Exhibit A:

Project Application

FY 2024 Call for Projects

Regional Traffic Signal Synchronization Program

Project P

Supplemental Application

Ball Road-Taft Avenue Traffic Signal Synchronization Project

10/26/2023
Application Deadline

Project Overview

Length of Corridor (mi):	10.1
Number of signals:	37
Total Project Cost:	$1,713,247.50
M2 funds requested:	$1,370,598.00
Total Match:	$342,649.50
Cash Match:	$342,649.50
In-kind Match:	*$0.00*
Participating Agencies:	Anaheim Orange Caltrans

Applicant Agency: City of Anaheim

Contact Name: John Thai

Contact Number: (714) 765-5202

Contact Email: jthai@anaheim.net

Project P Regional Traffic Signal Synchronization Program
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a. Project **Corridor**
Ball Road - Taft Avenue Regional Traffic Signal Synchronization Project

b. Project Limits:
from **Knott Avenue** to **Tustin Street**

c. Project Length (*miles*):
10.1

d. Number of signalized intersections along the corridor (include all Caltrans intersections):
37 number of signals on project corridor(s) **0** number of offset signals included in this project

e. Participating agencies / Traffic Forum Members (*including applicant agency*):

☐ Aliso Viejo	☐ Cypress	☐ La Habra	☐ Los Alamitos	☐ San Juan Capistrano
☑ Anaheim	☐ Dana Point	☐ La Palma	☐ Mission Viejo	☐ Santa Ana
☐ Brea	☐ Fountain Valley	☐ Laguna Beach	☐ Newport Beach	☐ Seal Beach
☐ Buena Park	☐ Fullerton	☐ Laguna Hills	☑ Orange	☐ Stanton
☑ Caltrans	☐ Garden Grove	☐ Laguna Niguel	☐ Placentia	☐ Tustin
☐ Costa Mesa	☐ Huntington Beach	☐ Laguna Woods	☐ Rancho Santa Margarita	☐ Villa Park
☐ County of Orange	☐ Irvine	☐ Lake Forest	☐ San Clemente	☐ Westminster
				☐ Yorba Linda

f. Lead Agency
☑ **Anaheim**

g. Designation of the corridor to synchronize:
☑ Signal Synchronization Network Corridor / Priority Corridor ☐ Master Plan of Arterial Highways Corridor

h. Project Start Date: **September 1, 2024** Project End Date: **August 31, 2027**

i. Select any that apply:
☑ Re-timing at least 75% of previous project ☐ Timing at least 75% of new eligible project ☐ None
☑ All participating agencies are participating in the Countywide Baseline Project

j. Contact Information (Include name, title, agency, phone, email, and address)

John Thai, Principal Traffic Engineer (714) 765-5202 jthai@anaheim.net City of Anaheim 201 S. Anaheim Bl Suite 502 Anaheim CA 92805	Gabrielle Hayes, Senior Civil Engineer (714) 744-5561 ghayes@cityoforange.org City of Orange 300 E Chapman Ave Orange CA 92866
Pauline Nguyen, Branch Chief Traffic Signals/Ramp Metering/Census Caltrans District 12 6681 Marine Way Irvine CA 92618	

k. Signalized intersections that are part of the project:

	Main Corridor	Cross Street
1	Ball Road	Knott Av
2	Ball Road	Western Av
3	Ball Road	Beach Bl*
4	Ball Road	Gaymont Dr
5	Ball Road	Dale Av
6	Ball Road	Magnolia Av
7	Ball Road	Webster Av (Ped)
8	Ball Road	Gilbert St
9	Ball Road	Perdido St
10	Ball Road	Brookhurst St
11	Ball Road	Empire St
12	Ball Road	Nutwood St
13	Ball Road	Trident Rd
14	Ball Road	Euclid St
15	Ball Road	Loara St
16	Ball Road	Gilbuck Dr
17	Ball Road	Walnut St
18	Ball Road	Flore St
19	Ball Road	Disneyland Dr
20	Ball Road	Ox Rd
21	Ball Road	Harbor Bl
22	Ball Road	Lemon St
23	Ball Road	Anaheim Bl
24	Ball Road	Metrolink
25	Ball Road	Lewis St-East St
26	Ball Road	State College Bl
27	Ball Road	Bellhaven St (Firestation)
28	Ball Road	Sunkist St
29	Ball Road	SB-57 Off Ramp*
30	Ball Road	NB-57 On Ramp*
31	Ball Road	Phoenix Club Dr
32	Ball Road	Main St
33	Ball Road	Batavia St
34	Ball Road	Glassell St
35	Ball Road	Shaffer St
36	Ball Road	Cambridge St
37	Ball Road	Tustin St

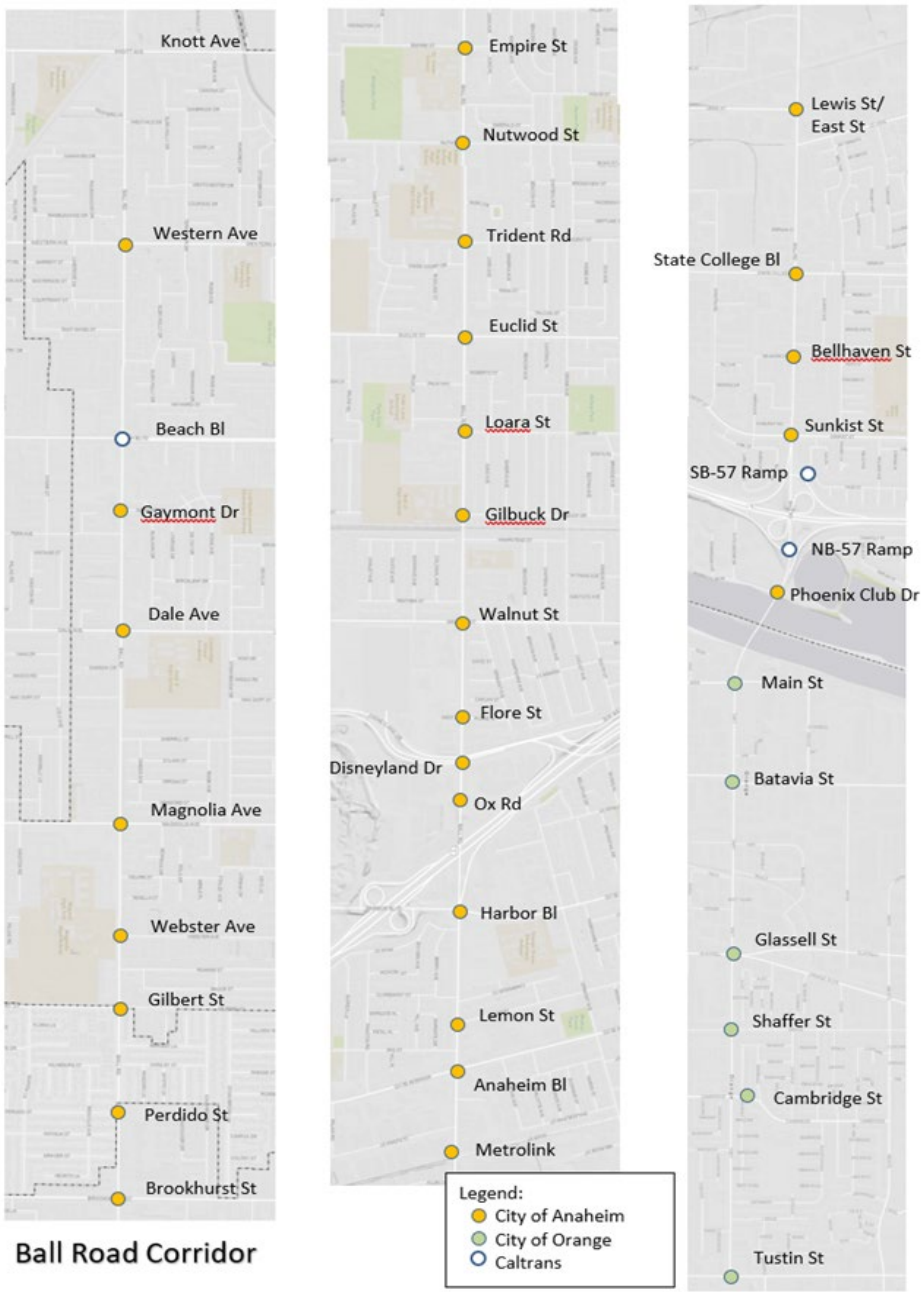
Legend

Anaheim

Orange

*Caltrans

m. Project Map Depicting the Project Limits and Offset Signals



SECTION 2: REGIONAL SIGNIFICANCE

Explain why this project is regionally significant:

Ball Road-Taft Avenue is a primary corridor that travels across multi-jurisdictional cities. This corridor was last funded by the M2 RTSSP (Project P) in 2013, over 10 years ago, which upgraded some of the traffic signal infrastructure and communications. For this project, there are 37 signals included along the 10.1 miles of the Ball Road – Taft Avenue corridor. The project starts at Ball Road and Knott Avenue at the City of Anaheim and ends at Ball Road and Tustin Street at the City of Orange. There are 28 intersections within the City of Anaheim and 6 intersections within the City of Orange. Caltrans is a participating agency and has 3 signalized intersections included in this project.

This corridor handles traffic volumes from 14,000 to 52,000 vehicles per day. It has a mixed land use with residential, commercial, and businesses and is a major route for major event generators such as Disney Theme Parks and Honda Center, site of the Anaheim Ducks and volleyball events of the 2028 Olympic Games. Additionally, with the new development, OCVibe, around the Honda Center, traffic delays and vehicle emission will increase in the near future.

There is a need to upgrade the existing signal infrastructure along the corridor to accommodate the new current technologies and new standards.

SECTION 3: ACKNOWLEDGEMENT OF REQUIRED TASKS

a. **PROJECT TASKS**

☑ **By checking this box, the Applicant Agency, on behalf of all the participating agencies, agree to the following tasks:**

Primary Implementation (PI) Phase, lasting approximately one year shall include the following:

Task 1: Project Management - PI Phase

This task is ongoing throughout the duration of the PI Phase of the project. It includes day-to-day project management, such as meetings, progress reports, tracking of schedules, tracking of cost by agency, invoicing, and overall administration of the PROJECT.

The following list is a minimum of what is required of this task:

- *A running record of project cost broken down by Participating Agency shall be part of this task. This information will be used by the Lead Agency to bill Participating Agencies for their respective project match.*
- *A running record of all scope changes and/or any deviations from the final approved application. This information will be used by the Lead Agency to request for Scope Changes at the Semi-Annual Review (SAR).*

Task 2: Data Collection and Field Review

This task shall include collecting seven-day, 24-hour machine counts, including vehicle and bike classifications, along each 1-mile segment of the corridor(s). The project shall also produce weekday and weekend peak period intersection turning movement (ITM) counts at every signalized intersection, including pedestrian and bicycle counts. ITM counts shall be conducted for two hours of each weekday peak period (AM, mid-day, and PM) and a single four-hour Saturday mid-day peak period. All counts shall be summarized in Microsoft Excel format. All data will adhere to the CTFP Guidelines for data compatibility.

Data collection also includes field review of before and after conditions. The floating car method shall be utilized with software and GPS for the 'Before' Study to fine-tune the corridor operation and verify integrity of system intersection clocks. Synchronized Video shall be used to compare actual conditions to anticipated conditions dictated by the time-space diagram so that any anomalies may be corrected prior to the 'After' studies task.

Field review conducted as part of this task will document the existing conditions for all signal timing, infrastructure, and system improvements on the project. This includes pre-construction pictures for comparison during the post-construction walkthrough, should there be any questions or discrepancies noted by any parties. Data Collection and Field Review Memos shall be provided to all participating agencies.

☑ ***Check this box to indicate all agencies on this application will opt out of the data collection portion of Task 3 due to participation in the Countywide Baseline Project. A Before/After study is still required. A memorandum shall be submitted to indicate completion of this task.***

Task 3: System Design and Construction

The Lead Agency will hire a consultant(s), licensed contractor(s), and/or use city staff, or extension of staff, to design, procure, install, construct, and implement all desired components of the project as described in this application in accordance with the CTFP Guidelines.

All work and equipment supplied for the project shall comply and be done in accordance with the latest standards and provisions of each Participating Agency or latest approved California Department of Transportation (Caltrans) Standard Plans and Standard Specifications.

SECTION 3: ACKNOWLEDGEMENT OF REQUIRED TASKS

As-built plans shall be provided to match the improvements. This task is not complete until all participating agencies approve the improvements implemented in their jurisdiction.

Task 4: Signal Timing Optimization and Implementation

Synchronization will be inter-jurisdictional in nature. All existing traffic patterns, flows, and conditions will be taken into account. At a minimum, synchronized timing plans will be developed for a weekday AM, Mid-day, PM, and a Weekend peak period. Special generators such as schools and businesses along with cross street traffic will be considered as part of the project. Timing plans that will be developed will assist traffic in getting to its destination without regard to physical or jurisdictional boundaries.

The following list is a minimum of what is required of this task:

- *A review of the basic timing parameters*
- *Concept of Operations documenting the recommended coordination strategies (e.g. segments, cycle lengths, etc.) based on existing data collection and simulations*
- *Existing and Optimized simulation networks in Synchro (version 10) that is also shared with OCTA using the OCTA designated ID numbers*
- *Implementation and fine-tuning of proposed timing plans*

This task will not be complete until all participating agencies approve the new timing plans

☑ ***Check this box to indicate all agencies on this application will opt out of the Signal Timing Optimization and Implementation task (Task 4) due to participation in the Countywide Baseline Project. The Final PI Report shall still include a section on timing optimization and implementation from the Baseline Project.***

Task 5: Final PI Report

A Final PI Report, with an executive summary, shall provide complete documentation of the project, including, but not limited to:

- *Project scope, objectives, locations, findings, and recommendations*
- *Data collected: counts, travel time studies, and project benefits achieved in terms of fuel savings, travel time, and other measurable parameters*
- *For each intersection: lane configurations, signal phasing, turning movement data, and cycle lengths for existing and proposed timings for all peak periods*
- *All work performed for system construction and signal timing optimization*
- *Implementation schedule and improvements accomplished, including dates*
- *Procedures for continuing maintenance, surveillance, and evaluation of the coordinated signal system*

The report shall document all planned and programmed improvements on the study corridor as well as recommendations based on PI tasks for further infrastructure improvements that would likely improve the corridor signal coordination project results. The report shall be completed in accordance with the current CTFP Guidelines.

Finally, the report shall provide recommendations with cost and benefit estimates for future improvements to traffic signal infrastructure (signal controllers, vehicle detection, communications, etc.), intersection capacity (appropriate signal phasing, lane geometrics, and alleviation of physical bottlenecks that curtail arterial capacity), and traffic management strategies. These proposed improvements should be useful in determining future enhancements to the corridor.

A Project Summary Sheet, one sheet front and back, that describes the project and improvements gained shall be provided to OCTA. This sheet will be used by OCTA and Participating Agencies to present to the Board and elected officials.

SECTION 3: ACKNOWLEDGEMENT OF REQUIRED TASKS

☑ ***By checking this box, the following additional PI task(s) and/or exceptions will be made:***
There are three (3) Caltrans intersections within City of Anaheim city limits in the project. If these three Caltrans intersections are not included in OCTA's Baseline Signal Coordination Project, then the City, as part of this project, will perform all required counts at these locations and Anaheim staff coordinate these three locations with OCTA's project upon receipt of the signal coordination model. In addition, Anaheim will enter into a Coop Agreement with Caltrans and bear the cost of Caltrans encroachment permit fees, if any.

ONGOING OPERATIONS AND MAINTENANCE (O&M) PHASE, lasting approximately two (2) years, shall include the following:

Task 6: Project Management - O&M Phase
This task includes day-to-day project management, such as meetings, tracking of schedules, invoicing, and overall administration of the project. This task shall continue in full force as specified in the Primary Implementation Phase.

Task 7: Continuing Support
During this 24-month period, the signal timing along the corridor/route/grid shall be observed and fine-tuned. This task shall also include the monitoring, maintaining, and repair of detection and communication implemented as part of this project. Monthly drives shall be conducted along the length of the project during all designated corridor synchronization timing plan hours of operation in order to verify that the synchronization timing is working as designed and complete any necessary adjustments. This is followed by a monthly memorandum summarizing the status and trends of the corridor based on the runs conducted. Trip logs for the month shall be provided to the Participating Agencies. The memorandum shall include all additional tasks requested and completed during that month. Performance metrics comparisons from ATSPM, where available, shall also be included in the memorandum.

Task 8: Final O&M Report
At the end of the O&M Phase, a Final O&M Report documenting the Ongoing Operations and Maintenance efforts and procedures for continuing maintenance shall be prepared. At the minimum, the memorandum shall include when travel runs were conducted and issues and solutions throughout the phase. The memorandum shall document all planned and programmed improvements on the study corridor as well as recommendations for further infrastructure improvements that would likely improve the corridor signal coordination project results.

☑ ***By checking this box, the following additional O&M task(s) and/or exceptions will be made:***
In addition, the City will also conduct signal timing runs in the O&M phase at the three Caltrans intersections for the two year O&M period and include the results in the O&M Final Report.

b. **ENVIRONMENTAL CLEARANCE AND OTHER PERMITS**

☑ By checking this box, the Applicant Agency, on behalf of all the participating agencies, agree to obtain environmental clearance and other permits (if needed) for this project

c. **ACKNOWLEDGMENT OF MEETING CTFP GUIDELINES**

☑ By checking this box, the Applicant Agency, on behalf of all the participating agencies, certify that all current CTFP guidelines were met for this project.

SECTION 4: FUNDING NEEDS / COSTS FOR PROPOSED PROJECT BY TASK

a. Summary of Project Cost

Project Tasks	Total Cost	
Task 1: Project Management - PI Phase	$	92,500.00
Task 2: Data Collection	$	37,000.00
Task 3: System Design and Construction	$	1,400,047.50
Task 4: Signal Timing Optimization and Implementation	$	13,500.00
Task 5: Project Report	$	37,000.00
Task 6: Project Management - O&M Phase	$	18,500.00
Task 7: Continuing Support	$	103,600.00
Task 8: Final Technical Memorandum	$	11,100.00
Total Project Cost:	**$**	**1,713,247.50**

Match Commitment: **20%** *(minimum 20%)*

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

	Project Total	
Total M2 Request:	*$*	*1,370,598.00*
Total Agency Match:	*$*	*342,649.50*
Total Project Cost:	**$**	**1,713,247.50**

	PI Total	
Total M2 Request for PI Phase:	*$*	*1,264,038.00*
Total Agency Match for PI Phase:	*$*	*316,009.50*
Total PI Cost:	**$**	**1,580,047.50**

	O&M Total	
Total M2 Request for O&M Phase:	*$*	*106,560.00*
Total Agency Match for O&M Phase:	*$*	*26,640.00*
Total O&M Cost:	**$**	**133,200.00**

SECTION 4: FUNDING NEEDS / COSTS FOR PROPOSED PROJECT BY TASK

b. Summary of Cost by Agency

Anaheim

	Agency	Caltrans	Offset	Total
Number of Signals:	28		0	28

Project Tasks (Anaheim)	Cost / Int	Total Cost
Task 1: Project Management - PI Phase	$ 2,500.00	$ 70,000.00
Task 2: Data Collection	$ 1,000.00	$ 28,000.00
Task 3: System Design and Construction	-	$ 1,400,047.50
Task 4: Signal Timing Optimization and Implementation	$ -	$ -
Task 5: Project Report	$ 1,000.00	$ 28,000.00
Task 6: Project Management - O&M Phase	$ 500.00	$ 14,000.00
Task 7: Continuing Support	$ 2,800.00	$ 78,400.00
Task 8: Final Technical Memorandum	$ 300.00	$ 8,400.00

	M2 Requested	Match	Total Cost
PI	**$ 1,220,838.00**	**$ 305,209.50**	**$ 1,526,047.50**
O&M	**$ 80,640.00**	**$ 20,160.00**	**$ 100,800.00**

15%PI $ 228,907.13

Orange

	Agency	Caltrans	Offset	Total
Number of Signals:	6	0	0	6

Project Tasks (Orange)	Cost / Int	Total Cost
Task 1: Project Management - PI Phase	$ 2,500.00	$ 15,000.00
Task 2: Data Collection	$ 1,000.00	$ 6,000.00
Task 3: System Design and Construction	-	$ -
Task 4: Signal Timing Optimization and Implementation	$ -	$ -
Task 5: Project Report	$ 1,000.00	$ 6,000.00
Task 6: Project Management - O&M Phase	$ 500.00	$ 3,000.00
Task 7: Continuing Support	$ 2,800.00	$ 16,800.00
Task 8: Final Technical Memorandum	$ 300.00	$ 1,800.00

	M2 Requested	Match	Total Cost
PI	**$ 21,600.00**	**$ 5,400.00**	**$ 27,000.00**
O&M	**$ 17,280.00**	**$ 4,320.00**	**$ 21,600.00**

SECTION 4: FUNDING NEEDS / COSTS FOR PROPOSED PROJECT BY TASK

c. Summary of Intersection Improvement Costs

LOC.	AGENCY	PROJECT CROSS STREETS	TASK 3 IMPROVEMENT TOTALS			
			Design	Construction	TOTAL	Average Score
1	Anaheim	Knott Av	$ -	$ 75,900.00	**$ 75,900.00**	30.3
2	Anaheim	Western Av	$ 2,900.00	$ 87,575.00	**$ 90,475.00**	28.2
3	Anaheim	Beach Bl*	$ -	$ 3,162.50	**$ 3,162.50**	50.0
4	Anaheim	Gaymont Dr	$ -	$ 13,915.00	**$ 13,915.00**	25.5
5	Anaheim	Dale Av	$ -	$ 44,275.00	**$ 44,275.00**	27.0
6	Anaheim	Magnolia Av	$ -	$ 45,540.00	**$ 45,540.00**	30.3
7	Anaheim	Webster Av (Ped)	$ -	$ 7,590.00	**$ 7,590.00**	50.0
8	Anaheim	Gilbert St	$ 500.00	$ 56,975.00	**$ 57,475.00**	27.8
9	Anaheim	Perdido St	$ -	$ 13,915.00	**$ 13,915.00**	25.5
10	Anaheim	Brookhurst St	$ -	$ 45,540.00	**$ 45,540.00**	30.3
11	Anaheim	Empire St	$ -	$ 44,275.00	**$ 44,275.00**	27.0
12	Anaheim	Nutwood St	$ -	$ 44,275.00	**$ 44,275.00**	27.0
13	Anaheim	Trident Rd	$ 2,400.00	$ 44,515.00	**$ 46,915.00**	27.0
14	Anaheim	Euclid St	$ 500.00	$ 58,240.00	**$ 58,740.00**	30.3
15	Anaheim	Loara St	$ 2,400.00	$ 74,875.00	**$ 77,275.00**	27.8
16	Anaheim	Gilbuck Dr	$ 2,400.00	$ 74,875.00	**$ 77,275.00**	27.8
17	Anaheim	Walnut St	$ -	$ 13,915.00	**$ 13,915.00**	25.5
18	Anaheim	Flore St	$ -	$ 45,540.00	**$ 45,540.00**	30.3
19	Anaheim	Disneyland Dr	$ -	$ 45,540.00	**$ 45,540.00**	30.3
20	Anaheim	Ox Rd	$ -	$ 45,540.00	**$ 45,540.00**	30.3
21	Anaheim	Harbor Bl	$ 500.00	$ 58,240.00	**$ 58,740.00**	30.3
22	Anaheim	Lemon St	$ 2,400.00	$ 74,875.00	**$ 77,275.00**	27.8
23	Anaheim	Anaheim Bl	$ 500.00	$ 26,615.00	**$ 27,115.00**	27.0
24	Anaheim	Metrolink	$ 2,400.00	$ 38,190.00	**$ 40,590.00**	40.0
25	Anaheim	Lewis St-East St	$ -	$ 13,915.00	**$ 13,915.00**	25.5
26	Anaheim	State College Bl	$ 2,400.00	$ 69,815.00	**$ 72,215.00**	40.0
27	Anaheim	Bellhaven St (Firestation)	$ 2,400.00	$ 38,190.00	**$ 40,590.00**	40.0
28	Anaheim	Sunkist St	$ 500.00	$ 58,240.00	**$ 58,740.00**	30.3
29	Anaheim	SB-57 Off Ramp*	$ -	$ 2,500.00	**$ 2,500.00**	50.0
30	Anaheim	NB-57 On Ramp*	$ -	$ 2,500.00	**$ 2,500.00**	50.0
31	Anaheim	Phoenix Club Dr	$ -	$ 13,915.00	**$ 13,915.00**	25.5
32	Orange	Main St	$ 10,980.00	$ 139,995.00	**$ 150,975.00**	40.0
33	Orange	Batavia St	$ 11,880.00	$ 151,470.00	**$ 163,350.00**	40.0
34	Orange	Glassell St	$ 1,880.00	$ 23,970.00	**$ 25,850.00**	50.0
35	Orange	Shaffer St	$ 4,000.00	$ 51,000.00	**$ 55,000.00**	30.0
36	Orange	Cambridge St	$ 2,580.00	$ 32,895.00	**$ 35,475.00**	28.3
37	Orange	Tustin St	$ 6,280.00	$ 80,070.00	**$ 86,350.00**	40.0
49	0		$ -	$ -	**$ -**	
50	0		$ -	$ -	**$ -**	
-	Anaheim	TMC Improvements	$ -	$ 94,875.00	**$ 94,875.00**	40.0
-	0	TMC Improvements	$ -	$ -	**$ -**	
-	0	TMC Improvements	$ -	$ -	**$ -**	
-	0	TMC Improvements	$ -	$ -	**$ -**	
				SIGNAL IMPROVEMENT TOTAL =	**$ 1,917,047.50**	**33.2**

SECTION 5: DETAILED LOCAL MATCH COMMITMENT

PART 1: AGENCY TOTAL MATCH SUMMARY

Agency	CASH		IN-KIND		TOTAL MATCH	
	PI	OMM	PI	OMM	PI	OMM
Anaheim	*$305,209.50*	*$20,160.00*			*$305,209.50*	*$20,160.00*
	$325,369.50		***$0.00***		***$325,369.50***	
Orange	*$5,400.00*	*$4,320.00*			*$5,400.00*	*$4,320.00*
	$9,720.00		***$0.00***		***$9,720.00***	
Caltrans	*$5,400.00*	*$2,160.00*			*$5,400.00*	*$2,160.00*
	$7,560.00		***$0.00***		***$7,560.00***	
0	*$0.00*	*$0.00*			*$0.00*	*$0.00*
	$0.00		***$0.00***		***$0.00***	
0	*$0.00*	*$0.00*			*$0.00*	*$0.00*
	$0.00		***$0.00***		***$0.00***	
0	*$0.00*	*$0.00*			*$0.00*	*$0.00*
	$0.00		***$0.00***		***$0.00***	
TOTAL MATCH	***$316,009.50***	***$26,640.00***	***$0.00***	***$0.00***	***$316,009.50***	***$26,640.00***
	$342,649.50		***$0.00***		***$342,649.50***	

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

A. Cash Match

Agency	Funding Source	Amount of Cash Contribution
Anaheim	Gas Tax, Traffic Impact Fees	$325,369.50
Orange	Gas Tax, M2 Fair Share	$9,720.00
	TOTAL CASH MATCH:	$342,649.50

B. In-Kind Services

i. Specific Improvements (List items and Cost):

Agency	Description	Expenditure
	None	
	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*
Select a City	None				$0.00
					$0.00
					$0.00
					$0.00
				Total for City of Select a City:	*$0.00*
				Total Staffing Commitment (ii):	*$0.00*

TOTAL IN-KIND MATCH* (i + ii):	$0.00

*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 shall be included with the in-kind report submittals. Records will be subject to auditing. In-kind match can be converted to Cash Match, but Cash Match cannot be converted to in-kind match.

SECTION 6: PROJECT SCHEDULE BY TASK

a. Projected Start and End Dates:

Project start date: September 1, 2024

Project end date: August 31, 2027

b. Projected Schedule by Task

Task	Starting Date	Ending Date
Task 1: Project Management - PI Phase	September 1, 2024	August 31, 2025
Task 2: Data Collection	October 1, 2024	May 31, 2025
Task 3: System Design and Construction	October 1, 2024	May 31, 2025
Task 4: Signal Timing Optimization and Implementation	*10/1/2024 (based on Countywide Baseline Project)*	*5/31/2025 (based on Countywide Baseline Project)*
Task 5: Project Report	June 1, 2025	June 30, 2025
Task 6: Project Management - O&M Phase	July 1, 2025	June 30, 2027
Task 7: Continuing Support	July 1, 2025	June 30, 2027
Task 8: Final Technical Memorandum	August 1, 2027	August 31, 2027

☐ By checking this box, the Applicant Agency, on behalf of all the participating agencies, agree to implement this project within 12 months. (***This means the project will be ineligible for delays and timely use funds extensions. This is not applicable to projects requesting OCTA to lead and Baseline Project participants.)***

Appendix A
CALCULATIONS AND ESTIMATED POINTS

APPENDIX A: CALCULATIONS AND ESTIMATED POINTS

Criteria (Max Points)	Estimated Points
1. Transportation Significance (25 points) Yes, All agencies are participating in the Countywide Baseline Project Inclusion of offset signals w/in 2,700' # of offset signals on project / total # of offset signals: 0 / 0 = 100.0% = 10 Vehicle Miles Traveled (VMT): 376,682 = 15	25
2. Economic Effectiveness (Cost to Benefit Ratio): (10 points) Calculation for Total Project Cost / VMT = $1,713,248 / 376,682 = 4.55	9
3. Project Characteristics: (20 points) Average project improvement score = 33.2	10
4. Project Scale: (20 points) # of signals along entire length of corridor: 37 = 6 # of signals being synched / total # of corridor signals: 37 / 46 = 80.4% = 8	14
5. Number of Jurisdictions: (10 points) 3 Participating Jurisdiction(s)	6
6. Current Project Status (10 points) Yes, Retiming 75% of previous project = 5 Not Timing 75% of new eligible project = 0 Not Implementing within 12 months = 0	5
7. Funding Match: (5 points) $342,649.50 / $1,713,247.50 = 20.00%	0
Total Estimated Points:	**69**

Appendix B

AGENCY IMPROVEMENT CALCULATIONS

Is this a timing-only project (no improvements)? Has improvements

TABLE I: AGENCY IMPROVEMENT PREFERENCES

☐ Yes ☑ No

CATEGORIES	ID	ITEM DESCRIPTION	UNIT PRICE (MATERIAL + LABOR)		APPLICABLE DESIGN COST PER UNIT		VENDOR/BRAND & ADDITIONAL NOTES	
			Anaheim	Orange	Anaheim	Orange	Anaheim	Orange
Comm	1	Above ground (e.g. wireless, cellular, etc.)		$18,800		$1,880		Encom Radio, Fiber Switch & power supply, SFPs
	2	Fiber Optic underground				$0		
	3	All other (e.g. copper, aerial fiber, GPS, etc.)	$5,000	$6,800		$680	Ethernet Switch, SFPs, FDU, Fiber Patch Panels	Fiber Switch & power supply, SFPs, Fiber Patch Panel
Field Elements	4	ATC signal controller	$6,000	$7,000	$0	$700	Econolite 2070 w/EOS software	Econolite Cobalt w/ ASC3
	5	Signal cabinet on existing foundation	$24,000	$40,000	$2,400	$4,000	Western Systems Type P+	Use existing foundation as is, Econolite TS Type II P Cabinet, reuse existing SCE service
	10	CCTV	$10,000	$12,000	$500	$1,200	Axis	
	13	Vehicle detection + bicycle detection	$24,000		$0		Econolite	
	14	Vehicle detection		$44,000		$4,400		Gridsmart w/ mounting brackets
	16	Pedestrian detection (audible)					Polara APS	
	20	EVP (hybrid or GPS)	$12,000	$9,000	$0	$900	DDL	Opticom GTT GPS
	24	Signal Performance Monitoring	$25,000				NoTraffic or equivalent	
TMC/TOC	27	Central System (server, licenses, workstations)	$75,000				Server modules and addtl licenses to support SPMs from field devices. The number is a NTE estimate.	
Caltrans	34	Caltrans Cooperative Agreement	$2,500					

APPENDIX B: AGENCY IMPROVEMENT CALCULATIONS

TABLE II: DESCRIPTION OF WORK BY INTERSECTION

LOCATION	IMPLEMENTING AGENCY	PROJECT CROSS STREETS	DESCRIPTION OF WORK												
			Above ground (e.g. wireless, cellular, etc.)	Fiber Optic underground	All other (e.g. copper, aerial fiber, GPS, etc.)	ATC signal controller	Signal cabinet on existing foundation	CCTV	Vehicle detection + bicycle detection	Vehicle detection	Pedestrian detection (audible)	EVP (hybrid or GPS)	Signal Performance Monitoring	Central System (server, licenses, workstations)	Caltrans Cooperative Agreement
			1	2	3	4	5	10	13	14	16	20	24	27	34
1	Anaheim	Knott Av			1	1			1				1		
2	Anaheim	Western Av			1	1	1	1	1						
3	Anaheim	Beach Bl*													1
4	Anaheim	Gaymont Dr			1	1									
5	Anaheim	Dale Av			1	1			1						
6	Anaheim	Magnolia Av			1	1							1		
7	Anaheim	Webster Av (Ped)				1									
8	Anaheim	Gilbert St			1	1		1	1						
9	Anaheim	Perdido St			1	1									
10	Anaheim	Brookhurst St			1	1							1		
11	Anaheim	Empire St			1	1			1						
12	Anaheim	Nutwood St			1	1			1						
13	Anaheim	Trident Rd			1	1	1								
14	Anaheim	Euclid St			1	1		1					1		
15	Anaheim	Loara St			1	1	1		1						
16	Anaheim	Gilbuck Dr			1	1	1		1						
17	Anaheim	Walnut St			1	1									
18	Anaheim	Flore St			1	1							1		
19	Anaheim	Disneyland Dr			1	1							1		
20	Anaheim	Ox Rd			1	1							1		
21	Anaheim	Harbor Bl			1	1		1					1		
22	Anaheim	Lemon St			1	1	1		1						
23	Anaheim	Anaheim Bl			1	1		1							
24	Anaheim	Metrolink				1	1								
25	Anaheim	Lewis St-East St			1	1									
26	Anaheim	State College Bl				1	1						1		
27	Anaheim	Bellhaven St (Firestation)				1	1								
28	Anaheim	Sunkist St			1	1		1					1		
29	Anaheim	SB-57 Off Ramp*													1
30	Anaheim	NB-57 On Ramp*													1
31	Anaheim	Phoenix Club Dr			1	1									
32	Orange	Main St	1			1	1			1					
33	Orange	Batavia St	1			1	1			1		1			
34	Orange	Glassell St	1												
35	Orange	Shaffer St					1								
36	Orange	Cambridge St			1	1		1							
37	Orange	Tustin St	1							1					
-	Anaheim	TMC Improvements												1	
		QUANTITY TOTAL =	**4**	**0**	**25**	**31**	**11**	**7**	**9**	**3**	**0**	**1**	**10**	**1**	**3**

APPENDIX B: AGENCY IMPROVEMENT CALCULATIONS

TABLE II: DESCRIPTION OF WORK BY INTERSECTION

LOCATION	IMPLEMENTING AGENCY	PROJECT CROSS STREETS	SIGNAL IMPROVEMENT COSTS					NOTES
			Design	Construction	Construction Management & Inspection 15%	Contingency 10%	TOTAL	
1	Anaheim	Knott Av	$ -	$ 60,000.00	$ 9,000.00	$ 6,900.00	**$ 75,900.00**	
2	Anaheim	Western Av	$ 2,900.00	$ 69,000.00	$ 10,350.00	$ 8,225.00	**$ 90,475.00**	
3	Anaheim	Beach Bl*	$ -	$ 2,500.00	$ 375.00	$ 287.50	**$ 3,162.50**	
4	Anaheim	Gaymont Dr	$ -	$ 11,000.00	$ 1,650.00	$ 1,265.00	**$ 13,915.00**	
5	Anaheim	Dale Av	$ -	$ 35,000.00	$ 5,250.00	$ 4,025.00	**$ 44,275.00**	
6	Anaheim	Magnolia Av	$ -	$ 36,000.00	$ 5,400.00	$ 4,140.00	**$ 45,540.00**	
7	Anaheim	Webster Av (Ped)	$ -	$ 6,000.00	$ 900.00	$ 690.00	**$ 7,590.00**	
8	Anaheim	Gilbert St	$ 500.00	$ 45,000.00	$ 6,750.00	$ 5,225.00	**$ 57,475.00**	
9	Anaheim	Perdido St	$ -	$ 11,000.00	$ 1,650.00	$ 1,265.00	**$ 13,915.00**	
10	Anaheim	Brookhurst St	$ -	$ 36,000.00	$ 5,400.00	$ 4,140.00	**$ 45,540.00**	
11	Anaheim	Empire St	$ -	$ 35,000.00	$ 5,250.00	$ 4,025.00	**$ 44,275.00**	
12	Anaheim	Nutwood St	$ -	$ 35,000.00	$ 5,250.00	$ 4,025.00	**$ 44,275.00**	
13	Anaheim	Trident Rd	$ 2,400.00	$ 35,000.00	$ 5,250.00	$ 4,265.00	**$ 46,915.00**	
14	Anaheim	Euclid St	$ 500.00	$ 46,000.00	$ 6,900.00	$ 5,340.00	**$ 58,740.00**	
15	Anaheim	Loara St	$ 2,400.00	$ 59,000.00	$ 8,850.00	$ 7,025.00	**$ 77,275.00**	
16	Anaheim	Gilbuck Dr	$ 2,400.00	$ 59,000.00	$ 8,850.00	$ 7,025.00	**$ 77,275.00**	
17	Anaheim	Walnut St	$ -	$ 11,000.00	$ 1,650.00	$ 1,265.00	**$ 13,915.00**	
18	Anaheim	Flore St	$ -	$ 36,000.00	$ 5,400.00	$ 4,140.00	**$ 45,540.00**	
19	Anaheim	Disneyland Dr	$ -	$ 36,000.00	$ 5,400.00	$ 4,140.00	**$ 45,540.00**	
20	Anaheim	Ox Rd	$ -	$ 36,000.00	$ 5,400.00	$ 4,140.00	**$ 45,540.00**	
21	Anaheim	Harbor Bl	$ 500.00	$ 46,000.00	$ 6,900.00	$ 5,340.00	**$ 58,740.00**	
22	Anaheim	Lemon St	$ 2,400.00	$ 59,000.00	$ 8,850.00	$ 7,025.00	**$ 77,275.00**	
23	Anaheim	Anaheim Bl	$ 500.00	$ 21,000.00	$ 3,150.00	$ 2,465.00	**$ 27,115.00**	
24	Anaheim	Metrolink	$ 2,400.00	$ 30,000.00	$ 4,500.00	$ 3,690.00	**$ 40,590.00**	
25	Anaheim	Lewis St-East St	$ -	$ 11,000.00	$ 1,650.00	$ 1,265.00	**$ 13,915.00**	
26	Anaheim	State College Bl	$ 2,400.00	$ 55,000.00	$ 8,250.00	$ 6,565.00	**$ 72,215.00**	
27	Anaheim	Bellhaven St (Firestation)	$ 2,400.00	$ 30,000.00	$ 4,500.00	$ 3,690.00	**$ 40,590.00**	
28	Anaheim	Sunkist St	$ 500.00	$ 46,000.00	$ 6,900.00	$ 5,340.00	**$ 58,740.00**	
29	Anaheim	SB-57 Off Ramp*	$ -	$ 2,500.00	$ -	$ -	**$ 2,500.00**	
30	Anaheim	NB-57 On Ramp*	$ -	$ 2,500.00	$ -	$ -	**$ 2,500.00**	
31	Anaheim	Phoenix Club Dr	$ -	$ 11,000.00	$ 1,650.00	$ 1,265.00	**$ 13,915.00**	
32	Orange	Main St	$ 10,980.00	$ 109,800.00	$ 16,470.00	$ 13,725.00	**$ 150,975.00**	
33	Orange	Batavia St	$ 11,880.00	$ 118,800.00	$ 17,820.00	$ 14,850.00	**$ 163,350.00**	
34	Orange	Glassell St	$ 1,880.00	$ 18,800.00	$ 2,820.00	$ 2,350.00	**$ 25,850.00**	
35	Orange	Shaffer St	$ 4,000.00	$ 40,000.00	$ 6,000.00	$ 5,000.00	**$ 55,000.00**	
36	Orange	Cambridge St	$ 2,580.00	$ 25,800.00	$ 3,870.00	$ 3,225.00	**$ 35,475.00**	
37	Orange	Tustin St	$ 6,280.00	$ 62,800.00	$ 9,420.00	$ 7,850.00	**$ 86,350.00**	
-	Anaheim	TMC Improvements	$ -	$ 75,000.00	$ 11,250.00	$ 8,625.00	**$ 94,875.00**	
QUANTITY TOTAL =			**SIGNAL IMPROVEMENT TOTAL =**				**$ 1,917,047.50**	

TABLE III: PROJECT AVERAGE IMPROVEMENT SCORES

LOCATION	IMPLEMENTING AGENCY	PROJECT CROSS STREETS	DESCRIPTION OF WORK													AVERAGE IMPROVEMENT SCORE	NOTES
			Above ground (e.g. wireless, cellular, etc.)	Fiber Optic underground	All other (e.g. copper, aerial fiber, GPS, etc.)	ATC signal controller	Signal cabinet on existing foundation	CCTV	Vehicle detection + bicycle detection	Vehicle detection	Pedestrian detection (audible)	EVP (hybrid or GPS)	Signal Performance Monitoring	Central System (server, licenses, workstations)	Caltrans Cooperative Agreement		
			Time Source			None/5+ Years or Within 5 Years								0+ or <	Y/N		
1	Anaheim	Knott Av			1	50			30				40			30.3	
2	Anaheim	Western Av			1	50	30	30	30							28.2	
3	Anaheim	Beach Bl*													50	50.0	
4	Anaheim	Gaymont Dr			1	50										25.5	
5	Anaheim	Dale Av			1	50			30							27.0	
6	Anaheim	Magnolia Av			1	50							40			30.3	
7	Anaheim	Webster Av (Ped)				50										50.0	
8	Anaheim	Gilbert St			1	50		30	30							27.8	
9	Anaheim	Perdido St			1	50										25.5	
10	Anaheim	Brookhurst St			1	50							40			30.3	
11	Anaheim	Empire St			1	50			30							27.0	
12	Anaheim	Nutwood St			1	50			30							27.0	
13	Anaheim	Trident Rd			1	50	30									27.0	
14	Anaheim	Euclid St			1	50		30					40			30.3	
15	Anaheim	Loara St			1	50	30		30							27.8	
16	Anaheim	Gilbuck Dr			1	50	30		30							27.8	
17	Anaheim	Walnut St			1	50										25.5	
18	Anaheim	Flore St			1	50							40			30.3	
19	Anaheim	Disneyland Dr			1	50							40			30.3	
20	Anaheim	Ox Rd			1	50							40			30.3	
21	Anaheim	Harbor Bl			1	50		30					40			30.3	
22	Anaheim	Lemon St			1	50	30		30							27.8	
23	Anaheim	Anaheim Bl			1	50		30								27.0	
24	Anaheim	Metrolink				50	30									40.0	
25	Anaheim	Lewis St-East St			1	50										25.5	
26	Anaheim	State College Bl				50	30						40			40.0	
27	Anaheim	Bellhaven St (Firestation)				50	30									40.0	
28	Anaheim	Sunkist St			1	50		30					40			30.3	
29	Anaheim	SB-57 Off Ramp*													50	50.0	
30	Anaheim	NB-57 On Ramp*													50	50.0	
31	Anaheim	Phoenix Club Dr			1	50										25.5	
32	Orange	Main St	50			50	30			30						40.0	
33	Orange	Batavia St	50			50	30			30		40				40.0	
34	Orange	Glassell St	50													50.0	
35	Orange	Shaffer St					30									30.0	
36	Orange	Cambridge St			5	50		30								28.3	
37	Orange	Tustin St	50							30						40.0	
-	Anaheim	TMC Improvements												40		40.0	
													AVERAGE SCORE =			33.2	

Appendix C

APPENDIX C: VEHICLE MILES TRAVELED (VMT)

Segment	ADTs	Distance	VMT
West City Limit - Brookhurst St	28,969	2.98	86,260
Brookhurst St - Harbor Bl	44,574	2.51	112,001
Harbor Bl - Phoenix Club Dr	52,384	2.50	130,960
Phoenix Club Dr - Main St	34,100	0.30	10,256
Main St - Batavia St	28,900	0.29	8,489
Batavia St - Glassell St	26,000	0.53	13,788
Glassell St - Cambridge St	14,300	0.44	6,256
Cambridge St - Tustin St	15,900	0.55	8,673
Total Project VMT:		**10.10**	**376,682**

Source:
See Attached Counts.

Appendix D

AGENCY RESOLUTIONS AND LETTERS OF SUPPORT

Appendix E

ADDITIONAL INFORMATION

ELIGIBLE IMPROVEMENTS	SCORE BASED ON STATUS	
Signal Timing (No Capital)	**Online**	**Offline**
Timing Only	50	30
Timing + Traffic Responsive (license only)	50	15
Timing + Peer-to-Peer (configuration only)	50	40
Timing + Traffic Adaptive (license only)	40	1
Signal Communication	**No Time Source**	**Time Source**
Above ground (e.g. wireless, cellular, etc.)	50	30
Fiber Optic underground	25	15
All other (e.g. copper, aerial fiber, GPS, etc.)	5	1
Field Elements	**None/5+ Years**	**Within 5 Years**
ATC signal controller	50	10
Signal cabinet on existing foundation	30	10
Signal cabinet on new foundation	15	5
BBS/USP (attached)	20	10
BBS/UPS on existing foundation	10	5
BBS/UPS on new foundation	5	1
CCTV	30	10
Vehicle detection (ATSPM inputs + counts)	50	30
Vehicle detection (ATSPM inputs)	40	20
Vehicle detection + bicycle detection	30	15
Vehicle detection	30	15
Bicycle detection	30	15
Pedestrian detection (audible)	50	30
Pedestrian detection	30	15
Active transportation/pedestrian safety	50	30
Transit Signal Priority	50	25
EVP (hybrid or GPS)	40	10
EVP (infrared)	30	10
Speed feedback signs (existing post)	40	10
Speed feedback signs (new post)	20	10
Signal Performance Monitoring	40	10
Minor Signal Operational Improvements	**None/5+ Years**	**Within 5 Years**
Channelization	40	20
Signal phasing improvement	50	25
TMC/TOC	**None/10+ Years**	**Within 10 Years**
Central System (server, licenses, workstations)	40	20
Display (video wall, VMS, etc.)	30	10
UPS for TMC	20	5
Caltrans Participation	**With Coop**	**Without Coop**
Caltrans Cooperative Agreement	50	25