2026 Local Signal Synchronization Plan Update

Submitted by:

June 4, 2026

Submitted to:

OCTA

City of Orange
Public Works Department
300 E. Chapman Ave.
Orange, CA 92866

May 19, 2026

Orange County Transportation Authority
ATTN: Ms. Alicia Yang
Regional Modeling and Traffic Operations
Planning Division
P.O. Box 14184
Orange, CA 92863-1584

Subject: Local Signal Synchronization Plan Submittal as Part of the Measure M2 Eligibility Process

Dear Ms. Yang,

The City of Orange is pleased to submit its Local Signal Synchronization Plan as part of the Measure M2 eligibility process. The submittal includes the following components:

1. A completed "Local Signal Synchronization Plan Consistency Review Checklist" form establishing consistency between the Local Signal Synchronization Plan and the Regional Traffic Signal Synchronization Master Plan.

2. An updated Local Signal Synchronization Plan for Fiscal Years 2026/27 to 2028/29 including all required elements as identified in the "Guidelines for the Preparation of Local Signal Synchronization Plans".

3. Update of GIS-based online signal inventory

The City looks forward to continuing the implementation of the beneficial programs and construction projects required and made possible by Measure M2.

If you have any questions, please contact me at (714) 744-5534 or via email at ltay@cityoforange.org.

Sincerely,

Larry S. Tay, PE, TE, PTOE
City Traffic Engineer

Enclosures

A. Local Signal Synchronization Plan Consistency Review Checklist
B. Local Signal Synchronization Plan

Orange 2026 LSSP Cover Letter.docx

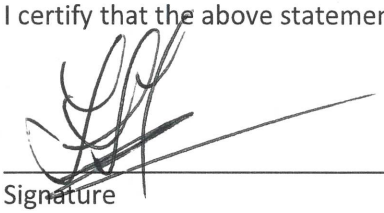
LOCAL SIGNAL SYNCHRONIZATION PLAN CONSISTENCY REVIEW CHECKLIST

The Local Agency Name: City of Orange Plan Date: June 30, 2026

Local agencies must submit a copy of the Local Signal Synchronization Plan, a completed consistency review checklist, and any supporting documentation. Complete the table below.

Local Agency Statement	Page #s in LSSP	Provided or N/A
1. Signal synchronization goals of the agency are consistent with those outlined as part of the Regional Traffic Signal Synchronization Master Plan.	1 - 3	Yes
2. Traffic signal synchronization street routes are identified, including all corridors along the regional signal synchronization network located within the local agency.	4	Yes
3. Traffic signal inventory for all traffic signal synchronization street routes.	5 - 10	Yes
4. Three-year plan separately showing costs, available funding, and phasing for capital, operations, and maintenance of signal synchronization along the traffic signal synchronization street routes and traffic signals which may include unconstrained and build-out scenarios.	11 - 13	Yes
5. Signal synchronization review, revision, and assessment of synchronization activities along the traffic signal synchronization street routes and traffic signals.	14 - 19	Yes

I certify that the above statements are true to the best of my knowledge.



5-19-26

Signature Date

Larry S. Tay, City Traffic Engineer, City of Orange

Printed Name, Title

LOCAL SIGNAL SYNCHRONIZATION PLAN

Section 1
Traffic Signal Synchronization Goals, Policies, and Objectives

The City of Orange's Local Signal Synchronization Plan is a step towards the implementation of the City's General Plan Circulation Element Goal to provide safe, efficient, and comprehensive circulation system that serves local needs, forecasted demands, and sustains quality of life. The Local Signal Synchronization Plan addresses both local and regional circulation needs.

The Local Signal Synchronization Plan is recognized by the City to be a valuable measure in maintaining an effective and efficient circulation system. Towards this end, the City has carried out and continues to implement and support synchronization related projects in collaboration with neighboring cities and agencies.

The City has allocated resources and efforts in the management, operations, and maintenance of its traffic signal system in keeping with the Local Signal Synchronization Plan. The following is a description of the City's efforts in implementing the Plan:

A. Completed Inter-Jurisdictional Signal Coordination Projects
   - Main Street RTSSP
   - Katella Avenue RTSSP
   - Garden Grove Boulevard RTSSP
   - Santiago Boulevard

B. Current Inter-Jurisdictional Signal Coordination Projects
   - Kraemer Blvd/Glassell St/Grand Ave RTSSP - PI Phase ongoing
   - Ball Road/Taft Avenue RTSSP - PI Phase ongoing
   - Tustin Street/Rose Drive RTSSP - PI Phase completed, O&M Phase ongoing
   - State College Blvd/The City Dr RTSSP - PI Phase ongoing

C. Planned/Future Inter-Jurisdictional Signal Coordination Projects
   - Lincoln Avenue
   - Chapman Avenue
   - Orangewood Avenue
   - Santiago Canyon Boulevard/Wanda Road (New Corridor)

D. Existing Synchronization Infrastructure
   - The City of Orange Traffic Management Center (TMC) facility is an additional tool to effectively manage traffic. The TMC is capable of managing multi-jurisdictional interlinks with neighboring cities to allow direct communications with each respective systems. This supports the full implementation of the Regional Traffic Signal Synchronization Network.

The City, through the RTSSP, has renovated the TMC with a new video wall, appurtenant hardware, and upgraded to the Centracs Advanced Traffic Management System platform in order to effectively utilize the TMC functions.

- To date, the City has the following synchronized major arterials namely:
    - Tustin Street between Fairhaven Avenue and Santa Ana Canyon Road
    - Lincoln Avenue between Batavia Street and East City Limit
    - Katella Avenue between West City Limit (Struck Avenue) and Jamboree Road
    - Chapman Avenue between Lewis Street and Cliffway Drive
    - State College Boulevard/The City Drive between Garden Grove Boulevard and Orangewood Avenue
    - Newport Boulevard between Canyon View Avenue and Santiago Canyon Road
    - Taft Avenue between Main Street and Tustin Street
    - Glassell Street between Riverdale Avenue and SR-22 westbound ramp
    - Orangewood Avenue between Eckhoff Street and Batavia Street

  The traffic signals along these corridors are equipped with the necessary infrastructure and communication systems to effect synchronization.

- New Corridor
    - Santiago Boulevard/Wanda Road between Lincoln Avenue and Collins Avenue is categorized as a City Controlled System (Local Route). The corridor is heavily utilized as motorists utilize the arterial to bypass the SR-55 freeway.

E. Locally Funded Arterial Synchronization

- At this time, there are no planned locally funded arterials to be synchronized.

F. Regional Traffic Signal Synchronization Master Plan

- The City of Orange is committed and in full support of the Regional Traffic Signal Synchronization Master Plan. There were no candidate synchronization corridors currently identified for the 2026 CTFP Call for Projects. Participation is planned for city corridors on future calls.
- The City has taken the initiative with its own synchronization efforts and will continue to participate and source funding opportunities to realize full regional synchronization.

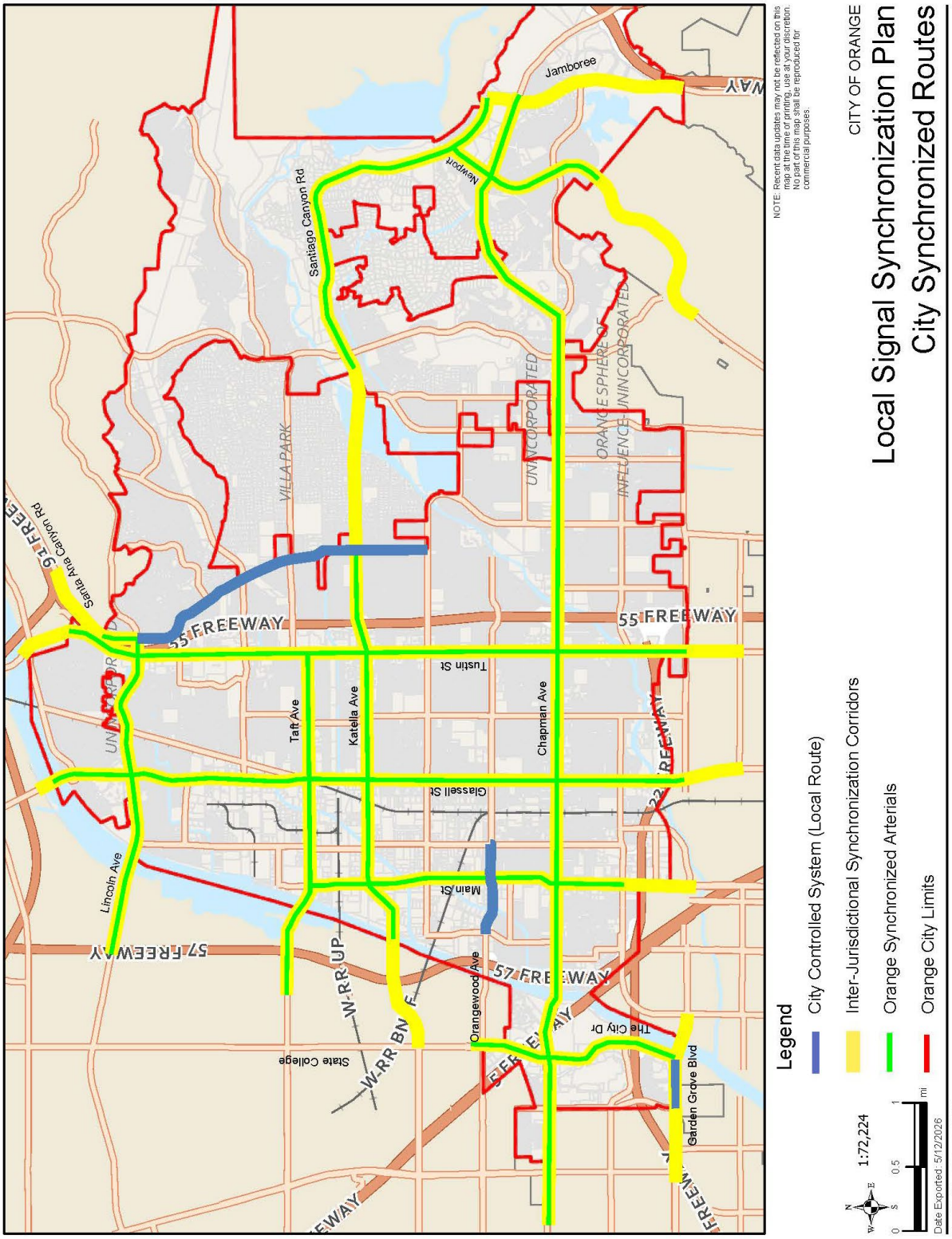
G. Resource Allocation

- The City of Orange allocates funds both in its Capital Improvement Program and Operating Budget towards efforts in the implementation of local and regional synchronization projects and programs.

- The City of Orange operates and maintains its own traffic signal network which is the responsibility of the Traffic Division under the Public Works Department. The Traffic Division's Operations Section is responsible for the routine preventive maintenance and associated operations of the traffic signal equipment, infrastructure, and appurtenances.
- Staff is allocated to perform Engineering and Traffic Survey for data collection relative to signal synchronization. The data collection includes traffic volume studies, directional counts, and travel-time and delay studies.

Section 2

Traffic Signal Synchronization Street Routes (Existing and Planned)



Section 3
Traffic Control Inventory

The City of Orange's signal equipment inventory is presented in the following pages.

Traffic Synchronization Inventory

City of Orange

Updated 4/5/2023 by J. Rocha

Corridor	Cross Street Intersection	Cycle Length				Maintenance Responsibility	Operations			Equipment										
		AM	MID	PM	WKND		Left	Right	Other	Cabinet	Type	Software	Detection	Bike Detection	CCTV	Power Backup	Comm	Other ITS	ATMS	Status
Chapman Avenue	Lewis	130	130	130	130	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	Other	Loops	No	N/A	BBS	Fiber			
	Manchester	130	130	130	130	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 1)	Cobalt	Other	Loops	No	N/A	BBS	Fiber			
	City Drive	130	130	130	130	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	Other	Video	No	Cohu	BBS	Fiber			
	5 Freeway	90	90	90	90	Caltrans					170/170E									
	Rampart	90	90	90	90	Caltrans					170/170E									
	Renaissance	90	90	90	90	Caltrans					170/170E									
	57 On/Off Ramp	90	90	90	90	Caltrans					170/170E									
	57 On/Off Ramp	90	90	90	90	Caltrans					170/170E									
	Flower	130	130	130	130	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Feldner	130	130	130	130	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Main	130	130	130	130	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Batavia	130	130	130	130	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Lemon	70	70	70	70	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Grand	70	70	70	70	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Shaffer	70	70	70	70	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Cambridge	70	70	70	70	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Tustin	130	130	140	130	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	55 Off Ramp	90	90	90	90	Caltrans					170/170E									
	55 On Ramp	90	90	90	90	Caltrans					170/170E									
	Yorba	130	120	140	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Malena	130	120	140	120	Orange	Protected	Permissive	Other	P (TS1)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Prospect	130	120	140	120	Orange	Protected	Prot/Overlap	Other	P (TS1)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	James	130	120	140	120	Orange	Permissive	Permissive	Other	P (TS2 Type 1)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Esplanade	130	120	140	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Hewes	130	120	140	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Rancho Santiago	130	120	140	120	Orange	Protected	Permissive	Other	P (TS1)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Cannon	130	120	140	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Canyon View	130	120	140	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	Yes	Cohu	BBS	Fiber			
	Cliffway	65	120	70	120	Orange	Protected	Permissive	Other	P (TS1)	Cobalt	ASC/3	Loops	No	N/A	BBS	Wireless			
	Orange Park Blvd	FREE	FREE	FREE	FREE	Orange	Protected	Permissive	Other	P (TS1)	ASC/3	ASC/3	Loops	No	N/A	N/A	Other			
	Newport	135	135	135	135	Orange	Protected	Prot/Overlap	Other	P (TS1)	ASC/3	ASC/3	Loops	No	Cohu	BBS	Copper			
	Trails End	FREE	FREE	FREE	FREE	Orange	Protected	Prot/Overlap	Other	P (TS1)	ASC/3	ASC/3	Loops	Yes	N/A	BBS	Copper			
	Shopping Center	FREE	FREE	FREE	FREE	Orange	Protected	Permissive	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	Yes	Cohu	BBS	Copper			
	Jamboree	145	145	145	145	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Video	Yes	Cohu	BBS	Copper			
Katella Ave	Struck	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Stadium Promenade	130	140	140	140	Orange	Protected	Permissive	Other	P (TS1)	Cobalt	ASC/3	Video	No	N/A	BBS	Fiber			
	Main	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Batavia	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	N/A	BBS	Fiber			
	Home Depot	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Glassell	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Shaffer	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Cambridge	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	N/A	BBS	Fiber			
	California	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Tustin	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			

Changes shown in green.

Traffic Synchronization Inventory

City of Orange

Updated 4/5/2023 by J. Rocha

Corridor	Cross Street Intersection	Cycle Length				Maintenance Responsibility	Operations			Equipment										
		AM	MID	PM	WKND		Left	Right	Other	Cabinet	Type	Software	Detection	Bike Detection	CCTV	Power Backup	Comm	Other ITS	ATMS	Status
Katella Ave (Cont)	55 Freeway On Ramp	130	140	140	140	Caltrans					170/170E									
	55 Freeway Off Ramp	130	140	140	140	Caltrans					170/170E									
	Handy	130	105	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	N/A	BBS	Wireless			
	Wanda	130	105	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	N/A	BBS	Wireless			
Katella/Villa Park Road	Center	130	105	140	140	Villa Park					Other									
	Lemon	130	105	140	140	Villa Park					Other									
Katella/Santiago Canyon Road	Hewes	90	90	90	90	County					ASC/3									
	Cannon	130	105	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	Yes	Cohu	BBS	Wireless			
	Orange Park	139	139	139	139	Orange	Protected	Perm/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	Yes	N/A	BBS	Cellular			
	Windes	100	100	100	100	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	Yes	N/A	BBS	Other			
	Holy Sepulcher	124	124	124	124	Orange	Protected	Protected	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	Yes	N/A	BBS	Wireless			
	Newport	140	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	Yes	Cohu	BBS	Copper			
	Jamboree	138	138	138	138	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	Yes	Cohu	BBS	Copper			
Tustin Street	Santa Ana Road	FREE	FREE	FREE	FREE	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	Yes	N/A	BBS	GPS	Wireless		
	55 Off Ramp	FREE	FREE	FREE	FREE	Caltrans					170/170E									
	Lincoln	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber	Wireless		
	55 SB On Ramp	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	N/A	BBS	Fiber			
	Heim	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Village Town Center	65	70	140	70	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Village Way	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Meats	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Briardale	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Taft	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Van Owen	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Katella	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Quincy	130	140	140	140	Orange	Protected	Protected	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	N/A	Fiber			
	Collins	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Mayfair	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Walnut	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Palm	130	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Chapman	140	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Radar	No	Cohu	BBS	Fiber			
	Palmyra	140	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	La Veta	140	130	140	140	Orange	Protected	Prot/Overlap	Other	P (TS1)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	22 Freeway On Ramp	70	65	70	70	Caltrans					170/170E									
	22 Freeway Off Ramp	140	130	140	140	Caltrans					170/170E									
	Fairhaven	140	130	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS				
Lincoln Avenue	Batavia	120	120	120	120	County					ASC/3									
	Glassell	120	120	120	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	Cohu	BBS	Wireless			
	Orange Olive	120	120	120	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	Cohu	BBS	Wireless			
	Canal	80	120	120	120	Orange	Protected	Permissive	Other	P (TS1)	ASC/3	ASC/3	Loops	No	N/A	N/A	Copper			
	Tustin	130	130	140	130	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Video	No	Cohu	BBS	Fiber			

Changes shown in green.

Traffic Synchronization Inventory

City of Orange

Updated 4/5/2023 by J. Rocha

Corridor	Cross Street Intersection	Cycle Length				Maintenance Responsibility	Operations			Equipment										
		AM	MID	PM	WKND		Left	Right	Other	Cabinet	Type	Software	Detection	Bike Detection	CCTV	Power Backup	Comm	Other ITS	ATMS	Status
Taft Avenue	Main	110	110	110	110	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	Yes	N/A	BBS	Wireless			
	Batavia	110	110	110	110	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	Yes	N/A	BBS	Wireless			
	Glassell	140	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video/Loops	Yes	Cohu	BBS	Wireless			
	Shaffer	110	110	110	110	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video/Loops	Yes	N/A	N/A	Fiber	Wireless		Adv Loops
	Cambridge	110	110	110	110	Orange	Permissive	Permissive	Other	P (TS1)	Cobalt	ASC/3	Video/Loops	Yes	N/A	BBS	Fiber			Adv Loops
	Tustin	130	130	140	130	Orange	Protected	Permissive	Other	P (TS1)	Cobalt	ASC/3	Video/Loops	No	N/A	BBS	Fiber	Wireless		Adv Loops
Glassell Street	Riverdale	120	120	120	120	Orange	Protected	Permissive	Other	M	Cobalt	ASC/3	Loops	No	N/A	N/A	Fiber			
	Richland	120	120	120	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Lincoln	120	120	120	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	Yes	Cohu	BBS	Fiber	Wireless		
	Fletcher	95	95	95	95	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	Yes	N/A	BBS	Fiber	Wireless		
	Meats	67	67	67	67	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video/Loops	No	N/A	BBS	Fiber	Wireless		Adv Loops
	Grove	60	60	60	60	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	N/A	Fiber			
	Taft	140	140	140	140	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber	Wireless		
	Katella	120	120	120	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video/Loops	No	Cohu	BBS	Fiber	Wireless		Adv Loops
	Adams	90	90	90	90	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber	Wireless		
	Collins	95	95	95	95	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video/Loops	No	N/A	BBS	Fiber	Wireless		Adv Loops
	Walnut	54	54	54	54	Orange	Permissive	Permissive	Other	M	Cobalt	ASC/3	Video	Yes	N/A	N/A	Fiber	Wireless		
	Sycamore	70	70	70	70	Orange	Permissive	Permissive	Other	P (TS1)	Cobalt	ASC/3	Video	Yes	N/A	N/A	Fiber	Wireless		
	Palm	90	90	90	90	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	Yes	Cohu	BBS	Fiber	Wireless		
	La Veta	135	135	135	135	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	Yes	Axis	BBS	Fiber	Wireless		
	22 On/Off Ramp	120	120	120	120	Caltrans					2070									
	22 On/Off Ramp	120	120	120	120	Caltrans					2070									
Newport Boulevard	Santiago Canyon Road	140	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	Yes	Cohu	BBS	Copper			
	Chapman	135	135	135	135	Orange	Protected	Prot/Overlap	Other	P (TS1)	ASC/3	ASC/3	Loops	Yes	Cohu	BBS	Copper			
	White Oak	100	113	100	113	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	Yes	N/A	BBS	Copper			
	Canyon View	100	89	100	89	Orange	Protected	Permissive	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	Yes	Cohu	BBS	Fiber			
The City Drive	Orangewood	120	120	120	120	Anaheim					170/170E									
	5 Freeway On/Off (NB)	90	90	90	90	Caltrans					170/170E									
	5 Freeway On/Off (SB)	90	90	90	90	Caltrans					170/170E									
	Chapman	130	130	130	130	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Video	No	Cohu	BBS	Fiber			
	Medical Center Drive	130	130	130	120	Orange	Protected	Prot/Overlap	Other	P (TS1)	ASC/3	ASC/3	Loops	No	N/A	BBS	Fiber			
	Dawn Way	130	130	130	120	Orange	Protected	Prot/Overlap	Other	P (TS1)	ASC/3	ASC/3	Loops	No	N/A	BBS	Fiber			
	Justice	130	130	130	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	N/A	BBS	Fiber			
	Entertainment	130	130	130	120	Orange	Protected	Prot/Overlap	Other	P (TS1)	ASC/3	ASC/3	Loops	No	N/A	BBS	Fiber			
	Metropolitan	130	130	130	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	N/A	BBS	Fiber			
	22 Freeway Off Ramp	130	130	130	120	Caltrans					170/170E									
	Garden Grove	130	130	130	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	Cohu	BBS	Fiber			
Orangewood	Eckhoff	120	120	120	120	Orange	Protected	Prot/Overlap	Other	P (TS1)	ASC/3	ASC/3	Loops	No	N/A	BBS	Wireless			
	Poplar	60	60	120	60	Orange	Protected	Permissive	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	N/A	BBS	Wireless			
	Main Street	120	120	120	120	Orange	Protected	Protected	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Batavia	60	60	60	60	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	ASC/3	ASC/3	Loops	No	N/A	BBS	Wireless			

Changes shown in green.

Traffic Synchronization Inventory

City of Orange

Updated 4/5/2023 by J. Rocha

Corridor	Cross Street Intersection	Cycle Length				Maintenance Responsibility	Operations			Equipment										
		AM	MID	PM	WKND		Left	Right	Other	Cabinet	Type	Software	Detection	Bike Detection	CCTV	Power Backup	Comm	Other ITS	ATMS	Status
Main Street	Taft	110	110	110	110	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Wireless			
	Katella	130	140	140	140	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Struck	120	120	120	120	Orange	Permissive	Permissive	Other	P (TS2 Type 1)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Collins	120	120	120	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Walnut	120	120	120	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	Cohu	BBS	Fiber			
	Palm	120	120	120	120	Orange	Permissive	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	N/A	BBS	Fiber			
	Chapman	130	130	130	130	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	Almond	120	120	120	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Palmyra	120	120	120	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	Culver	120	120	120	120	Orange	Protected	Permissive	Other	P (TS2 Type 2)	Cobalt	ASC/3	Loops	No	N/A	BBS	Fiber			
	La Veta	120	120	120	120	Orange	Protected	Prot/Overlap	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	Cohu	BBS	Fiber			
	CHOC	120	120	120	120	Orange	Protected	Protected	Other	P (TS2 Type 2)	Cobalt	ASC/3	Video	No	N/A	BBS	Fiber			

Changes shown in green.

City of Orange System:

Central System: Econolite CENTRACS
Controller Operating System: ASC/3 and Cobalt Controller Software

Caltrans System:

Model 2070 Controller (Local): TSCP Program
Field Master Model 2070 Controller: GPS + TRFM Program

Section 4
Traffic Signal Synchronization System and Three-Year Plan

3-YEAR OUTLOOK
TRAFFIC SIGNAL SYNCHRONIZATION

Funding Needs for Synchronized Operation (Constrained)

Reporting Jurisdiction Expenditures: City of Orange

Type of Traffic Signal Synchronization Expenditures in Year of Expenditure Dollars

MAINTENANCE

PROJECT	FY26/27	FY27/28	FY28/29	TOTAL
Communication and Software Maintenance	$ 25,300	$ 25,300	$ 25,300	$ 75,900
TMC Software Upgrade & Maintenance	$ 13,200	$ 13,200	$ 13,200	$ 39,600
Traffic Signal Maintenance on Synchronized Routes (excluding staff time)	$ 55,000	$ 55,000	$ 55,000	$ 165,000
Traffic Signal Utility Cost (Electricity)	$ 132,000	$ 132,000	$ 132,000	$ 396,000
Signal Equipment Upgrade	$ 55,000	$ 55,000	$ 55,000	$ 165,000
Subtotal Maintenance:	$ 231,000	$ 231,000	$ 231,000	$ 693,000

CONSTRUCTION

PROJECT	FY26/27	FY27/28	FY28/29	TOTAL
Ball Road-Taft Ave RTSSP	$ 286,000	$ -	$ -	$ 286,000
Kraemer Blvd/Glassell St/Grand Ave RTSSP	$ 1,543,450	$ -	$ -	$ 1,543,450
State College Blvd/The City Dr RTSSP	$ 864,306	$ -	$ -	$ 864,306
Subtotal Construction:	$ 2,693,756	$ -	$ -	$ 2,693,756

OPERATIONS

PROJECT	FY26/27	FY27/28	FY28/29	TOTAL
Ball Road-Taft Ave RTSSP	$ 4,800	$ 16,200	$ -	$ 21,000
Kraemer Blvd/Glassell St/Grand Ave RTSSP	$ 12,600	$ 37,800	$ -	$ 50,400
State College Blvd/The City Dr RTSSP	$ 15,950	$ 47,850	$ -	$ 63,800
Biennial City Traffic Signal Synchronization	$ -	$ 95,000	$ -	$ 95,000
Subtotal Operations:	$ 33,350	$ 196,850	$ -	$ 230,200

Grand Total:	**$ 2,958,106**	**$ 427,850**	**$ 231,000**	**$ 3,616,956**

3-YEAR OUTLOOK
TRAFFIC SIGNAL SYNCHRONIZATION

Funding Needs for Synchronized Operation (Unconstrained)

Reporting Jurisdiction Expenditures: City of Orange

Type of Traffic Signal Synchronization Expenditures in Year of Expenditure Dollars

MAINTENANCE

PROJECT	FY26/27	FY27/28	FY28/29	TOTAL
Communication and Software Maintenance	$ 38,500	$ 38,500	$ 38,500	$ 115,500
TMC Software Upgrade & Maintenance	$ 22,000	$ 22,000	$ 22,000	$ 66,000
Traffic Signal Maintenance on Synchronized Routes (excluding staff time)	$ 82,500	$ 82,500	$ 82,500	$ 247,500
Traffic Signal Utility Cost (Electricity)	$ 132,000	$ 132,000	$ 132,000	$ 396,000
Signal Equipment Upgrade	$ 71,500	$ 71,500	$ 71,500	$ 214,500
Subtotal Maintenance:	$ 346,500	$ 346,500	$ 346,500	$ 1,039,500

CONSTRUCTION

PROJECT	FY26/27	FY27/28	FY28/29	TOTAL
Ball Road-Taft Ave RTSSP	$ 286,000	$ -	$ -	$ 286,000
Kraemer Blvd/Glassell St/Grand Ave RTSSP	$1,543,450	$ -	$ -	$ 1,543,450
State College Blvd/The City Dr RTSSP	$ 864,306	$ -	$ -	$ 864,306
Lincoln Avenue	$ -	$ 631,050	$ -	$ 631,050
Chapman Avenue	$ -	$ 3,065,100	$ -	$ 3,065,100
Orangewood Avenue	$ -	$ -	$ 540,900	$ 540,900
Santiago Boulevard/Wanda Road	$ -	$ -	$ 991,650	$ 991,650
Subtotal Construction:	$ 2,693,756	$ 3,696,150	$ 1,532,550	$ 7,922,456

OPERATIONS

PROJECT	FY26/27	FY27/28	FY28/29	TOTAL
Ball Road-Taft Ave RTSSP	$ 4,800	$ 16,200	$ -	$ 21,000
Kraemer Blvd/Glassell St/Grand Ave RTSSP	$ 12,600	$ 37,800	$ -	$ 50,400
State College Blvd/The City Dr RTSSP	$ 15,950	$ 47,850	$ -	$ 63,800
Biennial City Traffic Signal Synchronization	$ -	$ 95,000	$ -	$ 95,000
Lincoln Avenue	$ -	$ -	$ 12,600	$ 12,600
Chapman Avenue	$ -	$ -	$ 61,200	$ 61,200
Orangewood Avenue	$ -	$ -	$ -	$ -
Santiago Boulevard/Wanda Road	$ -	$ -	$ -	$ -
Subtotal Operations:	$ 33,350	$ 196,850	$ 73,800	$ 304,000

Grand Total:	**$ 3,073,606**	**$ 4,239,500**	**$ 1,952,850**	**$ 9,265,956**

LSSP IMPLEMENTATION – CANDIDATE SIGNAL SYNCHRONIZATION PROJECTS WITH ESTIMATED COSTS TO COMPLETE PLANNED NETWORK

Reporting Jurisdiction Expenditures: City of Orange

CORRIDOR	IMPROVEMENT SUMMARY	ESTIMATED COST
Lincoln Avenue (Batavia Street to East City Limit)	Install fiber optics and communication equipment, replace controllers, cabinets, vehicle detection, EVP, Ethernet switches and CCTV cameras (47 Total Intersections - 7 City of Orange intersections)	$ 4,406,250
Chapman Avenue (Lewis Street to Jamboree Road)	Install fiber optics and communication equipment, replace controllers, cabinets, vehicle detection, EVP, Ethernet switches and CCTV cameras (58 Total Intersections - 34 City of Orange intersections)	$ 5,437,500
Orangewood Avenue (Harbor Boulevard to Batavia Street)	Install fiber optics and communication equipment, replace controllers, cabinets, vehicle detection, EVP, Ethernet switches and CCTV cameras (15 Total Intersections - 6 City of Orange intersections)	$ 1,406,250
Santiago Boulevard/ Wanda Road (Lincoln Avenue to Collins Avenue	Install fiber optics and communication equipment, replace controllers, cabinets, vehicle detection, EVP, Ethernet switches and CCTV cameras (Total of 11 City of Orange Intersections)	$ 1,031,250
	Total Estimated Cost:	$ 12,281,250

Section 5
Traffic Signal Synchronization Assessment Review and Update of Traffic Signal Timing

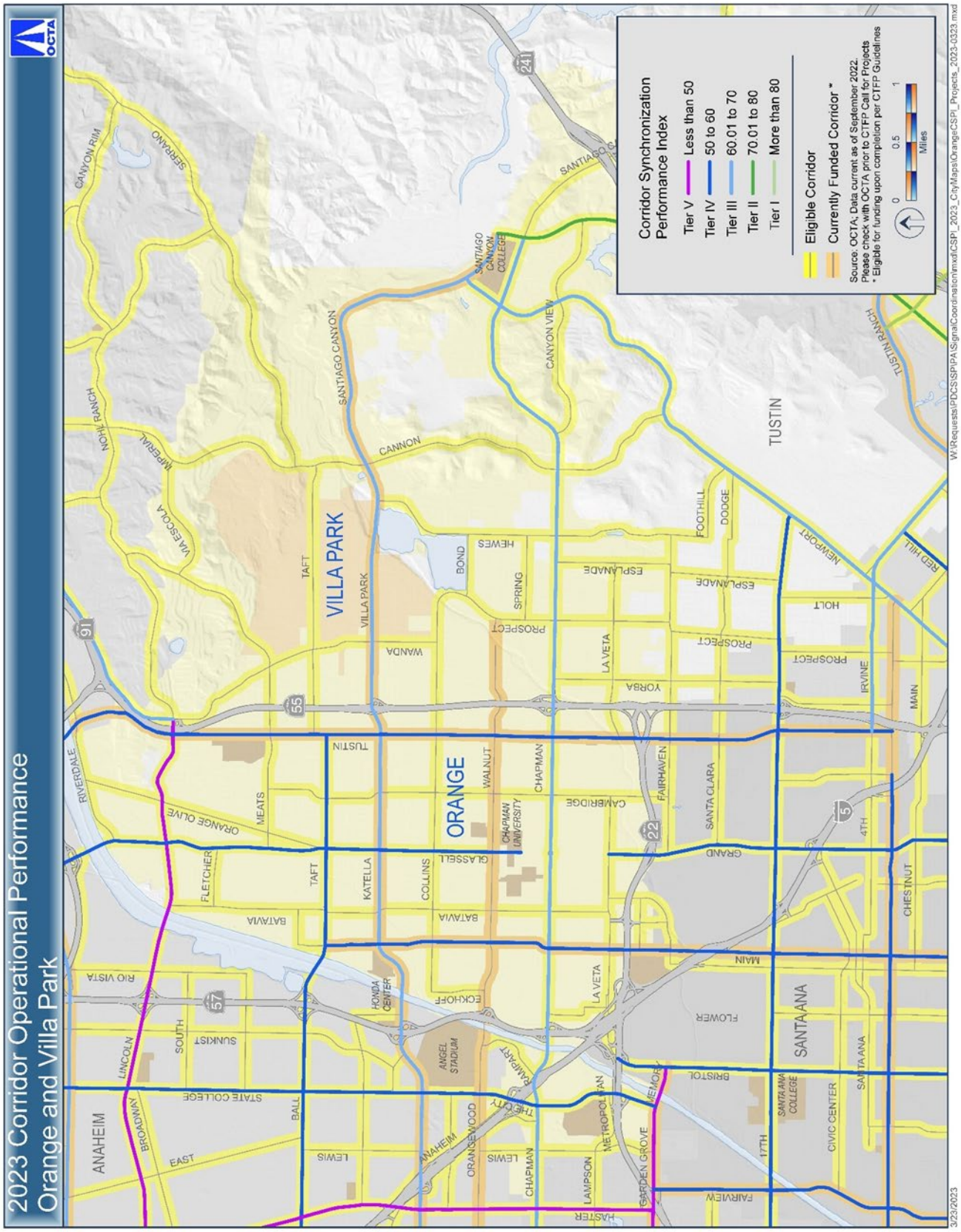
Significant timing plan updates and projects completed FY 2023/2024 through 2025/2026

The City of Orange is committed to maintain efficient traffic flow throughout the City's arterials. To achieve this, the City will continue to upgrade and maintain the traffic signal system and signal timing synchronization. The City will also participate in inter-jurisdictional synchronization projects with neighboring agencies.

OCTA has established the Corridor Synchronization Performance Index (CSPI) to measure the corridor performance. The components of the CSPI are travel time and stop reduction, average speed and gas savings. The City has participated in signal synchronization programs in coordination with OCTA and other neighboring agencies for a number of arterials in the past three years. The Tustin Avenue-Rose Drive RTSSP Corridor is currently in the monitoring stages and the project will be completed in July 2026.

The implemented projects showed performance improvements in all categories of travel time reduction, stop reduction, increase green to red signal ratio, and decreased stops per mile as indicated on the final report for the corridor synchronization as shown on the attached CSPI map. The CSPI map is from 2023, and OCTA is currently working on a new CSPI assessment via the OCTA Countywide Baseline project. An updated CSPI map will be included in the next LSSP update.

The City of Orange has allocated funds, staffing, and invested in traffic signal infrastructure as part of its strategy for sustaining its traffic signal synchronization efforts including update of timing plans on a periodic basis for years to come. To this end, the City's Traffic Division has a count program to update traffic volumes for the biennial traffic flow map. The City will also retain the services of traffic engineering firms to perform signal timing tasks both for local and inter-jurisdictional synchronization projects as the need arises.



Tustin St is Tier II based on the Tustin/Rose RTSSP Project

Traffic Signal Synchronization

Assessment, Review and Revisions (2023 – 2026)

Local Agency Corridor	Timing Reviewed (Past 3 years)	Did timing require updates	Peak Period		TIMING UPDATE RESULTS							
					Average Speed (mph)		Stops/Mile		Greens/Red		CSPI Score/Tier	
					Before	After	Before	After	Before	After	Before	After
Tustin St/ Rose Dr RTSSP	Yes	Yes	AM	NB	24.0	24.5	1.4	1.3	2.2	2.5	65.2/3	69.2/3
				SB	19.4	23.5	1.8	1.3	1.6	2.8	49.3/5	70.5/2
			MD	NB	24.4	26.5	1.3	0.9	2.2	3.7	65.9/3	85.3/1
				SB	24.0	29.1	1.5	0.8	1.9	4.3	61.6/3	94.5/1
			PM	NB	21.1	22.8	1.5	1.2	2.0	2.7	58.1/4	69.2/3
				SB	17.6	24.3	25.7	28.8	16.1	23.9	59.4/4	77.0/2
			SAT	NB	26.1	27.3	1.2	0.9	2.6	4.0	72.3/2	89.1/1
				SB	23.3	27.4	1.8	1.0	1.4	3.3	53.6/4	82.4/1
											Average	**79.7/2**

Signal Timing Revisions
(2023 – 2026)

PROJECT CORRIDOR	CROSS STREETS	PEAK PERIOD	CYCLE LENGTH (sec) (Before/After)
Tustin Street / Rose Drive RTSSP	Fairhaven Avenue	AM	130/140
		MD	110/130
		PM	140/140
		SAT	110/140
	SR-22 EB Ramps/Seba Avenue	AM	130/140
		MD	110/130
		PM	140/140
		SAT	110/140
	Sr-22 WB Ramp	AM	65/70
		MD	55/65
		PM	140/70
		SAT	55/70
	La Veta Avenue/Rock Creek Drive	AM	130/140
		MD	110/130
		PM	140/140
		SAT	110/140
	Palmyra Avenue	AM	130/140
		MD	110/140
		PM	140/140
		SAT	110/140
	Chapman Avenue	AM	130/140
		MD	130/140
		PM	140/140
		SAT	130/140
	Palm Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Walnut Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Mayfair Avenue	AM	130/130
		MD	FREE/140
		PM	140/140
		SAT	130/140
	Collins Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140

Signal Timing Revisions
(2023 – 2026)

PROJECT CORRIDOR	CROSS STREETS	PEAK PERIOD	CYCLE LENGTH (sec) (Before/After)
Tustin Street / Rose Drive RTSSP (Cont.)	Quincy Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Katella Avenue	AM	130/130
		MD	130/140
		PM	130/140
		SAT	130/140
	Van Owen Avenue/Toyota Way	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Taft Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Taft Avenue/Briardale Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Meats Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	East Village Way	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Village Town Center	AM	65/65
		MD	65/70
		PM	140/140
		SAT	130/70
	Heim Avenue	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	SR-55 SB On Ramp	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140

Signal Timing Revisions
(2023 – 2026)

PROJECT CORRIDOR	CROSS STREETS	PEAK PERIOD	CYCLE LENGTH (sec) (Before/After)
Tustin Street / Rose Drive RTSSP (Cont.)	Lincoln Avenue/Nohl Ranch Road	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Santiago Boulevard at Nohl Ranch Road	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/140
	Santiago Boulevard at SR-55 NB Ramp/Vista Park	AM	130/130
		MD	130/140
		PM	140/140
		SAT	130/105
	SR-55 SB Off Ramp	AM	65/FREE
		MD	60/FREE
		PM	65/FREE
		SAT	60/FREE
	Santa Ana Canyon Road	AM	FREE/FREE
		MD	FREE/FREE
		PM	FREE/FREE
		SAT	FREE/FREE