2025

CALL FOR PROJECTS

SUPPLEMENTAL APPLICATION GUIDE

Table of Contents

Introduction and Purpose of Guide

The Supplemental Application, in Excel format, has been developed to encompass all components necessary for the Orange County Transportation Authority's (OCTA's) Regional Traffic Signal Synchronization Program (RTSSP) 2025 Call for Projects. This completed Supplemental Application must be submitted in hard copy and electronically, both in PDF and Excel format, as per the latest update to the Comprehensive Transportation Funding Program (CTFP) Guidelines. A partially filled Sample Supplemental Application is included at the end of this Guide.

The Supplemental Application will, as much as possible, identify what is automatically calculated versus what requires an input. For example, **green** shaded cells denote **INPUT** fields and **gray** shaded cells denote **AUTO-FILL** fields. **Note**: The color on your screen may vary due to screen resolution.

The following sections will detail the required updates to each tab in the Excel file to complete the Supplemental Application.

If you have additional questions or need assistance, please email TrafficOps@octa.net.

Title Page

The cells that will require an input are as follows:

- Enter the ***Date of Submittal*** in Row 13
- Select the appropriate ***Type of Submittal*** from the drop-down in Row 14.
  a. Application Deadline = First submittal
  b. Revised Submittal = All versions after the initial submittal

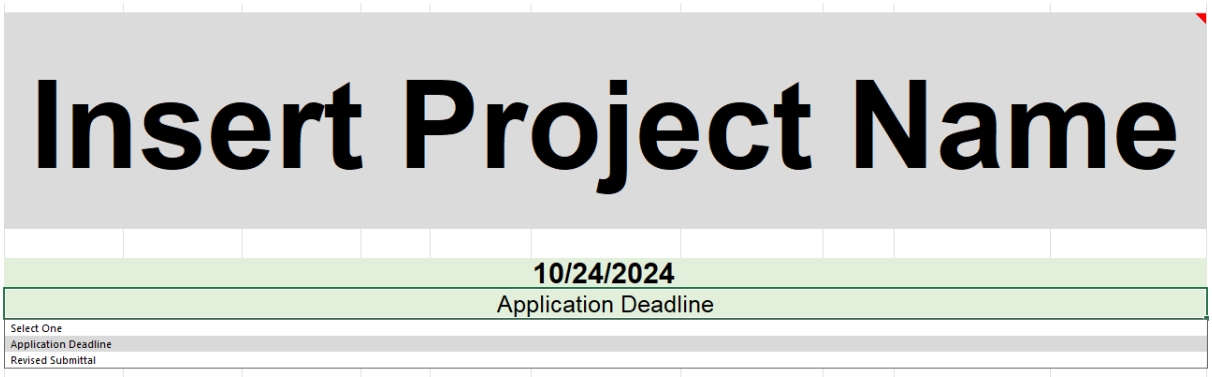


Figure 1. Use drop-down menu to select type of submittal.

- Using the drop-down menu, select the ***Participating Agencies*** starting with **Row 27, Column I**.
  a. Use one line per agency as shown in the Sample Supplemental Application.
  b. Only select Caltrans as a participating agency if <u>all agencies that have Caltrans intersections are signing a cooperative agreement w/Caltrans</u>.

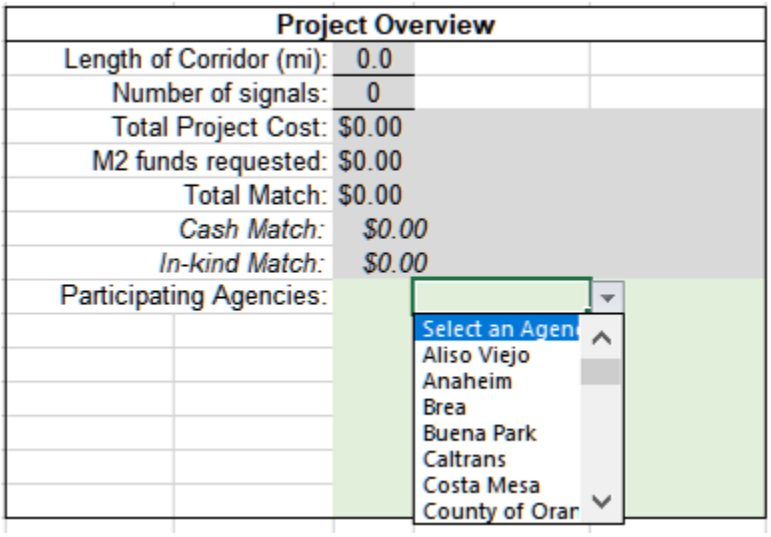


Figure 2. Use drop-down menu to select all participating agencies.

- Using the drop-down menu, select the ***Applicant Agency*** in **Cell F38**
  a. If the County of Orange is the Applicant Agency, use the drop-down menu in **Cell E38** to select the blank option to remove "City of".
    i. An alternative way is to select **Cell E38** and hit the delete key.

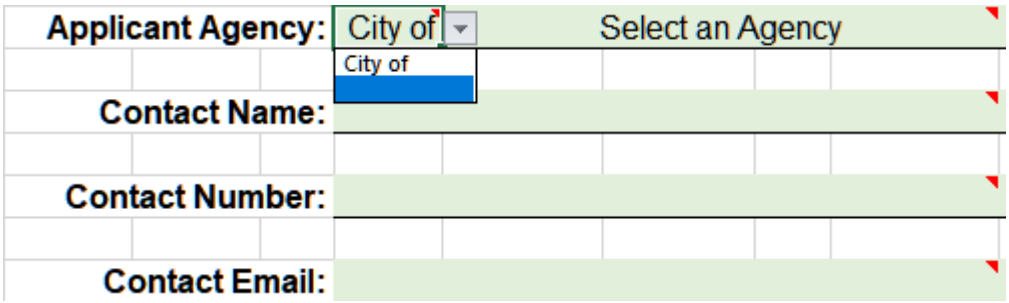


Figure 3. Use this method to remove "City of" if the County is the applicant agency

- Enter the ***Contact Name*** for the ***Applicant Agency*** in **Row 38**
- Enter the ***Contact Number*** for the ***Applicant Agency*** in **Row 40**
- Enter the ***Contact Email*** for the ***Applicant Agency*** in **Row 42**

Note: For the cells that will automatically populate, such as the name of the corridor and the funding request, it is recommended that these values be checked after all tabs are populated.

Table of Contents (Checklist)

Populate the corresponding page numbers in **Column B** after the rest of the application is filled out. Make sure to avoid any page number overlaps.

Section 1: Key Technical Information

This section will be completed in three different tabs (**Section 1.a-j, Section 1.k-l, and Section 1.m**).

Part a: Type and Name of Project

- Use the drop-down menu in **Row 3** to select the type of project. The following are the eligible types of projects per the CTFP Guidelines:
  - ***Corridor****: shall be a single, multijurisdictional eligible corridor that includes at least 20 intersections; at least five (5) miles in length; at least three (3) eligible local agencies and four (4) signals per mile;* ***OR*** *the full length of the corridor*
  - ***Grid****: shall be multijurisdictional with a minimum of two (2) local, eligible agencies (excluding Caltrans) and consist of one main corridor that is specifically identified with a maximum of two (2) crossing corridors*
  - ***Route****: must be supported with actual vehicle counts and a description of the proposed route to demonstrate that the interconnect corridors do form a coherent route. A "route" project shall meet the minimum eligibility requirements as described above for a "corridor" project.* For "route" projects encompassing more than two (2) corridors, it is imperative to provide current Origin-Destination (OD) count data. This data should include a detailed depiction of the route and clearly highlight the OD points using the collected vehicle data. Discussion with OCTA staff regarding OD data gathering prior to collection for the application is encouraged. The analysis should illustrate how the route offers a coherent and logical path, detail the expected benefits, and explain the rationale behind drivers' choice of this particular route. Additionally, routes must maintain the integrity of eligible and/or previously synchronized corridors, avoiding any disruption to established routes to ensure seamless connectivity. The provided data should be recent, preferably within the last 12 months, and collected during peak traffic hours. Include maps and diagrams that illustrate the OD points and the flow of the route. A draft application must be submitted **at least four (4) weeks** prior to the final submission deadline. **Failure to submit a draft application by this deadline will result in automatic disqualification of the project.** By adhering to these guidelines, applicants will ensure their projects align with the objectives of Project P.
- Enter the Project Name, which is the Name of the Corridor/Grid/Route in **Row 4**. Be sure to include all names for a corridor that does not carry the same name from end to end.

Part b: Project Limits

Enter the project limits in **Row 7**, starting with the Northern/Western limit to the Southern/Eastern limit. If it is a grid project, please enter the limits of the main corridor. The full extent of the grid should be explained in ***Section 2***. If it's a route, enter the starting and ending intersections.

Part c: Project Length

Enter the project length in miles to the nearest hundredth place. Include all route and grid corridors.

Part d: Number of Signalized Intersections

Enter the number of signalized intersections along the corridor/grid/route that will be synchronized as part of this project in **Cell B13**.

- The count shall include all Caltrans intersections, regardless of an executed cooperative agreement.
- This shall NOT include any offset signals that will be included with the project for synchronization. The number of offset signals shall be entered in **Cell H13**.

Part e: Participating Agencies

Using the checkboxes, select all the participating agencies that will be a part of this project, including the applicant agency.

Caltrans shall only be selected if **ALL** participating agencies that have Caltrans signals in their jurisdiction pledge to sign a Cooperative Agreement with Caltrans. The pledge shall be included with the letters of support from all participating agencies. The applicant agency will pledge this in the application cover letter, if applicable.

All participating agencies, and Caltrans if included, will be required to provide a letter of support in ***Appendix D*** and an approved resolution in ***Appendix D***.

Part f: Lead Agency

Using the checkboxes, select the Lead Agency. The Lead Agency is responsible for delivering the project, collecting the required match, and filing the Final Report with OCTA Local Programing.

Choices include: OCTA and all eligible Orange County cities, and the County of Orange. Select only one option. Caltrans is not an eligible choice, though they may appear in the drop-down menu. **OCTA WILL NOT BE AN OPTION IN THE 2025 CALL FOR PROJECTS.**

If a local agency is chosen as the Lead Agency, please use the drop-down menu to select the agency. This dropdown menu pulls data from the list of Participating Agencies on the ***Title Page*** so you may see Caltrans listed. However, Caltrans **CANNOT** be a lead agency.

Note: *An additional 10% of total project cost will be added to applications that designate OCTA as the lead agency. This is strictly used to calculate the benefit to cost ratio score. This additional 10% inflation will not be added to the proposed budget.* ***[OCTA WILL NOT BE LEADING PROJECTS FOR THE 2025 CALL FOR PROJECTS]***

Part g: Is this project on either the Signal Synchronization Network or Master Plan of Arterial Highways?

Select Yes or No. An application can only be accepted if the project is along the Signal Synchronization Network (SSN) or Master Plan of Arterial Highways (MPAH). **IF NEITHER IS TRUE, THEN THIS PROJECT DOES NOT QUALIFY FOR PROJECT P FUNDING**. If you are unsure, please contact TrafficOps@octa.net.

Part h: Project Start and End Dates

This field will automatically populate using the information provided in Section 6.

Part i: Project Status and Baseline Participation

In this section, you will use the dropdown menu to select the choice that fits your application:

- ☐ Re-timing at least 75% of previous project
  - Select this option if your project will include at least 75% of a previously OCTA-funded project. If you are unsure, please inquire by sending an email to TrafficOps@octa.net.
- ☐ Timing at least 75% of new eligible project
  - Select this option if your project will include at least 75% of a new eligible project. Eligible projects must at least be on the Signal Synchronization Network or Master Plan of Arterial Highways and meet minimum requirements per Page 8-19 of the latest CTFP Guidelines.
- ☐ None
  - Select this option if none of the above applies.
- ☐ Countywide Baseline Project Participation
  - Select "Yes" if all participating agencies and project signals, excluding Caltrans, on this application will be participating in the Countywide Baseline Project.
  - Select "No" if not all participating agencies or project signals will be participating in the Countywide Baseline Project.

Part j: Contact Information

Enter the project contact for every participating agency. Each contact should include the agency, contact name, position title, phone number, email, and mailing address.

Part k (Tab ***Section 1.k-l***): List of Signalized Intersections

Enter the name of the main corridor and cross street under the appropriate columns. Make sure to number the entries and denote the owning agency with color. Do not differentiate Caltrans intersections by color. Label Caltrans intersections with an asterisk (*) (See Sample Supplemental Application). Caltrans intersections will be counted towards the agency based on physical location.

k.	Signalized intersections that are part of the project:		
		Main Corridor	**Cross Street**
	1	Main Corridor	Cross Street

Figure 4. If it is a shared intersection, use both colors (one per cell).

Delete unused numbering and rows or add more as needed.

Part l (Tab ***Section 1.k-l***): List of Offset Signals

If offset signals, signalized intersections on the Master Plan of Arterial Highways (MPAH) that are within 2,700 feet of the project corridor/grid/route, are going to be included in this project, enter the main street and cross street of each. Make sure to number the entries, continuing from **Part k**, and denoting the owning agency with the appropriate colors. Caltrans signals shall be in the color of the agency of its physical location and denoted with an asterisk (*).

Applicants are recommended to check this number with OCTA prior to submittal as changes will not be allowed after an application has been submitted.

Baseline participants are only required to list offset signals that will have improvements. A reminder that only applications with project signals on the Baseline are allowed to have offset signal improvements as part of the application.

Part m (Tab ***Section 1.m***): Project Map Depicting the Project Limits

Please include a quality map that shows the limits of the project. **DO NOT** use satellite view as that is hard to read. A proper map should show all the project intersections, street names, and a legend to distinguish intersections by agency. Fit the map to one page, whether letter/tabloid/11"x17" and portrait/landscape.

Section 2: Regional Significance

In this section, please explain why this project is regionally significant. Any justification for a route or grid project would also be included here. Please keep this section to one page. If this is a grid, introduce the main corridor (indicate limits) and include the crossing arterials and their corresponding limits. If this is a route with more than two (2) corridors, provide a description of the route with the included OD vehicle data. Any additional document can be included in Appendix E.

Section 3: Acknowledgement of Required Tasks

In Part a, you will acknowledge on behalf of all participating agencies that, if funded, the lead agency will execute this project per the tasks and components as written in this section. If additional tasks or exceptions to the tasks are requested, please check the designated boxes and describe it in the spaces provided (areas shaded in green). Please use this space to explain how Caltrans signals will be dealt with in this project. If the applicants will opt out of Tasks 2 and 4, then this space should explain how Caltrans signals will be dealt with.

☐ ***By checking this box, the following additional PI task(s) and/or exceptions will be made:***
<Insert Text>

Figure 5. Use this section to include exceptions to the PI tasks listed in this section.

For participants of the Countywide Baseline Project, agencies can use the provided checkbox to opt out of the data collection portion of Task 3 since data will be collected as part of the Baseline Project. However, it is important to note that a Before and After study is still required.

☑ ***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.***

A similar opt-out checkbox is available for Task 4.

☑ ***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.***

In Part b, you will acknowledge, on behalf of all participating agencies, compliance with environmental requirements and other permits as necessary.

In Part c, you will acknowledge, on behalf of all participating agencies, that this project will comply with the current CTFP Guidelines.

Section 4: Funding Needs / Costs for Proposed Project by Task

In this section, you will break down the costs per task by agency. Input fields are shaded **green**.

The only input required in Part a [Summary of Project Cost] is the **Match Commitment**, The rest of the table will automatically populate with the inputs in the individual agency tables below it.

In Part b [Summary of Cost by Agency]:

- Input Agency Name by selecting from the drop-down menu. Do not select Caltrans.
- Input number of signalized intersections that are owned and operated by the agency (exclude Caltrans intersections). If it is a shared intersection, please indicate the actual share to the nearest tenth. This number will be used to determine your share in match requirements.
- Input number of signalized intersections that are owned and operated by Caltrans within the Agency's jurisdiction.
- Input number of offset signals (signals on MPAH that are within 2,700' of corridor) within the Agency's jurisdiction that are included in this project for signal timing purposes.
- Input cost per intersection per task. Task 3 will not have a cost per intersection. Instead, the total cost will be pulled from Appendix B.II.
- Input the pledged cash and in-kind match.
- Repeat for every participating agency (excluding Caltrans).

Note: All fields in Task 3 will automatically populate based on information from ***Appendix B***.

There is a mathematical check on the right to make sure the Measure M2 funding request does not exceed the maximum cap ($250,000 per mile or $75,000 per signal), that there is a minimum of 20% match per agency, and the construction management requested does not exceed 20% of M2 allocation requested. Please verify all formulas, as necessary, to ensure that the calculations are accurate.

It is not required that all agencies use up the available budget per signal/mile caps, but each agency is required to contribute at least a 20% match towards their expenses. The overall project match must be at least 20%. Agencies with Caltrans signals shall also provide a match for timing, O&M, and any improvements proposed.

Part c [Funding Needs / Costs for Proposed Project by Task]: This section will be automatically populated based on information entered in ***Appendix B***. Delete or hide any unused rows to prevent calculation errors.

Section 5: Detailed Local Match Commitment

Please refer to Section 4 and Table II sheets when completing the tables in this section.

- Part 1 will automatically be populated. Fill in the required information shaded in green in Part 2.
- In Part 2A, the Agency will auto-populate based on **Section 1**. The applicant only needs to fill in the funding source for the cash match.
- If agencies intend to use specific improvements towards their required match, the information shall be entered in Part 2Bi. The specific improvement per agency must be entered to complete the table. Improvements proposed for in-kind match shall be an eligible improvement per the CTFP Guidelines. If no improvements will be contributed, then leave the table blank and hide unused rows for condensed spacing.
- In Part 2Bii, if in-kind match is provided, the applicant shall enter staff or consultant hours that will be contributed towards the project. The agency, staff position, type of service to project, number of hours, and fully burdened hourly rate shall be entered. 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 in-kind report submittals. **Records are subject to auditing.** *Refer to the Sample Supplemental Application as needed.*

Note: Additional rows shall be added as necessary to complete this section. It is also recommended that the applicant confirm the values shown to ensure consistency throughout the application. **Delete or hide blank rows, as necessary, to condense the information for printing.**

Section 6: Project Schedule by Task

Part a will be automatically populated based on the information in Part b. Fill in your projected dates in Part b. Dates shall be no sooner than fiscal year July 2025 – June 2026.

Appendix A: Calculations and Estimated Points

This appendix provides the Estimated Points for your application.

Required input fields are shaded in Green**.** Gray fields are automatically populated based on information entered in other sections. Description of each category is as follows:

1. **Transportation Significance:**
   a. Cell B4 will be auto-filled based on your participation in the Countywide Baseline Project as answered in Section 1.i.
      - A "Yes" response will automatically award your application with full points for offset signals.
      - A "No" response will mean the applicants are not participating in the Countywide Baseline Project and thus further calculations are needed to determine the application's score for offset signal inclusion.

   b. **Total number of offset signals (Cell H6)** refers to all possible offset signalized intersections whether or not it will be part of the optimized timing task of this application. Offset signals are defined as the signalized intersections on the MPAH that are within 2,700 feet from either direction of the project corridor. Please confirm the number with TrafficOps@octa.net as you will not be able to change this number once the application has been submitted.
   c. **Vehicle Miles Traveled** will be populated based on information provided in Appendix C.
2. **Economic Effectiveness** will be automatically populated based on information from ***Section 4*** and ***Appendix C***. This category takes the Total Project as entered in ***Section 4*** and divides it by the VMT calculated in ***Appendix C***.
3. **Project Characteristics** will be automatically populated based on the information provided in ***Appendix B.3***. ***See Appendix B.3*** for more information on how this is calculated.
4. **Project Scale**
   a. **Number of signals** along the entire length of corridor(s) (within Orange County) whether or not they are part of this project.
      - For a grid network, it would be the total number of signals on the main corridor.
      - For a route, it would be the sum of all corridors.
5. **Number of Jurisdictions** refers to the number of participants on this project. This number is automatically populated based on information entered on the Title Page.
   a. Caltrans may only be counted as a participant if all agencies with Caltrans signalized intersections pledge to sign a cooperative agreement with Caltrans. This shall be addressed in the cover letter and letters of support from each agency.
6. **Current Project Status:**
   a. **Retiming 75% of previous project**: This will be automatically populated based on information inputted in **Section 1.a-j**.
   b. **Timing of 75% of new eligible project**: This will be automatically populated based on information inputted in **Section 1.a-j**.
7. **Funding Match** will be automatically populated based on information in Section 4.a-b.

The rest of the fields in **Gray** will automatically populate. Please make sure the values are correct based on inputs from all previous sections. Contact TrafficOps@octa.net to report errors.

Appendix B: Agency Improvement Calculations

Appendix B.1 - Table I: Agency Improvement Preferences

The purpose of this table is to capture the equipment preferences of each participating agency and the respective cost per unit. The Item Descriptions are grouped per the Score Table in the CTFP Guidelines. Do not adjust the improvements as everything is linked. You will need to group your improvements to fit into these existing Item Descriptions. Use the Additional Notes section to expand/explain what is included in the lump sum cost. If you need assistance, email TrafficOps@octa.net.

Important!

First step is to determine if this application will be a timing-only project, meaning no improvements. Select the appropriate box to the right of the table header (as shown below).

	Is this a timing-only project (no improvements)?
TABLE I: AGENCY IMPROVEMENT PREFERENCES	☐ Yes ☐ No

Figure 6. Important First Step in Appendix B.1

This selection will impact what needs to be filled out in the table so make sure to do this step first.

- As with the other sections, the input fields are shaded green. Gray fields are automatically populated.

Auto-Fill	Input Only

Figure 7. Only input data in the green shaded cells.

- Select the agency names from the dropdown menu starting with **Cell D5**.
- Item Description
  - The Item Descriptions **SHALL NOT** be changed. You will need to group your improvements to fit within these existing Item Descriptions. For questions, clarifications, or guidance, please email TrafficOps@octa.net.
  - All communication improvements shall be entered as a lump sum.
    - **EXAMPLE:** There are 15 intersections that will receive communications upgrades. Upgrades are breakdown down as follows:
      $ 94,000 x 1 Conduit repair
      $ 2,000 x 12 Patch panel
      $ 3,000 x 15 Ethernet switch
      $ 3,700 x 12 #6E pb + splice enclosure
      $ 20 x 600 Remove copper + add pull tape
      $ 1,500 x 30 #6 pb
      $ 90 x 1,100 3" Conduit + 120-SMFO
      *$ 363,405 [Total cost of **Fiber Optic underground** improvements]*
      *$ 363,405 / 15 intersections = **$24,227** [Cost per intersection]*
    - $24,227 will be entered as the unit cost into **Appendix B.1 – Table I** under Item Description #2 for Fiber Optic underground as shown below:

			Is this a timing-only project (no improvements)?		
TABLE I: AGENCY IMPROVEMENT PREFERENCES			☐ Yes ☑ No		
			UNIT PRICE (MATERIAL + LABOR)		
CATEGORIES	ID	ITEM DESCRIPTION	Dana Point	Laguna Niguel	Mission Viejo
Comm	1	Above ground (e.g. wireless, cellular, etc.)		$1,800	
	2	Fiber Optic underground	$3,000	$24,227	$23,143
	3	All other (e.g. copper, aerial fiber, GPS, etc.)	$1,100		

  - Each of the 15 intersections receiving upgrades will be marked with a Quantity of "1" under Fiber Optic Underground in **Appendix B2 – Table II**.
- Use ***Vendor/Brand & Additional Notes*** to elaborate on items desired, such as:
  - Brand/name of ATMS
  - Brand/model of cameras
  - Items that will be included in communications
    - Conduit thickness
    - Fiber/conduit segments (i.e. from Street A to Street B)
    - Fiber strand count
    - Fiber strand count for termination
    - Length of drop cable
    - Number of SFPs and speed
    - Number and type of pullboxes
  - Type of Controller (with or without touchscreen & controller firmware)
  - Type of cabinet (including or excluding new/modified foundation)

- Under the ***Unit Price (Material + Labor)*** columns, enter the unit price per improvement.
  - Round numbers (length and cost) to the *nearest thousand* to avoid rounding errors.
  - This shall include all material, labor, flat-rate turn-on support, tax, and shipping costs for a fully operational improvement.
  - Common things that applicants forget to include:
    - Fiber termination, including number of strands that need to be terminated
    - Fiber distribution units and splice enclosures
    - SFP units (include quantity and speed)
    - Slack for fiber optic cable length
    - Conduit repair for fiber installation in existing conduit
    - New conduit due to lack of existing conduit capacity
    - Incorrect length of new conduit
    - Number of pullboxes required
  - Unit costs shall be estimated and derived from recent procurements, when possible, and **rounded to the *nearest thousand***.
- Under the ***Applicable Design Cost Per Unit*** column, enter any associated design cost requested as part of that improvement. *Design costs are typically 10-15% of the improvement costs and it is assumed that some items will not require any design.*
- **Note**: In **Task 2 Data Collection**, the unit cost from the **Section 4** tab includes field work for signal timing and infrastructure improvement efforts.

- Enter the brand/model/specific preferences under the ***Vendor/Brand & Additional Notes*** columns, if known. Repeat for every applicable improvement.
- Insert more columns as necessary to include all participating agencies, but make sure the formulas are consistent with the rest of the table. **If you need assistance, email TrafficOps@octa.net.**
- Delete or hide columns if they are not needed to condense the table for printing.
- Delete or hide rows if they are not needed to condense the table for printing.
- Provide a breakdown for TMC improvements in Appendix E.

Appendix B.2 - Table II: Description of Work by Intersection

This table will include all the improvements and associated costs proposed on this project per intersection. Input fields are shaded green (light and dark green mean the same here). Gray fields mean the cell will be automatically populated.

1. In Column A, a number is assigned to every intersection based on Section 1k. For convenience, Column C is automatically populated for you based on Section 1k. However, if this format does not work because not every intersection has improvements, you can choose to renumber the intersections in Column A but follow the numbering from Section 1k. As shown in the Sample Supplemental Application, no numbers are assigned to improvements at the Traffic Management Center (TMC). Enter the TMC improvements at the end of the table if you choose to keep the format as provided.
2. In Column B, use the drop-down menu to select the implementing agency. Unlike Section 1, you will be selecting the agency that will be ***providing the match*** for the associated improvement costs. Use red font to indicate the agency responsible for the match if different from the agency owning the intersection. For example, Caltrans intersections may not be labeled as Caltrans if a local agency is funding the improvements, as shown below.

LOCATION	IMPLEMEN	PROJECT CROSS STREETS
36	Orange	Sycamore Avenue/University Drive
37	Orange	Palm Avenue
38	Orange	La Veta Avenue
39	Santa Ana	SR-22 Westbound Ramp*
40	Santa Ana	SR-22 Eastbound Ramp*
41	Santa Ana	Fairhaven Avenue

Figure 8. Show agency responsible for match by using red font.

3. **Column C** lists all project cross streets. For convenience, it is set up to reference **Section 1k**, but if you modify the numbering, you will need to adjust the contents of **Column C** to match the new numbering. In the Sample Supplemental Application, the intersection list is referenced to **Section 1k** to avoid having to retype the street names.
4. **Columns D to AK** show the **Item Descriptions** as listed in the Score Table in the CTFP Guidelines. These are automatically populated from **Appendix B.1 – Table I**. Do not change them.
5. For every intersection, enter the quantity for each improvement that is proposed in the appropriate spaces as shown in the example. If a value is added to an improvement that does not currently have a cost associated in **Appendix B.1 – Table I**, the cell will change to yellow to indicate that information is missing in **Appendix B.1 – Table I**. See legend at the bottom of the table for information.
6. The spreadsheet is set up to automatically sum the total cost of improvements based on the quantity entered in **Appendix B.2 – Table II** and the unit price information entered in **Appendix B.1 – Table I**. It is the responsibility of the applicant to ensure the calculations are correct.

- In **Cell AN6**, enter the percentage of the construction that should be added for construction management and inspection **(not to exceed 20%)**.
- In **Cell AO6**, enter the percentage of contingency that would be added to the design, construction, and construction management/inspection total **(not to exceed 10%)**.
- **Column AP** will auto-populate based on information provided in Column AK and Appendix B.1.
- Total Agency Match is defaulted to 20% (minimum match required). Only change this cell if the application will provide an overmatch (cash only).

7. In the ***Notes*** column, enter any additional information, such as conduit/fiber segments, modifications required at any intersection, or any extra information that will help with procurement, pricing, and understanding the improvement. Since communication improvements are lump sum, please enter information here to explain what will be included. *See the Sample Supplemental Application for examples.*
8. **If you have less locations than listed, hide the extra rows for a cleaner application.**
9. For Countywide Baseline Project participants, improvements are allowed for offset signals using the existing budget. Offset signals will start to populate in Row 51, but you may make adjustments manually as needed to suit your needs.

Important Note**:** The cells in Table I and II are linked, thus adding rows may disrupt the formula. If you need assistance, please email TrafficOps@octa.net for assistance.

Appendix B.3 – Table III: Project Average Improvement Scores

In this table, you will use the drop-down menus to select the appropriate score per the **Score Table** (Figure 9). The table is conditionally formatted so a cell that is highlighted yellow means a score needs to be selected. If the cell is highlighted red, it means there should be no score there because there is no relative improvement in ***Tables I and II***.

If this application is a timing-only project, as selected in ***Appendix B.1***, then the table with improvements will be blacked out. You will be left with the columns regarding timing-only (no improvements). If this is not a timing only project, then the timing columns will be blacked out. **DO NOT** input anything in the blacked-out cells.

Definitions:

- **Online**: Connected to a central system and is active.
- **Offline**: Not connected to a central system and/or is inactive.
- **No time source**: No reliable time source at the signalized intersection.
- **Time source**: There is a reliable time source at the signalized intersection, such as GPS, master controller, direct connection to central system, etc.
- **None/5+ Years**: None means the improvement does not exist or has never been installed at the intersection or it has been over 5 years from the application deadline since the improvement was installed.
- **Within 5 Years**: This means the improvement was installed within 5 years of the application deadline.
- **None/10+ Years**: None means the improvement does not exist or has never been installed at the intersection or it has been over 10 years from the application deadline since the improvement was installed.
- **Within 10 Years**: This means the improvement was installed within 10 years of the application deadline.
- **Participation**: Participation means Caltrans will be an active participant on this project. This requires a cooperative agreement between all applicable participating agencies and Caltrans. The agreement can be a collective cooperative agreement for the project or between Caltrans and each individual agency.
- **No Participation**: This means agencies will not sign a cooperative agreement with Caltrans and Caltrans will not be an active participant.

Example:

You are applying for a CCTV camera at an intersection that has never had CCTV, you will use the drop-down menu to select 30. If you previously installed a CCTV camera within the last 5 years, then a score of 10 would be selected in the drop-down menu.

Eligible Improvements	Score Based on Status	
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	30	10
EVP (hybrid or GPS)	40	10
EVP (infrared)	30	10
Speed feedback signs (existing post)	40	10
Speed feedback signs (new post)	20	10
Corridor 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	20	5
Caltrans	Participation	No Participation
Cooperative Agreement	50	25

Figure 9. Score Table for Project Characteristics per CTFP Guidelines

Appendix C: Vehicle Miles Traveled (VMT)

Include the vehicle miles traveled (VMT) data calculation in this table. Input the segments (Column C) within the corresponding agency (Column B), average daily traffic (ADT, Column G), and the segment length (Column H). VMT should be calculated by the smallest segmentation on which the city typically collects ADT data. ADT must be based upon actual count information taken **within 36 months preceding the application date** and include 24-hour, midweek, bi-directional counts for each segment. All supporting data shall be inserted after this summary table and be organized in order in which they appear for the calculation of the VMT. Data from the OCTA Traffic Flow Map shall not be used. Failure to provide the appropriate ADT data will be treated as a non-responsive application. At the bottom of the table, indicate the source of the count data.

Appendix D: Agency Resolutions and Letters of Support

Include the resolution for every participating agency in this appendix. If a resolution is not ready at the time of submission, a sample resolution with estimated dates is acceptable. A sample resolution can be found in the CTFP Guidelines. A Microsoft Word copy may be requested by emailing TrafficOps@octa.net.

Include the letters of support for all participating agencies in this appendix. Additional information that will assist in the evaluation and understanding of the project should be included in Appendix E. Please **DO NOT** include the CTFP Guidelines or the MPAH maps.

Appendix E: Additional Information

Include additional information that will assist in the evaluation and understanding of the project in this appendix, such as a breakdown of TMC improvements, City-wide ITS Plan, OD vehicle counts, or relevant traffic studies. Please **DO NOT** include the CTFP Guidelines or the MPAH maps. Cabinet photos, as-built drawings, equipment specifications, and cabinet drawings should be uploaded to OCFundtracker and does not need to be submitted via hard copy.

Printing the Document

The intent is for all documents to look alike so it streamlines the application reviewing process and saves paper. With that in mind, navigate into the **Print** menu and select **Print Entire Workbook.** Then, use **Print Preview** to scroll through all the pages to ensure the contents are not inappropriately spilling onto the next page and that you have the correct page numbers.

- Make sure to check the page numbers in the Checklist (aka Table of Contents) as well.
- Make sure to update the **Headers** with the project name.
- Delete or hide columns/rows if they are not needed to condense the sheets for printing.
- Check that all formulas are populating correctly.
- Appendix B may be printed on ledger and/or 11”x17” for ease of reviewing.

OCFundtracker

OCFundtracker Training Manual: https://www.octa.net/trainingmanual

Additional Help

If you have additional questions or need assistance, please email Adrian Salazar (asalazar@octa.net) or the Traffic Operations Team (TrafficOps@octa.net).

Attachment A

Sample Supplemental Application

FY 2025 Call for Projects

Regional Traffic Signal Synchronization Program

Project P

Supplemental Application

Lake Forest Drive Regional Traffic Signal Synchronization Program Project

10/24/2024
Application Deadline

Project Overview

Length of Corridor (mi):	7.5
Number of signals:	28
Total Project Cost:	$2,495,200.00
M2 funds requested:	$1,996,160.00
Total Match:	$499,040.00
Cash Match:	*$475,540.00*
In-kind Match:	*$23,500.00*
Participating Agencies:	Lake Forest Laguna Hills Irvine Caltrans

Applicant Agency: City of Lake Forest

Contact Name: Tran Tran

Contact Number: 949-461-3485

Contact Email: ttran@lakeforestca.gov

Project P Regional Traffic Signal Synchronization Program
Table of Contents

SECTION 1: KEY TECHNICAL INFORMATION

a. Project **Corridor**
Lake Forest Drive Regional Traffic Signal Synchronization Program Project

b. Project Limits:
from **Portola Parkway** to **Romano / Hidden Canyon**

c. Project Length (*miles*):
7.5

d. Number of signalized intersections along the corridor (include all Caltrans intersections):
28 number of signals on project corridor(s) **10** 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 ☐ **Lake Forest**

g. Is this project on either the Signal Synchronization Network or Master Plan of Arterial Highways?
◉ Yes ○ No

h. Project Start Date: **January 2, 2025** Project End Date: **July 31, 2028**

i. Project Status and Baseline Participation

Re-timing at least 75% of previous project
Yes, all applicant agencies and project signals are participating in the Countywide Baseline Project

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

City of Lake Forest Tran Tran, Traffic Engineering Manager 949-461-3485 ttran@lakeforestca.gov 100 Civic Center Drive Lake Forest, CA 92630	**City of Laguna Hills** Joe Ames Public Works Director / City Engineer 949-707-2655 james@lagunahillsca.gov 24035 El Toro Road, Laguna Hills, CA 92653
City of Irvine Mark Ha, Supervising Transportation Analyst 949-724-6186 mha@cityofirvine.org 1 Civic Center Plaza, Irvine, CA 92606	**Caltrans** Pauline Nguyen Branch Chief, Traffic Signals / Ramp Metering / Census 949-936-3484 (O) / 949-279-9168 (M) pauline.nguyen@dot.ca.gov 6681 Marine Way, Irvine, CA 92618

k. Signalized intersections that are part of the project:

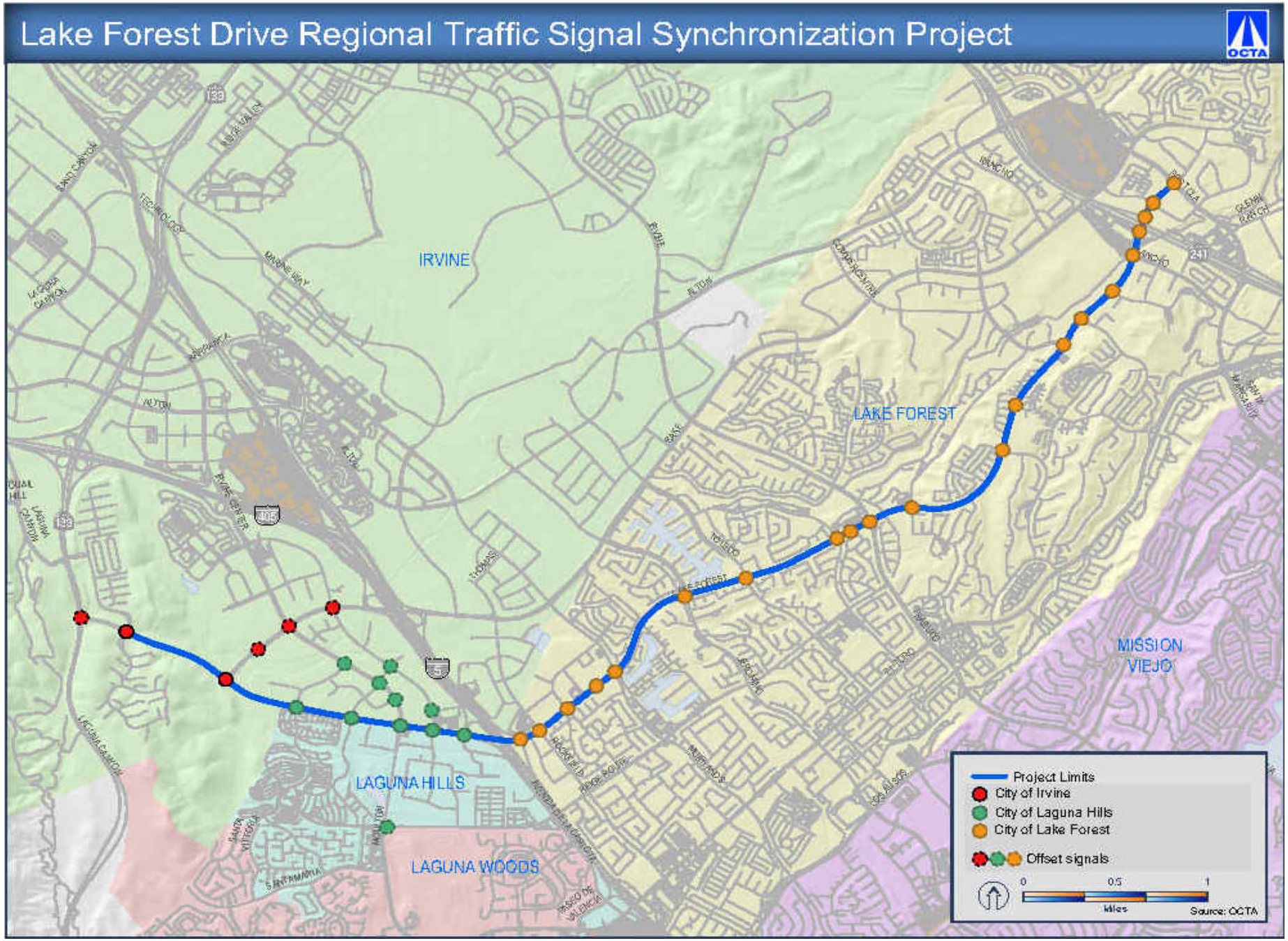
	Main Corridor	Cross Street
1	Lake Forest Drive	Romano/Hidden Canyon
2	Lake Forest Drive	Bake Parkway
3	Lake Forest Drive	Santa Vittoria Road / Tesla
4	Lake Forest Drive	Mill Creek Drive / Scientific
5	Lake Forest Drive	Moulton Parkway / Irvine Center Drive
6	Lake Forest Drive	Del Lago Drive / Research Drive
7	Lake Forest Drive	I-5 SB Off-Ramp / Avenida De La Carlota*
8	Lake Forest Drive	I-5 NB Off-Ramp*
9	Lake Forest Drive	Rockfield Blvd
10	Lake Forest Drive	Aspan St
11	Lake Forest Drive	Lake Forest Town Center
12	Lake Forest Drive	Muirlands Blvd
13	Lake Forest Drive	Jeronimo Rd
14	Lake Forest Drive	Toledo Way
15	Lake Forest Drive	Serrano Road
16	Lake Forest Drive	Chinook Drive
17	Lake Forest Drive	Trabuco Road
18	Lake Forest Drive	Canada/Newvale
19	Lake Forest Drive	Pittsford Drive
20	Lake Forest Drive	Vintage Woods
21	Lake Forest Drive	Dimension Drive
22	Lake Forest Drive	Regency Lane
23	Lake Forest Drive	Vista Terrace
24	Lake Forest Drive	Rancho Parkway
25	Lake Forest Drive	SR-241 SB Off-Ramp*
26	Lake Forest Drive	SR-241 NB On-Ramp*
27	Lake Forest Drive	Towne Centre Drive
28	Lake Forest Drive	Portola Parkway

Legend
Irvine
Laguna Hills
Lake Forest
* Caltrans

l. Offset signalized intersections that are part of the project.
Baseline participants only need to list signals that are requesting improvements :

	Main Street	Cross Street
29	Lake Forest Drive	Laguna Canyon Road
30	Gitano	Bake Parkway
31	Irvine Center Drive	Bake Parkway
32	Research	Bake Parkway
33	Tesla	Irvine Center Drive
34	Scientific	Irvine Center Drive
35	Scientific	Research
36	Protocol	Irvine Center Drive
37	Inquiry	Research
38	El Pacifico Drive	Moulton Parkway

m. Project Map Depicting the Project Limits and Offset Signals



SECTION 2: REGIONAL SIGNIFICANCE

Explain why this project is regionally significant:

<INSERT TEXT> Use this section to also justify why a grid/route is requested, if applicable.

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 shall 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 (excluding Caltrans) 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 4 for Caltrans signals is the responsibility of the applicant.***

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:***
The applicant will cover Tasks 2 and 4 for all Caltrans signals on this project.

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:***
<Insert Text>

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	$ 57,000.00
Task 2: Data Collection	$ 4,000.00
Task 3: System Design and Construction	$ 2,197,800.00
Task 4: Signal Timing Optimization and Implementation	$ 16,000.00
Task 5: Project Report	$ 38,000.00
Task 6: Project Management - O&M Phase	$ 19,000.00
Task 7: Continuing Support	$ 152,000.00
Task 8: Final Technical Memorandum	$ 11,400.00
Total Project Cost:	**$ 2,495,200.00**

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

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

	Project Total
Total M2 Request:	*$ 1,996,160.00*
Total Agency Match:	*$ 499,040.00*
Total Project Cost:	**$ 2,495,200.00**

	PI Total
Total M2 Request for PI Phase:	*$ 1,850,240.00*
Total Agency Match for PI Phase:	*$ 462,560.00*
Total PI Cost:	**$ 2,312,800.00**

	O&M Total
Total M2 Request for O&M Phase:	*$ 145,920.00*
Total Agency Match for O&M Phase:	*$ 36,480.00*
Total O&M Cost:	**$ 182,400.00**

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

b. Summary of Cost by Agency

Lake Forest

	Agency	Caltrans	Offset	Total
Number of Signals:	18	3		21

Project Tasks (Lake Forest)	Cost / Int	Total Cost
Task 1: Project Management - PI Phase	$ 1,500.00	$ 31,500.00
Task 2: Data Collection (Caltrans only)	$ 1,000.00	$ 3,000.00
Task 3: System Design and Construction	-	$ 1,733,820.00
Task 4: Signal Timing Optimization and Implementation (Caltrans only)	$ 4,000.00	$ 12,000.00
Task 5: Project Report	$ 1,000.00	$ 21,000.00
Task 6: Project Management - O&M Phase	$ 500.00	$ 10,500.00
Task 7: Continuing Support	$ 4,000.00	$ 84,000.00
Task 8: Final Technical Memorandum	$ 300.00	$ 6,300.00

	M2 Requested	Match	Total Cost
PI	**$ 1,441,056.00**	**$ 360,264.00**	**$ 1,801,320.00**
O&M	**$ 80,640.00**	**$ 20,160.00**	**$ 100,800.00**

Laguna Hills

	Agency	Caltrans	Offset	Total
Number of Signals:	4	1	6	11

Project Tasks (Laguna Hills)	Cost / Int	Total Cost
Task 1: Project Management - PI Phase	$ 1,500.00	$ 16,500.00
Task 2: Data Collection (Caltrans only)	$ 1,000.00	$ 1,000.00
Task 3: System Design and Construction	-	$ 361,680.00
Task 4: Signal Timing Optimization and Implementation (Caltrans only)	$ 4,000.00	$ 4,000.00
Task 5: Project Report	$ 1,000.00	$ 11,000.00
Task 6: Project Management - O&M Phase	$ 500.00	$ 5,500.00
Task 7: Continuing Support	$ 4,000.00	$ 44,000.00
Task 8: Final Technical Memorandum	$ 300.00	$ 3,300.00

	M2 Requested	Match	Total Cost
PI	**$ 315,344.00**	**$ 78,836.00**	**$ 394,180.00**
O&M	**$ 42,240.00**	**$ 10,560.00**	**$ 52,800.00**

Irvine

	Agency	Caltrans	Offset	Total
Number of Signals:	2	0	4	6

Project Tasks (Irvine)	Cost / Int	Total Cost
Task 1: Project Management - PI Phase	$ 1,500.00	$ 9,000.00
Task 2: Data Collection (Caltrans only)	$ 1,000.00	$ -
Task 3: System Design and Construction	-	$ 102,300.00
Task 4: Signal Timing Optimization and Implementation (Caltrans only)	$ 4,000.00	$ -
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	$ 4,000.00	$ 24,000.00
Task 8: Final Technical Memorandum	$ 300.00	$ 1,800.00

	M2 Requested	Match	Total Cost
PI	**$ 93,840.00**	**$ 23,460.00**	**$ 117,300.00**
O&M	**$ 23,040.00**	**$ 5,760.00**	**$ 28,800.00**

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	Irvine	Romano/Hidden Canyon	$ -	$ 13,200.00	**$ 13,200.00**	10.0
2	Irvine	Bake Parkway	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	10.0
3	Laguna Hills	Santa Vittoria Road / Tesla	$ 4,500.00	$ 73,380.00	**$ 77,880.00**	38.3
4	Laguna Hills	Mill Creek Drive / Scientific	$ 4,500.00	$ 73,380.00	**$ 77,880.00**	38.3
5	Laguna Hills	Moulton Parkway / Irvine Center Driv	$ 2,500.00	$ 46,340.00	**$ 48,840.00**	37.5
6	Laguna Hills	Del Lago Drive / Research Drive	$ 2,500.00	$ 46,340.00	**$ 48,840.00**	37.5
7	Laguna Hills	I-5 SB Off-Ramp / Avenida De La Ca	$ -	$ -	**$ -**	40.0
8	Lake Forest	I-5 NB Off-Ramp*	$ -	$ -	**$ -**	40.0
9	Lake Forest	Rockfield Blvd	$ 10,000.00	$ 147,080.00	**$ 157,080.00**	29.0
10	Lake Forest	Aspan St	$ 10,000.00	$ 147,080.00	**$ 157,080.00**	29.0
11	Lake Forest	Lake Forest Town Center	$ 10,000.00	$ 147,080.00	**$ 157,080.00**	29.0
12	Lake Forest	Muirlands Blvd	$ 10,000.00	$ 147,080.00	**$ 157,080.00**	29.0
13	Lake Forest	Jeronimo Rd	$ 10,000.00	$ 147,080.00	**$ 157,080.00**	29.0
14	Lake Forest	Toledo Way	$ 10,000.00	$ 180,080.00	**$ 190,080.00**	29.2
15	Lake Forest	Serrano Road	$ 10,000.00	$ 147,080.00	**$ 157,080.00**	29.0
16	Lake Forest	Chinook Drive	$ 10,000.00	$ 147,080.00	**$ 157,080.00**	29.0
17	Lake Forest	Trabuco Road	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	25.0
18	Lake Forest	Canada/Newvale	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	25.0
19	Lake Forest	Pittsford Drive	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	25.0
20	Lake Forest	Vintage Woods	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	25.0
21	Lake Forest	Dimension Drive	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	25.0
22	Lake Forest	Regency Lane	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	25.0
23	Lake Forest	Vista Terrace	$ 2,500.00	$ 33,800.00	**$ 36,300.00**	25.0
24	Lake Forest	Rancho Parkway	$ -	$ -	**$ -**	
25	Lake Forest	SR-241 SB Off-Ramp*	$ -	$ -	**$ -**	40.0
26	Lake Forest	SR-241 NB On-Ramp*	$ -	$ -	**$ -**	40.0
27	Lake Forest	Towne Centre Drive	$ 9,000.00	$ 121,680.00	**$ 130,680.00**	28.3
28	Lake Forest	Portola Parkway	$ -	$ -	**$ -**	
29	Irvine	Lake Forest Drive @ Laguna Canyo	$ -	$ 13,200.00	**$ 13,200.00**	10.0
30	Irvine	Gitano @ Bake Parkway	$ -	$ 13,200.00	**$ 13,200.00**	10.0
31	Irvine	Irvine Center Drive @ Bake Parkway	$ -	$ 13,200.00	**$ 13,200.00**	10.0
32	Irvine	Research @ Bake Parkway	$ -	$ 13,200.00	**$ 13,200.00**	10.0
33	Laguna Hills	Tesla @ Irvine Center Drive	$ -	$ 12,540.00	**$ 12,540.00**	10.0
34	Laguna Hills	Scientific @ Irvine Center Drive	$ -	$ 12,540.00	**$ 12,540.00**	10.0
35	Laguna Hills	Scientific @ Research	$ -	$ 12,540.00	**$ 12,540.00**	10.0
36	Laguna Hills	Protocol @ Irvine Center Drive	$ -	$ 12,540.00	**$ 12,540.00**	10.0
37	Laguna Hills	Inquiry @ Research	$ -	$ 12,540.00	**$ 12,540.00**	10.0
38	Laguna Hills	El Pacifico Drive @ Moulton Parkwa	$ -	$ 12,540.00	**$ 12,540.00**	10.0
-	Irvine	TMC Improvements	$ -	$ -	**$ -**	
-	Laguna Hills	TMC Improvements	$ -	$ 33,000.00	**$ 33,000.00**	40.0
-	Lake Forest	TMC Improvements	$ -	$ 59,400.00	**$ 59,400.00**	40.0
-	0	TMC Improvements	$ -	$ -	**$ -**	
				SIGNAL IMPROVEMENT TOTAL =	**$ 2,197,800.00**	**24.9**

SECTION 5: DETAILED LOCAL MATCH COMMITMENT

PART 1: AGENCY TOTAL MATCH SUMMARY

Agency	CASH		IN-KIND		TOTAL MATCH	
	PI	OMM	PI	OMM	PI	OMM
Lake Forest	*$351,764.00*	*$20,160.00*	*$8,500.00*	*$0.00*	*$360,264.00*	*$20,160.00*
	$371,924.00		***$8,500.00***		***$380,424.00***	
Laguna Hills	*$73,836.00*	*$10,560.00*	*$5,000.00*	*$0.00*	*$78,836.00*	*$10,560.00*
	$84,396.00		***$5,000.00***		***$89,396.00***	
Irvine	*$13,460.00*	*$5,760.00*	*$10,000.00*	*$0.00*	*$23,460.00*	*$5,760.00*
	$19,220.00		***$10,000.00***		***$29,220.00***	
TOTAL MATCH	***$439,060.00***	***$36,480.00***	***$23,500.00***	***$0.00***	***$462,560.00***	***$36,480.00***
	$475,540.00		***$23,500.00***		***$499,040.00***	

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

A. Cash Match

Agency	Funding Source	Amount of Cash Contribution
Lake Forest	AQMD	$371,924.00
Laguna Hills	General Funds	$84,396.00
Irvine	M2 Turnback	$19,220.00
	TOTAL CASH MATCH:	$475,540.00

B. In-Kind Services

i. Specific Improvements (List items and Cost):

Agency	Description	Expenditure
Irvine	ATC controller	$10,000.00
	Total Specific Improvements (i):	$10,000.00

ii. Staffing Commitment:

Agency	Staff Position	Type of Service to Project	No. of Hours	Fully Burdened Hourly Rate	Total*
Lake Forest	Contract Traffic Engineer	Timing review	20	$175.00	$3,500.00
	Contract Technician	Timing review, implementation, fine-tuning	50	$100.00	$5,000.00
				Total for City of Lake Forest:	*$8,500.00*
Laguna Hills	Contract Technician	Timing review, implementation, fine-tuning	50	$100.00	$5,000.00
				Total for City of Laguna Hills:	*$5,000.00*
				Total Staffing Commitment (ii):	*$13,500.00*

TOTAL IN-KIND MATCH* (i + ii):	$23,500.00

*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: January 2, 2025

Project end date: July 31, 2028

b. Projected Schedule by Task

Task	Starting Date	Ending Date
Task 1: Project Management - PI Phase	January 2, 2025	June 30, 2026
Task 2: Data Collection	January 6, 2025	April 30, 2025
Task 3: System Design and Construction	January 2, 2025	September 30, 2025
Task 4: Signal Timing Optimization and Implementation	January 6, 2025	May 31, 2025
Task 5: Project Report	June 1, 2025	April 30, 2026
Task 6: Project Management - O&M Phase	July 1, 2026	July 31, 2028
Task 7: Continuing Support	July 1, 2026	July 31, 2028
Task 8: Final Technical Memorandum	July 1, 2028	July 31, 2028

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 on MPAH w/in 2,700' # of offset signals on project / total # of offset signals: 10 / 40 = 100.0% = 10 Vehicle Miles Traveled (VMT): 182,892 = 6	16
2. Economic Effectiveness (Cost to Benefit Ratio): (10 points) Calculation for Total Project Cost / VMT = $2,495,200 / 182,892 = 13.64	6
3. Project Characteristics: (20 points) Average project improvement score = 24.9	5
4. Project Scale: (20 points) # of signals along entire length of corridor(s): 28 = 4 # of signals being synched / total # of corridor signals: 28 / 28 = 100.0% = 10	14
5. Number of Jurisdictions: (15 points) 4 Participating Jurisdiction(s)	11
6. Current Project Status (5 points) Re-timing at least 75% of previous project = 5	5
7. Funding Match: (5 points) $499,040.00 / $2,495,200.00 = 20.00%	0
Total Estimated Points:	**57**

Appendix B

AGENCY IMPROVEMENT CALCULATIONS

TABLE I: AGENCY IMPROVEMENT PREFERENCES ☐ Yes ☑ No

CATEGORIES	ID	ITEM DESCRIPTION	UNIT PRICE (MATERIAL + LABOR)			APPLICABLE DESIGN COST PER UNIT			VENDOR/BRAND & ADDITIONAL NOTES		
			Irvine	Lake Forest	Laguna Hills	Irvine	Lake Forest	Laguna Hills	Irvine	Lake Forest	Laguna Hills
Comm	2	Fiber Optic underground		$25,000	$25,000		$2,500	$2,500		Actelis ML 680DF; 29,000 lf of copper removal; cable testing on reel and post test; 36k lf of 72-SMFO; 12-SMFO breakout cable at all locations; splice cabinet at all locations; patch panel at all locations; splice closure and splice through points (3 locations)	
Field Elements	4	ATC signal controller	$10,000	$9,000	$9,500				XN ITS Controller	Econolite Cobalt w/EOS	Econolite Cobalt w/FSK card
	5	Signal cabinet on existing foundation		$25,000						TS2 Type 2 P44	
	8	BBS/UPS on existing foundation		$10,000			$1,000			UPS cabinet for existing Myers unit w/4 batteries	
	10	CCTV	$25,000			$2,500			Axis IP CCTV, mounts, Cat5E cable		
	14	Vehicle detection		$45,000			$4,500			Wavetronix	
	16	Pedestrian detection (audible)			$15,000			$1,500			Navigator iN2 APS w/sign; countdown ped heads
	17	Pedestrian detection		$20,000			$2,000			Countdown ped head + push buttons	
	20	EVP (hybrid or GPS)			$20,000			$2,000			
	24	Signal Performance Monitoring	$45,000	$45,000					ClearGuide	Centracs SPM	

APPENDIX B: AGENCY IMPROVEMENT CALCULATIONS

TABLE II: DESCRIPTION OF WORK BY INTERSECTION

LOCATION	IMPLEMENTING AGENCY	PROJECT CROSS STREETS	DESCRIPTION OF WORK											
			Fiber Optic underground	ATC signal controller	Signal cabinet on existing foundation	BBS/UPS on existing foundation	CCTV	Vehicle detection	Pedestrian detection (audible)	Pedestrian detection	EVP (hybrid or GPS)	Signal Performance Monitoring	Central System (server, licenses, workstations)	Caltrans Cooperative Agreement
			2	4	5	8	10	14	16	17	20	24	27	34
1	Irvine	Romano/Hidden Canyon		1										
2	Irvine	Bake Parkway					1							
3	Laguna Hills	Santa Vittoria Road / Tesla	1	1							1			
4	Laguna Hills	Mill Creek Drive / Scientific	1	1							1			
5	Laguna Hills	Moulton Parkway / Irvine Center Drive	1	1										
6	Laguna Hills	Del Lago Drive / Research Drive	1	1										
7	Laguna Hills	I-5 SB Off-Ramp / Avenida De La Carlota*												1
8	Lake Forest	I-5 NB Off-Ramp*												1
9	Lake Forest	Rockfield Blvd	1	1		1		1		1				
10	Lake Forest	Aspan St	1	1		1		1		1				
11	Lake Forest	Lake Forest Town Center	1	1		1		1		1				
12	Lake Forest	Muirlands Blvd	1	1		1		1		1				
13	Lake Forest	Jeronimo Rd	1	1		1		1		1				
14	Lake Forest	Toledo Way	1	1	1	1		1		1				
15	Lake Forest	Serrano Road	1	1		1		1		1				
16	Lake Forest	Chinook Drive	1	1		1		1		1				
17	Lake Forest	Trabuco Road	1											
18	Lake Forest	Canada/Newvale	1											
19	Lake Forest	Pittsford Drive	1											
20	Lake Forest	Vintage Woods	1											
21	Lake Forest	Dimension Drive	1											
22	Lake Forest	Regency Lane	1											
23	Lake Forest	Vista Terrace	1											
24	Lake Forest	Rancho Parkway												
25	Lake Forest	SR-241 SB Off-Ramp*												1
26	Lake Forest	SR-241 NB On-Ramp*												1
27	Lake Forest	Towne Centre Drive	1					1		1				
28	Lake Forest	Portola Parkway												
29	Irvine	Lake Forest Drive @ Laguna Canyon Road		1										
30	Irvine	Gitano @ Bake Parkway		1										

APPENDIX B: AGENCY IMPROVEMENT CALCULATIONS

TABLE II: DESCRIPTION OF WORK BY INTERSECTION

LOCATION	IMPLEMENTING AGENCY	PROJECT CROSS STREETS	DESCRIPTION OF WORK											
			Fiber Optic underground	ATC signal controller	Signal cabinet on existing foundation	BBS/UPS on existing foundation	CCTV	Vehicle detection	Pedestrian detection (audible)	Pedestrian detection	EVP (hybrid or GPS)	Signal Performance Monitoring	Central System (server, licenses, workstations)	Caltrans Cooperative Agreement
			2	4	5	8	10	14	16	17	20	24	27	34
31	Irvine	Irvine Center Drive @ Bake Parkway		1										
32	Irvine	Research @ Bake Parkway		1										
33	Laguna Hills	Tesla @ Irvine Center Drive		1										
34	Laguna Hills	Scientific @ Irvine Center Drive		1										
35	Laguna Hills	Scientific @ Research		1										
36	Laguna Hills	Protocol @ Irvine Center Drive		1										
37	Laguna Hills	Inquiry @ Research		1										
38	Laguna Hills	El Pacifico Drive @ Moulton Parkway		1										
-	Irvine	TMC Improvements												
-	Laguna Hills	TMC Improvements											1	
-	Lake Forest	TMC Improvements										1		
		QUANTITY TOTAL =	**20**	**23**	**1**	**8**	**1**	**9**	**0**	**9**	**2**	**1**	**1**	**4**

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 20%	Contingency 10%	Caltrans Cooperative Agreement Fees ($2,500)	TOTAL	
1	Irvine	Romano/Hidden Canyon	$ -	$ 10,000.00	$ 2,000.00	$ 1,200.00	$ -	**$ 13,200.00**	
2	Irvine	Bake Parkway	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	
3	Laguna Hills	Santa Vittoria Road / Tesla	$ 4,500.00	$ 54,500.00	$ 11,800.00	$ 7,080.00	$ -	**$ 77,880.00**	120-SMFO in existing conduit, splice enclosures, FDU from Santa Vittoria to Mill Creek
4	Laguna Hills	Mill Creek Drive / Scientific	$ 4,500.00	$ 54,500.00	$ 11,800.00	$ 7,080.00	$ -	**$ 77,880.00**	120-SMFO in existing conduit, splice enclosures, FDU from Mill Creek to Moulton
5	Laguna Hills	Moulton Parkway / Irvine Center Drive	$ 2,500.00	$ 34,500.00	$ 7,400.00	$ 4,440.00	$ -	**$ 48,840.00**	120-SMFO in existing conduit, splice enclosures, FDU from Moulton to Del Lago
6	Laguna Hills	Del Lago Drive / Research Drive	$ 2,500.00	$ 34,500.00	$ 7,400.00	$ 4,440.00	$ -	**$ 48,840.00**	120-SMFO in existing conduit, splice enclosures, FDU from Del Lago to Rockfield
7	Laguna Hills	I-5 SB Off-Ramp / Avenida De La Carlota*	$ -	$ -	$ -	$ -	$ 2,500.00	**$ 2,500.00**	
8	Lake Forest	I-5 NB Off-Ramp*	$ -	$ -	$ -	$ -	$ 2,500.00	**$ 2,500.00**	
9	Lake Forest	Rockfield Blvd	$ 10,000.00	$ 109,000.00	$ 23,800.00	$ 14,280.00	$ -	**$ 157,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Rockfield to
10	Lake Forest	Aspan St	$ 10,000.00	$ 109,000.00	$ 23,800.00	$ 14,280.00	$ -	**$ 157,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Aspan to
11	Lake Forest	Lake Forest Town Center	$ 10,000.00	$ 109,000.00	$ 23,800.00	$ 14,280.00	$ -	**$ 157,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Lake Forest
12	Lake Forest	Muirlands Blvd	$ 10,000.00	$ 109,000.00	$ 23,800.00	$ 14,280.00	$ -	**$ 157,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Muirlands to
13	Lake Forest	Jeronimo Rd	$ 10,000.00	$ 109,000.00	$ 23,800.00	$ 14,280.00	$ -	**$ 157,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Jeronimo to
14	Lake Forest	Toledo Way	$ 10,000.00	$ 134,000.00	$ 28,800.00	$ 17,280.00	$ -	**$ 190,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Toledo to
15	Lake Forest	Serrano Road	$ 10,000.00	$ 109,000.00	$ 23,800.00	$ 14,280.00	$ -	**$ 157,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Serrano to
16	Lake Forest	Chinook Drive	$ 10,000.00	$ 109,000.00	$ 23,800.00	$ 14,280.00	$ -	**$ 157,080.00**	120-SMFO in existing conduit, splice enclosures, FDU from Chinook to
17	Lake Forest	Trabuco Road	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	120-SMFO in existing conduit, splice enclosures, FDU from Trabuco to
18	Lake Forest	Canada/Newvale	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	120-SMFO in existing conduit, splice enclosures, FDU from Canada to Pittsford
19	Lake Forest	Pittsford Drive	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	120-SMFO in existing conduit, splice enclosures, FDU from Pittsford to Vintage Woods
20	Lake Forest	Vintage Woods	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	120-SMFO in existing conduit, splice enclosures, FDU from Vintage Woods to Dimension
21	Lake Forest	Dimension Drive	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	120-SMFO in existing conduit, splice enclosures, FDU from Dimension to Regency
22	Lake Forest	Regency Lane	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	120-SMFO in existing conduit, splice enclosures, FDU from Regency to Vista Terrace
23	Lake Forest	Vista Terrace	$ 2,500.00	$ 25,000.00	$ 5,500.00	$ 3,300.00	$ -	**$ 36,300.00**	120-SMFO in existing conduit, splice enclosures, FDU from Vista Terrace to Rancho
24	Lake Forest	Rancho Parkway	$ -	$ -	$ -	$ -	$ -	**$ -**	120-SMFO in existing conduit, splice enclosures, FDU from Rancho to Town Ctr
25	Lake Forest	SR-241 SB Off-Ramp*	$ -	$ -	$ -	$ -	$ 2,500.00	**$ 2,500.00**	
26	Lake Forest	SR-241 NB On-Ramp*	$ -	$ -	$ -	$ -	$ 2,500.00	**$ 2,500.00**	
27	Lake Forest	Towne Centre Drive	$ 9,000.00	$ 90,000.00	$ 19,800.00	$ 11,880.00	$ -	**$ 130,680.00**	120-SMFO in existing conduit, splice enclosures, FDU from Town Ctr to Portola
28	Lake Forest	Portola Parkway	$ -	$ -	$ -	$ -	$ -	**$ -**	
29	Irvine	Lake Forest Drive @ Laguna Canyon Road	$ -	$ 10,000.00	$ 2,000.00	$ 1,200.00	$ -	**$ 13,200.00**	
30	Irvine	Gitano @ Bake Parkway	$ -	$ 10,000.00	$ 2,000.00	$ 1,200.00	$ -	**$ 13,200.00**	

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 20%	Contingency 10%	Caltrans Cooperative Agreement Fees ($2,500)	TOTAL	
31	Irvine	Irvine Center Drive @ Bake Parkway	$ -	$ 10,000.00	$ 2,000.00	$ 1,200.00	$ -	**$ 13,200.00**	
32	Irvine	Research @ Bake Parkway	$ -	$ 10,000.00	$ 2,000.00	$ 1,200.00	$ -	**$ 13,200.00**	
33	Laguna Hills	Tesla @ Irvine Center Drive	$ -	$ 9,500.00	$ 1,900.00	$ 1,140.00	$ -	**$ 12,540.00**	
34	Laguna Hills	Scientific @ Irvine Center Drive	$ -	$ 9,500.00	$ 1,900.00	$ 1,140.00	$ -	**$ 12,540.00**	
35	Laguna Hills	Scientific @ Research	$ -	$ 9,500.00	$ 1,900.00	$ 1,140.00	$ -	**$ 12,540.00**	
36	Laguna Hills	Protocol @ Irvine Center Drive	$ -	$ 9,500.00	$ 1,900.00	$ 1,140.00	$ -	**$ 12,540.00**	
37	Laguna Hills	Inquiry @ Research	$ -	$ 9,500.00	$ 1,900.00	$ 1,140.00	$ -	**$ 12,540.00**	
38	Laguna Hills	El Pacifico Drive @ Moulton Parkway	$ -	$ 9,500.00	$ 1,900.00	$ 1,140.00	$ -	**$ 12,540.00**	
-	Irvine	TMC Improvements	$ -	$ -	$ -	$ -	$ -	**$ -**	
-	Laguna Hills	TMC Improvements	$ -	$ 25,000.00	$ 5,000.00	$ 3,000.00	$ -	**$ 33,000.00**	
-	Lake Forest	TMC Improvements	$ -	$ 45,000.00	$ 9,000.00	$ 5,400.00	$ -	**$ 59,400.00**	
QUANTITY TOTAL =			**SIGNAL IMPROVEMENT TOTAL =**					**$ 2,207,800.00**	

TABLE III: PROJECT AVERAGE IMPROVEMENT SCORES

LOCATION	IMPLEMENTING AGENCY	PROJECT CROSS STREETS	DESCRIPTION OF WORK											AVERAGE IMPROVEMENT SCORE	NOTES
			Fiber Optic underground	ATC signal controller	Signal cabinet on existing foundation	BBS/UPS on existing foundation	CCTV	Vehicle detection	Pedestrian detection (audible)	Pedestrian detection	EVP (hybrid or GPS)	Signal Performance Monitoring	Central System (server, licenses, workstations)	Caltrans Cooperative Agreement	
			ne Sou	None/5+ Years or Within 5 Years									0+ or <	Y/N	
1	Irvine	Romano/Hidden Canyon		10											10.0	
2	Irvine	Bake Parkway					10								10.0	
3	Laguna Hills	Santa Vittoria Road / Tesla	25	50							40				38.3	
4	Laguna Hills	Mill Creek Drive / Scientific	25	50							40				38.3	
5	Laguna Hills	Moulton Parkway / Irvine Center Drive	25	50											37.5	
6	Laguna Hills	Del Lago Drive / Research Drive	25	50											37.5	
7	Laguna Hills	I-5 SB Off-Ramp / Avenida De La Carlota*												40	40.0	
8	Lake Forest	I-5 NB Off-Ramp*												40	40.0	
9	Lake Forest	Rockfield Blvd	25	50		10		30		30					29.0	
10	Lake Forest	Aspan St	25	50		10		30		30					29.0	
11	Lake Forest	Lake Forest Town Center	25	50		10		30		30					29.0	
12	Lake Forest	Muirlands Blvd	25	50		10		30		30					29.0	
13	Lake Forest	Jeronimo Rd	25	50		10		30		30					29.0	
14	Lake Forest	Toledo Way	25	50	30	10		30		30					29.2	
15	Lake Forest	Serrano Road	25	50		10		30		30					29.0	
16	Lake Forest	Chinook Drive	25	50		10		30		30					29.0	
17	Lake Forest	Trabuco Road	25												25.0	
18	Lake Forest	Canada/Newvale	25												25.0	
19	Lake Forest	Pittsford Drive	25												25.0	
20	Lake Forest	Vintage Woods	25												25.0	
21	Lake Forest	Dimension Drive	25												25.0	
22	Lake Forest	Regency Lane	25												25.0	
23	Lake Forest	Vista Terrace	25												25.0	
24	Lake Forest	Rancho Parkway														
25	Lake Forest	SR-241 SB Off-Ramp*												40	40.0	
26	Lake Forest	SR-241 NB On-Ramp*												40	40.0	
27	Lake Forest	Towne Centre Drive	25					30		30					28.3	
28	Lake Forest	Portola Parkway														
29	Irvine	Lake Forest Drive @ Laguna Canyon Road		10											10.0	
30	Irvine	Gitano @ Bake Parkway		10											10.0	
31	Irvine	Irvine Center Drive @ Bake Parkway		10											10.0	
32	Irvine	Research @ Bake Parkway		10											10.0	
33	Laguna Hills	Tesla @ Irvine Center Drive		10											10.0	
34	Laguna Hills	Scientific @ Irvine Center Drive		10											10.0	
35	Laguna Hills	Scientific @ Research		10											10.0	
36	Laguna Hills	Protocol @ Irvine Center Drive		10											10.0	
37	Laguna Hills	Inquiry @ Research		10											10.0	
38	Laguna Hills	El Pacifico Drive @ Moulton Parkway		10											10.0	
-	Irvine	TMC Improvements														
-	Laguna Hills	TMC Improvements											40		40.0	
-	Lake Forest	TMC Improvements										40			40.0	
														AVERAGE SCORE =	24.9	

Appendix C

VEHICLE MILES TRAVELED (VMT)

APPENDIX C: VEHICLE MILES TRAVELED (VMT)

	Segment	ADTs	Distance	VMT
Lake Forest Drive	Portola Pkwy - Towne Centre Dr	10,100	0.26	2,626
	Towne Centre Dr - SR-241 On-Ramp	10,100	0.10	1,010
	Sr-241 Off Ramp - Rancho Pkwy	10,100	0.14	1,414
	Rancho Pkwy - Vista Terrace	22,100	0.24	5,304
	Vista Terrace - Regency Lane	22,100	0.23	5,083
	Regency Lane - Dimension Dr	19,300	0.18	3,474
	Dimension Dr - Vintage Woods	19,300	0.45	8,685
	Vintage Woods - Pittsford Dr	19,300	0.28	5,404
	Pittsford Dr - Canada/Newvale	25,100	0.67	16,817
	Canada/Newvale - Trabuco Rd	25,100	0.25	6,275
	Trabuco Rd - Chinook Dr	33,800	0.12	4,056
	Chinook Dr - Serrano Rd	33,800	0.09	3,042
	Serrano Rd - Toledo Way	33,800	0.56	18,928
	Toledo Way - Jeronimo Rd	33,500	0.35	11,725
	Jeronimo Rd - Muirlands Blvd	32,200	0.61	19,642
	Muirlands Blvd - Lake Forest Town Center	36,200	0.13	4,706
	Lake Forest Town Center - Aspan St	36,200	0.21	7,602
	Aspan St - Rockfield Blvd	36,200	0.19	6,878
	Rockfield Blvd - I-5 Ramp	53,200	0.12	6,384
	I-5 Ramp - De Lago	53,200	0.47	25,004
	Del Lago - Moulton Pkwy	20,800	0.18	3,744
	MoultonPkwy - Mill Creek	10,300	0.28	2,884
	Mill Creek - Santa Vittoria	9,500	0.29	2,755
	Santa Vittoria - Bake Pkwy	9,000	0.43	3,870
	Bake Pkwy - Romano/Hidden Canyon	9,000	0.62	5,580
		Total Project VMT:	**7.45**	**182,892**

Source: *2023 Citywide Counts*

Appendix D

AGENCY RESOLUTIONS AND LETTERS OF SUPPORT

Appendix E

ADDITIONAL INFORMATION

City of Laguna Hills - TMC Improvements

Item Description	Unit	Qty	Unit Price	Total
Centracs licenses	LS	1	$ 25,000	$ 25,000
Total for City of Laguna Hills - TMC Improvements:				**$ 25,000**

City of Lake Forest - TMC Improvements

Item Description	Unit	Qty	Unit Price	Total
SPM license	LS	1	$ 20,000	$ 20,000
Setup and configuration	LS	1	$ 5,000	$ 5,000
Total for City of Lake Forest - TMC Improvements:				**$ 25,000**