

**COOPERATIVE AGREEMENT
AMONG THE CITIES OF ORANGE, ANAHEIM, PLACENTIA, SANTA ANA,
TUSTIN AND YORBA LINDA FOR THE
TUSTIN AVENUE/ROSE DRIVE CORRIDOR TRAFFIC SIGNAL
SYNCHRONIZATION PROJECT**

THIS COOPERATIVE AGREEMENT ("Agreement") is made and entered into this _____ day of _____, 2021 ("Effective Date"), by and among the CITY OF ORANGE, a municipal corporation ("ORANGE"), the CITY OF ANAHEIM, a municipal corporation ("ANAHEIM"), the CITY OF PLACENTIA, a municipal corporation ("PLACENTIA"), the CITY OF SANTA ANA, a municipal corporation ("SANTA ANA"), the CITY OF TUSTIN, a municipal corporation ("TUSTIN"), and the CITY OF YORBA LINDA, a municipal corporation ("YORBA LINDA"). ORANGE, ANAHEIM, PLACENTIA, SANTA ANA, TUSTIN AND YORBA LINDA are collectively referred to herein as "CITIES".

RECITALS

A. ORANGE applied for a grant from the Orange County Transportation Authority ("OCTA") as part of the Renewed Measure M (M2) Regional Traffic Signal Synchronization Program ("RTSSP") (Project P), aimed to coordinate traffic signals across multiple jurisdictions to enhance countywide traffic flow and reduce congestion (the "APPLICATION").

B. The Tustin Avenue/Rose Drive Traffic Signal Synchronization Project (the "PROJECT") was selected by OCTA as one of the RTSSP projects to be funded in Fiscal Year 2020-2021, based on an application submitted by ORANGE on behalf of CITIES.

C. OCTA and ORANGE entered into a Master Funding Agreement (Agreement No. C-1-2777) defining the terms and conditions for approved Measure M2 projects.

D. CITIES desire to initiate and implement the PROJECT, with ORANGE as the lead agency.

E. CITIES desire to enter into this Agreement to demonstrate their commitment to improving traffic signal synchronization opportunities for Orange County and to develop and implement the PROJECT.

F. CITIES desire to set the specific terms, conditions and funding responsibilities between the CITIES for the implementation of the PROJECT.

NOW, THEREFORE, it is mutually understood and agreed by the CITIES as follows:

1. **TERM**

This Agreement shall commence on the Effective Date and continue in full force and effect until December 31, 2026. This Agreement may be extended for up to two additional one-year periods upon the mutual written consent of the CITIES' project liaisons.

2. **SCOPE OF PROJECT**

A. The PROJECT includes improvement at fifty-four (54) traffic signals along Tustin Avenue (known as Tustin Street in portions of the PROJECT area) and Rose Drive as described in and at an estimated cost as set forth in the PROJECT Application ("APPLICATION") attached as Exhibit "A" and incorporated herein by this reference.

B. The PROJECT includes elements identified in the APPLICATION, including certain hardware and software upgrades to traffic controllers, traffic telecommunications, master controllers and associated systems (collectively referred to as "Traffic Control Elements"), and these Traffic Control Elements will be constructed and/or installed and implemented as part of the PROJECT as identified in the APPLICATION, attached as Exhibit "A."

3. **SHARED RESPONSIBILITIES**

A. CITIES agree to coordinate the inclusion of other Traffic Control Elements and in-kind services to be integrated during the construction of the PROJECT that are not included in the project application and that the applicable city will have the responsibility for verifying and coordinating during the course of the PROJECT. All costs associated with the inclusion of other Traffic Control Elements, if any, are the sole responsibility of the city owning each and any of those other elements during the PROJECT.

B. CITIES agree to implement the PROJECT based on Exhibit "A," including a combined cash and in-kind match of approximately Six Hundred Ninety Thousand Five Hundred Ninety Dollars (\$690,590.00), which equals twenty percent (20%) of the PROJECT cost split with the following cost contribution of cash and in kind services:

AGENCY	CASH		IN-KIND		TOTAL MATCH	
	PI*	O&M**	PI	O&M	PI	O&M
City of Anaheim	\$118,412.50	\$0.00	\$0.00	\$3,360.00	\$118,412.50	\$3,360.00
	\$118,412.50		\$3,360.00		\$121,772.50	
City of Orange	\$224,520.00	\$12,000.00	\$0.00	\$0.00	\$224,520.00	\$12,000.00
	\$236,520.00		\$0.00		\$236,520.00	
City of Placentia	\$82,917.50	\$3,360.00	\$0.00	\$0.00	\$82,917.50	\$3,360.00
	\$86,277.50		\$0.00		\$86,277.50	
City of Santa Ana	\$73,545.00	\$2,360.00	\$12,400.00	\$1,000.00	\$85,945.00	\$3,360.00
	\$75,905.00		\$13,400.00		\$89,305.00	
City of Tustin	\$30,225.00	\$1,440.00	\$0.00	\$0.00	\$30,225.00	\$1,440.00
	\$31,665.00		\$0.00		\$31,665.00	
City of Yorba Linda	\$105,220.00	\$2,400.00	\$17,430.00	\$0.00	\$122,650.00	\$2,400.00
	\$107,620.00		\$17,430.00		\$125,050.00	
TOTAL MATCH	\$634,840.00	\$21,560.00	\$29,830.00	\$4,360.00	\$664,670.00	\$25,920.00
	\$656,400.00		\$34,190.00		\$690,590.00	

* Primary Implementation Phase

** Operations and Maintenance Phase

CITIES agree the final amount and corresponding match may vary and will be based on the 20% of actual cost of implementing all timing, improvements, and maintenance, as identified in the project application. OCTA will fund the remaining 80% of the project cost estimated at Two Million Seven Hundred Sixty-Two Thousand Three Hundred Sixty Dollars (\$2,762,360.00).

C. Upon issuance of a Notice to Proceed to the consultant that is selected by ORANGE through a Request for Proposal, ORANGE may issue invoices to CITIES for up to eighty percent (80%) of the cash match amount identified in Section 3.B, above, and Exhibit "A." The remaining cash match amount will be invoiced after the completion of the Primary Implementation Phase of the PROJECT.

D. CITIES agree that unused PROJECT funds from one city may be used by another city (with matching fund responsibility) upon mutual written agreement of CITIES.

E. In the event the cost of the PROJECT exceeds the estimates as submitted in the APPLICATION, ORANGE shall meet with the affected city to determine revisions to the PROJECT. Any revisions necessitating an increase to the budget(s) or revised funding proposal(s) are subject to advanced written approval by the affected city. Any cost overruns shall be the financial responsibility of the jurisdiction where the work improvement occurs or as the case may be, causes the required improvement.

F. CITIES agree to:

(1) Designate a technical lead person to act as the liaison for the PROJECT. The liaison and any other required personnel shall attend and participate in all PROJECT-related meetings and participate on the OCTA Traffic Forum.

(2) Participate, cooperate and coordinate with contractors, consultants, vendors and staff in good faith using reasonable efforts to resolve any unforeseen issues and disputes arising out of the PROJECT to the extent practicable with respect to the performance of the PROJECT.

(3) Participate and support the PROJECT implementation within the timeframe outlined in the APPLICATION and consistent with OCTA's Comprehensive Transportation Funding Programs ("CTFP") Guidelines.

(4) Provide ORANGE all current intersection, local field master, and/or central control system timing plans and related data upon request.

(5) Identify and verify the upgrades to Traffic Control Elements to be constructed and installed as part of the PROJECT and as identified in the project application for each city.

(6) Coordinate the inclusion of other Traffic Control Elements and in-kind services, where necessary, that CITIES require for the implementation of the PROJECT but are

not included in the project application. Each city shall be responsible for the inclusion of such elements within reason.

(7) Maintain PROJECT-related signals and telecommunications equipment with high priority during the PROJECT and be responsible for repair of the signal control systems in CITIES' own jurisdiction.

(8) Provide on-site support for signal control systems, timing plans, detection systems and related equipment during construction, installation and integration, and be available to change or make adjustments to timing plans at a central or field location when necessitated by the PROJECT.

(9) Waive all fees associated with any local agency permits that may be required of the consultant, sub-consultants, contractors and/or service or equipment providers in the performance of the PROJECT.

(10) Document in-kind match or dollar match funding as identified in the project application and provide verification of such expenditures as part of any required review or audit process, which may include payroll records, contracts and purchase orders.

(11) Maintain and operate the traffic signals and improvements for a period of two (2) years following the completion of the Primary Implementation Phase of the PROJECT.

(12) Maintain a complete set of records in accordance with generally accepted accounting principles. Upon reasonable notice, CITIES shall permit the authorized representatives of ORANGE to inspect and audit all work, materials, payroll, books, accounts, and other data and records of CITIES for a period of four (4) years after final payment, or until any on-going audit is completed, whichever is later. For purposes of audit, the date of completion of this Agreement shall be the date of ORANGE's payment of CITIES' final billing (so noted on the invoice), if applicable, under this Agreement. ORANGE shall have the right to reproduce any such books, records, and accounts. The above provision with respect to audits shall extend to and/or be included in contracts with CITIES' contractor(s).

4. RESPONSIBILITIES OF ANAHEIM, PLACENTIA, SANTA ANA, TUSTIN AND YORBA LINDA

A. ANAHEIM, PLACENTIA, SANTA ANA, TUSTIN and YORBA LINDA agree to the following responsibilities for implementation and funding of the PROJECT:

(1) To designate ORANGE as the Administering Agency for the PROJECT, authorizing ORANGE to manage, procure and implement all aspects of the PROJECT.

(2) To authorize ORANGE to enter into a Cooperative Agreement on CITIES' behalf with the State of California Department of Transportation (Caltrans) to coordinate the implementation of Intelligent Transportation System (ITS) equipment and coordinated signal synchronization at intersections between city streets and State Highway System Off-Ramps

(Caltrans Improvements). Such Cooperative Agreement for General Traffic Signal Synchronization is required by Caltrans. (This Section is not applicable to PLACENTIA.)

(3) To reimburse ORANGE for the costs of improvements and coordination attributable to Caltrans Improvements in each city's jurisdiction. Payment shall be within thirty (30) days of receipt of invoice from ORANGE. (This Section is not applicable to PLACENTIA.)

(4) To authorize OCTA to distribute its grant allocation of approximately Two Million Seven Hundred Sixty-Two Thousand Three Hundred Sixty Dollars (\$2,762,360.00) to ORANGE in order to pool the CITIES' grant funds to effect completion of a more thorough PROJECT than could be accomplished by each city individually.

(5) To contribute CITIES' match share of cash and in-kind services as set forth in Section 3.B, above. Payment shall be within thirty (30) days of receipt of invoice from ORANGE.

(6) To provide detailed documentation supporting any in-kind match set forth in Section 3.B, above, to the reasonable satisfaction of ORANGE.

(7) To help develop the PROJECT scope, attend team meetings, and review all consultant and administrative reports pertaining to the scope of work in their individual jurisdictions.

(8) To provide required updates as requested by OCTA as part of the semi-annual review process until the completion of the three-year grant period. Documents to be provided include but are not limited to payroll records, contracts, and purchase orders related to the PROJECT.

B. ANAHEIM may request to implement, within its own jurisdiction, Tasks 3 and/or 7 as listed in the Primary Implementation Phase, in coordination with and the written approval of ORANGE as follows:

(1) Prior to ORANGE granting approval of ANAHEIM's request, ANAHEIM shall initiate discussions with and obtain concurrence from OCTA.

(2) ANAHEIM shall assume responsibility for the coordination, design, construction and integration of all field and Traffic Management Center elements in the assigned Tasks and according to the timeline as set forth in the APPLICATION.

(3) ANAHEIM shall ensure its PROJECT Tasks are performed in accordance with OCTA's Comprehensive Transportation Funding Program Guidelines.

(4) Any change in scope from Exhibit "A" or change in budget as outlined in 3.B as it pertains to any Tasks undertaken by ANAHEIM shall require prior written approval from ORANGE.

(5) ANAHEIM's responsibilities and the required timeline shall be set forth in a separate writing, signed by the designated project managers for ANAHEIM and ORANGE.

(6) Failure of ANAHEIM to perform Tasks 3 and/or 7 within the approved timeline and according to the approved scope may result in a loss of funding or costs deemed ineligible for reimbursement. Costs incurred by ANAHEIM that are deemed ineligible shall be the sole responsibility of ANAHEIM.

(7) ANAHEIM shall fund the approved Tasks as the costs are incurred. ANAHEIM shall receive reimbursement for said Tasks after OCTA approves such expenses.

5. RESPONSIBILITIES OF ORANGE

ORANGE agrees to the following responsibilities for implementation and funding of the PROJECT:

A. To manage the PROJECT for CITIES. ORANGE shall act as the Administering Agency for the work for all CITIES. Within ten (10) days after this Agreement has been executed, ORANGE will provide an executed copy of this Agreement to OCTA, pursuant to the terms and conditions set forth herein.

B. To contribute its match share of cash as set forth in Section 3.B, above.

C. To enter into any required Cooperative Agreement with Caltrans regarding Caltrans Improvements in CITIES; to comply with all the terms and conditions of said Cooperative Agreement; to pay invoices for such Caltrans Improvements as required by Caltrans; and to invoice CITIES in a timely manner with detailed documentation of said Caltrans Improvements.

D. To work cooperatively with CITIES; to ensure that CITIES have the opportunity to provide meaningful input into all phases of the PROJECT; to ensure that CITIES' staff has adequate time to review all draft reports, contracts, the proposed scope of work, and any other pertinent information; and to convene regular meetings of staff representatives from CITIES to provide a regular process of input from CITIES to the consultant team.

E. To enter into an agreement with a qualified consultant and contractor to assist in the completion and monitoring of the PROJECT.

F. To coordinate the work effort of the PROJECT, provide the day to-day management of the consultant, and manage all consultant administration and contracting. ORANGE shall review and pay the consultant's invoices accordingly after ensuring that the work has been satisfactorily performed.

G. To provide ongoing maintenance and operation of optimized signal timing after the Primary Implementation phase of the PROJECT is completed and to continue such maintenance until the end of the grant period and provide verification of such activities as required by Measure M2 program funding.

H. To comply with all of the terms and conditions of its Cooperative Agreement with OCTA, including the project reporting and auditing requirements contained therein.

I. ORANGE, or its authorized representatives, may upon close-out of PROJECT under this Agreement, perform an audit and or technical review to ensure that the CTFP Guidelines policies and procedures were followed. Such an audit shall be performed within one hundred eighty (180) days after the PROJECT's grant period is complete. If the audit or technical review determines that any of the activities performed are ineligible for CTFP funding, the city that incurred the ineligible expense must return the amount of funding used to perform the ineligible activity to ORANGE.

6. MUTUAL INDEMNIFICATION

ORANGE and the participating CITIES (PARTNERS) agree to indemnify, defend and hold harmless all PROJECT partners, their elected officials, officers, agents and employees from and against all claims (including attorney's fees and reasonable expenses for litigation and settlement) for any loss or damages, bodily injuries, damage to, or loss of property caused by negligent acts, omission or willful misconduct of the PARTNERS, their officers, agents and employees in connection with or arising out of the performance of this Agreement.

7. INSURANCE

A. CITIES shall each maintain and keep in full force and effect during the term of this Agreement insurance or a program of self-insurance against claims for injuries to persons or damages to property which may arise in connection with CITIES' performance of their obligations hereunder.

B. CITIES shall require their consultants and contractors performing work in connection with this Agreement to obtain and maintain the following minimum amount of insurance during the term of this Agreement as described below:

(1) General liability insurance in the amount of \$1,000,000 per occurrence and \$2,000,000 in the aggregate. Such insurance shall: (a) cover bodily injury, death and property damage; (b) name CITIES, and their elected officials, officers, employees, agents, volunteers and representatives as additional insured(s); and (c) be primary and not contributory with respect to insurance or self-insurance programs maintained by the city.

(2) Business automobile liability with a combined single limit of \$1,000,000. Said insurance shall cover bodily injury, death and property damage for all owned, non-owned and hired vehicles and be written on an occurrence basis.

(3) Workers' compensation insurance as required by law with any required employer's liability insurance with limits not less than \$1,000,000 per accident.

(4) Professional liability insurance covering errors and omissions arising out of the performance of this Agreement with a minimum limit of \$1,000,000 per claim. Contractor shall agree to keep such policy in force and effect for PROJECT duration.

C. The insurance policies maintained by a consultant or contractor shall be primary insurance and no insurance held or owned by CITIES shall be called upon to cover any loss under the policy. A consultant or contractor will determine its own needs in procurement of insurance to cover liabilities other than as stated above.

D. Before a consultant or contractor performs any work or prepares or delivers any materials, it shall furnish certificates of required insurance and endorsements to CITIES, evidencing the aforementioned minimum insurance coverages on forms acceptable to ORANGE, which shall provide that the insurance in force will not be canceled or allowed to lapse without at least ten (10) days' prior written notice to CITIES.

E. If a consultant or contractor maintains broader coverage and/or higher limits than the minimums described above, the CITIES shall require and shall be entitled to the broader coverage and/or higher limits maintained by the consultant or contractor.

8. GENERAL PROVISIONS

A. Complete Agreement. This Agreement, including any attachments incorporated herein and made applicable by reference, constitutes the complete and exclusive statement of the terms and conditions of the agreement among CITIES and it supersedes all prior representations, understandings and communications among the parties.

B. Representatives. CITIES each designate their City Manager or his/her designee to be the representative of CITIES for purposes of this Agreement. The City Manager may issue all consents, approvals, directives, and agreements called for by this Agreement, except as otherwise expressly provided in this Agreement.

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

D. Severability. If any term, provision, covenant or condition of this Agreement is held to be invalid, void or otherwise unenforceable, to any extent, by any court of competent jurisdiction, the remainder of this Agreement shall not be affected thereby, and each term, provision, covenant or condition of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

E. Compliance with All Laws. CITIES shall comply with all applicable federal, state and local laws, statutes, ordinances and regulations of any governmental agency having jurisdiction over the PROJECT.

F. Force Majeure. CITIES shall not be responsible for delays or lack of performance resulting from acts beyond their reasonable control. Such acts include, but are not limited to, any incidence of fire, flood, acts of God, commandeering of material, products, plants or facilities by the federal, state or local government, national fuel shortage, pandemic, and any other conditions beyond the reasonable control of a city.

G. Assignment. Neither this Agreement, nor any of the CITIES' rights, obligations, or duties hereunder may be assigned in whole or in part by any city without the prior written consent of the other CITIES in their sole and absolute discretion. Any attempted assignment shall be deemed void and of no force and effect. Consent to one assignment shall not be deemed consent to any subsequent assignment, nor the waiver of any right to consent to such subsequent assignment.

H. Governing Law. This Agreement shall be governed by and construed under the laws of the State of California and applicable local and federal laws, regulations and guidelines. In the event of any legal action to enforce or interpret this Agreement, the parties agree that the sole and exclusive venue shall be a court of competent jurisdiction located in Orange County, California.

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

J. Notices. Any notices, requests, or demands made among the CITIES pursuant to this Agreement are to be directed as follows:

To ORANGE:

City Clerk
City of Orange
300 E. Chapman Ave.
Orange, CA 92866

To ANAHEIM:

City Clerk
City of Anaheim
200 S. Anaheim Blvd.
2nd Floor, Room 217
Anaheim, CA 92805

To PLACENTIA:

City Clerk
City of Placentia
401 E. Chapman Ave.
Placentia, CA 92870

To SANTA ANA:

Clerk of the Council
City of Santa Ana
20 Civic Center Plaza
Santa Ana, CA 92701

To TUSTIN:

City Clerk
City of Tustin
300 Centennial Way
Tustin, CA 92780

To YORBA LINDA:

City Clerk
City of Yorba Linda
4845 Casa Loma Ave.
Yorba Linda, CA 92886

K. Order of Precedence. In the event of an inconsistency between this Agreement and the attached Exhibit, the terms set forth in this Agreement shall prevail. If, and to the extent this Agreement incorporates by reference any provision of any document, such provision shall be deemed a part of this Agreement. Nevertheless, if there is any conflict among the terms and conditions of this Agreement and those of any such provision or provisions so incorporated by reference, this Agreement shall govern over the document referenced.

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

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

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

O. Counterparts of Agreement. This Agreement may be executed and delivered in any number of counterparts, each of which, when executed and delivered shall be deemed an original and all of which together shall constitute one agreement.

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

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

<p>CITY OF ORANGE, a California municipal corporation</p> <p>By: _____ Rick Otto City Manager</p> <p>APPROVED AS TO FORM:</p>	<p>CITY OF ANAHEIM, a California municipal corporation</p> <p>By: _____ Harry Sidhu Mayor</p> <p>ATTEST:</p>
<p>_____ Mary E. Binning Senior Assistant City Attorney</p> <p>RECOMMENDED FOR APPROVAL:</p>	<p>_____ Theresa Bass City Clerk</p> <p>APPROVED AS TO FORM:</p>
<p>_____ Chris Cash Public Works Director</p>	<p>_____ Bryn M. Morley Deputy City Attorney</p>

CITY OF PLACENTIA, a California
municipal corporation

By: _____
Damien R. Arrula
City Administrator

ATTEST:

Robert S. McKinnell
City Clerk

APPROVED AS TO FORM:

Christian L. Bettenhausen
City Attorney

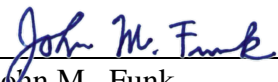
CITY OF SANTA ANA, a California
municipal corporation

By: _____
Kristine Ridge
City Manager

ATTEST:

Daisy Gomez
City Clerk

APPROVED AS TO FORM:
Sonia R. Carvalho, City Attorney



John M. Funk
Assistant City Attorney

RECOMMENDED FOR APPROVAL:

Nabil Saba
Executive Director
Public Works Agency

CITY OF TUSTIN, a California
municipal corporation

By: _____
Letitia Clark
Mayor

ATTEST:

Erica N. Yasuda
City Clerk

APPROVED AS TO FORM:

David E. Kendig
City Attorney

CITY OF YORBA LINDA, a California
municipal corporation

By: _____
Peggy Huang
Mayor

ATTEST:

Marcia Brown
City Clerk

APPROVED AS TO FORM:

Todd O. Litfin
City Attorney

EXHIBIT “A”

**PROJECT APPLICATION
SCOPE OF WORK AND ESTIMATED COSTS**

FY 2020 Call for Projects

Regional Traffic Signal Synchronization Program

Project P

Supplemental Application

Tustin Avenue/Rose Drive

10/27/2019

Revision 1: 4/7/2021

Project Overview

Length of Corridor (mi): 11.4

Number of signals: 54

Total Project Cost: **\$3,452,950.00**

M2 funds requested: **\$2,762,360.00**

Total Match: **\$690,590.00**

Cash Match: **\$656,400.00**

In-kind Match: **\$34,190.00**

Participating agencies: Anaheim, Orange (City), Placentia,
Santa Ana, Tustin, Yorba Linda

Applicant Agency: City of Orange

Contact Name: Larry Tay

Contact Number: 714-744-5534

Contact Email: ltay@cityoforange.org

TUSTIN AVENUE/ROSE DRIVE
RTSSP GRANT APPLICATION OCTOBER 2019

Project P Regional Traffic Signal Synchronization Program Application Checklist

Project P Application Checklist		Page	Rev1 Page:
RTSSP Online Application – submitted through OCFundTracker		Online	
1. Vehicle Miles Traveled			
2. Benefic Cost Ratio			
3. Project Characteristics			
4. Transportation Significance			
5. Maintenance of Effort			
6. Project Scale			
7. Number of Jurisdictions			
8. Current Project Readiness			
9. Funding Over-Match			
10. Cabinet photos, equipment specifications, as-built drawings, cabinet drawings, etc. (if OCTA-Led)		Flashdrive	
Section 1: Key Technical Information			
a. Project Corridor Limits		1	1
b. Designation of the corridor to synchronize: Signal Synchronization Network corridor or Master Plan of Arterial Highways corridor		1	2
c. Project start date and end date, including any commitment to operate signal synchronization beyond the three year grant period		1	2
d. Signalized intersections that are part of the project		1	2
e. Traffic Forum members		1	2
Section 2: Lead agency		2	3
Section 3: Resolutions of support from the project’s Traffic Forum members		3	4
Section 4: Preliminary plans for the proposed project by task (detail below)			
The plans shall include details about both phases of the project: <u>Primary Implementation (PI)</u> and the <u>Ongoing Maintenance and Operations (O & M)</u> . The plan should be organized using the following setup.			
Primary Implementation shall include details about the following:			
Task 1: Project Administration (required)		Pg. 4-5	5-6
Task 2: Data Collection (required)			
Task 3: Field Review and Plans Specifications and Estimates (required)			
Task 4: Corridor "Before" Study (required)			
Task 5: Signal Timing Optimization and Implementation (required)			
Task 6: Corridor "After" Study (required)			
Task 7: Synchronization System Construction (required)			
Task 8: Project Report (required)			
Task 9: On-going Operations and Maintenance (required)			
Ongoing Maintenance and Operations (O&M) will begin after the <u>Primary Implementation</u> of the project is completed. It shall include details about the following:		Pg. 6	6
a. Monitoring and improving optimized signal timing (required)			
b. Communications and detection support (optional)			
c. O&M Final Memorandum (required)			
Section 5: Funding Needs/Costs for Proposed Project by Task		Pg. 6	7-8
a. Table I: Summary of Improvements		Pg. 7	9
b. Table II: Detailed Improvement Breakdown		Pg. 8	10-15
Section 6: Project schedule for the 3 year grant period by task		Pg. 9	16
Section 7: Matching funds		Pg. 10	17-18
Section 8: Environmental clearances and other permits		Pg. 11	19
Section 9: Calculations used to develop selection criteria inputs		Pg. 11-12	19-20
Section 10: Any additional information deemed relevant by the applicant		Pg. 13	21-23
Appendices		Pg. 14	

**TUSTIN AVENUE/ROSE DRIVE
RTSSP GRANT APPLICATION OCTOBER 2019**

SECTION 1: KEY TECHNICAL INFORMATION

- a. The proposed project will synchronize Tustin Avenue/Rose Drive corridor from First Street in Santa Ana to Wabash Avenue in Yorba Linda. The project includes fifty-four (54) signals over eleven and four tenths (11.4) miles. **Figure 1** shows a map of the project area.

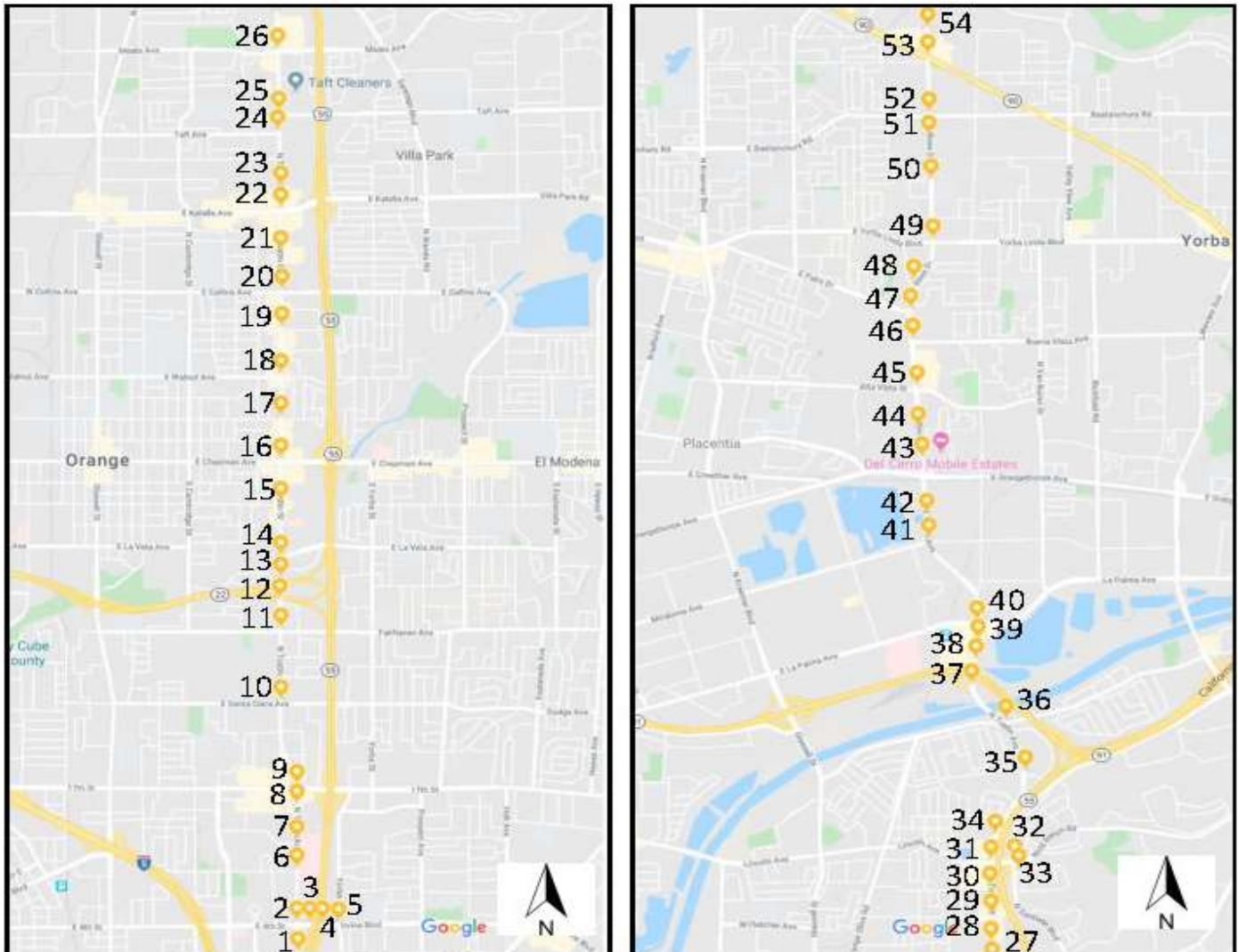


Figure 1: Signalized intersection and proposed project limits.

**TUSTIN AVENUE/ROSE DRIVE
RTSSP GRANT APPLICATION OCTOBER 2019**

b. Designation of the corridor to synchronize:

- ☒ Master Plan of Arterial Highways Corridor
☒ Signal Synchronization Network Corridor

c. Project Start Date: August 1, 2020 Project End Date: July 31, 2023

All agencies commit to operate signal synchronization **BEYOND** the three year grant period for:

- ☒ Zero Years ☐ One Year ☐ Two Years ☐ Three Years ☐ Other

d. Signalized intersections that are part of the project:

No.	Agency	Intersection on Tustin Avenue@	No.	Agency	Intersection on Tustin Avenue@
1	Tustin	First Street	30	Orange	SR-55 S/B On Ramp
2	Santa Ana	Fourth Street	31	Orange	Lincoln Avenue/Nohl Ranch Road
3	Caltrans	Fourth Street SR-55 S/B Ramps	32	Caltrans	Nohl Ranch Road @ Santiago Blvd
4	Caltrans	Fourth Street SR-55 N/B Ramps	33	Caltrans	Santiago Blvd @ N/B SR-55 Ramp Vista Park
5	Tustin	Irvine Boulevard @ Yorba Street	No. Agency Intersection on Tustin Avenue@		
6	Santa Ana	Fruit Street	34	Caltrans	SR-55 S/B Off Ramp
7	Santa Ana	Wellington Avenue	35	Orange	Santa Ana Canyon Road
8	Santa Ana	entre on Seventeenth/Tustin Centr	36	Anaheim	Riverdale Avenue
9	Santa Ana	Seventeenth Street	37	Anaheim	SR-91 E/B Ramps
10	Santa Ana	Santa Clara Avenue	38	Anaheim	SR-91 W/B Ramps
11	Orange	Fairhaven Avenue	39	Anaheim	Pacificcenter Drive
12	Caltrans	SR-22 E/B Ramp - Seba Avenue	40	Anaheim	La Palma Avenue
13	Caltrans	SR-22 W/B Ramp	41	Anaheim	Mira Loma Avenue
14	Orange	La Veta Avenue/Rock Creek	42	Anaheim	Auto Exchange
15	Orange	Palmyra Avenue	No. Agency Intersection on Rose Drive @		
16	Orange	Chapman Avenue	43	Placentia	Del Cerro (Orangethorpe Grade Sep)
17	Orange	Palm Avenue	44	Placentia	Castner Drive
18	Orange	Walnut Avenue	45	Placentia	Alta Vista Street
19	Orange	Mayfair Avenue	46	Placentia	Buena Vista Avenue
20	Orange	Collins Avenue	47	Placentia	Palm Drive
21	Orange	Quincy Avenue	48	Placentia	Linda Vista Street/Valpariso Way
22	Orange	Katella Avenue	49	Placentia	Yorba Linda Boulevard
23	Orange	Van Owen Avenue/Toyota Way	50	Yorba Linda	School Ped Signal
24	Orange	Taft Avenue	51	Yorba Linda	Equestrian Signal/Ped Signal
25	Orange	Taft Avenue/Briardale	52	Yorba Linda	Bastanchury Road
26	Orange	Meats Avenue	53	Caltrans	Imperial Highway
27	Orange	East Village Way	54	Yorba Linda	Wabash Avenue
28	Orange	Village Town Center			
29	Orange	Heim Avenue			

e. Traffic Forum members:

Anaheim
Orange
Placentia
Santa Ana
Tustin
Yorba Linda

SECTION 2: LEAD AGENCY

☒ City of Orange will be the lead agency

☐ County of Orange will be the lead agency

Please note OCTA will not be leading projects for this Call for Projects.

The Tustin Avenue Rose Drive RTSSP corridor is a rejuvenated project originally performed and funded by M2 RTSSP in 2011 and was from the original Call for Projects. The project for FY 20/21 has been expanded to include the City of Yorba Linda making the total number of participating agencies now 6 plus Caltrans. The corridor length is close to 12 miles in length and will have 54 intersections retimed including some crossing arterial segments and interfacing abutting agency intersections to two crossing corridors with the SR-55 Freeway. All signal and ITS equipment need to be updated to the latest ATC standards to promote Automated Traffic Signal Performance Measures and to embrace Connected Vehicle technologies.

Land uses along the corridor have changed over the course of time. The Mall of Orange is now changed over to an individually owned small retail store situation with many fast food restaurants, etc. Major brick and mortar anchor stores have all left this type of development because of on line purchasing applications. Other types of entertainment and retail development has increased all across the length of the Tustin Avenue area. The Pacificcenter complex in Anaheim has also recently developed and is influencing operations on both Tustin Avenue and La Palma Avenue. The Orangethorpe Grade Separation project has eliminated a full eight phase intersection impacted by the BNSF rail crossing. All conflicts and queueing issues have been resolved.

The original timing has decayed and needs to be revisited. Therefore, it is imperative that this very important corridor be considered for the 2020 Call for Projects from OCTA

SECTION 3: RESOLUTIONS OF SUPPORT

Draft resolutions and letters of support from the partnering Traffic Forum members are provided in the Appendix A to E.

1. City of Yorba Linda Resolution will be approved at the City Council Meeting on November 5, 2019.
2. A letter of support from Caltrans District 12 was sent to the City of Orange on October 19, 2019
3. A letter of intent from the City of Orange was sent to OCTA on October 16, 2019. A Resolution will be approved by the City Council on November 12, 2019
4. A Letter of support from the City of Placentia was sent to the City of Orange on October 16, 2019. A Resolution
5. A letter of intent from the City of Tustin was sent to the City of Orange on October 19, 2019. A Resolution will be approved by the City Council on November 19, 2019
6. A letter of intent from the City of Santa Ana was sent to the City of Orange on October 16, 2019. A Resolution will be approved by the City Council on November 19, 2019
7. A letter of intent from the City of Anaheim was sent to the City of Orange on October 23, 2019. A Resolution will be approved by the City Council in December of 2019
8. A sample Resolution is supplied for the City of Anaheim. A full resolution will be approved by the City Council in December of 2019

SECTION 4: PRELIMINARY PLANS FOR THE PROJECT

Primary Implementation (PI)

The Primary Implementation phase will last approximately one year and include the following elements:

Task 1: Project Administration

The City of Orange will lead the project using contracted consultant staff to optimize signal synchronization timing along the Tustin Avenue/Rose Drive corridor. Orange shall perform normal day to day project administration duties. Local agency staff will perform local project administration duties. Project budget shall include time and funding for agency outreach and coordination. Orange will be responsible for all fiduciary elements of the project including dissemination of any funds and/or collection of funds from the partnering agencies. Project Administration services by Orange will include but not be limited to administration, engineering and design, coordination, presentation and other related responsibilities to ensure a timely project delivery. The budget shall include time and funding for outreach and cooperative agreement development and matching funds required by the partners.

Task 2: Data Collection

The Consultant contracted by the City of Orange will collect data necessary to thoroughly understand existing traffic conditions in the study area, develop a concept of operations, and be able to develop optimal time-of-day traffic signal coordination plans for specific zones and traffic generators as applicable.

Task 3: Field Review and Plans Specifications, and Estimates

The City of Orange's contracted consultant shall be a qualified traffic engineering consultant with the ability to complete the engineering design of the fiber upgrade and communications for the project. The Consultant will review the geometric layout, existing traffic signal equipment, and signal synchronization related infrastructure to identify any deficiencies for each intersection and along the whole corridor/route. The review shall include an assessment of the existing intersection geometry, traffic conditions, traffic signal control equipment, and telemetry/interconnect facilities along the corridor and of each intersection using observation, available as-built plans, consultation with the local AGENCIES, and Party supplied aerial photos. Based on the initial assessment by the partnering agencies and with their respective permission, the CONSULTANT shall inspect the interior of each traffic control cabinet, inspect the telemetry systems and determine their respective condition and make recommendations for equipment upgrades. The project scope shall encourage innovative solutions and also account for unforeseen conditions.

Task 4: Corridor "Before" Study

The City of Orange's contracted consultant shall be a qualified traffic engineering consultant with the ability to conduct "before" floating car travel runs prior to timing implementation. The Consultant will conduct a 'Before' field study report representative of the times and days for which synchronization plans will be developed. The report shall identify Measures of Effectiveness (MOE) to evaluate the effects of the synchronization plans. MOE's will likely include traffic flow, travel time, average speed, number of stops per mile, number of intersections traversed on green vs. stopped by red (Greens per Red) (note: Average Speed, Stops per Mile, and Greens per Red are the new OCTA MOE, Corridor Synchronization Performance Index (CSPI)), fuel consumption reduction, pollution reduction, and other pertinent items. Agencies with Automated Signal Performance Measures should provide any data or analytics as part of the Before Study.

Task 5: Signal Timing Optimization and Implementation

Synchronization or coordination will be inter-jurisdictional in nature. All existing special generators such as schools or attractive businesses, traffic patterns, flows, and conditions will be taken into account. Synchronized timing will be developed for the AM Peak, PM Peak, Mid-day Peak and Weekend Peak. Crossing Arterial projects that have recently been timed will be considered as part of the project. Timing plans will be developed that assist traffic in getting to its destination without regard to physical or jurisdictional boundaries.

Task 6: Corridor "After" Study

The City of Orange's contracted consultant shall be a qualified traffic engineering consultant with the ability to conduct "after" floating car travel runs after timing implementation. The Consultant will

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conduct an 'After' field study representative of the times and days for which synchronization plans will be developed. The 'After' study must be conducted in the same manner and contain the same MOE's as the 'Before' study in order to evaluate the improvements of the synchronization plans. MOE's should be compiled for the optimized corridor using the floating car method. Agencies with ATSPM shall provide any data and analytics to complement both the before and after studies.

Task 7: Synchronization System Construction

The City of Orange will use qualified traffic engineering consultants to design all infrastructure and equipment upgrades based on Section 5. All installations and upgrades will be per the owning agencies' standards. Details of equipment upgrades are tabulated in Tables I and II. Since the agencies have requested Orange to be the lead on this project, Orange will enlist a qualified contractor on a standard procurement basis to construct the facilities based on State and local agencies standards, specifications, and special provisions as developed by the consultant.

Task 8: Primary Implementation Project Report

The contracted consultant will develop a before and after study for the project. This report will be completed after the Primary Implementation is completed and will include the following:

- Introduction/project description: a summary of the project including the purpose, background, and objectives of the project.
- Data collection: a summary of the data collected as part of the effort including the traffic counts, phasing, lane configurations, etc.
- Traffic signal systems improvements: a summary of the implemented traffic signal systems improvements by city.
- Signal timing optimization: a summary of the development and implementation of updated signal timing including the models, selected cycle lengths, intersection groupings, etc.
- Results: the study will contain directional morning, mid-day, evening, and weekend peak periods using travel times, average speeds, green lights to red lights, stops per mile, and the derived corridor synchronization performance index (CSPI) metric. This information shall be collected both before and after any signal timing changes have been made. Additional details based on the Final Report Template will also be included.
- Benefits to cost analysis: project benefits resulting from signal synchronization will be evaluated based on the before and after study results. Savings will be calculated for travel time, fuel consumptions, vehicle maintenance, Greenhouse Gas (GHG) reduction, and a final benefit cost ratio.
- Future signal corridor improvements: recommendations for system and equipment enhancements to improve traffic flow and signal synchronization will be provided.
- Conclusion: a summary of the before and after study and its findings.

The City of Orange shall be responsible for submission of this document along with relevant backup information to OCTA Programs for close out of the PI Phase.

Task 9: On-going Maintenance & Operations

The City of Orange's contracted consultant shall provide "on-call" signal timing support services for a period of two years or 24 months following the complete closeout and all payments made for the Primary Implementation phase, to address any future adjustments that may be needed during this period. Depending on the nature of the adjustment, the Consultant may accomplish the fine-tuning adjustments remotely from the office through the traffic management systems. During this 24-month period the Consultant will be prepared to review any project intersection requested within (24) hours of written notice, including observing and fine-tuning the signal timing. The Consultant will also assist with resolving communications and detection issues along the corridor.

The Consultant will drive the length of the project arterial during all designated corridor synchronization timing plan hours of operation on a monthly basis in order to verify that the synchronization timing is working as designed, and complete any necessary adjustments. Monthly driving times will consist of a full 12-hour weekday and a 4-hour Saturday. All drives shall be documented. A copy, limited to jurisdictional boundaries, shall also be sent to each agency.

At the end of the 2-year O&M phase, the Consultant shall prepare a memorandum to summarize the O&M phase. It should, at the minimum, include when travel runs were conducted, issues and solutions throughout the phase, and recommendations for future improvements.

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SECTION 5: FUNDING NEEDS / COSTS FOR PROPOSED PROJECT BY TASK

Primary Implementation

The Primary Implementation will last one year and include the following elements (See Table I and Table II).

Project Tasks	Cost / Int	Total Cost	Match	
			Cash	In-Kind
Task 1: Project Administration	\$ 2,000.00	\$ 108,000.00	\$ 20,600.00	\$ 1,000.00
Task 2: Data Collection	\$ 850.00	\$ 45,900.00	\$ 9,180.00	\$ -
Task 3: Field Review and Plans Specifications, and Estimates	\$ 7,350.00	\$ 396,900.00	\$ 72,440.00	\$ 6,940.00
Task 4: Corridor "Before" Study	\$ 600.00	\$ 32,400.00	\$ 6,480.00	\$ -
Task 5: Signal Timing Optimization and Implementation	\$ 5,150.00	\$ 278,100.00	\$ 51,620.00	\$ 4,000.00
Task 6: Corridor "After" Study	\$ 600.00	\$ 32,400.00	\$ 6,480.00	\$ -
Task 7: Synchronization System Construction (See Table II)	-	\$2,375,650.00	\$ 457,240.00	\$ 17,890.00
Task 8: Primary Implementation Project Report	\$ 1,000.00	\$ 54,000.00	\$ 10,800.00	\$ -
Task 9: Ongoing Operations & Maintenance (See Task 9 Details)	\$ 2,400.00	\$ 129,600.00	\$ 21,560.00	\$ 4,360.00
Total Project Cost:		\$ 3,452,950.00	\$ 656,400.00	\$ 34,190.00

Ongoing Operations & Maintenance

Ongoing Operations and Maintenance will last two years and include the following elements. (See **Task 9 Details**):

Task 9 Details:

Task	Description of Work	Unit Price / Intersection	# of signals	Cost
Project Administration	Day to day administrative duties during O&M			included
Monitoring and improving optimized signal timing	Drive monthly and improve timing parameters along 54 signals for 24 months after signal timing and implemented along Tustin Avenue/Rose Drive from 1st Street to Wabash Avenue (@\$70/signal/month)	\$1,680.00	54	\$90,720
Communications and detection support	Monitor, maintain, and repair communication and detection along for 54 signals for 24 months after signal timing is implemented along Tustin Avenue/Rose Drive. (@ \$30/signal/month)	\$720.00	54	\$38,880
OMM Memorandum	A memorandum to summarize the O&M phase, including details on when travel runs were conducted; issues and solutions throughout the phase; and recommendations for future improvements.			included
Proposed Ongoing Operations & Maintenance:				\$129,600

Total Project Cost (Including PI and O&M for a total of 3 years):

Total M2 Request:
Total Agency Match:
Total Project Cost:

Total	
	\$2,762,360.00
	\$690,590.00
	\$3,452,950.00

TABLE I: SUMMARY OF IMPROVEMENTS

Location	Agency	Project Intersections at:	Description of Work																								
			INTERSECTION						CONTROLLERS		CONTROLLER CABINET					COMMUNICATION UPGRADE								ADVANCED TRAFFIC MANAGEMENT SYSTEM (ATMS)			
			EVP (all directions)	Video Detection System	UPS	ATSPM including OK M AI Applied Cell Site	ADA Pushbutton Assembly	Pedestrian Countdown Heads	New Controller	SDLC Cable	New Cabinet with New Foundation	New Cabinet (Reuse existing foundation)	System Detector (DLC)	Advance Detection Loop with New Conduit	Bluetooth Travel Time Unit	CCTV Camera	6E Pull box and Splice Enclosure	Fiber In New Conduit	Fiber in Existing Conduit	Fiber Distribution Unit (FDU)	Fiber Switch/Ethernet Switch	Patch Panel and Fiber Splicing	Ethernet Switch and/or Cell Modem	CENTRACS Integration + System Graphics	CENTRACS System License or CENTRACS System Modules	TMC Workstation	
Rose Drive @																											
1	Yorba Linda	Wabash Avenue				X			X	X		X				X	X	X		X	X	X	X	X	X		
2	Caltrans	Imperial Highway															X	X		X	X	X	X				
3	Yorba Linda	Bastanchury Road				X			X	X		X				X	X	X		X	X	X	X	X	X		
4	Yorba Linda	Equestrian/Ped Signal				X			X	X		X				X	X	X		X	X	X	X	X	X		
5	Yorba Linda	School Ped Signal				X			X	X		X				X	X	X		X	X	X	X	X	X		
6	Placentia	Yorba Linda Boulevard				X	X	X	X	X						X				X	X	X	X				
7	Placentia	Linda Vista Street/Valpariso Way				X			X	X						X				X	X	X	X		X		
8	Placentia	Palm Drive				X			X	X						X				X	X	X	X		X		
9	Placentia	Buena Vista Avenue				X	X	X	X	X						X				X	X	X	X		X		
10	Placentia	Alta Vista Street				X	X	X	X	X						X				X	X	X	X		X		
11	Placentia	Castner Avenue				X			X	X						X				X	X	X	X		X		
12	Placentia	Del Cerro (Orange Thorpe Grade Separation							X	X									X	X	X	X			X		
Tustin Avenue @																											
13	Anaheim	Auto Exchange	X	X			X	X	X	X					X					X	X	X					
14	Anaheim	Mira Loma Avenue	X	X			X	X	X	X					X	X				X	X	X					
15	Anaheim	La Palma Avenue	X	X			X	X	X	X	X			X	X					X	X	X					
16	Anaheim	Pacificcenter Drive																									
17	Caltrans	SR-91 W/B Ramps																									
18	Caltrans	SR-91 E/B Ramps																									
19	Anaheim	Riverdale Avenue	X	X			X	X	X	X						X					X						
20	Orange	Santa Ana Canyon Road	X			X	X		X	X		X											X				
21	Caltrans	SR-55 S/B Off Ramp																									
22	Caltrans	Santiago Boulevard @ SR-55 N/B - Vista Park																									
23	Caltrans	Nohl Ranch Road at Santiago Boulevard																									
24	Orange	Lincoln Avenue/Nohl Ranch Road				X			X																		
25	Orange	SR-55 S/B On Ramp	X	X		X			X	X																	
26	Orange	Heim Avenue	X			X	X		X																		
27	Orange	Village Town Center	X						X							X											
28	Orange	East Village Way	X			X	X		X			X															
29	Orange	Meats Avenue	X			X	X		X			X															
30	Orange	Taft Avenue/Briardale	X			X			X																		
31	Orange	Taft Avenue	X			X			X			X				X											
32	Orange	Van Owen Avenue/Toyota Way				X			X	X																	
33	Orange	Katella Avenue	X	X		X			X																		
34	Orange	Quincy Avenue	X	X		X			X																		
35	Orange	Collins Avenue	X	X		X			X																		
36	Orange	Mayfair Avenue				X			X																		
37	Orange	Walnut Avenue	X			X			X			X				X											
38	Orange	Palm Avenue				X			X																		
39	Orange	Chapman Avenue		X		X																					
40	Orange	Palmyra Avenue	X			X			X	X						X											
41	Orange	La Veta./Rock Creek				X																					
42	Caltrans	SR-22 W/B																									
43	Caltrans	SR-22 E/B - Seba																									
44	Orange	Fairhaven	X	X		X			X																		
45	Santa Ana	Santa Clara Avenue							X							X	X		X		X	X	X				
46	Santa Ana	Seventeenth Street																			X	X	X				
47	Santa Ana	Centre on Seventeenth/Tustin Centre							X																		
48	Santa Ana	Wellington Avenue							X																		
49	Santa Ana	Fruit Street							X			X															
50	Caltrans	SR-55 N/B																									
51	Caltrans	SR-55 S/B																									
52	Santa Ana	Fourth Street				X	X		X			X					X	X	X	X	X	X		X	X		
53	Tustin	Irvine Boulevard at Yorba				X			X	X																	
54	Tustin	First Street				X	X		X																		

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TABLE II: DETAILED IMPROVEMENTS BREAKDOWN

Item No.	Rose Drive @	Item Description	Unit	Qty	Labor to Install	Equipment Cost	Total	Cash Match	In-Kind Match	Agency
1	Wabash Avenue	Furnish and Install TS2 Cabinet Type "P", Cobalt ATC Controller & Appurtenances on Existing Foundation	EA	1	\$ 4,000.00	\$ 23,000.00	\$ 27,000.00	\$ 5,400.00		Yorba Linda
2		Furnish and Install BBS System and Cabinet on New Type "P" cabinet	EA	1	\$ 1,000.00	\$ 6,500.00	\$ 7,500.00	\$ 1,500.00		Yorba Linda
3		Re-establish Existing Type II service	EA	1	\$ 800.00		\$ 800.00	\$ 160.00		Yorba Linda
4		Furnish and Install Video Surveillance Camera & Appurtenances	EA	1	\$ 1,000.00	\$ 8,000.00	\$ 9,000.00	\$ 1,800.00		Yorba Linda
5		Furnish and Install 2" Conduit with 72 SFO I/C South to Imperial Hwy. (900-ft)	LF	900	\$ 35.00	\$ 10.00	\$ 40,500.00	\$ 8,100.00		Yorba Linda
6		Furnish and Install 6E Fiber Drop Pull box & Appurtenances	EA	4	\$ 2,500.00	\$ 1,000.00	\$ 14,000.00	\$ 2,800.00		Yorba Linda
7		Furnish and Install Fiber Ethernet Switch and Power Supply	EA	1	\$ 500.00	\$ 3,000.00	\$ 3,500.00	\$ 700.00		Yorba Linda
8	Imperial Highway	Furnish and Install 2" Conduit with 72 SFO I/C South to Bastanchury Rd. (1,900-ft)	LF	1900	\$ 35.00	\$ 10.00	\$ 85,500.00	\$ 17,100.00		Yorba Linda
9		Furnish and Install 6E Fiber Drop Pull box & Appurtenances	EA	4	\$ 2,500.00	\$ 1,000.00	\$ 14,000.00	\$ 2,800.00		Yorba Linda
10	Bastanchury Road	Supply and Install Cobalt ATC Controller & Appurtenances in Existing Cabinet	EA	1	\$ 1,000.00	\$ 4,000.00	\$ 5,000.00	\$ 1,000.00		Yorba Linda
11		Furnish and Install Video Surveillance Camera & Appurtenances	EA	1	\$ 1,000.00	\$ 8,000.00	\$ 9,000.00	\$ 1,800.00		Yorba Linda
12		Furnish and Install Duplex Power Outlet	EA	1	\$ 150.00	\$ 50.00	\$ 200.00	\$ 40.00		Yorba Linda
13		Furnish and Install 2" Conduit with 72 SFO I/C South to Equestrian Xing. (850-ft)	LF	850	\$ 35.00	\$ 10.00	\$ 38,250.00	\$ 7,650.00		Yorba Linda
14		Furnish and Install 6E Fiber Drop Pull box & Appurtenances	EA	3	\$ 2,500.00	\$ 1,000.00	\$ 10,500.00	\$ 2,100.00		Yorba Linda
15		Furnish and Install Fiber Ethernet Switch and Power Supply	EA	1	\$ 500.00	\$ 3,000.00	\$ 3,500.00	\$ 700.00		Yorba Linda
16		Remove Twisted Pair Copper and Furnish and Install 72 SFO East to Grey Rock (550-ft)	LF	550	\$ 5.00	\$ -	\$ 2,750.00	\$ 550.00		Yorba Linda
17	Equestrian Xing	Supply and Install Cobalt ATC Controller & Appurtenances in Existing Cabinet	EA	1	\$ 1,000.00	\$ 4,000.00	\$ 5,000.00	\$ 1,000.00		Yorba Linda
18		Furnish and Install Video Surveillance Camera & Appurtenances	EA	1	\$ 1,000.00	\$ 8,000.00	\$ 9,000.00	\$ 1,800.00		Yorba Linda
19		Furnish and Install Duplex Power Outlet	EA	1	\$ 150.00	\$ 50.00	\$ 200.00	\$ 40.00		Yorba Linda
20		Furnish and Install 2" Conduit with 72 SFO I/C South to Pedestrian Xing. (1,500-ft)	LF	1500	\$ 35.00	\$ 10.00	\$ 67,500.00	\$ 13,500.00		Yorba Linda
21		Furnish and Install 6E Fiber Drop Pull box & Appurtenances	EA	5	\$ 2,500.00	\$ 1,000.00	\$ 17,500.00	\$ 3,500.00		Yorba Linda
22		Furnish and Install Fiber Ethernet Switch and Power Supply	EA	1	\$ 500.00	\$ 3,000.00	\$ 3,500.00	\$ 700.00		Yorba Linda
23	Pedestrian Xing (SCHOOL)	Supply and Install Cobalt ATC Controller & Appurtenances in Existing Cabinet	EA	1	\$ 1,000.00	\$ 4,000.00	\$ 5,000.00	\$ 1,000.00		Yorba Linda
24		Furnish and Install Video Surveillance Camera & Appurtenances	EA	1	\$ 1,000.00	\$ 8,000.00	\$ 9,000.00	\$ 1,800.00		Yorba Linda
25		Furnish and Install duplex Power Outlet	EA	1	\$ 150.00	\$ 50.00	\$ 200.00	\$ 40.00		Yorba Linda
26		Furnish and Install 6E Fiber Drop Pull box & Appurtenances	EA	1	\$ 2,500.00	\$ 1,000.00	\$ 3,500.00	\$ 700.00		Yorba Linda
27		Furnish and Install Fiber Ethernet Switch and Power Supply	EA	1	\$ 500.00	\$ 3,000.00	\$ 3,500.00	\$ 700.00		Yorba Linda
28	Yorba Linda TMC Upgrades	F&I Server to Server Module to Centracs ATMS	EA	1	\$ 500.00	\$ 20,000.00	\$ 20,500.00	\$ 4,100.00		Yorba Linda
29		Develop Graphics and Integrate intersections to Centracs ATMS	EA	5	\$ 1,000.00	\$ -	\$ 5,000.00	\$ 1,000.00		Yorba Linda
30	Yorba Linda On Call Consultant Services	Various items involved with Construction Engineering, Design Review, etc. See various tables for expansion.	LS	1	\$ 14,490.00		\$ -	\$ -	\$ 14,490.00	Yorba Linda
31	Yorba Linda Blvd.	Furnish & install Cobalt ATC controller unit	EA	1	\$ 750.00	\$ 4,150.00	\$ 4,900.00	\$ 980.00		Placentia
32		Furnish & install Actelis ML684D Ethernet Fiber and VDSL Switch	EA	1	\$ 400.00	\$ 2,000.00	\$ 2,400.00	\$ 480.00		Placentia
33		Furnish & install Fiber Termination Unit	EA	1	\$ 400.00	\$ 1,200.00	\$ 1,600.00	\$ 320.00		Placentia
34		Furnish & install CCTV System	EA	1	\$ 1,000.00	\$ 7,000.00	\$ 8,000.00	\$ 1,600.00		Placentia
35		Furnish & install Active Pedestrian Safety System and Audio Push Buttons (4-ways) Includes Cabinet System Module	LS	1	\$ 2,160.00	\$ 6,100.00	\$ 8,260.00	\$ 1,652.00		Placentia
36		Furnish & install Countdown Ped Head System	EA	8	\$ 75.00	\$ 250.00	\$ 2,600.00	\$ 520.00		Placentia

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37	Linda Vista St.	Furnish & install Cobalt ATC controller unit	EA	1	\$ 750.00	\$ 4,150.00	\$ 4,900.00	\$ 980.00		Placentia
38		Furnish & install Actelis ML684D Ethernet Fiber and VDSL Switch	EA	1	\$ 400.00	\$ 2,000.00	\$ 2,400.00	\$ 480.00		Placentia
39		Furnish & install Fiber Termination Unit	EA	1	\$ 400.00	\$ 1,200.00	\$ 1,600.00	\$ 320.00		Placentia
40		Furnish & install CCTV System	EA	1	\$ 1,000.00	\$ 7,000.00	\$ 8,000.00	\$ 1,600.00		Placentia
41	Palm Dr.	Furnish & install Cobalt ATC controller unit	EA	1	\$ 750.00	\$ 4,150.00	\$ 4,900.00	\$ 980.00		Placentia
42		Furnish & install Actelis ML684D Ethernet Fiber and VDSL Switch	EA	1	\$ 400.00	\$ 2,000.00	\$ 2,400.00	\$ 480.00		Placentia
43		Furnish & install Fiber Termination Unit	EA	1	\$ 400.00	\$ 1,200.00	\$ 1,600.00	\$ 320.00		Placentia
44		Furnish & install CCTV System	EA	1	\$ 1,000.00	\$ 7,000.00	\$ 8,000.00	\$ 1,600.00		Placentia
45	Buena Vista Ave.	Furnish & install Cobalt ATC controller unit	EA	1	\$ 750.00	\$ 4,150.00	\$ 4,900.00	\$ 980.00		Placentia
46		Furnish & install Actelis ML684D Ethernet Fiber and VDSL Switch	EA	1	\$ 400.00	\$ 2,000.00	\$ 2,400.00	\$ 480.00		Placentia
47		Furnish & install Fiber Termination Unit	EA	1	\$ 400.00	\$ 1,200.00	\$ 1,600.00	\$ 320.00		Placentia
48		Furnish & install CCTV System	EA	1	\$ 1,000.00	\$ 7,000.00	\$ 8,000.00	\$ 1,600.00		Placentia
49		Furnish & install Active Pedestrian Safety System and Audio Push Buttons (3-ways) Includes Cabinet System Module	LS	1	\$ 1,420.00	\$ 5,200.00	\$ 6,620.00	\$ 1,324.00		Placentia
50		Furnish & install Countdown Ped Head System	EA	6	\$ 75.00	\$ 250.00	\$ 1,950.00	\$ 390.00		Placentia
51	Alta Vista St.	Furnish & install Cobalt ATC controller unit	EA	1	\$ 750.00	\$ 4,150.00	\$ 4,900.00	\$ 980.00		Placentia
52		Furnish & install Actelis ML684D Ethernet Fiber and VDSL Switch	EA	1	\$ 400.00	\$ 2,000.00	\$ 2,400.00	\$ 480.00		Placentia
53		Furnish & install Fiber Termination Unit	EA	1	\$ 400.00	\$ 1,200.00	\$ 1,600.00	\$ 320.00		Placentia
54		Furnish & install CCTV System	EA	1	\$ 1,000.00	\$ 7,000.00	\$ 8,000.00	\$ 1,600.00		Placentia
55		Furnish & install Active Pedestrian Safety System and Audio Push Buttons (4-ways) Includes Cabinet System Module	LS	1	\$ 2,160.00	\$ 6,100.00	\$ 8,260.00	\$ 1,652.00		Placentia
56		Furnish & install Countdown Ped Head System	EA	8	\$ 75.00	\$ 250.00	\$ 2,600.00	\$ 520.00		Placentia
57	Castner Dr.	Furnish & install Cobalt ATC controller unit	EA	1	\$ 750.00	\$ 4,150.00	\$ 4,900.00	\$ 980.00		Placentia
58		Furnish & install Actelis ML684D Ethernet Fiber and VDSL Switch	EA	1	\$ 400.00	\$ 2,000.00	\$ 2,400.00	\$ 480.00		Placentia
59		Furnish & install Fiber Termination Unit	EA	1	\$ 400.00	\$ 1,200.00	\$ 1,600.00	\$ 320.00		Placentia
60	Del Cerro Dr.	Furnish & install Cobalt ATC controller unit	EA	1	\$ 750.00	\$ 4,150.00	\$ 4,900.00	\$ 980.00		Placentia
61		Furnish & install Actelis ML684D Ethernet Fiber and VDSL Switch	EA	1	\$ 400.00	\$ 2,000.00	\$ 2,400.00	\$ 480.00		Placentia
62		Furnish & install Fiber Termination Unit	EA	1	\$ 400.00	\$ 1,200.00	\$ 1,600.00	\$ 320.00		Placentia
63		Furnish & install CCTV System	EA	1	\$ 1,000.00	\$ 7,000.00	\$ 8,000.00	\$ 1,600.00		Placentia
64	From Rose/Yorba Linda to Orangethorpe/Del Cerro	Furnish & install 72 SMFO Trunk Cable in existing conduit (Rose/Yorba Linda to Orangethorpe/Del Cerro)	LF	8400	\$ 3.00	\$ 2.00	\$ 42,000.00	\$ 8,400.00		Placentia
65		Furnish & install 12 SMFO Drop Cable in existing conduit at each intersection	LF	800	\$ 6.00	\$ 10.00	\$ 12,800.00	\$ 2,560.00		Placentia
66		Furnish & install 2" Sch. 80 PVC conduit between Rose/Del Cerro and Orangethorpe/Del Cerro	LF	700	\$ 25.00	\$ 10.00	\$ 24,500.00	\$ 4,900.00		Placentia
67		Furnish & install Fiber Splice Enclosure. Splice proposed 72 SFMO fiber to existing 72 SMFO Fiber at Orangethorpe/Del Cerro	LS	1	\$ 3,000.00	\$ 1,500.00	\$ 4,500.00	\$ 900.00		Placentia
68		Add intersections to Centrac with graphics	LS	6	\$ 1,500.00		\$ 9,000.00	\$ 1,800.00		Placentia

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69	Auto Exchange	Furnish and install controller	EA	1	\$ 150.00	\$ 3,500.00	\$ 3,650.00	\$ 730.00	Anaheim
70		Furnish and install Ethernet switch	EA	1	\$ 3,000.00	\$ 3,000.00	\$ 6,000.00	\$ 1,200.00	Anaheim
71		Furnish and install armored 120 SMFO cable	LF	1000	\$ 7.00	\$ -	\$ 7,000.00	\$ 1,400.00	Anaheim
72		Furnish and install fiber tray, terminate SMFO cable to cabinet	EA	LS	\$ 3,000.00	\$ 600.00	\$ 3,600.00	\$ 720.00	Anaheim
73		Furnish and install loops, video detection	EA	LS	\$ 1,000.00	\$ 20,000.00	\$ 21,000.00	\$ 4,200.00	Anaheim
74	Mira Loma	Furnish & install countdown ped head system	EA	8	\$ 135.00	\$ 150.00	\$ 2,280.00	\$ 456.00	Anaheim
75		Furnish and install controller	EA	1	\$ 150.00	\$ 3,500.00	\$ 3,650.00	\$ 730.00	Anaheim
76		Furnish and install Ethernet switch	EA	1	\$ 3,000.00	\$ 3,000.00	\$ 6,000.00	\$ 1,200.00	Anaheim
77		Furnish and install armored 120 SMFO cable	LF	3200	\$ 7.00	\$ -	\$ 22,400.00	\$ 4,480.00	Anaheim
78		Furnish and install fiber tray, terminate SMFO cable to cabinet	EA	LS	\$ 3,000.00	\$ 600.00	\$ 3,600.00	\$ 720.00	Anaheim
79	La Palma	Furnish and install CCTV	EA	1	\$ 400.00	\$ 12,000.00	\$ 12,400.00	\$ 2,480.00	Anaheim
80		Furnish and install loops, video detection	EA	LS	\$ 1,000.00	\$ 20,000.00	\$ 21,000.00	\$ 4,200.00	Anaheim
81		Furnish and install performance measure equipment	EA	1	\$ 500.00	\$ 10,000.00	\$ 10,500.00	\$ 2,100.00	Anaheim
82		Furnish & install accessible ped pushbutton	EA	8	\$ 150.00	\$ 1,000.00	\$ 9,200.00	\$ 1,840.00	Anaheim
83		Furnish & install countdown ped head system	EA	8	\$ 135.00	\$ 150.00	\$ 2,280.00	\$ 456.00	Anaheim
84	La Palma	Furnish and install cabinet	EA	1	\$ 550.00	\$ 20,000.00	\$ 20,550.00	\$ 4,110.00	Anaheim
85		Furnish and install controller	EA	1	\$ 150.00	\$ 3,500.00	\$ 3,650.00	\$ 730.00	Anaheim
86		Furnish and install Ethernet switch	EA	1	\$ 3,000.00	\$ 3,000.00	\$ 6,000.00	\$ 1,200.00	Anaheim
87		Furnish and install armored 120 SMFO cable	LF	610	\$ 7.00	\$ -	\$ 4,270.00	\$ 854.00	Anaheim
88		Furnish and install fiber tray, terminate SMFO cable to cabinet	EA	LS	\$ 3,000.00	\$ 600.00	\$ 3,600.00	\$ 720.00	Anaheim
89		Furnish and install CCTV	EA	1	\$ 400.00	\$ 12,000.00	\$ 12,400.00	\$ 2,480.00	Anaheim
90		Furnish and install loops, video detection	EA	LS	\$ 1,000.00	\$ 20,000.00	\$ 21,000.00	\$ 4,200.00	Anaheim
91		Furnish and install performance measure equipment	EA	1	\$ 500.00	\$ 10,000.00	\$ 10,500.00	\$ 2,100.00	Anaheim
92		Furnish & install accessible ped pushbutton	EA	8	\$ 150.00	\$ 1,000.00	\$ 9,200.00	\$ 1,840.00	Anaheim
93	Pacificcenter	Furnish & install countdown ped head system	EA	8	\$ 135.00	\$ 150.00	\$ 2,280.00	\$ 456.00	Anaheim
94		Furnish and install controller	EA	1	\$ 150.00	\$ 3,500.00	\$ 3,650.00	\$ 730.00	Anaheim
95		Furnish and install Ethernet switch	EA	1	\$ 2,500.00	\$ 3,000.00	\$ 5,500.00	\$ 1,100.00	Anaheim
96		Furnish and install armored 120 SMFO cable	LF	800	\$ 7.00	\$ -	\$ 5,600.00	\$ 1,120.00	Anaheim
97		Furnish and install fiber tray, terminate SMFO cable to cabinet	EA	LS	\$ 3,000.00	\$ 600.00	\$ 3,600.00	\$ 720.00	Anaheim
98		Furnish and install CCTV	EA	1	\$ 400.00	\$ 12,000.00	\$ 12,400.00	\$ 2,480.00	Anaheim
99		Furnish and install loops, video detection	EA	LS	\$ 1,000.00	\$ 20,000.00	\$ 21,000.00	\$ 4,200.00	Anaheim
100		Furnish and install performance measure equipment	EA	1	\$ 500.00	\$ 10,000.00	\$ 10,500.00	\$ 2,100.00	Anaheim
101		Furnish & install accessible ped pushbutton	EA	8	\$ 150.00	\$ 1,000.00	\$ 9,200.00	\$ 1,840.00	Anaheim
102	Caltrans Ramps SR-91	Furnish & install countdown ped head system	EA	8	\$ 135.00	\$ 150.00	\$ 2,280.00	\$ 456.00	Anaheim
103		Caltrans Encroachment Permit (Synchronize with SR-91 Ramp E)	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00	Anaheim
104		Caltrans Encroachment Permit (Synchronize with SR-91 Ramp W)	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00	Anaheim
105	Riverdale	Furnish and install controller	EA	1	\$ 150.00	\$ 3,500.00	\$ 3,650.00	\$ 730.00	Anaheim
106		Furnish and install Ethernet switch	EA	1	\$ 3,000.00	\$ 3,000.00	\$ 6,000.00	\$ 1,200.00	Anaheim
107		Furnish and install fiber tray, terminate SMFO cable to cabinet	EA	1	\$ 3,000.00	\$ 600.00	\$ 3,600.00	\$ 720.00	Anaheim
108		Furnish and install CCTV	EA	1	\$ 400.00	\$ 12,000.00	\$ 12,400.00	\$ 2,480.00	Anaheim
109		Furnish and install loops, video detection	EA	LS	\$ 1,000.00	\$ 20,000.00	\$ 21,000.00	\$ 4,200.00	Anaheim
110		Furnish and install performance measure equipment	EA	1	\$ 500.00	\$ 10,000.00	\$ 10,500.00	\$ 2,100.00	Anaheim
111		Furnish & install accessible ped pushbutton	EA	8	\$ 150.00	\$ 1,000.00	\$ 9,200.00	\$ 1,840.00	Anaheim
112		Furnish & install countdown ped head system	EA	8	\$ 135.00	\$ 150.00	\$ 2,280.00	\$ 456.00	Anaheim
113	Santa Ana Cyn Road	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00	Orange City
114		Furnish & install P44 Cabinet on existing foundation	EA	1	\$ 3,200.00	\$ 19,400.00	\$ 22,600.00	\$ 4,520.00	Orange City
115		Furnish & install Myers UPS/BBS W/4 Batteries	EA	1	\$ 1,100.00	\$ 6,000.00	\$ 7,100.00	\$ 1,420.00	Orange City
116		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00	Orange City
117		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00	Orange City
118		SPM O & M per year	EA	3	\$ 800.00	\$ -	\$ 2,400.00	\$ 480.00	Orange City
119		Furnish & install AI Applied Cell Site	EA	1	\$ 1,100.00	\$ 5,000.00	\$ 6,100.00	\$ 1,220.00	Orange City
120	Caltrans Ramps SR-55	S/B SR-55 Off Ramp	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00	Orange City
121		Nohl Ranch Road at Santiago Boulevard	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00	Orange City
122		N/B SR-55 Ramp at Santiago Boulevard	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00	Orange City
123	Lincoln Avenue	Furnish and install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00	Orange City
124		SPM O & M per year for 3 years	EA	3	\$ 800.00	\$ -	\$ 2,400.00	\$ 480.00	Orange City

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125		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
126	SR-55 FRWY S/B On Ramp	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
127		Furnish & install Gridsmart Video Detection	EA	1	\$ 1,100.00	\$ 20,000.00	\$ 21,100.00	\$ 4,220.00		Orange City
128		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
129		SPM O & M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
130		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
131	Heim Avenue	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
132		Furnish & install Myers UPS/BBS W/4 Batteries	EA	1	\$ 1,100.00	\$ 6,000.00	\$ 7,100.00	\$ 1,420.00		Orange City
133		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
134		SPM O & M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
135		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
136	Village Town Center	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
137		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
138		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
139		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
140		Furnish & install Cohu Rise CCTV	EA	1	\$ 1,100.00	\$ 3,500.00	\$ 4,600.00	\$ 920.00		Orange City
141	East Village Way	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
142		Furnish & install P44 Cabinet on New Foundation	EA	1	\$ 6,000.00	\$ 19,400.00	\$ 25,400.00	\$ 5,080.00		Orange City
143		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
144		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
145		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
146	Meats Avenue	Furnish & install Myers UPS/BBS W/4 Batteries	EA	1	\$ 1,100.00	\$ 6,000.00	\$ 7,100.00	\$ 1,420.00		Orange City
147		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,400.00	\$ 3,950.00	\$ 790.00		Orange City
148		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
149		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
150		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
151	Briardale Avenue	Furnish & install Gridsmart Video Detection	EA	1	\$ 1,100.00	\$ 20,000.00	\$ 21,100.00	\$ 4,220.00		Orange City
152		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
153		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
154		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
155		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
156	Taft Avenue	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
157		Furnish & install P44 Cabinet on existing foundation	EA	1	\$ 3,200.00	\$ 19,400.00	\$ 22,600.00	\$ 4,520.00		Orange City
158		Furnish & install Cohu Rise CCTV	EA	1	\$ 1,100.00	\$ 3,500.00	\$ 4,600.00	\$ 920.00		Orange City
159		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
160		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
161	Van Owen Avenue	Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
162		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
163		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
164		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
165		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
166	Katella Avenue	Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
167		Furnish & install Iteris SPM	EA	1	\$ 199.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
168		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
169		Furnish & install Gridsmart Video Detection	EA	1	\$ 1,100.00	\$ 20,000.00	\$ 21,100.00	\$ 4,220.00		Orange City
170		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
171	Quincy Avenue	Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
172		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
173		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
174		Furnish & install P44 Cabinet on existing foundation	EA	1	\$ 3,200.00	\$ 19,400.00	\$ 22,600.00	\$ 4,520.00		Orange City
175		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
176	Collins Avenue	Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
177		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
178		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
179		Furnish & install Gridsmart Video Detection	EA	1	\$ 1,100.00	\$ 20,000.00	\$ 21,100.00	\$ 4,220.00		Orange City

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180	Mayfair Avenue	Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
181		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
182		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
183	Walnut Avenue	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
184		Furnish & install P44 Cabinet on existing foundation	EA	1	\$ 3,200.00	\$ 19,400.00	\$ 22,600.00	\$ 4,520.00		Orange City
185		Furnish & install GTT EVP System	EA	1	\$ 135.00	\$ 145.00	\$ 280.00	\$ 56.00		Orange City
186		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
187		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
188	Palm Avenue	Furnish & install Cohu Rise CCTV	EA	1	\$ 1,100.00	\$ 3,500.00	\$ 4,600.00	\$ 920.00		Orange City
189		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
190		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
191	Chapman Avenue	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
192		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
193		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
194	Palmyra Avenue	Furnish & install Gridsmart Video Detection	EA	1	\$ 1,100.00	\$ 20,000.00	\$ 21,100.00	\$ 4,220.00		Orange City
195		Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
196		Furnish & install Cohu Rise CCTV	EA	1	\$ 1,100.00	\$ 3,500.00	\$ 4,600.00	\$ 920.00		Orange City
197		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
198		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
199	LaVeta Avenue	Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
200		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
201		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
202	Caltrans Ramps SR-22	W/B On Ramp	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00		Orange City
203		E/B Off Ramp/Seba	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00		Orange City
204	Fairhaven Drive	Furnish & install Cobalt ATC controller unit (No touchscreen)	EA	1	\$ 550.00	\$ 3,500.00	\$ 4,050.00	\$ 810.00		Orange City
205		Furnish & install GTT EVP System	EA	1	\$ 1,100.00	\$ 7,000.00	\$ 8,100.00	\$ 1,620.00		Orange City
206		Furnish & install Iteris SPM	EA	1	\$ 100.00	\$ 900.00	\$ 1,000.00	\$ 200.00		Orange City
207		SPM O&M per year	EA	3	\$ 800.00		\$ 2,400.00	\$ 480.00		Orange City
208		Furnish & install Gridsmart Video Detection	EA	1	\$ 1,100.00	\$ 20,000.00	\$ 21,100.00	\$ 4,220.00		Orange City
209	Santa Clara Avenue	Econolite 2070-1C CPU w/ latest Econolite software	EA	1	\$ 1,000.00	\$ 2,000.00	\$ 3,000.00	\$ 600.00		Santa Ana
210		CCTV Camera System (Axis Q6055-E)	EA	1	\$ 2,000.00	\$ 6,000.00	\$ 8,000.00	\$ 1,600.00		Santa Ana
211		Install 144-SMFO from Santa Clara to 17th (in existing conduit)	LF	4000	\$ 1.00	\$ 4.00	\$ 20,000.00	\$ 4,000.00	\$ 600.00	Santa Ana
212		Etherwan Fiber Optic Ethernet Switch (EX78921-0VB)	EA	1	\$ 1,000.00	\$ 3,000.00	\$ 4,000.00	\$ 800.00		Santa Ana
213		Fiber Splicing (including Fiber Distribution Unit)	LS	1	\$ 2,000.00	\$ 3,000.00	\$ 5,000.00	\$ 1,000.00		Santa Ana
214		Econolite Autoscope Vision or Iteris Vantage Edge2 Video Detection System	LS	1	\$ 30,000.00	\$ 5,000.00	\$ 35,000.00	\$ 7,000.00		Santa Ana
215	17th Street	Fiber Splicing (including Fiber Distribution Unit)	LS	1	\$ 1,000.00	\$ 1,000.00	\$ 2,000.00	\$ 400.00	\$ 400.00	Santa Ana
216	Tustin Center	Econolite 2070-1C CPU w/ latest Econolite software	LS	1	\$ 1,000.00	\$ 2,000.00	\$ 3,000.00	\$ 600.00	\$ 600.00	Santa Ana
217	Wellington Avenue	Econolite 2070-1C CPU w/ latest Econolite software	LS	1	\$ 1,000.00	\$ 2,000.00	\$ 3,000.00	\$ 600.00	\$ 600.00	Santa Ana
218	Fruit Street	Replace existing cabinet w/ Type 332L cabinet, Type II Dual Service, Foundation, Conduits and Pull Boxes	LS	1	\$ 10,000.00	\$ 30,000.00	\$ 40,000.00	\$ 8,000.00	\$ 600.00	Santa Ana
219		Econolite ATC 2070C controller w/ latest Econolite software	LS	1	\$ 2,000.00	\$ 6,000.00	\$ 8,000.00	\$ 1,600.00		Santa Ana
220		Southern California Edison New Service Fee	LS	1	\$ 7,000.00	\$ -	\$ 7,000.00	\$ 1,400.00		Santa Ana
221		Southern California Edison Conduit and Pull Box	LS	1	\$ 5,000.00	\$ 10,000.00	\$ 15,000.00	\$ 3,000.00		Santa Ana
222	Caltrans Ramps SR-55	4th Street On-Off ramp N/B SR-55	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00		Tustin
223		4th Street On-Off ramp S/B SR-55	LS	1	\$ 2,500.00	\$ -	\$ 2,500.00	\$ 500.00		Santa Ana
224	4th Street	Replace existing cabinet w/ Type 332L cabinet, Type II Dual Service, Foundation, Conduits and Pull Boxes	LS	1	\$ 10,000.00	\$ 30,000.00	\$ 40,000.00	\$ 8,000.00	\$ 600.00	Santa Ana
225		Econolite ATC 2070C controller w/ latest Econolite software	LS	1	\$ 2,000.00	\$ 6,000.00	\$ 8,000.00	\$ 1,600.00		Santa Ana
226		Southern California Edison New Service Fee	LS	1	\$ 7,000.00	\$ -	\$ 7,000.00	\$ 1,400.00		Santa Ana
227		Southern California Edison Conduit and Pull Box	LS	1	\$ 5,000.00	\$ 10,000.00	\$ 15,000.00	\$ 3,000.00		Santa Ana
228		Caltrans Encroachment Permit (Synchronize with SR-55 Ramps)	LS	1	\$ 20,000.00	\$ -	\$ 20,000.00	\$ 4,000.00		Santa Ana
229	Tustin Ave/First St	Cobalt ATC TS2 Type 2 Controller & Appurtenances	EA	1	\$ 500.00	\$ 5,000.00	\$ 5,500.00	\$ 1,100.00		Tustin
230		Polara Navigator iN2 APS W/ 5x7 R10-3B Braille Signs	EA	6	\$ 170.00	\$ 450.00	\$ 3,720.00	\$ 744.00		Tustin
231		Polara Navigator iN2 APS Controller Assembly	EA	1	\$ 800.00	\$ 2,500.00	\$ 3,300.00	\$ 660.00		Tustin
232		Radar Detection	LS	1	\$ 5,000.00	\$ 20,000.00	\$ 25,000.00	\$ 5,000.00		Tustin

**TUSTIN AVENUE/ROSE DRIVE
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233	Yorba St/Irvine Blvd	Cobalt ATC TS2 Type 2 Controller & Appurtenances	EA	1	\$ 500.00	\$ 5,000.00	\$ 5,500.00	\$ 1,100.00		Tustin
234		Polara Navigator iN2 APS W/ 5x7 R10-3B Braille Signs	EA	8	\$ 170.00	\$ 450.00	\$ 4,960.00	\$ 992.00		Tustin
235		Polara Navigator iN2 APS Controller Assembly	EA	1	\$ 800.00	\$ 2,500.00	\$ 3,300.00	\$ 660.00		Tustin
236		Radar Detection	LS	1	\$ 5,000.00	\$ 20,000.00	\$ 25,000.00	\$ 5,000.00		Tustin
Subtotal:							\$ 1,900,520.00	\$ 380,104.00	\$ 17,890.00	
Contingency (10%):							\$ 190,052.00	\$ 38,010.40	\$ -	
Construction Management (15%):							\$ 285,078.00	\$ 57,015.60	\$ -	
In-Kind Match							\$ -	\$ (17,890.00)		
SYSTEM IMPROVEMENT TOTAL:							\$ 2,375,650.00	\$ 457,240.00	\$ 17,890.00	

**TUSTIN AVENUE/ROSE DRIVE
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SECTION 6: PROJECT SCHEDULE BY TASK

Project start date: August 1, 2020

Project end date: July 31, 2023

Primary Implementation

Task	Starting Date	Ending Date
Task 1: Project Administration	August 1, 2020	June 30, 2023
Task 2: Data Collection	August 1, 2020	September 30, 2020
Task 3: Field Review and Plans Specifications, and Estimates	August 1, 2020	October 31, 2020
Task 4: Corridor "Before" Study	November 1, 2020	November 7, 2020
Task 5: Signal Timing Optimization and Implementation	August 1, 2020	May 1, 2021
Task 6: Corridor "After" Study	May 5, 2021	May 12, 2021
Task 7: Synchronization System Construction	December 1, 2020	May 31, 2021
Task 8: Primary Implementation Project Report	June 15, 2021	June 15, 2021
Task 9: Ongoing Operations & Maintenance	August 1, 2021	June 30, 2023

Ongoing Monitoring and Maintenance

Task	Starting Date	Ending Date
a. Monitoring and improving optimized signal timing	August 1, 2021	June 30, 2023
b. Communications and detection support	August 1, 2021	June 30, 2023
c. OMM Memo	August 1, 2021	June 30, 2023

TUSTIN AVENUE/ROSE DRIVE
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SECTION 7: DETAILED LOCAL MATCH COMMITMENT

Input Only
Auto-Fill

PART 1: AGENCY TOTAL MATCH SUMMARY

Agency	CASH		IN-KIND		TOTAL MATCH	
	PI	OMM	PI	OMM	PI	OMM
City of Anaheim	118,412.50	0.00	0.00	3,360.00	118,412.50	3,360.00
	118,412.50		3,360.00		121,772.50	
City of Orange	224,520.00	12,000.00	0.00	0.00	224,520.00	12,000.00
	236,520.00		0.00		236,520.00	
City of Placentia	82,917.50	3,360.00	0.00	0.00	82,917.50	3,360.00
	86,277.50		0.00		86,277.50	
City of Santa Ana	73,545.00	2,360.00	12,400.00	1,000.00	85,945.00	3,360.00
	75,905.00		13,400.00		89,305.00	
City of Tustin	30,225.00	1,440.00	0.00	0.00	30,225.00	1,440.00
	31,665.00		0.00		31,665.00	
City of Yorba Linda	105,220.00	2,400.00	17,430.00	0.00	122,650.00	2,400.00
	107,620.00		17,430.00		125,050.00	
TOTAL MATCH	634,840.00	21,560.00	29,830.00	4,360.00	664,670.00	25,920.00
	656,400.00		34,190.00		690,590.00	

PART 2: MATCH BREAKDOWN (CASH vs IN-KIND SERVICES)

A. Cash Match

Agency	Funding Source	Amount of Cash Contribution
City of Anaheim	Local Funds	\$118,412.50
City of Orange	Local Funds	\$236,520.00
City of Placentia	Road Funds	\$86,277.50
City of Tustin	Local Funds	\$31,665.00
City of Santa Ana	Local Funds	\$75,905.00
City of Yorba Linda	Local Funds	\$107,620.00
TOTAL CASH MATCH:		\$656,400.00

B. In-Kind Services

i. Specific Improvements (List items and Cost):

Agency	Description	Expenditure
Total Specific Improvements (i):		\$0.00

ii. Staffing Commitment:

Agency	Staff Position	Type of Service to Project	No. of Hours	Fully Burdened Hourly Rate	Total*
City of Santa Ana	Senior Civil Engineer	Project Administration, Quality Assurance & Signal Timing	50.0	\$86.93	\$4,346.50
	Assistant Engineer	Design PS&E	58.0	\$76.41	\$4,431.78
	Construction Inspector	Construction Inspection	60.0	\$58.21	\$3,492.60
	Engineering Intern	Design PS&E	61.70	\$18.30	\$1,129.12
Total for City of Santa Ana:					\$13,400.00
	Project Manager	PS&E, Traffic Signal Timing, Timing Implementation and System Integration Review, QA	18	\$165.00	\$2,970.00

**TUSTIN AVENUE/ROSE DRIVE
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City of Yorba Linda	Senior Engineer	PS&E, Traffic Signal Timing, Timing Implimentation and Ststem integration Review, QA	22	\$150.00	\$3,300.00
	Traffic Signal System Supervisor	PS&E, Traffic Signal Timing, Timing Implimentation and Ststem integration Review, QA	33	\$135.00	\$4,455.00
	Traffic Signal System Specialist	Construction Observation	54	\$125.00	\$6,705.00
<i>Total for City of Yorba Linda :</i>					\$17,430.00
City of Anaheim	Engineering Intern	Drive Corridor and reports	168	\$20.00	\$3,360.00
<i>Total for City of Anaheim:</i>					\$3,360.00
Total Staffing Commitment (ii):					\$34,190.00
TOTAL IN-KIND MATCH* (i + ii):					\$34,190.00

*Total amount is the required participation by the identified agency. The number of hours and hourly rate will be based on each agency's actual fully burdened billing rates, which must collectively equal the same value of the assigned "Total" dollars. Each agency will be responsible for keeping detailed records of hours worked and description of work. An accounting record of personnel, hours at fully burdened rate is expected to be included with the final submittal. Records will be subject to auditing.

**TUSTIN AVENUE/ROSE DRIVE
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SECTION 8: ENVIRONMENTAL CLEARANCE AND OTHER PERMITS

Environmental clearance and other permits (if needed) will be obtained for this project.

SECTION 9: SELECTION CRITERIA CALCULATIONS

Vehicle Miles Traveled (VMT):

	Segment	ADTs	Distance	VMT
1	1st to 4th Street	18,033	0.17	3,066
2	4th Street to Fruit Street	25,521	0.32	8,167
3	Fruit Street to Wellington Avenue	24,518	0.17	4,168
4	Wellington Avenue to Centre on Seventeenth	24,518	0.21	5,149
5	Centre on Seventeenth to 17th Street	24,518	0.12	2,942
6	17th Street to Santa Clara Avenue	35,618	0.52	18,521
7	Santa Clara Avenue to Fairhaven Avenue	33,810	0.42	14,200
8	Fairhaven Avenue to SR-22 E/B Ramps at Seba	35,700	0.18	6,426
9	SR-22 E/B Ramps at Seba to SR-22 W/B Ramps	35,700	0.13	4,641
10	SR-22 W/B Ramps to La Veta/Rock Creek	35,700	0.13	4,641
11	La Veta Rock Creek to Palmyra Avenue	32,100	0.32	10,272
12	Palmyra Avenue to Chapman Avenue	32,100	0.25	8,025
13	Chapman Avenue to Palm Avenue	38,800	0.25	9,700
14	Palm Avenue to Walnut Avenue	38,800	0.25	9,700
15	Walnut Avenue to Mayfair Avenue	33,900	0.28	9,492
16	Mayfair Avenue to Collins Avenue	33,900	0.22	7,458
17	Collins Avenue to Katella Avenue	33,800	0.48	16,224
18	Katella Avenue to Van Owen Avenue/Toyota Way	41,000	0.13	5,330
19	Van Owen Avenue/Toyota Way to Taft Avenue	41,000	0.33	13,530
20	Taft Avenue to Taft Avenue/Briardale	41,000	0.11	4,510
21	Taft Avenue/Briardale to Meats Avenue	43,300	0.38	16,454
22	Meats Avenue to Lincoln Avenue/Nohl Ranch Road	31,400	0.83	26,062
23	Lincoln Avenue/Nohl Ranch Road to Santa Ana Canyon Road	27,400	0.58	15,892
24	Santa Ana Canyon Road to Riverdale Avenue	27,400	0.32	8,768
25	Riverdale Avenue to SR-91 E/B Ramps	17,630	0.28	4,936
26	SR-91 E/B Ramps to SR-91 W/B Ramps	63,258	0.12	7,591
27	SR-91 W/B Ramps to Pacificcenter Drive	62,501	0.15	9,375

**TUSTIN AVENUE/ROSE DRIVE
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29	Pacificcenter Drive to La Palma Avenue	61,791	0.12	7,415
30	La Palma Avenue to Mira Loma Avenue	25,484	0.59	15,036
31	Miraloma Avenue to Auto Exchange	23,000	0.19	4,370
32	Auto Exchange to Del Cerro	26,399	0.29	7,656
33	Del Cerro to Castner Drive	29,291	0.19	5,565
34	Castner Drive to Alta Vista Street	29,291	0.25	7,323
35	Alta Vista Street to Buena Vista Avenue	27,290	0.28	7,641
36	Buena Vista Avenue to Palm Drive	27,290	0.18	4,912
37	Palm Drive to Linda Vista Street/Valpariso Way	22,484	0.18	4,047
38	Linda Vista Street/Valpariso Way to Yorba Linda Boulevard	22,484	0.27	6,071
39	Yorba Linda Boulevard to School Ped Xing	18,200	0.35	6,370
40	School Ped Xing to Equestrian Signal/Ped Signal	18,200	0.27	4,914
41	Equestrian Signal/Ped Signal to Bastanchury Road	18,200	0.14	2,548
42	Bastanchury Road to Imperial Highway	16,700	0.35	5,845
43	Imperial Highway to Wabash Avenue	22,800	0.16	3,648

Total Project VMT:		11.46	348,601
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Source: 2016 - 2019 All Agency ADT Counts

SECTION 10: DETAILED BREAKDOWN OF COSTS BY AGENCIES

City of Tustin

Number of Signals: 2

3

Project Tasks (Tustin)	Total Cost	Match	
		Cash	In-Kind
Task 1: Project Administration	\$ 6,000.00	\$ 1,200.00	\$ -
Task 2: Data Collection	\$ 2,550.00	\$ 510.00	\$ -
Task 3: Field Review and Plans Specifications, and Estimates	\$ 22,050.00	\$ 4,410.00	\$ -
Task 4: Corridor "Before" Study	\$ 1,800.00	\$ 360.00	\$ -
Task 5: Signal Timing Optimization and Implementation	\$ 15,450.00	\$ 3,090.00	\$ -
Task 6: Corridor "After" Study	\$ 1,800.00	\$ 360.00	\$ -
Task 7: Synchronization System Construction (See Table II)	\$ 98,475.00	\$ 19,695.00	\$ -
Task 8: Primary Implementation Project Report	\$ 3,000.00	\$ 600.00	\$ -
Task 9: Ongoing Operations & Maintenance (See Task 9 Details)	\$ 7,200.00	\$ 1,440.00	\$ -
Total Project Cost:	\$ 158,325.00	\$ 31,665.00	\$ -

City of Santa Ana

Number of Signals: 6

7

Project Tasks (Santa Ana)	Total Cost	Match	
		Cash	In-Kind
Task 1: Project Administration	\$ 14,000.00	\$ 1,800.00	\$ 1,000.00
Task 2: Data Collection	\$ 5,950.00	\$ 1,190.00	\$ -
Task 3: Field Review and Plans Specifications, and Estimates	\$ 51,450.00	\$ 6,290.00	\$ 4,000.00
Task 4: Corridor "Before" Study	\$ 4,200.00	\$ 840.00	\$ -
Task 5: Signal Timing Optimization and Implementation	\$ 36,050.00	\$ 3,210.00	\$ 4,000.00
Task 6: Corridor "After" Study	\$ 4,200.00	\$ 840.00	\$ -
Task 7: Synchronization System Construction (See Table II)	\$ 306,875.00	\$ 57,975.00	\$ 3,400.00
Task 8: Primary Implementation Project Report	\$ 7,000.00	\$ 1,400.00	\$ -
Task 9: Ongoing Operations & Maintenance (See Task 9 Details)	\$ 16,800.00	\$ 2,360.00	\$ 1,000.00
Total Project Cost:	\$ 446,525.00	\$ 75,905.00	\$ 13,400.00

City of Anaheim

Number of Signals: 5

7

Project Tasks (Anaheim)	Total Cost	Match	
		Cash	In-Kind
Task 1: Project Administration	\$ 14,000.00	\$ 2,800.00	\$ -
Task 2: Data Collection	\$ 5,950.00	\$ 1,190.00	\$ -
Task 3: Field Review and Plans Specifications, and Estimates	\$ 51,450.00	\$ 10,290.00	\$ -
Task 4: Corridor "Before" Study	\$ 4,200.00	\$ 840.00	\$ -
Task 5: Signal Timing Optimization and Implementation	\$ 36,050.00	\$ 7,210.00	\$ -
Task 6: Corridor "After" Study	\$ 4,200.00	\$ 840.00	\$ -
Task 7: Synchronization System Construction (See Table II)	\$ 469,212.50	\$ 93,842.50	\$ -
Task 8: Primary Implementation Project Report	\$ 7,000.00	\$ 1,400.00	\$ -
Task 9: Ongoing Operations & Maintenance (See Task 9 Details)	\$ 16,800.00	\$ -	\$ 3,360.00
Total Project Cost:	\$ 608,862.50	\$ 118,412.50	\$ 3,360.00

City of Orange

Project Tasks (Orange)	Total Cost	Match	
		Cash	In-Kind
Task 1: Project Administration	\$ 50,000.00	\$ 10,000.00	\$ -
Task 2: Data Collection	\$ 21,250.00	\$ 4,250.00	\$ -
Task 3: Field Review and Plans Specifications, and Estimates	\$ 183,750.00	\$ 36,750.00	\$ -
Task 4: Corridor "Before" Study	\$ 15,000.00	\$ 3,000.00	\$ -
Task 5: Signal Timing Optimization and Implementation	\$ 128,750.00	\$ 25,750.00	\$ -
Task 6: Corridor "After" Study	\$ 15,000.00	\$ 3,000.00	\$ -
Task 7: Synchronization System Construction (See Table II)	\$ 683,850.00	\$ 136,770.00	\$ -
Task 8: Primary Implementation Project Report	\$ 25,000.00	\$ 5,000.00	\$ -
Task 9: Ongoing Operations & Maintenance (See Task 9 Details)	\$ 60,000.00	\$ 12,000.00	\$ -
Total Project Cost:	\$ 1,182,600.00	\$ 236,520.00	\$ -

City of Placentia

Number of Signals: 7

7

Project Tasks (Placentia)	Total Cost	Match	
		Cash	In-Kind
Task 1: Project Administration	\$ 14,000.00	\$ 2,800.00	\$ -
Task 2: Data Collection	\$ 5,950.00	\$ 1,190.00	\$ -
Task 3: Field Review and Plans Specifications, and Estimates	\$ 51,450.00	\$ 10,290.00	\$ -
Task 4: Corridor "Before" Study	\$ 4,200.00	\$ 840.00	\$ -
Task 5: Signal Timing Optimization and Implementation	\$ 36,050.00	\$ 7,210.00	\$ -
Task 6: Corridor "After" Study	\$ 4,200.00	\$ 840.00	\$ -
Task 7: Synchronization System Construction (See Table II)	\$ 291,737.50	\$ 58,347.50	\$ -
Task 8: Primary Implementation Project Report	\$ 7,000.00	\$ 1,400.00	\$ -
Task 9: Ongoing Operations & Maintenance (See Task 9 Details)	\$ 16,800.00	\$ 3,360.00	\$ -
Total Project Cost:	\$ 431,387.50	\$ 86,277.50	\$ -

City of Yorba Linda

Number of Signals: 4

5

Project Tasks (Yorba Linda)	Total Cost	Match	
		Cash	In-Kind
Task 1: Project Administration	\$ 10,000.00	\$ 2,000.00	\$ -
Task 2: Data Collection	\$ 4,250.00	\$ 850.00	\$ -
Task 3: Field Review and Plans Specifications, and Estimates	\$ 36,750.00	\$ 4,410.00	\$ 2,940.00
Task 4: Corridor "Before" Study	\$ 3,000.00	\$ 600.00	\$ -
Task 5: Signal Timing Optimization and Implementation	\$ 25,750.00	\$ 5,150.00	\$ -
Task 6: Corridor "After" Study	\$ 3,000.00	\$ 600.00	\$ -
Task 7: Synchronization System Construction (See Table II)	\$ 525,500.00	\$ 90,610.00	\$ 14,490.00
Task 8: Primary Implementation Project Report	\$ 5,000.00	\$ 1,000.00	\$ -
Task 9: Ongoing Operations & Maintenance (See Task 9 Details)	\$ 12,000.00	\$ 2,400.00	\$ -
Total Project Cost:	\$ 625,250.00	\$ 107,620.00	\$ 17,430.00

Note: Rose Drive at Imperial Highway is in PI on another project.

Note: Cities with Caltrans intersections are included within their totals

Project Summary

X All guidelines were met for this project.

**TUSTIN AVENUE/ROSE DRIVE
RTSSP GRANT APPLICATION OCTOBER 2019**

LIST OF CONTACTS

Agency	Phone	Email	Street Address
City of Orange Larry Tay Traffic Engineer	714-744-5534	ltay@cityoforange.org	City of Orange 300 E. Chapman Avenue Orange, CA 92866
City of Anaheim John Thai Principal Traffic Engineer	714-765-5202	jthai@anaheim.net	City of Anaheim Traffic Management Center 200 South Anaheim Boulevard Anaheim, CA 92805
City of Placentia Luis Estevez Director of Public Works	714-993-8120	lestevez@placentia.org	City of Placentia 401 E. Chapman Avenue Placentia, CA 92870
City of Santa Ana Cesar Rodriguez Senior Civil Engineer	714-647-5626	crodriguez5@santa-ana.org	City of Santa Ana 20 Civic Center Plaza Traffic Engineering Section/M-43 Santa Ana, CA 92702
City of Tustin Krys Saldivar Public Works Manager- Traffic/Transportation	714-573-3172	ksalvidar@tustinca.org	City of Tustin 300 Centennial Way Tustin, CA 92780
City of Yorba Linda Tony Wang Traffic Engineering Manager	714-961-7184	twang@yorba-linda.org	City of Yorba Linda 4845 Casa Loma Avenue Yorba Linda, CA 92885-8714
Caltrans District 12 Shivinderjit Singh Branch Chief Electrical	949-936-3464	shivinderjit.singh@dot.ca.gov	Caltrans District 12 - TMC 6681 Marine Way Irvine, CA 92618