience: 36
Education:
B.S., 1973, Civil Engineering, Stanford University, Palo Alto, CA

LARRY POMATTO
Project Engineer
Mr. Larry Pomatto has over 30 years of experience in engineering, designing and managing distributed communications systems and automated process control systems. His technical expertise, breadth and depth of experience, and "no nonsense" approach to engineering, design and production ensure that the engineering, software development and installation support will be accomplished on time and within budget. Mr. Pomatto's experience includes project engineering management; system design and engineering for traffic control systems, automation, utility, and data acquisition systems; control of large-scale projects from conception through design, development, testing, installation, maintenance, training, and support; management and direction of hardware and software engineering project teams; direction of development teams and field engineers; contract negotiation for large value commercial and government contracts; technical direction for systems integrated commercial projects; and training customer staff. Key projects include:

- Intelligent Traffic Control Wireless Communication System Phase II, Los Angeles County, CA
- Intelligent Traffic Control Wireless Communication System Phase I, Los Angeles County, CA
- Wireless Ethernet Communication Infrastructure Implementation, City of Chula Vista, CA
- Design and Implementation of Wireless Communications 75 sites, Ventura County, CA

Registration:
Class B, B-2 General Contractor License
Years of Experience: 30
Education:
B.S., 1979, Construction Management, University of Texas

LLOYD BEAMAN
Construction Manager
Mr. Lloyd Beaman will serve as our Construction Manager. Mr. Beaman has over 30 years of construction management experience. Accomplished in the construction industry with the ability to handle multiple tasks concurrently and remain flexible in order to deal with a constantly changing environment. He is assertive and self motivated with the ability to analyze, and interpret all types of contract documents relating to construction, public works, governmental regulations, and technical procedures. His extensive experience spans a diversity of

projects, specialized construction and engineering projects. Management of site plans and design, regulatory permitting, government projects, roadways, bridges, sanitary sewer, storm sewer, water, and earthen dams. Key projects include:

- Downtown Indio Phase I Improvements, City of Indio, CA
- Downtown Indio Overhead and Underground Conversion City of Indio, CA
- Hunt Highway and San Tan Vista Improvements, Maricopa County, AZ
- 43rd Intersection Avenue Improvements, City of Glendale, AZ

PERSONNEL QUALIFICATIONS

The matrix below is a summary of the RBF Project Team's personnel assigned to support Mr. Ortiz on this important project.

NAME AND ROLE	YEARS, EDUCATION, REGISTRATION	SIMILAR PROJECTS
Carlos Ortiz, PE, TE, PTOE Project Manager	20 years BS, Civil Engineering, 1997, Civil Engineer, CA, C057535 1999, Traffic Engineer, CA, 2023 1999, Civil Engineer, AZ, 34332 1999, Professional Traffic Operations Engineer, US, 426	• SR 22/I-405 West County Connectors ITS, OCTA/Caltrans, CA • Orange County Transportation Authority (OCTA) Bus Rapid Transit (BRT) Program, OCTA, CA • Fiber Optic Signal Interconnect Phase II and Traffic Management Center, Garden Grove, CA • Fiber Optic Signal Interconnect and Amber Alert, Garden Grove, CA • Traffic Management System Operations Study (TMSOS - ITS Master Plan), City of Irvine, CA • Chapman Avenue, Katella Avenue, Tustin Street, Main Street and La Veta Avenue Fiber Optic and CCTV Communication Systems, City of Orange, CA
Brad Mielke, SE, PE Principal in Charge	31 Years B.A., Management Engineering B.S., Architectural/Structural Engineering Civil and Structural Engineer, CA	• Improvements to the All American Canal at Madison Street and Avenue 40, Indio, CA • El Dorado Bridge over Whitewater River, Indian Wells, CA • La Novia Avenue Bridge and Roadway Improvements, San Juan Capistrano, CA • Adams Street Bridge Replacement, La Quinta, CA • Garnet Street Bridge Replacement, Mentone, CA • State Route 57/60 At Grand Overcrossing, Diamond Bar, CA • Interstate 880 Operational and Safety Improvements at 29th Avenue and at 23rd Avenue, Oakland, CA
Lorraine Alhquist, MS Environmental Manager	16 Years M.S., 2003, Biological Sciences, Florida International University 2007, Certified Environmental Manager, #7332	• SR79 Realignment Noise Study • Bundy Canyon Road • SR125 Toll Road Noise Design Report
Michelle A. Jones Environmental Assistant	16 Years B.S. Civil Engineering	
John Dorado, PE Project Engineer	10 years BS, Civil Engineering, Civil Engineer (CA)	• SR 22/I-405 West County Connectors ITS, OCTA • Fiber Optic Signal Interconnect Phase II and Traffic Management Center, Garden Grove, CA • Wi Fi/Wi Max Master Plan, Indio, CA • Fiber Optic Signal Interconnect and Amber Alert, Garden Grove, CA

NAME AND ROLE	YEARS, EDUCATION, REGISTRATION	SIMILAR PROJECTS
Mark Esposito, PE, TE, PTOE Project Engineer	19 years AS, Electronics Civil and Traffic / Traffic Operations Engineering (CA)	• SR-57 Freeway Widening ITS, OCTA, CA • Oso Parkway/Pacific Drive Traffic Signal Synchronization Project, OCTA, CA • Alicia Parkway Traffic Signal Synchronization Project, OCTA, CA • Traffic Signal, Signal Communications, Signal Timing/Coordination Project, Simi Valley, CA • Chapman Avenue (Santiago Canyon Road) and Jamboree Road (New Traffic Signals, Modifications and Fiber Optic Communication/CCTV Systems), Orange, CA
Brad Donais, PE Project Engineer	16 Years BS, Civil Engineering Civil Engineer (CA)	• Transportation Center Public Improvements, City of Indio, CA • Jefferson Street Widening/Reconstruction Project - Phase II, Cities of La Quinta and Indio, CA • Downtown Infrastructure Improvements, City of Indio, CA • University Park CFD, Palm Desert, CA
Larry Pomato Project Engineer	36 years BS, Electrical Engineering	• Master radio design plan, Los Angeles County, CA • Wireless Ethernet communications, Chula Vista, CA • Wireless communications, Ventura County
John Holbrook, PE Project Engineer	35 years BS, Mechanical Engineering	• Radio mechanical and electrical design, Los Angeles County, CA • Wireless Ethernet communications, Chula Vista, CA • System Integration, Metropolitan Water District of Southern California, CA
Casey Murdie, PE, TE Design Engineer	6 years BS, Civil Engineering Civil Engineer (CA)	• Traffic signal, CCTV, and signal communication for various locations, Anaheim, CA • Orange County Transportation Authority (OCTA) Bus Rapid Transit (BRT) Program, OCTA, CA • I-210 ITS (CCTV/DMS/Traffic Signals) Mitigation improvements, Pasadena, CA
Kellen Sporny Design Engineer	4 years BS, Civil Engineering Engineer-In-Training (CA)	• Fiber Optic Signal Interconnect Phase II and Traffic Management Center, Garden Grove, CA • SR-22/I-405 West County Connectors ITS, OCTA/Caltrans, CA • Ring Road Traffic Signals, Fiber Optic Communication and CCTV System, Temecula, CA
Larry Chubb Design Engineer	36 years BSEE, OIT	• Radio path studies and configuration management, Los Angeles County, CA • Radio path studies and configuration management, EVMWD, CA • Broadband radio path studies and design, Ventura County, CA
Greg Conley Design Engineer	23 years Computer Science, Electronics	• Wireless Ethernet communications, Chula Vista, CA • System Integration, Metropolitan Water District of Southern California, CA • SCADA network design, Seattle Public Utilities, Seattle, WA
Armando Solis, PE Design Engineer	9 years BS, Civil Engineering, Civil Engineer (CA)	• SR-57 Freeway Widening ITS, OCTA, CA • Oso Parkway/Pacific Drive Traffic Signal Synchronization Project, OCTA, CA • Alicia Parkway Traffic Signal Synchronization Project, OCTA, CA
Jessica Parreno, PE Design Engineer	4 years BS, Civil Engineering Civil Engineer (CA)	• SR-57 Freeway Widening ITS, OCTA, CA • Oso Parkway/Pacific Drive Traffic Signal Synchronization Project, OCTA, CA • Alicia Parkway Traffic Signal Synchronization Project, OCTA, CA

NAME AND ROLE	YEARS, EDUCATION, REGISTRATION	SIMILAR PROJECTS
Rosalva Navarro Design Engineer	3 years BS Civil Engineering Engineer-In-Training (CA)	• 58-57 Freeway Widening ITS, OCTA, CA • Ose Parkway/Pacific Drive Traffic Signal Synchronization Project, OCTA, CA • Alicia Parkway Traffic Signal Synchronization Project, OCTA, CA
Lloyd Beaman Construction Manager	30 Years Construction Management, University of Texas Construction Safety and Health 30-hour Training, US Dept. of Labor, OSHA	• Downtown Indio Phase 1 Improvements, Indio, CA • Downtown Indio Overhead to Underground Conversion, Indio, CA • Carefree Highway, Peoria, AZ • Hunt Highway and San Tan Vista, Maricopa County, AZ
Kevin Goodwin Construction Administration	15 Years Certificate, 1986, AutoCADD Training	• Downtown Indio Overhead to Underground Conversion, Indio, CA • 43rd Avenue Intersection Improvements, Glendale, AZ • Hunt Highway Project, Casa Grand, AZ

FIRM EXPERIENCE

As requested, key staff / team members and their experience with federally funded projects coordinated by Caltrans District 8 is highlighted below:

KEY STAFF MEMBER / ROLE	CALTRANS D8 PROJECT NAME / DETAILED PROJECT INFORMATION
Carlos Ortiz, PE, TE, PTOE Project Manager Brad Donais, PE Project Engineer John Dorado, PE Project Engineer Lorraine Ahlquist, MS Environmental Manager	• **I-10/Jefferson Street Interchange, Indio, CA** o Start/Completion Dates: 2004 / 2010 o Federal Aid Project Number: 47520 o Local Agency Contact: City of Indio, Adrienne F. Dunfee, 760/541-4251 o Caltrans Local Assistance Contact: Junior Abella, 909/388-7193 • **I-10/Monterey Avenue Interchange, Palm Desert, CA** o Start/Completion Date: 2005 / 2010 o Federal Aid Project Number: 31208 o Local Agency Contact: City of Palm Desert, John Garcia, 760/776-6359 o Caltrans Local Assistance Contact: Emad Makar, 909/383-4978 • **Adams Street Bridge Replacement, La Quinta, CA** o Start/Completion Date: 2007 / 2009 o Federal Aid Project Number: BR-5IBIL (503) o Local Agency Contact: Bryan McKinney, City of La Quinta, 760/777-7045 o Caltrans Local Assistance Contact: Aaron Burton, 909/388-1804 • **Garnet Street Bridge Replacement, Mentone, CA** o Start/Completion Date: 2006 / ongoing o Federal Aid Project Number: BRLO-5954 (095) o Local Agency Contact: Mr. Chris Saed, County of San Bernardino, 909/387-7877 o Caltrans Local Assistance Contact: Aaron Burton, 909/388-1804

Section D: Firm Qualifications

FIRM BACKGROUND

RBF is a full service planning, environmental, engineering design, survey, and construction management firm with 15 offices in California, Arizona and Nevada, including our local Palm Desert office. This year marks RBF's 65th year of continuous operation. The firm is ranked 79th in ENR's Top 500 Design Firms. RBF is a strong, financially stable firm with no bankruptcy, pending litigation, closures or mergers that would impede our ability to complete this traffic improvement program. Through our dedication to client satisfaction, we maintain a consistent and healthy growth rate year after year.

Traffic Engineering. RBF provides traffic engineering services to many agencies throughout California, including agencies throughout the Coachella Valley. Our team has prepared ITS communication master plans and design for various types of communication systems including hardwired, fiber optic, microwave, wireless systems and traffic signal systems. In addition, RBF has provided design services for Closed Circuit Television (CCTV) Systems, Dynamic Message Signs (DMS), Traffic Monitoring Stations (TMS), Ram Metering Systems (RMS), Highway Advisory Radio (HAR), Red-Light Photo Enforcement Systems, and installation and upgrades of Traffic Management Centers (TMC) and workstations.

RBF possesses the full range of disciplines necessary to provide turnkey planning, design and implementation of a wide variety of traffic engineering projects. Many of RBF's experienced staff of registered civil engineers, traffic engineers, electrical engineers, landscape architects, planners, structural engineers, professional land surveyors, designers and CADD technicians have had the benefit of long careers in the consultant industry and have worked with several public agencies during their tenure at RBF. RBF has provided, and is currently providing, ITS services to several agencies including OCTA; Cities of Murrieta, Temecula, Indio, Palm Desert, Rancho Mirage, La Quinta, Anaheim, Orange, Irvine, Garden Grove, Mission Viejo, Beverly Hills, Santa Monica; and Caltrans Districts 8 and 12, to name a few.

Name:
RBF Consulting

Type of Firm: Corporation (CA)

Contact Person:
Carlos Ortiz, PE, TE, PTOE
cortiz@rbf.com

Telephone Number:
949/855-3657

Facsimile Number:
949/837-8007

Traffic Engineering and Intelligent Transportation Systems (ITS) Services

- Signal Systems
- Signal Communication Master Plans
- Signal Communication System Design
- Ramp Metering Systems
- Dynamic Message Signs (DMS)
- Traffic Management Centers (TMC)
- Video Surveillance Systems
- Bus Rapid Transit System
- Signal Timing and Operations

AUTHORIZED PRINCIPAL CONTACT

RBF's authorized principal contacts for this project include:

Mr. Brad Mielke, SE, PE, Office Manager, Principal in Charge 74-130 Country Club Drive, Suite 201 Palm Desert, CA 92260-1687 760/346-7481 bmielke@rbf.com	**Mr. Carlos Ortiz, PE, TE, PTOE, Project Manager, Vice President** 1472 Alton Parkway Irvine, CA 92618 949/855-3657 cortiz@rbf.com

FIRM EXPERIENCE

RBF has worked with federal agencies, local agencies and Caltrans for over 30 years on design reports, supporting environmental documents and plans, specifications and estimates for public improvement projects. The quality of the services we provide our clients is outstanding. Our thorough understanding of local public

agency and Caltrans standards for traffic design, from project planning through construction, ensures the timely and cost-efficient completion of the bidding documents, construction drawings, and cost estimates. Recently completed projects include:

Caltrans District 8 Federally Funded Projects

- Adams Street Bridge
- High Desert Corridor
- Garnet Street Bridge Replacement, Mentone
- Interstate 10 / Jefferson Street Interchange, Indio
- Interstate 10 / Monterey Street Interchange, Palm Desert
- Peyton Road, Chino Hills
- Interstate 215; San Bernardino County
- SR-60/SR-91/I-215 Interchange
- Interstate 210 Park & Ride, Fontana
- Street Improvements on North Cajon Boulevard, San Bernardino

To provide a concise overview of the RBF Project Team qualifications, we have prepared the following matrix outlining similar projects and their associated elements of work with traffic signal interconnect and traffic management center projects.

PROVEN EXPERIENCE FOR EVERY MAJOR PROJECT ELEMENT	Traffic Engineering Services	Project System Architecture	ITS Services	Traffic Signal Design	Signal Communication Systems	CCTV / DMS / TMS Systems	TMC / Work Station Systems	Ethernet Network	Signal Timing and Coordination	Caltrans Coordination / Approval	Construction Support
Fiber Optic Signal Interconnect Phase II and Traffic Management Center City of Garden Grove	✓	✓	✓		✓	✓	✓	✓		✓	✓
Traffic Management System Operations Study (ITS Master Plan) City of Irvine	✓	✓	✓		✓	✓	✓	✓			
Bus Rapid Transit (ITS, TSP, TSS Master Plan) OCTA	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Ring Road Traffic Signals and Intelligent Transportation System Improvements City of Temecula	✓	✓	✓	✓	✓	✓	✓		✓		✓
Wi Fi / Wi Max Communication Systems and Wireless Closed Circuit Television Surveillance (CCTV) System City of Indio	✓	✓	✓		✓	✓	✓	✓			✓
Downtown Indio Traffic Signal Improvements City of Indio	✓			✓	✓						✓
Highway 111 Improvements City of La Quinta	✓			✓	✓					✓	✓
University Park Improvements City of Palm Desert	✓		✓	✓	✓						✓
Fiber Optic Signal Interconnect and Amber Alert City of Garden Grove	✓	✓	✓		✓	✓	✓	✓		✓	✓

PROVEN EXPERIENCE FOR EVERY MAJOR PROJECT ELEMENT	Traffic Engineering Services	Project System Architecture	ITS Services	Traffic Signal Design	Signal Communication Systems	CCTV / DMS / TMS Systems	TMC / Work Station Systems	Ethernet Network	Signal Timing and Coordination	Caltrans Coordination / Approval	Construction Support
Fiber Optic Interconnect and CCTV Camera Surveillance System City of Orange	✓	✓	✓		✓	✓	✓	✓		✓	
Ocean Avenue and 2nd Street Fiber Optic and CCTV Communication Project City of Santa Monica	✓	✓	✓	✓	✓	✓	✓	✓			✓
Video Surveillance Integration Gap Closure Project City of Culver City	✓		✓		✓	✓	✓	✓			✓
SR-22 / I-405 West County Connectors ITS Ethernet System OCTA/CALTRANS	✓		✓	✓	✓	✓	✓	✓		✓	✓
ITS Fiber Optic, DMS and CCTV Project City of Pasadena	✓		✓	✓	✓	✓		✓		✓	
Santa Monica Boulevard Fiber Optic Communication Project City of Santa Monica	✓	✓	✓	✓	✓	✓	✓	✓			✓
SR–57 Widening ITS System OCTA / CALTRANS	✓		✓		✓						✓
Citywide Traffic Control and Transit Signal Priority System City Of Beverly Hills	✓			✓	✓		✓				
Alicia Parkway Traffic Light Synchronization Project (TLSP) OCTA	✓	✓	✓				✓	✓	✓	✓	✓
Oso Parkway/Pacific Park Drive Traffic Light Synchronization Project (TLSP) OCTA	✓	✓	✓				✓	✓	✓	✓	✓

Detailed similar representative experience follows:

Wi Fi / Wi Max Communication System and Wireless Close Circuit Television Surveillance System; Indio, CA

The City of Indio will be providing a Wi Fi/Wi Max System as part of their downtown redevelopment to provide free internet access to the public and provide wireless Closed Circuit Television (CCTV) surveillance to the City Police Department.

RBF working with our sub-consultant provided site survey and spectrum analysis survey of the 2.4GHz, 4.9GHz, 5.3GHz, and 5.8GHz frequency bands for the City of Indio. The Spectrum Analysis Survey was performed to evaluate the environmental noise level in the 2.4GHz, 4.9GHz, 5.3GHz, and 5.8GHz frequency bands. The Site Survey was performed to determine the potential line-of-sight ("LOS") between various mesh/AP nodes and potential backhaul locations. A total of twenty-one (21) sites were surveyed. The purpose of the surveys was to determine the potential functionality of deploying a municipal mesh wireless system providing "hot zone" coverage throughout various points of the city and also to determine options for use of the 4.9GHz Public Safety band access. The goal of the project is to create a wireless mesh overlay.

The City's video surveillance network will be fully compatible with an Internet Protocol (IP) based video solution. The network will give flexibility to insert video at temporary locations. Highlights of the City's wireless video solution include:

- Advanced video surveillance
- All IP MPEG4 video solution with full screen, full motion video @ 30fps
- Full PTZ capabilities with audio input/output and IR for low light
- All wireless solution using 802.11a and/or 4.9GHz backhaul and optional battery back up. Housings available for wind, sand, ice, bullet proof, etc
- Viewing/playback of up to 25 simultaneous cameras per viewing station. Can be viewed on standard PCs, PDAs as well as control room apps.
- Full video recording and playback. Record up to thousands of hours with standard or RAID hard drives
- Intelligent detection capabilities
- Intelligent backend systems for control center display, motion detection, pattern recognition, etc.
- Can be used in conjunction with other IP detectors

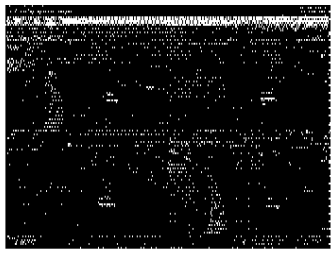
RBF is responsible for the development of the project master plan/system architecture and the preparation of plans, specifications and engineering estimates (PS&E) for design of the wireless CCTV system.

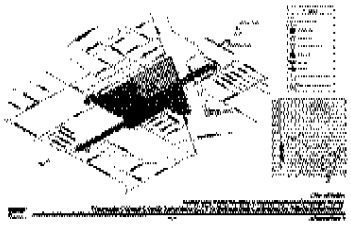
Relevant Project Highlights:

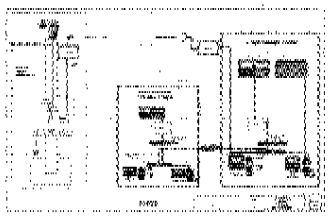
- Downtown Wi Fi/Wi Max Master Plan
- Wireless CCTV System
- Connection to Police Department
- Free Public Internet Services
- Plans, Specifications and Engineering Estimates (PS&E)

References:

City of Indio
100 Civic Center Mall
Indio, CA 92201
Mariana Aguirre, 760/391-4120







Relevant Project Highlights:

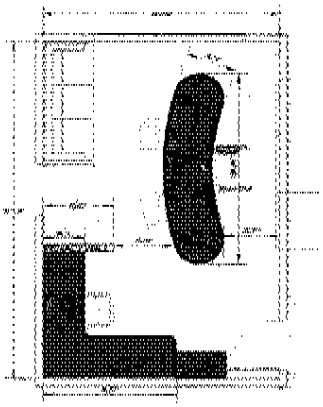
- 19 Miles of Fiber Optic Interconnect System
- Installation of Closed Circuit Television Camera Systems (CCTV) at 19 Locations
- New Traffic Management Center (TMC)
- Plans, Specifications and Engineering Estimates (PS&E)

Reference:

City of Garden Grove
11222 Acacia Parkway
Garden Grove, CA 92840
Dai Vu, PE, 714/741-5189

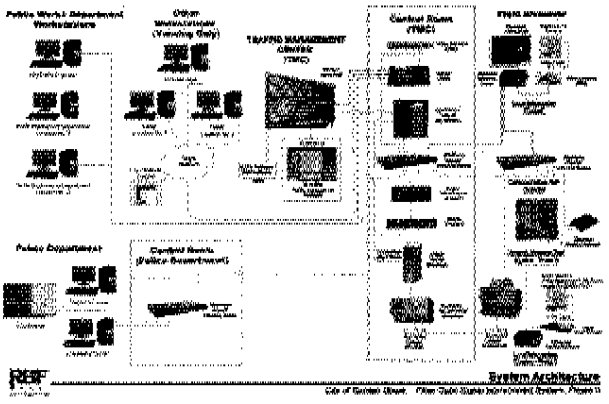
Fiber Optic Signal Interconnect Phase II and Traffic Management Center; Garden Grove, CA

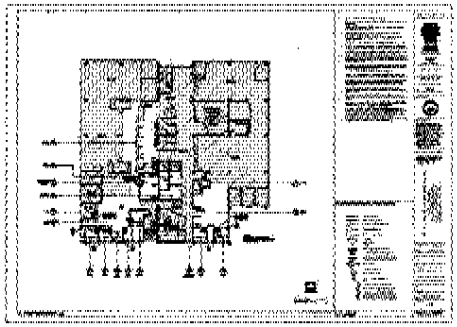
The City of Garden Grove will be expanding their Intelligent Transportation System (ITS) in order to complete the City's transitioning from a legacy communication system to an Ethernet (Internet Protocol) communication system. The proposed system will provide real time information and the capabilities to manage traffic operations and provide video surveillance from the Traffic Management Center (TMC) and the Police Dispatch and Command Centers. The project also consists of providing professional engineering services to assist the City in the design and installation of the City's new TMC that will incorporate state-of-the-art technology. It includes coordination and managing the TMC improvements with the Architect and the TMC System Integrator. It also includes coordination with the City's Information Technology (IT) Department to provide a communication link between the TMC and the City's communication network in order to provide real time video surveillance information to selected City staff at their work stations.



The project also consists of providing design services for 19-miles of fiber optic communication system along major corridors, 19 Closed Circuit Television Camera (CCTV) Systems, migration to a new centralized Traffic Management System (Econolite Centracs), new traffic signal controllers and cabinet upgrades, and additional hardware and software enhancements that provides the capabilities to manage the City's traffic signal system, CCTV surveillance system, and Amber Alert Dynamic Message Signs (DMS) via the City's Traffic Department communication network. In addition, the project will enhance the communication between the TMC and the Police Dispatch Center in order to disseminate messages to two DMS and have capabilities to view/control the 38 CCTV cameras. The scope of work for this project expanded to include fiber optic drops at twenty-five (25) City owned facilities including Fire Stations, water facilities (well site, booster stations and lift stations), Community Centers, Family Resource Centers, and Parks for future expansion of the City's communication network.

RBF is responsible for the development of the project master plan/system architecture and the preparation of plans, specifications and engineering estimates (PS&E) for design of the fiber optic signal interconnect systems, CCTV systems and TMC.





Fiber Optic Signal Interconnect and Amber Alert System; Garden Grove, CA

The City of Garden Grove will be expanding their Intelligent Transportation System (ITS) in order to facilitate the communications from the signalized intersections and corridors to the City's Traffic Management Center (TMC) and Police Dispatch. The proposed system will provide real time information to the City and the City will be able to manage traffic operations from the TMC. The project consisted of 17-miles of fiber optic communication system along major corridors, 19 Closed Circuit Television Cameras (CCTV) and two (2) Dynamic Message Signs (DMS) with Amber Alert capabilities that will link approximately 22 traffic signals and other field elements to the City's TMC via the City's Traffic Department communication network. In addition, it provides a communication link to the Police Dispatch in order to disseminate messages to the DMS and have capabilities to view/control the CCTV cameras. The scope of work for this project expanded to include fiber optic drops at the City's Public Works Yard and five (5) water facilities (well site, booster stations and lift stations per the City's Water Department request) for future fiber optic communications needs.

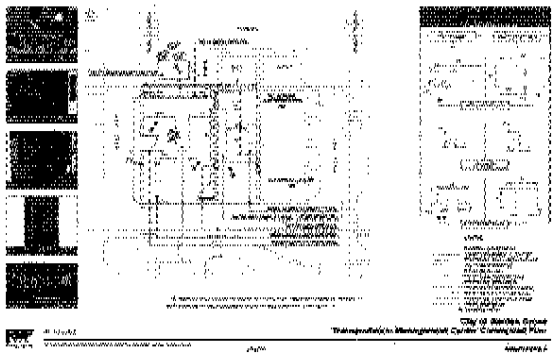
Relevant Project Highlights:

- 17 Miles of Fiber Optic Interconnect System
- Installation of Closed Circuit Television Camera Systems (CCTV) at 19 Locations
- Development of the Project Master Plan System Architecture
- Provide Fiber Optic Communication to Two (2) Proposed Dynamic Message Signs (DMS) with Amber Alert Capabilities
- Plans, Specifications and Engineering Estimates (PS&E)

Reference:
City of Garden Grove
11222 Acacia Parkway
Garden Grove, CA 92840
Doi Vu, PE, 714.741.5189

The project included the evaluation and design of the CCTV/DMS Systems and evaluation and design of the fiber optic communication lines connecting the field elements with the City's TMC in order to allow for management of each system. The proposed systems should satisfy current and future needs based on the City's requirements. As part of the ITS planning services, RBF provided thorough inventory and evaluation of the field elements and TMC, assessment of ITS technologies including manufacturers' presentations and field visits, and conceptual schematic plans.

In addition, RBF provided the City with conceptual plans for the new TMC showing different layouts based on the room size and building requirements. RBF was responsible for the development of the project master plan/system architecture and the preparation of plans, specifications and engineering estimates (PS&E) for design of the fiber optic signal interconnect systems, CCTV systems and DMS systems. The City's goal is to install the new fiber optic communication system while maintaining the existing hardwired communication system as an interim condition.



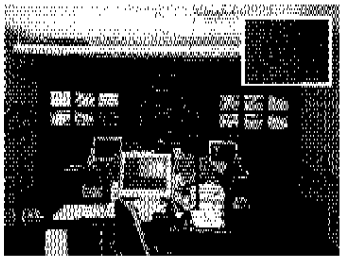
Traffic Management System Operations Study; Irvine, CA

Since 1992, the City of Irvine has been working to develop an Integrated Traffic Management System with interties to Caltrans, the University of California, Irvine and the City of Santa Ana. The City has deployed 65 CCTV cameras, eight (8) video detection systems, and six (6) changeable message signs, which are controlled from the City's traffic management center (ITRAC). In an effort to keep pace with the evolving communications and ITS industry, City staff and RBF conducted a detailed evaluation of their Advanced Traffic Management System and Communications Infrastructure focusing on four key areas: central traffic control system; traffic signal controller technology; communications infrastructure and topology; and ATM and Ethernet backbone data transport.

Relevant Project Highlights:
- ITS Master Plan
- Central Traffic Control System
- Traffic Signal Controller Technology
- Communications Infrastructure and Topology
- ATM and Ethernet Backbone Data Transport

Reference:
City of Irvine
One Civic Center Plaza
Irvine, CA 92623-9575
Mr. Ken Louie, 949/724-7645

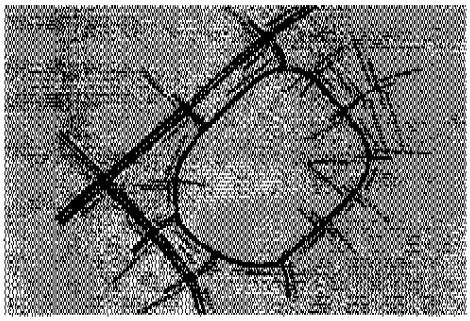
This study included an evaluation of the existing system's worth and forecast costs for the planned improvements. The study focuses on generating long-range forecasts for maintaining and rehabilitating the traffic signal system. One of the issues faced is the technical capability of contract staff to support the advanced equipment deployed in the City of Irvine. The City relies on fast, uninterrupted communications. The City explored several data transport modes, which has led to the deployment of ATM technology to communicate between data nodes through a mesh network. Long-term plans include the integration of video and data onto an Ethernet backbone to transmit information in a digital format. The City identified an 18-month program for implementing, testing and evaluating potential central traffic control systems based on benefits and deficiencies of the existing VMS system. Through the implementation of the new traffic signal control system and controller technology, the City is faced with the challenge of maintaining their legacy system. The City is in the process of evaluating the communications infrastructure and topology to allow for simultaneous communications of the two systems during migration.



Relevant Project Highlights:
- Traffic Signals inside the Promenade Mall
- 4 CCTV Cameras
- Fiber Optic and Hardwired Communication System
- Upgrade at the Communication Hub
- Upgrade at the TMC
- Conceptual Overhead Sign Details
- Signing and Striping

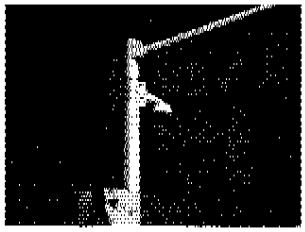
Ring Road Traffic Signals and Intelligent Transportation System Improvements; Promenade Mall, Temecula, CA

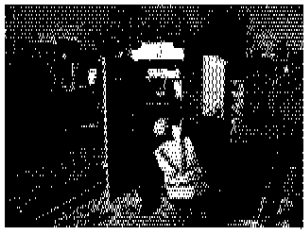
The proposed project improvements are intended to alleviate congestion and facilitate traffic efficiently and effectively throughout the mall's internal circulation loop roadway, Ring Road in the City of Temecula. RBF prepared signing and striping, traffic signals, closed circuit television (CCTV) systems, and hardwired and fiber optic communication plans and details, technical specifications, and engineer's estimates for the improvements of Ring Road.

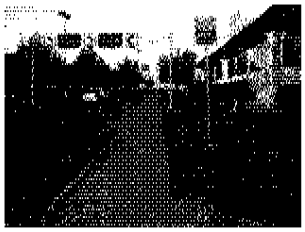


The project consisted of a fiber optic communication system that links the CCTV cameras to the City's Traffic Management Center (TMC) via the existing communication hub on Ynez Road, and provided hardwired communication to link the traffic signals on Ring Road with the existing adjacent traffic signals on Ynez Road and Winchester Road. RBF provide conceptual details for overhead lightweight sign structures during the planning phase.

RBF provided signal timing services that required special features to improve traffic flow—reduce travel times and stops and increase average speed—along Ring Road and the adjacent traffic signals on Ynez Road and Winchester Road due to the close proximity. As part of the signal timing services, RBF developed an operational microscopic model using SimTraffic. The operational analysis was used to understand the dynamics of the network and corridor operation. RBF also provided construction support services.







Relevant Project Highlights:

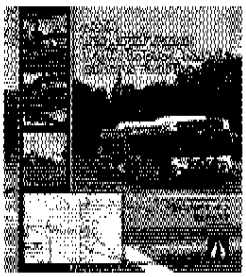
- Traffic Engineering Services
- Traffic Impact Analysis
- Transit Signal Priority
- Traffic Signal Synchronization
- Preparation of Request For Proposals
- Review of Proposals
- Program Management Services

Reference:

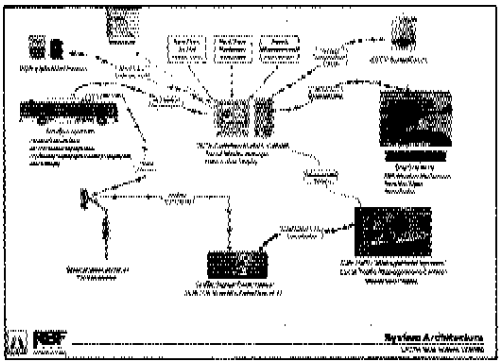
Orange County Transportation Authority
550 South Main Street
Orange, CA 92863
Cordoba Robinson, Project Manager
714/560-5715

Orange County Transportation Authority (OCTA) Bus Rapid Transit (BRT); Orange County, CA

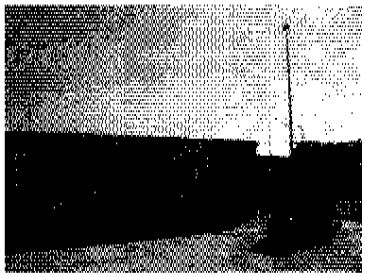
This is the County's first Bus Rapid Transit (BRT) project. It consists of three corridors (approximately 70 miles) throughout fourteen agencies/jurisdictions. The elements of the BRT system include: BRT vehicles that will share traffic lanes with general traffic, provide travelers real-time passenger information via next bus count down signs at stop locations, internet, personal data assistants (PDA), transit signal priority (TSP), distinct bus identity, system branding and customized shelters. The project also includes Traffic Signal Synchronization (TSS) of approximately 250 signalized intersections.

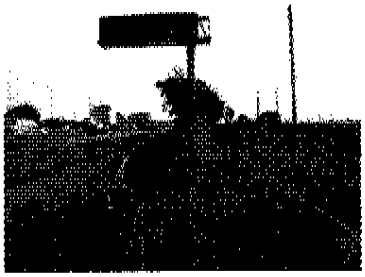


RBF is part of the Project Management Team providing Traffic Engineering Services to OCTA on the BRT Program. In the past two years, RBF has provided traffic engineering planning services that included assessing the TSP technology, existing traffic signal controllers hardware and software, and traffic management systems hardware and software. RBF has also prepared a Bus Rapid Transit Traffic Impact Analysis Report for Caltrans Facilities and included the analysis of 22 Caltrans signalized intersections and two freeway segments.



RBF has also assisted in the planning of the Transit Intelligent Transportation System (ITS) that includes the communications between next bus count down signs, the TSP system and the existing Automatic Vehicle Location (AVL)/GPS system and the Transit Management Center. The project involves coordinating with the 14 agencies/jurisdictions in regards to traffic related issues, community outreach, developing schedules to expedite the project, and preliminary cost estimates. RBF also prepared the TSP and the TSS portions of the Request-For-Proposal (RFP) and assisted on the other tasks including ITS and Project Management of the RFP. RBF is continuing to provide Traffic Engineering Services to the Project Management Team. RBF is responsible for project oversight of the proposed Transit Signal Priority (TSP) system, and Traffic Signal Synchronization (TSS) tasks.





Relevant Project Highlights:

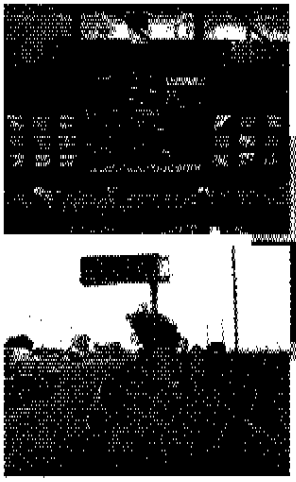
- Caltrans District 12 1st Ethernet Communication System
- 2 Miles of Fiber Optic Interconnect System
- Installation / Relocation of Closed Circuit Television Camera Systems (CCTV) at 4 Locations
- Installation of DMS at 2 Locations
- Modification of Ramp Metering Systems and Traffic Monitoring Systems
- Installation of Communication Equipment at 3 Hubs and TMC
- Plans, Specifications and Engineering Estimates (PS&E)

Reference:
Caltrans - District 12 TMC
6681 Marine Way
Irvine, CA 92618
Mr. Henry Pham, 949/936-3464

State Route 22 / Interstate 405 West County Connectors ITS; Orange County, CA

As part of the SR-22 / I-405 High Occupancy Vehicle (HOV) West County Connectors, RBF is currently preparing communication plans and details, technical specifications, and engineer's estimates to provide Caltrans District 12 their first Ethernet communication system. The project consist of installing an Ethernet fiber optic communication system that will link Caltrans facilities within the project area including traffic signal systems, ramp metering systems, traffic monitoring systems, closed circuit television (CCTV) systems, and dynamic message signs (DMS) to Caltrans District 12 Traffic Management Center (TMC).

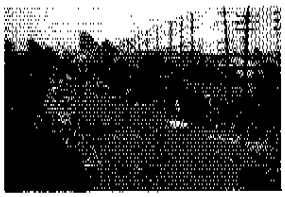
In addition, the new Ethernet communication system will require installation of hardware at the I-405/SR-22 Mini-Hub, I-5/SR-22 / La Veta Hub, I-405 / Euclid Hub, and at Caltrans District 12 TMC. The project also consists of providing plans and details, technical specifications, and engineer's estimates for the installation / relocation / modification of CCTV systems, ramp metering systems, traffic monitoring stations, and two Dynamic Message Signs (DMS).

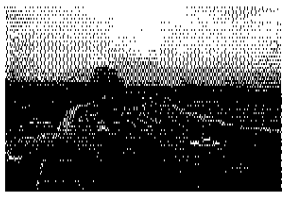


In addition, temporary plans and details, technical specifications, and engineer's estimates will be provided to maintain the existing CCTV systems, ramp metering systems, traffic monitoring stations, and Dynamic Message Signs (DMS) in operations during the improvements of the I-405 and SR-22 freeways and interchanges. It is anticipated that the construction period will be approximately four years.

City Of Orange Fiber Optic Interconnect and Closed Circuit Television (CCTV) Camera Surveillance System Project; Orange, CA

The City of Orange expanded its Intelligent Transportation System (ITS) in order to facilitate communications from signalized intersections and corridors to the City's Traffic Management Center (TMC). The system provides real time information to the City and it's able to manage traffic operations from the TMC.



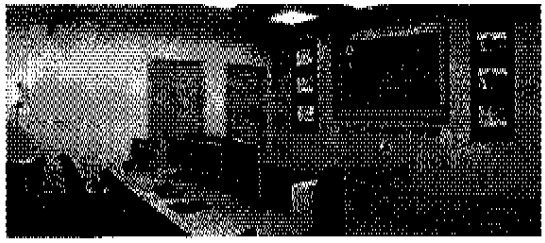


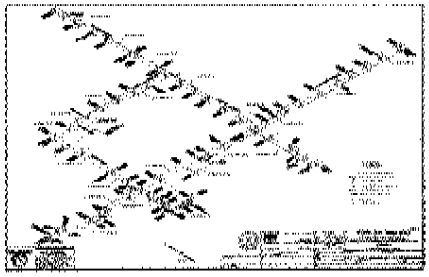
Relevant Project Highlights:

- 11 Miles of Fiber Optic Interconnect and Hardwired Interconnect System
- Installation of Closed Circuit Television Camera Systems (CCTV) at 17 Locations
- Plans, Specifications and Engineering Estimates (PS&E)

Reference:
City of Orange
300 East Chapman Avenue
Orange, CA 92866
Andy Fardbank, 714/744-5566

This project consisted of the installation of eleven miles of fiber optic interconnect system and hardwired interconnect system to coordinate the signalized intersections along Katella Avenue, Tustin Street, Main Street and La Veta Avenue in the City of Orange. The project also involved the installation of Closed Circuit Television camera systems (CCTV) at seventeen locations to provide the City of Orange with the capability to observe traffic operations that will link all traffic signals and other field elements to the City's Traffic Management Center (TMC) via the City's Traffic Department communication network. RBF was responsible for preparation of plans, specifications and engineering estimates (PS&E) for design of the traffic signal fiber optic communication system and CCTV systems. The City's goal is to have a communication system that will assist them in managing the traffic at selected intersections and roadway segments; enhance staff efficiency through remote monitoring, troubleshooting, and system adjustments; and compliment the City's existing traffic signal surveillance, control, and monitoring program. The City's goal is to have a traffic management system that will allow communication between its existing signal controllers and provide a communication link between the City's TMC and Caltrans District 12 TMC.





Relevant Project Highlights:
- CCTV at 11 Intersections
- Five miles of fiber optic communication
- Public Works Facility
- Work Station
- Plans, Specifications and Engineering Estimates (PS&E)

Reference:
City of Culver City
9770 Culver Boulevard
Culver City, CA 90230
Mr. Gabe Garcia, 310/253-5633

Video Surveillance Integration Gap Closure; Culver City, CA
This project consisted of the installation of Closed Circuit Television (CCTV) system at eleven (11) signalized intersections along Jefferson Boulevard, Culver Boulevard, Washington Boulevard and Sepulveda Boulevard to provide the City of Culver City the capability to observe traffic operations and expand their ITS system architecture.

The project also included installation of a 48-strand single mode fiber optic communication system to link the CCTV systems to the City Hall Hub and the Maintenance Yard. The project further included a CCTV workstation at the maintenance yard. RBF was responsible for preparation of plans, specifications and engineering estimates (PS&E) for the design of the CCTV systems, fiber optic communication system, and the CCTV workstation at the City's Maintenance Yard.

Alicia Parkway Traffic Light Synchronization Program (TLSP) Project, Orange County, CA
The 11-mile Alicia Parkway Traffic Light Synchronization Program (TLSP) Project involves 41 traffic signals through six agencies including the Cities of Aliso Viejo, Laguna Niguel, Laguna Hills, Mission Viejo, and Rancho Santa Margarita. It also crosses the San Diego Freeway (I-5). The project objective is to improve arterial traffic flow-reduce travel times and stops and increase average speed-along the Alicia Parkway Corridor through the synchronization of 41 traffic signals. Benefits to be gained by improving traffic flow included reduced fuel consumption and improved air quality. The project includes the procurement, installation and testing of the following systems:

- Two Econolite Centracs Advanced Traffic Management Systems (ATMS) including hardware and software, and integration with Traffic Management Center and field elements;
- Replacement of Multisonics and Econolite ASC/2 signal controllers with Econolite ASC/3 signal controllers;
- Replacement of Model 170E signal controllers with Model 2070 signal controllers
- New Model 170E TRFM Caltrans Master Controller
- Fiber optic drop cables
- FDU Units
- Ethernet communication switches—Copper and fiber optic
- Installation of a wireless radio link and integration with Ethernet system

Relevant Project Highlights:
- System Deployed: Econolite Centracs ATMS, fiber optic and copper Ethernet switches, GPS wireless clocks
- Controllers Deployed: Econolite ASC/3 controllers, Model 2070 controllers

References:
Mr. Ron Keith, Principal Traffic Engineer
OCTA
550 S. Main Street
Orange, CA 92863-1584
714.560.5920
rkeith@octa.net

An additional project objective was to identify deficiencies with the existing traffic signal control equipment and intersection operations, and provide recommendations towards simple, low-cost solutions that may be implemented to correct such deficiencies, with a view of assisting the traffic operations along this corridor. Work tasks include: Project management, data

collection, field review, 'before' study, furnishing and installation of traffic signal equipment, signal timing optimization/implementation, 'after' study, project report, and 9-months of continuing signal timing support.

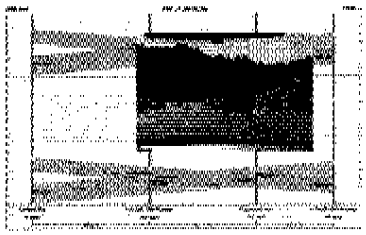
Oso Parkway / Pacific Park Drive Traffic Signal Synchronization Demonstration Project, Orange County, CA

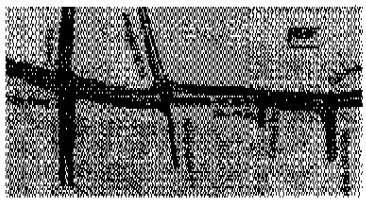
The eight and three-quarter mile Oso Parkway/Pacific Park Drive Traffic Signal Synchronization Demonstration project involved 34 traffic signals through six agencies including an unincorporated area of the County of Orange, and the Cities of Aliso Viejo, Laguna Niguel, Laguna Hills, Mission Viejo, and Rancho Santa Margarita. It also crosses the San Diego Freeway (I-5), the San Joaquin Hills Toll Road (SR-73) and the Foothill Toll Road (SR-241). The westerly to easterly project limits are Canyon Vistas at Pacific Park Drive in the City of Aliso Viejo to the SR-241 Northbound On-Ramp at Oso Parkway in the City of Rancho Santa Margarita.

Relevant Project Highlights:
- System Deployed: GPS wireless clocks
- Controllers Deployed: Model 170 controllers, Econolite ASC/2 controllers

Reference:
Mr. Ron Keith, Principal Traffic Engineer
OCTA
550 S. Main Street
Orange, CA 92863-1584
714.560.5930
rkeith@octa.net

The project objective was to improve arterial traffic flow-reduce travel times and stops and increase average speed-along almost nine-miles of Oso Parkway/Pacific Park Drive through the synchronization of 34 traffic signals. Benefits to be gained by improving traffic flow included reduced fuel consumption and improved air quality. An additional project objective was to identify deficiencies with the existing traffic signal control equipment and intersection operations, and provide recommendations towards simple, low-cost solutions that may be implemented to correct such deficiencies, with a view of assisting the traffic operations along this corridor. Work tasks included: Project management, data collection, field review, 'before' study, signal timing optimization/implementation, 'after' study, project report, and six months of continuing signal timing support.





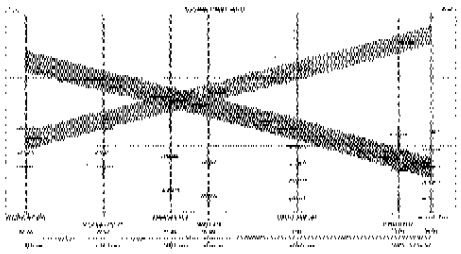
Relevant Project Highlights:
- System Deployed: fiber optic communication system
- Controllers Deployed: Econolite ASC/2 controllers

Reference:
Mr. David Medina, Associate Engineer/Traffic
City of Simi Valley
2929 Tapo Canyon Road, Simi Valley, CA 93063
805.583.6810
dmedina@simivalley.org

Traffic Signal Improvement and Signal Timing and Coordination Project, Simi Valley, CA

RBF provided signal timing and coordination and design services to improve traffic flow in the City of Simi Valley through the synchronization of 32 signalized intersections on five major arterials. These five arterials are Alamo Street, Cochran Street, Los Angeles Avenue, Royal Avenue, and Sycamore Drive.

The project was composed of two phases. In Phase I, RBF prepared plans, specifications, and estimates for the installation of signal communication conduit, twisted-pair cable, and the necessary cabinet modifications to establish system communication on the five project arterials. Phase II included the development, implementation and calibration of signal synchronization timing on the five project arterials (32 intersections), and the set-up and integration of the five new systems into the Aries traffic management software. Included in Phase II is the preparation of 66 custom intersection graphic displays and five custom zone graphic displays.



This project involved traffic data collection, survey of existing intersections and corridors, "Before" and "After" studies, arterial analysis, timing plan development, timing plan implementation and timing plan calibration. In addition, RBF prepared a project report that will include all of the data collected, analysis, studies, travel-time data, timing sheets and time-space diagrams. The travel-time data was collected during the evaluation of each corridor using a Global Position System (GPS) unit and the Time-Space and Platoon-Progression drafting software (TS/PP Draft). The optimization and implementation of the traffic signal timing was developed using Synchro and TS/PP Draft softwares. In addition, RBF set-up and assigned five (5) new systems ("zones") and thirty-two (32) intersections in the Aries traffic management software. This involved integrating both the software and hardware aspects of the traffic management system-verifying that the individual signal controllers, master controllers, and Aries together work as a unit.

SUBCONSULTANTS

To provide the City with the most qualified team for this project, RBF has included three (3) specialized subconsultant firms on our Team, as highlighted below. Note that Entech Consulting is a certified DBE and UDBE firm, and will enable the RBF Team to meet the City's participation level of 2.63 percent.

Systems Integrated will assist with the Fiber Optic / Traffic Signal Interconnect System Master Plan if the City anticipates using wireless communication systems or wireless options as part of the City's Fiber Optic / Traffic Signal Interconnect System Master Plan. Systems Integrated, a California corporation, is a consulting engineering firm specializing in system design, Electrical Engineering, and radio network applications. The company provides network services including radio survey, system design, and construction services for over thirty-five years, and provides wireless network services to many agencies in southern California. Recent projects include:

- **Wireless Communication System for Traffic Management Pilot Project; Los Angeles, CA** - Systems Integrated was selected in March 2006 to design and implement a wireless communication system to support high-speed communication to 51 signalized intersections throughout Los Angeles County. This system provides communication to the traffic signal controllers and facilitates real-time video surveillance of the intersections. The system allows the traffic control system to react to daily events and optimize traffic flow. The design utilizes Proxim's MP.11- 5054 ruggedized base station and subscriber radios mounted on traffic signal poles adjacent to the traffic controller cabinets. This design minimizes the impact of space limitations in the controller cabinet since the radios are mounted externally and will not require modifications to the cabinet.

- **Wireless Communication System For Traffic Management; Los Angeles, CA** - Systems Integrated was awarded a contract in September 2007 to deploy the WCS at over 935 signalized intersections throughout Los Angeles County. This system provides communication between the Traffic Management Center and the traffic signal controllers. This deployment is scheduled to be completed in 18 months or less.

Entech Consulting Group (DBE/UDBE), founded in 1993, is an environmental and construction management support firm. Environmental services include providing expertise to performing air quality and noise studies for the assessment of existing air quality conditions, the evaluation of impacts to the surrounding environment, and for developing mitigation measures for development and transportation projects. Entech Consulting Group has been instrumental in carrying out this mission for various transportation agencies, city and local municipalities, manufacturing plants and regulatory agencies. Entech's approach to meeting this challenge is by providing expertise in knowing and understanding applicable environmental laws to the client, providing guidance to the client at the beginning of a project in identifying project impacts that should be addressed,

working within the regulatory framework to develop strategies on how to effectively evaluate potential project impacts and proposing mitigation measures to protect or improve the existing conditions within the project area. Recent projects include:

- SR-79 Realignment Project, Domenigoni Parkway to Gilman Springs Road (RCTC, Caltrans District 8, FHWA, County of Riverside, City of San Jacinto, City of Hemet)
- Rosedale Highway Widening, Bakersfield
- Bundy Canyon Road Widening, Lake Elsinore
- SR-125 Toll Road Sound Wall Evaluation, San Diego, Caltrans, FHWA

Transportation Studies, Incorporated (TSI) will assist the RBF Project Team with traffic data collection. TSI provides high quality, competitively priced raw traffic data collection for government agencies, engineering firms and private businesses in the Western United States who are engaged in transportation planning. RBF and TSI have a strong teaming relationship and have worked together over the past ten years. RBF has used TSI data collection services for the majority of traffic engineering projects in the Coachella Valley. The firm's services include:

Machine Counts

- Travel time and delay studies
- Average daily traffic (ADT) volume
- Axle classification
- Speed studies (radar & 24-hour)

Manual Counts

- Intersection turning movement counts (TMC)
- License, parking lot, and driveway studies
- Vehicle classification
- Transportation asset inventories

CONTRACT COMMENTS

RBF has reviewed the copy of the City's Professional Services Agreement terms as provided in Attachment 5 and desires the proposed variation to text (additions are shown in ***bold italics***, deletions in ~~strike-out~~ format, and comments in *italics*):

1.0 SERVICES OF CONTRACTOR

1.1 Scope of Services. In compliance with all terms and conditions of this Agreement, Consultant agrees to perform the professional services set forth in the Scope of Services described in Exhibit "A", which is attached hereto and is incorporated herein by reference (hereinafter referred to as the "Services" or "Work"). As a material inducement to the City entering into this Agreement, Consulting represents and warrants that Consultant is ~~a provider of first class work and professional services and that Consultant is~~ experienced in performing the Work and Services contemplated herein, and, in light of such status and experience, Consultant covenants that it shall follow the ~~highest~~ ***appropriate generally accepted*** professional standards ***of care*** in performing the Work and Services required hereunder. For purposes of this agreement, the phrase "highest professional standards" shall mean those standards of practice recognized as ~~high quality~~ among ~~well~~ ***similarly*** qualified and experienced professionals performing similar work under similar circumstances.

EXHIBIT "E"
SCHEDULE OF COMPENSATION

Tasks listed below are identical to tasks identified in Exhibit A of this Agreement. Payments to Contractor shall be made no more frequently than monthly, and shall be based on lump sum costs per task item of work as indicated herein. Lump sum payments shall be made to Contractor based upon completion of tasks, or pro-rata portions thereof noted below, to a maximum of 75% of the lump sum task item fee until completion of such task item as determined by the Contract Officer. Each request for payment shall contain Contractor's statement of the work or tasks completed or portion performed, with supporting documentation. The determination of payment due shall be made based upon the reasonable judgment of the Contract Officer.

	Task Total Lump Sum
PHASE 1 – Environmental Approval and Project Development Services	
Task 1.1, Project Kickoff & Project Description	$ 6,192.00
Task 1.2, Research & Investigation	$ 1,893.00
Task 1.3, Preliminary Environmental Study (PES)	$ 5,896.00
Task 1.4, Initial Study / Categorical Exclusion (IS/CE)	$ 5,896.00
Task 1.5, Technical Studies	$ 34,400.00
Task 2.1, Existing System Inventory & Evaluation	$ 20,884.00
Task 2.2, Evaluation of Surrounding Systems	$ 3,256.00
Task 2.3, Assessment of Intelligent Transportation System (ITS) Opportunities	$ 9,248.00
Task 2.4, Assessment of Video Detection Integration	$ 8,520.00
Task 2.5, Assessment of Traveler Information:Link Integration	$ 6,504.00
Task 2.6, Project Development and Maintenance Plan	$ 8,048.00
Task 2.7, Prepare/Develop System Engineering Management Plan (SEMP)	$ 10,748.00
Phase 1 Subtotal	**$121,485.00**
PHASE 2 – Engineering Design (Plans, Specifications and Estimates) Services	
Task 3.1, Utility Research and Coordination	$ 1,834.00
Task 3.2, Signal Communication Plans	$ 38,100.00
Task 3.3, Technical Specifications	$ 7,064.00
Task 3.4, Engineer's Estimates	$ 5,140.00
Task 3.5, Data Collection	$ 26,904.00
Task 3.6, Network Modeling	$ 17,752.00
Task 3.7, Implementation and Verification	$ 13,180.00
Task 3.8, Intersection Graphics	$ 11,550.00
Task 3.9, Project Management and Coordination	$ 656.00
Task 3.10, Meetings	$ 656.00
Phase 2 Subtotal	**$122,836.00**
Reimbursable Expenses	**$ 3,200.00**
Grant Total	**$247,521.00**

END OF EXHIBIT "E"

EXHIBIT "F"
SCHEDULE OF PERFORMANCE

The Consultant's schedule of performance included in its proposal shall be incorporated herein. The schedule shall be adjusted accordingly to revise the project notice to proceed (NTP) date of February 1, 2010, as indicated in the originally submitted proposal, to the actual NTP date indicated in the City's letter to Consultant following approval of this agreement by the City Council.

END OF EXHIBIT "F"

REQUIRED CONTRACT FORMS FOLLOW THIS PAGE

Exhibit 10-F Certification of Consultant, Commissions & Fees

CERTIFICATION OF CONSULTANT

I HEREBY CERTIFY that I am a Senior Vice President, and duly authorized representative of the firm of **RBF Consulting**, whose address is **74-130 Country Club Drive, Suite 201, Palm Desert, CA 92260**, and that, except as hereby expressly stated, neither I nor the above firm that I represent have:

(a) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me or the above consultant) to solicit or secure this agreement; nor

(b) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the agreement; nor

(c) paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for me or the above consultant) any fee, contribution, donation, or consideration of any kind, for or in connection with, procuring or carrying out this agreement.

I acknowledge that this Certificate is to be made available to the California Department of Transportation (Caltrans) in connection with this agreement involving participation of Federal-aid Highway funds, and is subject to applicable state and federal laws, both criminal and civil.

May 3, 2010
(Date)


(Signature)

Exhibit 10-G – Certification of Local Agency

CERTIFICATION OF LOCAL AGENCY

I HEREBY CERTIFY that I am the Director of Public Works/City Engineer of the City of Palm Springs and that the consulting firm of RBF Consulting, or its representative has not been required (except as herein expressly stated), directly or indirectly, as an express or implied condition in connection with obtaining or carrying out this Agreement to:

(a) employ, retain, agree to employ or retain, any firm or person, or

(b) pay or agree to pay, to any firm, person or organization, any fee, contribution, donation, or consideration of any kind.

I acknowledge that this Certificate is to be made available to the California Department of Transportation (Caltrans) in connection with this Agreement involving participation of federal-aid highway funds, and is subject to applicable state and federal laws, both criminal and civil.

5/21/10
(Date)

(Signature)

EXHIBIT 10-O1 Local Agency Proposer UDBE Commitment (Consultant Contracts)

NOTE: PLEASE REFER TO INSTRUCTIONS ON THE REVERSE SIDE OF THIS FORM

LOCAL AGENCY: City of Palm Springs LOCATION: Citywide

PROJECT DESCRIPTION: Traffic Signal Interconnect Upgrade & Traffic Management Center

TOTAL CONTRACT AMOUNT: $247,521.00

PROPOSAL DATE: December 9, 2009

PROPOSER'S NAME: RBF Consulting

CONTRACT UDBE GOAL (%): 1.25%

WORK ITEM NO.	DESCRIPTION OR SERVICES TO BE SUBCONTRACTED (or contracted if the proposer is a UDBE)	UDBE CERT NO. AND EXPIRATION DATE	NAME OF EACH UDBE (Must be certified at the time proposals are due - include UDBE address and phone number)	PERCENT PARTICIPATION OF EACH UDBE
Task 1.5	Noise Analysis	32881; 4/2014	Entech Northwest 43410 Business Park Dr Temecula, CA 92590 (951) 506-0055	2.75%

For Local Agency to Complete:

Local Agency Proposal Number: RFP #07-10

Federal-Aid Project Number: CML 5282 (031)

Federal Share: 88.53%

Proposal Date: Nov. 2, 2009

Local Agency certifies that the UDBE certifications have been verified and all information is complete and accurate/unless noted otherwise.

Marcus Fuller — Print Name

Signature — Date: 5/21/10

Local Agenc Representative

(Area Code) Telephone Number: (760) 323-8253 x8744

Total Claimed UDBE Commitment: 2.75%

Signature of Proposer

May 21, 2010 — Date

949.855.3651 — (Area Code) Tel. No.

CARLOS ORTIZ — Person to Contact (Please Type or Print)

Local Agency Proposer UDBE Commitment (Consultant Contracts) (Rev 6/27/09)

Distribution: (1) Original - Local agency files

Exhibit 10 - P Non Lobbying Certification for Federal-Aid Contracts

The Consultant certifies by signing and submitting this contract to the best of his or her knowledge and belief that:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any federal 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

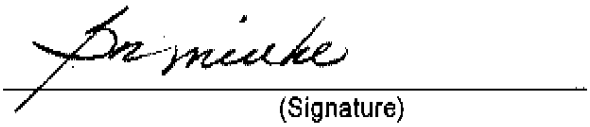
(2) If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was 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 a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Consultant also agrees by submitting his/her proposal/bid that he/she shall require that the language of this certification be included in all lower-tier subcontracts which exceed $100,000 and that all such sub-recipients shall certify and disclose accordingly.

Consultant Name: **RBF Consulting**

May 3, 2010
(Date)


(Signature)

Brad Mielke, PE, SE, Senior Vice President
(Name & Title)