

June 30, 2023

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

Steve Jones
Mayor

George S. Brietigam
Mayor Pro Tem - District 1

John R. O'Neill
Council Member - District 2

Cindy Ngoc Tran
Council Member - District 3

Joe DoVinh
Council Member - District 4

Stephanie Klopfenstein
Council Member - District 5

Kim Bernice Nguyen
Council Member - District 6

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

Dear Ms. Yang:

The City of Garden Grove 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 2023/24 to 2025/26 including and all required elements as identified in the "Guidelines for the Preparation of Local Signal Synchronization Plans".

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 call me at (714) 741-5189.

Sincerely,



Dai Vu, P.E.
City Traffic Engineer

Enclosures

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

LOCAL SIGNAL SYNCHRONIZATION PLAN CONSISTENCY REVIEW CHECKLIST


The Local Agency Name: City of Garden Grove Plan Date: June 30, 2023

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.	4-5	Provided
2) Traffic signal synchronization street routes are identified, including all corridors along the regional signal synchronization network located within the local agency.	6-7	Provided
3) Traffic signal inventory for all traffic signal synchronization street routes.	8-11	Provided
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.	12-15	Provided
5) Signal synchronization review, revision, and assessment of synchronization activities along the traffic signal synchronization street routes and traffic signals.	16-21	Provided

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



 Signature

5/22/2023

 Date

Dai Vu, City Traffic Engineer, City of Garden Grove

 Printed Name, Title, & Local Agency

LOCAL SIGNAL SYNCHRONIZATION PLAN

SECTION ONE
TRAFFIC SIGNAL SYNCHRONIZATION GOALS, POLICIES AND
OBJECTIVES

The City of Garden Grove's Local Signal Synchronization Plan (LSSP) is an integral part in helping establish the City's goal to optimize the signal progression throughout the City.

The City of Garden Grove is continually changing with new developments and growing families. With these changes comes additional traffic along our corridors, by maintaining and updating our LSSP every 3 years, we can proactively accommodate this growth. The City's LLSP is consistent with OCTA's regional plan.

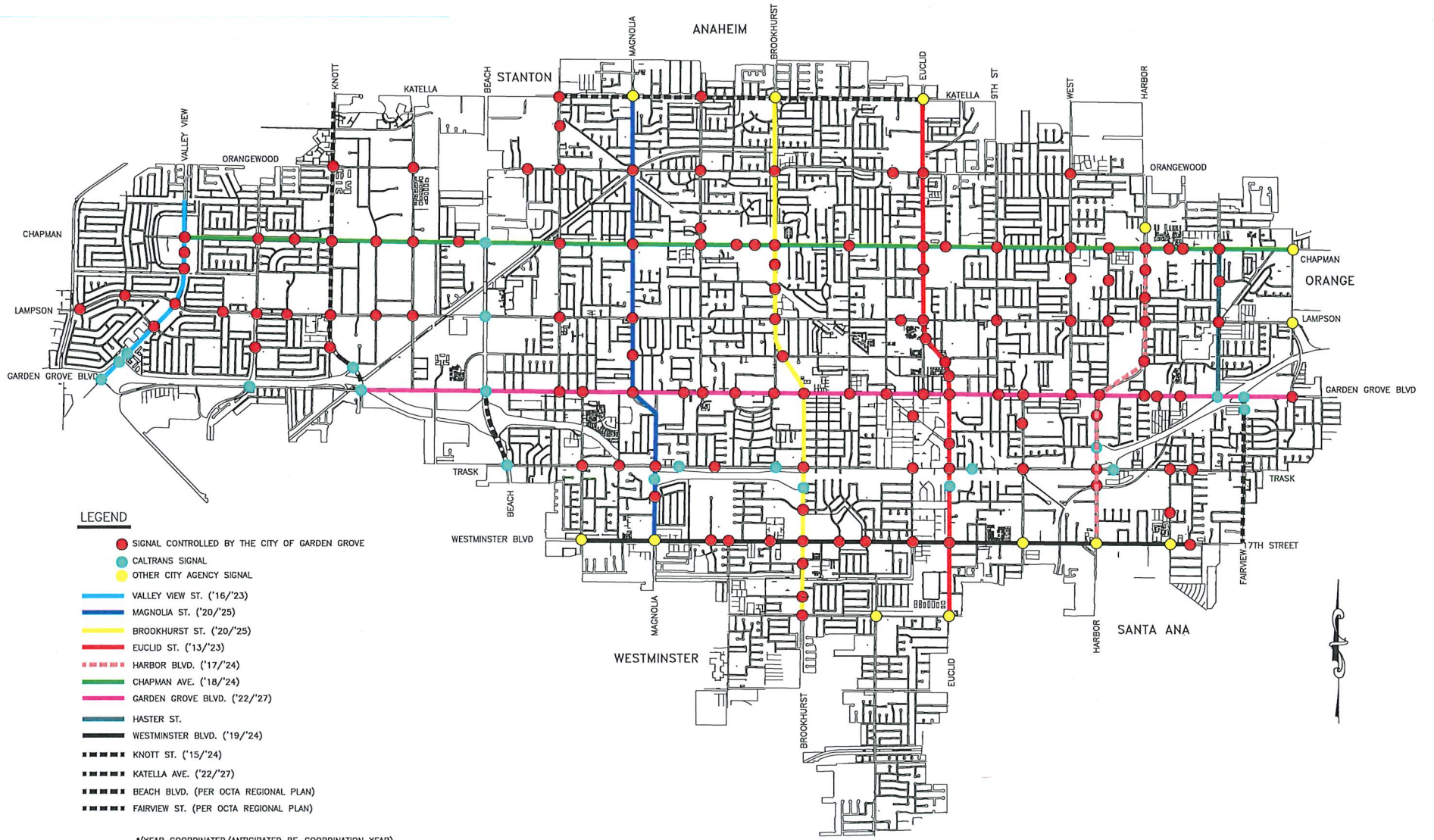
The City's Traffic Management Center (TMC) is an integral part of our signal synchronization network. The City currently uses Centracs to communicate with all our signals on our fiber optic network. The TMC also allows staff to view the 38 video cameras that were strategically placed on our busiest corridors. The video is invaluable because it enables staff to monitor entire corridors at one time and Centracs allows staff to monitor the timing and make any adjustments necessary right at the TMC.

The City currently has 112 of 134 total traffic signals connected to the fiber network. In order for the City to establish connectivity to the remaining 22 signals, certain equipment upgrades and infrastructure improvements need to be made. These upgrades and improvements are integral to keeping our network up to date and is an important part of the LSSP.

The City of Garden Grove has been a supporter and partner in multiple multi-jurisdictional signal coordination projects. These projects include Magnolia St., Brookhurst St., Garden Grove Blvd., Katella Ave., Valley View St. and Euclid St. The City currently does not have the staff to be a lead partner in any of these projects, but the City is always eager to be a participant and partner in these very important signal coordination projects.

SECTION TWO
TRAFFIC SIGNAL SYNCHRONIZATION STREET ROUTES
(EXISTING AND PLANNED)

CITY OF GARDEN GROVE LOCAL SIGNAL COORDINATION PLAN



SECTION THREE
TRAFFIC SIGNAL INVENTORY

Traffic Synchronization Inventory
City of Garden Grove

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
Valley View	Chapman	130	120	130	Free	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Fire Station	130	120	130	Free	Garden Grove				P (TS2 Type 1)	ASC/2	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Belgrave	130	120	130	Free	Garden Grove				P (TS2 Type 1)	ASC/2	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Lampson	130	120	130	Free	Garden Grove				P (TS2 Type 1)	ASC/2	Econolite (NEM)	Loops	No	Other	N/A	Fiber	N/A	Centracs	online
	Cenulean	130	120	130	Free	Garden Grove				P (TS2 Type 1)	ASC/2	Econolite (NEM)	Loops	No	Other	N/A	Fiber	CMS	Centracs	online
	Tiffany	120	Free	120	Free	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	WB 22 Off Ramp	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Garden Grove	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
Brookhurst	Orangewood	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Chapman	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Pavillion	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Bixby	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Lampson	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Stanford	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Garden Grove	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Trask	120	120	120	120	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	EB 22 On Ramp	140	140	140	140	Caltrans				Other	2070	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Woodbury	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Westminster	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	15th/ Reading	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	11th Street	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Hazard	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Euclid	Orangewood	120	120	120	120	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	Bosch	N/A	Fiber	N/A	Centracs
Chapman		130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
Marian		120	120	120	120	Garden Grove				Other	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
Lampson		120	120	120	120	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	Other	N/A	Fiber	N/A	Centracs	online
Main/College		120	120	120	120	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
Stanford		120	120	120	120	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
Acacia		120	120	120	120	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	Other	N/A	Fiber	N/A	Centracs	online
Garden Grove		140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
Century		120	120	120	120	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	Other	N/A	Fiber	N/A	Centracs	online
Trask		120	120	120	120	Garden Grove				Other	ASC/3	Econolite (NEM)	Loops	No	Other	N/A	Fiber	N/A	Centracs	online
SR-22		120	120	120	120	Caltrans				Other	2070	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
Westminster		140	140	140	140	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	Other	N/A	Fiber	N/A	Centracs	online
Harbor		Chapman	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs
	Resort Way	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Twintree	130	130	130	130	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Lampson	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Great Wolf	130	130	130	130	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Palm	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Garden Grove	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Albertsons	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online

Corridor	Intersection	Cycle Length				Responsibility	Operations			Equipment										
		AM	MID	PM	WKND		Left	Right	Other	Cabinet	Type	Software	Detection	Detection	CCTV	Backup	Comm	Other ITS	ATMS	Status
Harbor	SR-22/Banner	120	120	140	120	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Trask	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	CMS	Centracs	online
	Cardinal	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
Chapman	Valley View	130	120	130	120	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Springdale	130	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Lamplighter	130	110	130	110	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Knott	130	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Monarch	130	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Western	130	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Ped Signal	65	55	65	55	Garden Grove				Other	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Beach	140	120	140	120	Caltrans				P (TS2 Type 1)	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Nearing	130	130	130	130	Orange County				Other	other	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Dale	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Magnolia	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Gilbert	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Promenade	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Covey	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Brookhurst	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Nutwood	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Euclid	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
Delia	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online	
9th Street	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online	
West	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online	
Buaro	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online	
Harbor	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online	
Willowbrook	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online	
Somerset	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online	
Haster	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online	
Garden Grove	Knott	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	Other	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Beach	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	Other	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Dale	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Newland	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Magnolia	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Casa Linda	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Gilbert	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Galway	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Brookhurst Way	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Brookhurst St	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Nutwood	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Nelson/ Century	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Main	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Euclid	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	9th Street	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
Newhope	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online	
West	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online	
Harbor	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online	

	Palm	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
		Cycle Length					Operations			Equipment										
Corridor	Intersection	AM	MID	PM	WKND	Responsibility	Left	Right	Other	Cabinet	Type	Software	Detection	Detection	CCTV	Backup	Comm	Other ITS	ATMS	Status
Garden Grove	Ped Signal	70	70	70	70	Garden Grove				Other	Cobalt	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Partridge	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Haster	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Fairview	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Lewis	Free	Free	Free	Free	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	GPS	N/A	N/A	N/A
Magnolia	Orangewood	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Chapman	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Lampson	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Stanford	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Garden Grove	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Trask	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	EB 22 Ramp	120	120	120	120	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Mays	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
Trask	Beach	130	130	130	130	Caltrans				Other	2070	Other	Loops	No	N/A	N/A	Fiber	N/A	N/A	N/A
	Newland	Free	Free	Free	Free	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Yockey	Free	Free	Free	Free	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Magnolia	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	22 Fwy Off Ramp	120	Unkwn	120	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Ped Signal	Free	Free	Free	Free	Garden Grove				Other	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	22 on/off Ramps	120	Unkwn	120	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Brookhurst	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Taft	Free	Free	Free	Free	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Newhope	Free	Free	Free	Free	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Harbor	130	130	130	130	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	22 on/off Ramps	120	Unkwn	120	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Clinton	Free	Free	Free	Free	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Roxey	Free	Free	Free	Free	Garden Grove				P (TS2 Type 1)	ASC/3	econolite (NEM)	Video	Yes	N/A	N/A	Other	N/A	N/A	N/A
Westminster	Deodara	140	140	140	140	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
	Bushard	140	140	140	140	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Kerry	140	140	140	140	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Brookhurst St	140	140	140	140	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Bowen	140	140	140	140	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Taft	140	140	140	140	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Euclid	140	140	140	140	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Bosch	N/A	Fiber	N/A	Centracs	online
Knott	Orangewood	130	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Loops	No	N/A	N/A	Fiber	N/A	Centracs	online
	Chapman	130	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Lampson	130	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	Other	N/A	Fiber	N/A	Centracs	online
	Stanford	65	110	130	110	Garden Grove				P (TS2 Type 1)	ASC/3	Econolite (NEM)	Video	Yes	N/A	N/A	Fiber	N/A	Centracs	online
	Acacia	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	Garden Grove	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
Katella	Dale	140	130	140	130	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Loops	No	N/A	BB5	Other	N/A	N/A	N/A
	Gilbert	140	130	140	130	Garden Grove				P (TS2 Type 1)	Cobalt	Econolite (NEM)	Loops	No	N/A	BB5	Other	N/A	N/A	N/A
Fairview	22 Fwy On Ramp	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A
	22 Fwy Off Ramp	Unkwn	Unkwn	Unkwn	Unkwn	Caltrans				Other	170/170E	Other	Loops	No	N/A	N/A	Other	N/A	N/A	N/A

SECTION FOUR
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 Garden Grove

Type of Traffic Signal Synchronization Expenditures in Year of Expenditure
Dollars

MAINTENANCE

PROJECT	FY23/24	FY24/25	FY25/26	TOTAL
Communication and Software Maintenance	40,000	40,000	40,000	120,000
Subtotal Maintenance	40,000	40,000	40,000	120,000

CONSTRUCTION

PROJECT	FY23/24	FY24/25	FY25/26	TOTAL
Citywide Signal Synchronization	1,599,000	60,000	60,000	1,719,000
Subtotal Construction	1,599,000	60,000	60,000	1,719,000

OPERATIONS

PROJECT	FY23/24	FY24/25	FY25/26	TOTAL
Citywide Signal Timing Maintenance	45,000	45,000	45,000	135,000
Subtotal Operations	45,000	45,000	45,000	135,000
Grand Total	1,684,000	145,000	145,000	1,974,000

3-YEAR OUTLOOK TRAFFIC SIGNAL SYNCHRONIZATION

Funding Needs for Synchronized Operation (Unconstrained)

Reporting Jurisdiction Expenditures: City of Garden Grove

Type of Traffic Signal Synchronization Expenditures in Year of Expenditure
Dollars

MAINTENANCE

PROJECT	FY23/24	FY24/25	FY25/26	TOTAL
Communication and Software Maintenance	75,000	75,000	75,000	225,000
Subtotal Maintenance	75,000	75,000	75,000	225,000

CONSTRUCTION

PROJECT	FY23/24	FY24/25	FY25/26	TOTAL
Citywide Signal Synchronization	1,800,000	1,000,000	1,000,000	3,800,000
Replace controllers, cabinets, switches, detection, fiber splicing and TMC upgrades.				
Subtotal Construction	1,800,000	1,000,000	1,000,000	3,800,000

OPERATIONS

PROJECT	FY23/24	FY24/25	FY25/26	TOTAL
Citywide Signal Timing Maintenance	90,000	90,000	90,000	270,000
Subtotal Operations	90,000	90,000	90,000	270,000
Grand Total	1,965,000	1,165,000	1,165,000	4,295,000

LSSP IMPLEMENTATION – CANDIDATE SIGNAL SYNCHORNIZATION PROJECTS WITH ESTIMATED COSTS

Reporting Jurisdiction Expenditures: City of Garden Grove

The City has secured funding for Valley View Street and Euclid Street. These 2 projects will be implemented in FY 23/24. Candidate corridors for future synchronization projects are Knott St., Harbor Blvd. and Chapman Ave. The City is planning to pursue grant funding for these two corridors in FY 24/25 to FY 25/26. The scope of the projects include upgrade signal timing, signal cabinets, fiber optic switches, video detection, CCTV cameras, as well as upgrade equipment in the Traffic Management Center (TMC).

CORRIDOR	IMPROVEMENT SUMMARY	ESTIMATED COST
Valley View St.	Upgrade timing, cabinets, switches, detection, CCTV cameras, and TMC upgrades.	\$578,000
Euclid St.	Upgrade timing, cabinets, switches, detection, CCTV cameras, and TMC upgrades.	\$1,332,000
Knott St.	Upgrade timing, cabinets, switches, detection, CCTV cameras, and TMC upgrades.	\$400,000
Harbor Blvd.	Upgrade timing, cabinets, switches, detection, CCTV cameras, and TMC upgrades.	\$1,000,000
Chapman Ave.	Upgrade timing, cabinets, switches, detection, CCTV cameras, and TMC upgrades.	\$2,100,000
	Total Estimated Cost	\$5,410,000

SECTION FIVE

**TRAFFIC SIGNAL SYNCHRONIZATION ASSESSMENT REVIEW
AND REVISE, AS MAY BE NECESSARY, THE TIMING OF
TRAFFIC SIGNALS**

**Significant timing plan updates and projects completed FY
2020/2021 through 2022/2023**

The City of Garden Grove in conjunction with several other government agencies and consultants completed the synchronization of 4 corridors since 2020. The corridors completed are shown in the Table on Page 19.

Optimizing progression along our major corridors is a priority in the City of Garden Grove. Reducing stops and travel times results reduced emissions, increase in safety, and overall driver satisfaction. As part of the synchronization projects, the selected consultant was required to perform before and after studies which included several measures of effectiveness. All the corridors showed a significant decrease in travel times as well as decrease in stops per mile. Speeds along Brookhurst St. were increased by 65% and stops per mile were decreased by 60%. Speeds along Magnolia St. were increased by 2.7% and stops per mile were decreased by 10.5%. Speeds along Garden Grove Ave. were increased by 17% and stops per mile were decreased by 31%. Finally, speeds along Katella Ave. were increased by 9.1% and stops per mile were decreased by 23.8%. The Corridor Synchronization Performance Index (CSPI) were improved for all corridors. The CSPI tier for Brookhurst St. was decreased from tier 5 to tier 1. The CSPI tier for Magnolia St. was decreased from tier 4 to tier 3. The CSPI tier for Garden Grove Blvd. was decreased from tier 4 to tier 2. Finally, the CSPI tier for Katella Ave. was decreased from tier 3 to tier 1.

As part of the Project P funded projects, consultants are required to maintain the synchronization for 3 years. This has been a useful tool in keeping our timing plans current. City staff also periodically drives the corridors to determine any problem areas in the synchronization that may have arisen. The City also monitors the progression along the corridors through the Centracs central system and CCTV Cameras in the Traffic Management Center.

It is paramount to the City that the corridors in the Local Signal Coordination Plan be updated on a timely basis. The City understands that driving patterns, new developments, and population increases require that the synchronization on our corridors be kept up to date. The City of Garden Grove will be an eager participant in all multi-jurisdictional synchronization projects. However, because of staffing issues, the City currently cannot take the lead on any of the multi-jurisdictional synchronization project.

TRAFFIC SIGNAL SYNCHRONIZATION ASSESSMENT, REVIEW, AND REVISION

LOCAL AGENCY CORRIDOR	TIMING REVIEWED (Past 3 Years)	DID TIMING REQUIRE AN UPDATE?	TIMING UPDATE RESULTS (if available)							
			Speed Travel		Stops per mile		Greens per red		CSPI Score (Tier)	
			Before	After	Before	After	Before	After	Before	After
Brookhurst St. ¹	2020	Yes	19.9	32.9	1.27	4.47	1.75	0.7	5	1
Magnolia St. ¹	2020	Yes	23.5	26.7	13.4	12	1.22	1.31	4	3
Garden Grove Blvd. ¹	2021	Yes	22.5	26.3	1.6	1.1	1.5	2.8	4	2
Katella Ave. ¹	2022	Yes	26.3	28.7	1.22	.93	2.1	3.2	3	1

¹ Project P

SIGNAL TIMING REVISIONS

PROJECT CORRIDOR	CROSS STREET	CYCLE LENGTH (Before/After)
Brookhurst St.	Entire Corridor	Before = 120 / After = 140
Magnolia St.	Entire Corridor	Before = 120 / After = 140
Garden Grove Blvd.	Entire Corridor	Before= 120 / After = 140
Katella Ave.	Entire Corridor	Before= 120 / After = 140

CSPI MAP

In 2009, OCTA identified a new parameter to gauge the signal synchronization performance of arterial corridors. The parameter is called Corridor Synchronization Performance Index (CSPI). The CSPI is categorized into five levels: Tier I through Tier V. Tier I indicates very good signal synchronization conditions while Tier V indicates that the corridor would greatly benefit from improvements to signal synchronization. Attached is the 2023 Corridor Operational Performance map for Garden Grove. The map shows the CSPI of the City's arterial corridors which helps City to evaluate traffic mobility and identify candidate corridors for future signal synchronization projects.

2023 Corridor Operational Performance Garden Grove

