

# Signal Coordination

Use "Tab" or "Enter" or "Page Down"  
keys to move through this form.

DEFINITION: Projects should improve signal timing to reduce overall vehicle stops and delays and give transit vehicles priority. These include traffic signal synchronization, interconnection, improved timing projects, and transit signal priority projects. Signal timing that increases traffic speeds to the detriment of overall traffic performance, or that offers a significant inducement to travel by auto, does not benefit air quality. Speeds higher than 36 mph increase NOx emissions and may discourage walking and bicycling. These results may be counterproductive to meeting clean air goals.

## Red boxes denote MV Fee projects ONLY

Air District:

Local Government:

Not Applicable

## Green boxes denote CMAQ projects ONLY

Federal Number:

Approval Date:

CALTRANS DIST EA:

County:

Kern

NEED TO KNOW: Funding dollars

Number of operating days per year

Traffic volumes for the congested periods of the day

Length of the roadway segment impacted by the project

Before and after average traffic speeds

Travel growth degrades project performance over time.

Traffic flow improvements that occur immediately after implementation of the project decline to zero improvement by the end of the effectiveness period. To account for this, the methodology averages speed improvements over the effectiveness period by using half of the first-day benefits in calculations.

## WHITE BOXES ARE FOR ALL USERS

Project Name or

Short Description:

WILSON RD ADAPTIVE SIGNAL COORDINATION

Please use descriptive project name that fits in box.

Number of category must match number of subcategory

[View Category List](#)

[Print List](#)

Category: (5) Traffic Management

Subcategory: (5b) Traffic Flow or Signalization (timing, surveillance)

Description/Scope:  
(Issues/Comments) Deployment of adaptive signal coordination along Wilson Rd between Edgemont St and Chester ave

Use pull down menus.

For vehicle projects include number of vehicles, fuel type, engine type, and certification rates.

Implementing Agency or  
Project Sponsor:

Check if private-  
public partnership: ☐

Enter funding sources. [CLICK HERE](#) for help.

Motor Vehicle Funding (MVFees):	\$0
MSRC CoFunding (MSRC):	\$0
Moyer CoFunding (Moyer):	\$0
CMAQ Funding (CMAQ):	\$1,123,269
Other CoFunding or Local Match (CoFund):	\$145,531

To determine impact, separate entries may need to be made for each road segment and con-gested period. If connected segments are entered as one project, traffic volume should be the average volume of the segments, not aggregate volume

Project Life (Life): 5 years

Capital Recovery Factor (CRF): 0.22

Days (D):	250	operating days per year	Default is 250 (all weekdays)
Length (L) of congested roadway segment:	2.95	miles	Length of roadway impacted by the project.
Traffic volume during congested period (Congested Traffic):	14,498	trips per day	
Annual Project VMT (VMT):	10,692,275	annual miles	VMT= (D) * (L) * (Congested Traffic)

Emission Factors

Use measured "before" and "after" average speeds. If speeds are unknown, average traffic speed can be estimated using the segment length and a travel time for vehicles passing through the segment. Speed = Length/Time.

Before Speed Factor		After Speed Factor	
ROG Factor:	0.04	grams per mile	0.02
NOx Factor:	0.26	grams per mile	0.14
PM2.5 Factor:	0.00	grams per mile	0.00

Emission Factors depend on before-project and after-project average traffic speeds. To select emission factors for various speeds, refer to Emission Factors, Table 4. The emission factors in Table 4 can also be interpolated.

CO Factor:

Before Speed Factor

1.49

grams per mile

After Speed Factor

1.04

grams per mile

CO factor can be entered for Los Angeles and Imperial counties ONLY for CMAQ projects targeted at CO hot spots.

Emission Reductions

	pounds per year	kilograms per day
Reductions in Reactive Organic Gases (ROG):	257	0.32
Reductions in Nitrogen Oxides (NOx):	1,454	1.81
Reductions in Particulates (PM2.5):	20	0.02
Reductions in Carbon Monoxide (CO):	756	0.94
TOTAL EMISSION REDUCTIONS:	2,487	3.10

For Caltrans Staff  
Use ONLY

The calculation  
divides CO by 7

Less than 0.5  
pounds shows  
as zero

Annual Emission Reductions in pounds per year (ROG, NOx, CO, and PM2.5)  
=

Daily Emission Reductions in kilograms per day (ROG, NOx, CO, and PM2.5)  
=

## Cost-Effectiveness

dollars per lb.

dollars per ton

**MVFees Cost-Effectiveness:**

**\$0.00**

**\$0**

MVFees CE = ((MVFees + MSRC + Moyer) \* CRF)/(ROG + NOx + PM2.5 + C

**CMAQ Cost-Effectiveness:**

**\$98.62**

**\$197,241**

CMAQ CE = (CMAQ \* CRF)/(ROG + NOx + PM2.5 + C

**Total Cost-Effectiveness:**

**\$111.40**

**\$222,796**

Total CE = ((MVFees + MSRC + Moyer + CMAQ + CoFund) \* CRF)/(ROG + NOx + PM2.5 + CO

Negative emissions means the project causes pollution rather than reduces pollution. If emission reductions equal zero, cost-effectiveness cannot be calculated.

For One-Page Summaries  
of MV Fees Projects

**CLICK HERE**  
to Preview

**CLICK HERE**  
to Print

For One-Page Summaries  
of CMAQ Projects

**CLICK HERE**  
to Preview

**CLICK HERE**  
to Print

**Click Here to  
add another  
project of the  
same category**

For more summary reports of all project types, return to Main Menu, select "REPORTS MENU."

**NOTE:** You can view each project record you have entered by using the record bar at bottom of screen or the tab bar at left of screen.

End of Form

**MAIN MENU**

**EMISSION FACTORS (link to PDF on web)**