

San Joaquin Valley (SJV) Hot Spot Checklist for Interagency Consultation

The purpose of this form is to provide sufficient information to allow the IAC group to determine the evaluation if a project is exempt, non-exempt, and not POAQC, or non-exempt projects and POAQC (requires a quantitative project-level PM hot spot analysis).

It is the responsibility of the project sponsor to ensure that the form is filled out completely and provides a sufficient level of detail for the interagency consultation (IAC) to make an informed decision on whether or not a project requires further analysis. For example, the IAC group needs to consider the traffic impacts of the project, and thus part of the required information includes no build/build traffic data.

STEP 1: PROJECT IDENTIFICATION

A. Project Name and Number:

ADAPTIVE SIGNAL COORDINATION ALONG PANAMA LN FROM PARSONS WY TO DR. MARTIN LUTHER KING JR BLVD/ COTTONWOOD RD – CRPL - 5109 (297)

B. FTIP/CTIPS #Identification No¹:

CTIPS ID: 204-0000-0862

C. City/County:

BAKERSFIELD, KERN

D. Project Description:

Bakersfield: Panama Ln and Sparks St; installation of new traffic signal; Panama Ln from Parsons Wy to Dr. Martin Luther King Jr Blvd; installation of adaptive signal coordination.

The proposed project will involve the installation of new signal at Panama Ln and Sparks St and the installation of new traffic signal communication equipment along Panama Ln from Parsons Wy to Dr. Martin Luther King Blvd/ Cottonwood Rd (1.95 miles).

The purpose of this project is to improve signal timing along the above-referenced corridor. The improved signal timing will reduce overall vehicle stops and starts and limit delays in travel time. This reduction in vehicle stops and starts will improve the corridor's average speed, thereby reducing the air-polluting gases generated by vehicles at low speeds and when idling.

The project will also improve safety conditions by providing an orderly flow of traffic through efficient traffic signal coordination. As a result, intersections along the corridor, when timed appropriately, will result in both driver and pedestrian confidence and safety.

With the addition of signalized traffic at the intersection of Panama Ln and Sparks, adaptive signal coordination between the traffic signals along the Panama Ln corridor will be implemented appropriately.

¹ FTIP: Federal Transportation Improvement Program; CTIPS: California Transportation Improvement Program System.

E. Type of Project:

- New state highway
- Change to existing state highway
- New regionally significant street
- Change to existing regionally significant street
- New interchange
- Reconfigure existing interchange
- Intersection channelization
- Intersection signalization**
- Roadway realignment
- Bus, rail, or inter-modal facility/terminal/transfer point
- Truck weight/inspection station
- At or affects location identified in the SIP as a site of actual or possible violation of NAAQS
- Others, specify:

E. Hot-Spot Pollutant of Concern (*check both*): PM_{2.5} PM₁₀

F. Lead Agency: **CITY OF BAKERSFIELD**

a. Contact Person: **PAUL ARCHER**

b. Phone #: **(661) 326-3350**

c. Email: **parcher@bakersfieldcity.us**

G. Federal Action for which Project-Level PM Conformity is Needed
(check appropriate box)²

<input checked="" type="checkbox"/>	Categorical Exclusion (NEPA)		EA or Draft EIS		FONSI or Final EIS		PS&E or Construction		Other
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a. Include the scheduled date of Federal Action (if available):

I. NEPA Assignment – Project Type (check appropriate box)

	Exempt	<input checked="" type="checkbox"/>	Section 326 –Categorical Exclusion		Section 327 – Non-Categorical Exclusion
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J. Is this project in a conforming Plan and Transportation Improvement Program (TIP)?
Yes No

a. If yes, indicate the federal approval date for the latest regional conformity analysis
FTIP (KER180507) 2/2/2024 (Page 499);
2022 Regional Transportation Plan/ Sustainable Communities Strategy
(Page 155 and 514)

K. Current Programming Dates (as appropriate)³

	PE/ Env	ENG	ROW	CON
Start				25/26
End				2026

L. Project Description (Summary, Use Additional Sheets as Needed):

Information should include, but is not limited to:

- a. Purpose and need of the project.
- b. Route name, route number, project length, and mile point locations
- c. Number of current and future lanes (clearly indicate if any lanes are “turn lane only”)
- d. Identify as “Capacity Adding” or “Non-Capacity Adding” project
- e. Identify intersecting roads that will be impacted.
- f. Project impact on surrounding land use/ traffic generators (discuss especially effect on diesel traffic)

The project aims to improve air quality by reducing carbon emissions from inefficient traffic flow. Through adaptive signal coordination’s improved timing and communication between traffic signals, vehicles are able to travel efficiently

² EA: Environmental Assessment; EIA: Environmental Impact Assessment; FONSI: Finding of No Significant Impact; PS&E: Planning, Specification and Estimate.

³ PE: Preliminary Engineering; ENG: Engineering; ROW: Right-of-Way; CON: Construction

along a corridor, thus reducing carbon emissions. With the installation of a traffic signal at the intersection of Panama Ln and Sparks St, adaptive signal coordination along the Panama Ln corridor can be properly implemented.

At the intersection of Panama Ln and Sparks St, two through lanes, 1 left turn lane, and 1 right turn lane exist for both Eastbound and Westbound approaches. For the Northbound and Southbound approaches, there are 1 through lane, 1 right turn lane, and 1 left turn lane. The North and South bound approaches are currently stop controlled, requiring vehicles to come to a full stop and wait for traffic to clear on Panama Ln (a major arterial with a 50 mph speed limit). Converting to a signalized intersection will allow for North and South bound traffic to more safely turn on to Panama Ln, as well as minimize the amount of idle time spent waiting for the intersection to clear.

In conjunction with adaptive signal coordination along Panama Ln, signal timing and traffic flow along and across the corridor will be improved.

This project can be identified as “Non-Capacity Adding” with the implementation of Adaptive Signal Coordination and the installation of a Traffic Signal at Panama Ln and Sparks St. No additional lanes will be added for this project. With the implementation of the coordination equipment, there will be a reduction in traffic congestion.

The surrounding land use will not be altered or changed. The project will not realign the physical layout of existing roadways.

STEP 2: EXEMPT PROJECTS

EXEMPT PROJECT

No PM project-level conformity is required, and no further documentation is needed. Go to STEP 6.

Describe Type of Exempt Project:

NOT AN EXEMPT PROJECT. Go to STEP 3.

STEP 3: TRAFFIC INFORMATION

Fill out only relevant traffic information B through G. For example, fill out D and E if the project is an intersection, and fill out F and G if the project is a bus, rail, or intermodal facility/terminal/transfer point. Include additional tables, maps, and other graphical representations of the projects in separate sheets.

A. Year(s) Selected for the Proposed Facility:

a. Year(s) selected

	Years Selected
Existing Year	2020
Opening Year	2026
Analysis Year(s) ⁴	2046

b. Justification for Selection of Analysis Year(s):

There is a 2046 projected future network for the Panama Ln and Sparks St region. This projection characterizes the traffic model for the corridor. Additionally, the projection characterizes the typical design life of adaptive signal coordination equipment and other infrastructure considered for the proposed intersection improvement. Growth rate for this area of town is expected to increase because it is near a developing residential community.

B. Opening Year Traffic Information for No Build and Build Scenarios of the Proposed Facility

⁴ Section 93.116(a) of the conformity rule requires that PM hot-spot analyses consider either the full-time frame of an area's transportation plan or, in an isolated rural nonattainment or maintenance area, the 20-year regional emissions analysis. The project sponsor will need to choose an analysis year within the time frame of the transportation plan during which peak emissions from the project are expected, and new or worsened violations would most likely occur due to cumulative impacts of the project and background concentrations. In some cases, selecting only one analysis year, such as the last year of the transportation plan or the year of project completion, may not be sufficient to satisfy conformity requirements.

C. Analysis Year Traffic Information for No Build and Build Scenarios of the Proposed Facility

D. Opening Year Traffic Information for No Build and Build Scenarios of the Proposed Facility *(If the facility is an intersection or interchange)*

Opening Year 2026	No Build	Build
Intersection AADT	6745	6745
Truck AADT	431	431
% Trucks	1.03%	1.03%
Level-of-Service (LOS)	F (Peak)	A (Peak)
Control Delay (seconds)	341.6	5.4

E. Analysis Year Traffic Information for No Build and Build Scenarios of the Proposed Facility *(If the facility is an intersection or interchange)*

Analysis Year 2046	No Build	Build
Intersection AADT	8038	8038
Truck AADT	529	529
% Trucks	1.03%	1.03%
Control Delay (seconds)	14.6	18.7

LOCATION	* LOS (NO BUILD)	** LOS (BUILD)
Panama Ln & Sparks St		
NB	F	D
SB	F	D
EB		B
WB		B

* Only NB and SB Approaches have Stop bars

** LOS is Based on Non-Adaptive Traffic Signal

F. Opening Year Traffic Information for No Build and Build Scenarios of the Proposed Facility *(If the facility is a bus, rail, or intermodal facility/terminal/transfer point)*

	No Build	Build
Number of bus arrivals		
Number of bus arrivals that will be diesel buses	0	0
Fraction (%) of bus arrivals that will be diesel buses	0	0

G. Analysis Year Traffic Information for No Build and Build Scenarios of the Proposed Facility *(If the facility is a bus, rail, or intermodal facility/terminal/transfer point)*

	No Build	Build
Number of bus arrivals		
Number of bus arrivals that will be diesel buses	0	0
Fraction (%) of bus arrivals that will be diesel buses	0	0

H. Describe Traffic Impacts *(if appropriate)*⁵

Signalized intersections involve the installation of traffic signals to improve traffic flow and public safety. With the addition of adaptive signal coordination, the overall timing and efficiency is improved along a corridor.

Signalized intersections, while improving traffic flow and reducing emissions, can also be used to reduce angle collisions and reduce pedestrian/vehicle collisions.

I. Describe potential traffic redistribution effects of congestion relief *(impact on other facilities)*

With the installation of a signalized intersection, in combination with adaptive signal coordination, timing and coordination for traffic signals will be improved. The result of the improvements will lead to improved traffic flow, carbon reduction, travel time, and driver/pedestrian safety.

There is a potential for drivers to choose this route due to highly efficient traffic flow. The adaptive signal equipment will adjust its timing accordingly to meet the demands of traffic flow changes based on real-time traffic information to facilitate the most efficient timing pattern, thus preventing traffic congestion.

J. Is additional traffic information (tables, maps, and other graphical representations of the project (location, project details on additional lanes or ramps) presented in additional sheets at the end of the checklist?:

Yes No

⁵ Provide any justification if build % traffic > no-build, large changes in AADT and trucks % even if it is below EPA's criteria, etc.

STEP 4: POAQC DETERMINATION

NOT PROJECT OF AIR QUALITY CONCERN⁶. *Quantitate analysis is NOT required. IAC review, public participation, and concurrence are required. Provide the filled-out checklist to your MPO for the next steps*⁷. Use the space to provide a detailed narrative and rationale for this conclusion.

“The project does not meet the criteria for a Project of Air Quality Concern as defined in the final rule by 40 Code of Federal Regulations [CFR] 93.123(b)(1). The project is listed as one of the non-exempt project examples that are not a local air quality concern under 40 Code of Federal Regulations 93.123(b)(1)(i) and (ii) stated as “Intersection channelization projects, traffic circles or roundabouts, intersection signalization projects at individual intersections, and interchange reconfiguration projects that are designed to improve traffic flow and vehicle speeds, and do not involve any increases in idling. Thus, they would be expected to have a neutral or positive influence on PM [particulate matter] emissions.”

Additionally, the build and no-build scenarios have no changes in traffic, and truck traffic, the increase in traffic in analysis year is due to population growth and not due to the project”

With the addition of a traffic signal and adaptive signal coordination, the Panama Ln corridor Level Of Service (LOS) improved from a LOS “ F ” to a LOS “ A ” during the peak hours of the opening year (2026). In the Analysis year (2046), an isolated intersection LOS study was made comparing the No-Build and Build scenarios. No-Build has LOS “F” compared to Build LOS “D”. Adaptive Traffic Signal will improve the LOS D as it adjusts the optimal timing based on prevailing traffic. As a result, the addition of a traffic signal and adaptive signal coordination, along the intersection and corridor will allow for better traffic flow, thus reducing idle vehicles and carbon emissions as well as increasing public safety.

Go to STEP 6.

PROJECT OF AIR QUALITY CONCERN. *Check the following options to see if your project is one of the following options. If yes, the project could be of local air quality concern and requires quantitative hot-spot analysis based on interagency review.*

Examples of POAQC that are covered by 40 CFR 93.123(b)(1)(i) and (ii)

- *New or expanded highway projects with a significant number of, or increase in, diesel vehicles (e.g., 125,000 AADT and 10,000 (8%) diesel truck traffic) Note: These metrics are examples and should not be considered as threshold levels.*

⁶ Refer to EPA’s 2021 guidance, EPA-420-B-21-037, and FHWA’s FAQ document, for complete details.

⁷ Listed in Pg. 1 under “Instructions”

- *Project affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.*
- *New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.*
- *Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.*
- *Projects in or affecting locations, areas, or categories of sites that are identified in the PM10 and PM2.5 applicable implementation plan or implementation plan submissions, as appropriate, as sites of violation or possible violation.*

Examples of POAQC that are covered by 40 CFR 93.123(b)(1)(iii) and (iv)

- *A major new bus or intermodal terminal that is considered to be a “regionally significant project” under 40 CFR 93.101.*
- *An existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses increases by 50% or more, as measured by bus arrivals.*

STEP 5: ANALYSIS AND DOCUMENTATION (for POAQC)

The following is a summary of documentation to be included for a quantitative PM hot-spot analysis. Please refer to the EPA Quantitative Hot-Spot Guidance for more information.⁸ IAC review and concurrence are required on the modeling protocol before the modeling begins. Contact your MPO representative and Air Quality Coordinator for additional guidance.

Documentation to Be Included for the Quantitative PM Hot-spot Analysis:

- Description of project
- Description of type of emissions considered in the analysis.
- Contributing Factors
 - Air Quality
 - Transportation and traffic conditions
 - Built and natural environment
 - Meteorology, climate and seasonal data
 - Adopted emissions control measures
- Consider the full-time frame of the area's LRTP
- Description of existing conditions
- Description of changes resulting from the project
- Description of models, methods, and assumptions
- Description of analysis years
- Types of emissions included in the analysis and the details of emissions modeling.
- Results of air dispersion modeling.
- Background concentration estimation methods and results.
- Design value calculation.
- Discussion of why the project will not cause a violation of either the annual or 24-hour standard.
- Discussion of any mitigation measures
- Conclusion on how the project meets conformity requirements.
- Documentation of any IAC decisions on the latest planning assumptions used in the analysis.
- Documentation of any public comment on the latest planning assumptions used in the analysis.

⁸ See EPA Quantitative PM Hotspot Analysis Guidance, EPA-420-B-21-037, October 2021; Accessed at <https://www.epa.gov/state-and-local-transportation/project-level-conformity-and-hot-spot-analyses#pmguidance>

STEP 6: PUBLIC AND IAC INVOLVEMENT

Fill out this section after the checklist is sent to the MPO and the project is presented at the SJV Project Level Conformity Group Meeting.

A. SJV Project Level Conformity Group Meeting Date:

B. Summary of IAC comments received and responses:



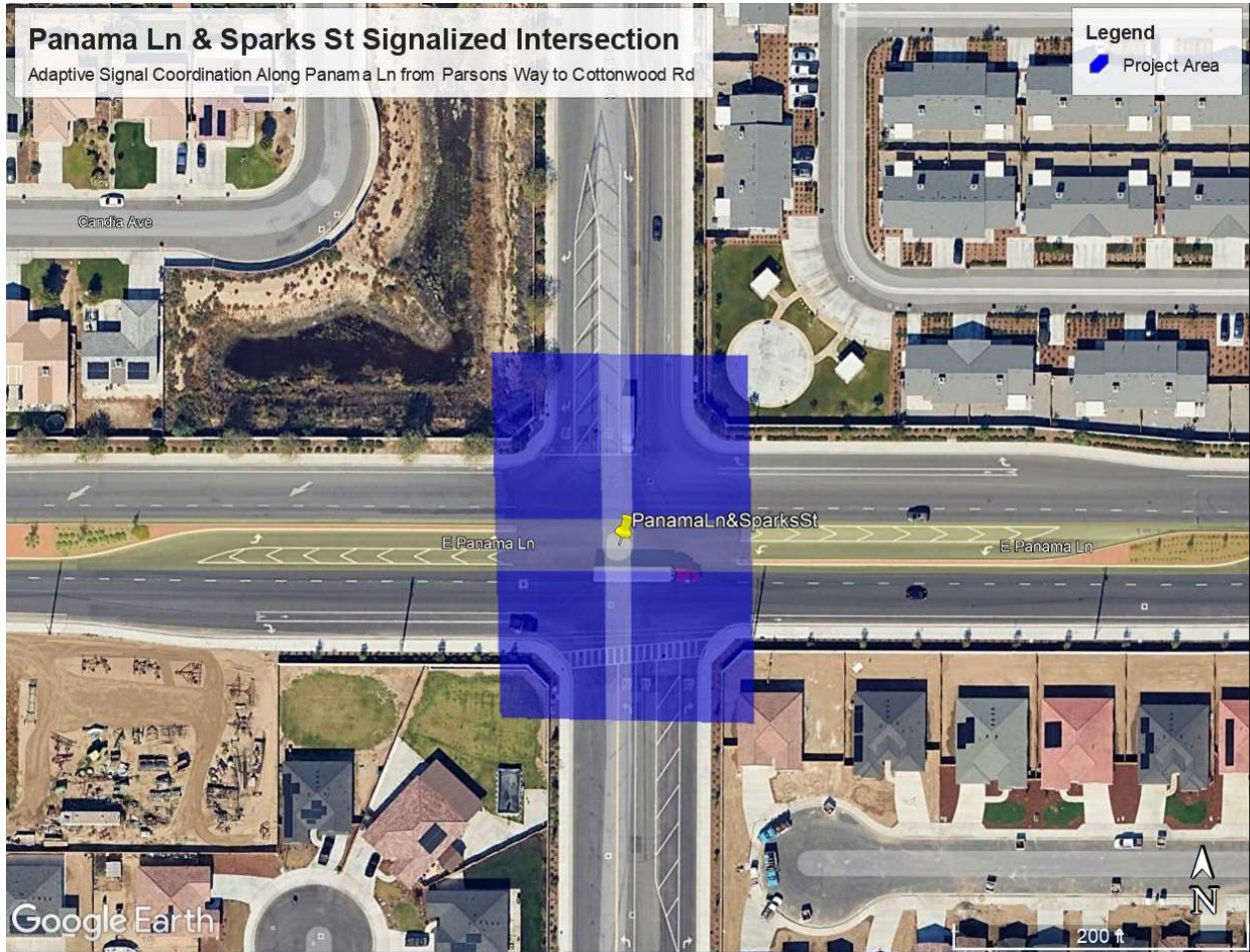
C. Summary of public comments received and responses:



D. IAC Concurrence Date(s):

Additional Information on Traffic Data

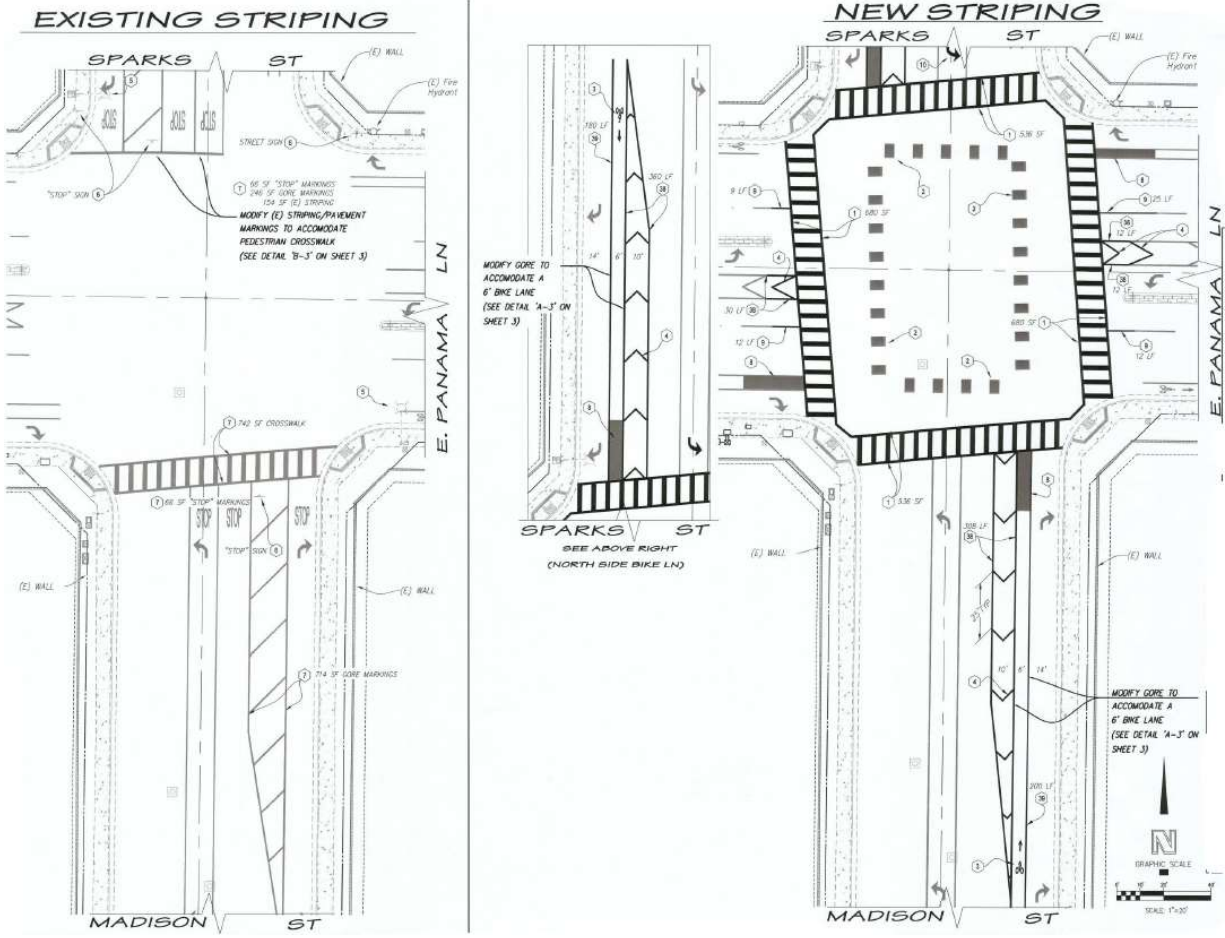
Attach traffic data tables, maps, and other graphical representations of the project as supplemental information (as indicated under Step 3. J).



Location Map for Panama Ln and Sparks St Intersection

OPENING YEAR 2026 ADT - PANAMA LN AND SPARKS ST								
NO BUILD CONDITIONS			NO BUILD / BUILD CONDITIONS			NO BUILD / BUILD CONDITIONS		
2020			2026			2046		
TOTAL ADT	TRUCKS ADT	TRUCKS %	TOTAL ADT	TRUCKS ADT	TRUCKS %	TOTAL ADT	TRUCKS ADT	TRUCKS %
6342	406	1.03%	6745	431	1.03%	8038	529	1.03%

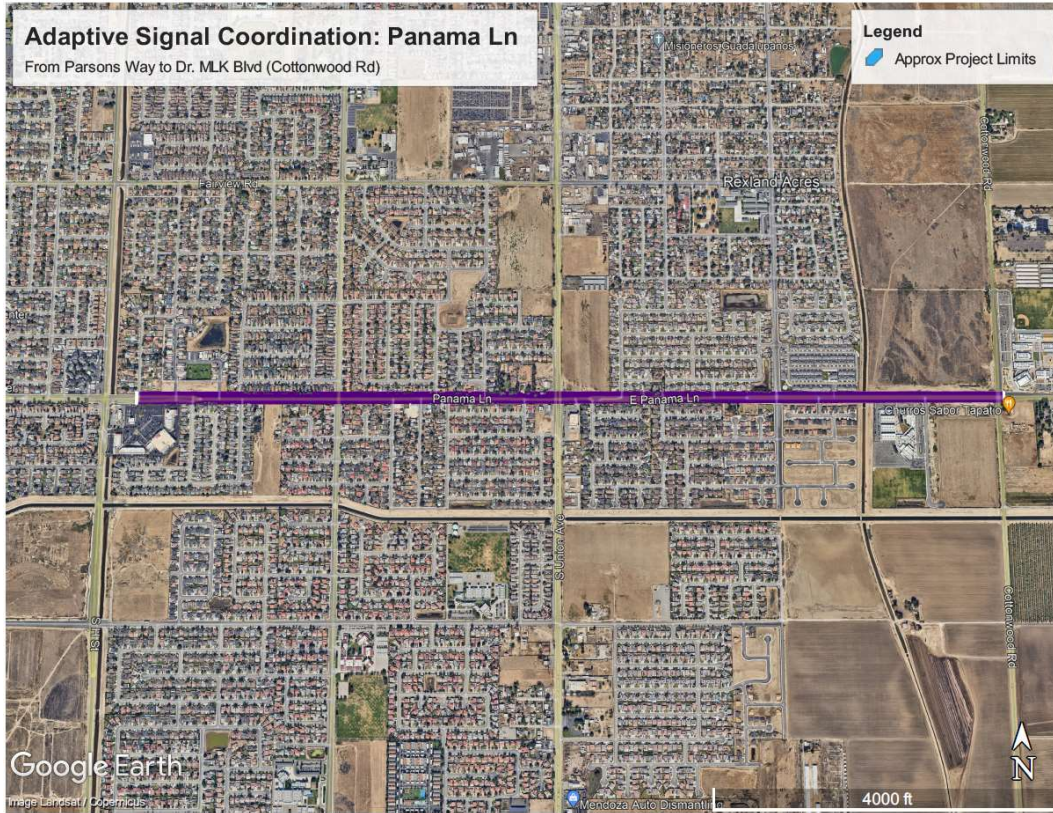
Average Daily Traffic (ADT)



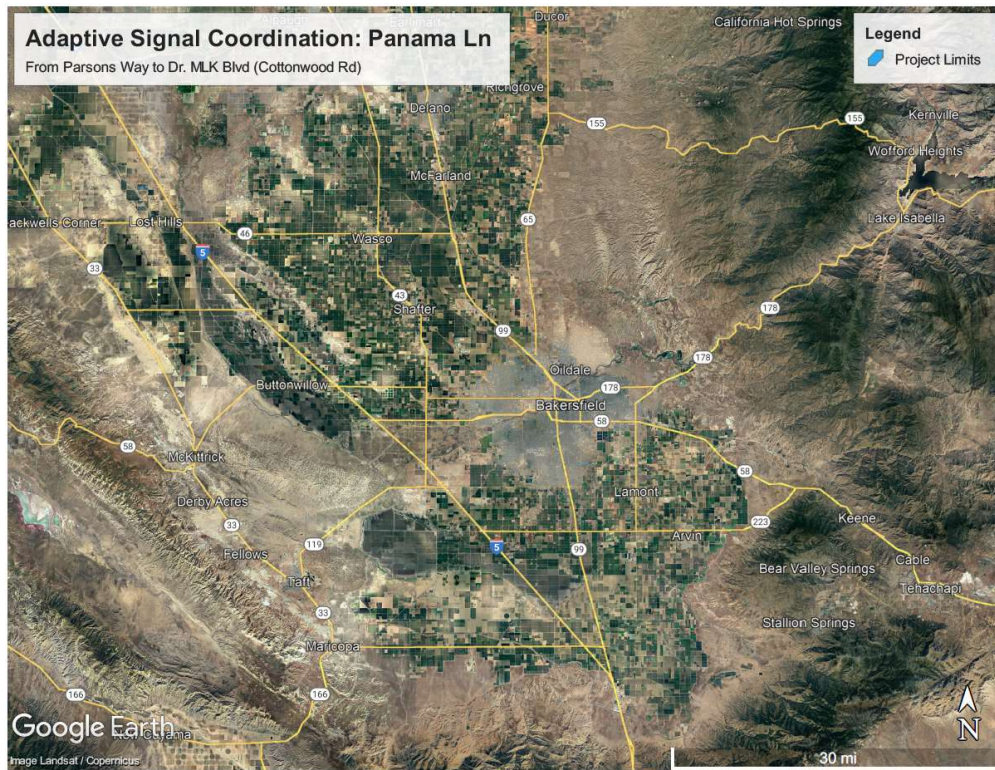
Striping Improvements @ Panama Ln and Sparks St

PANAMA LN AT SPARKS ST					
SIGNALIZED INTERSECTION					
	LOCATION	LOS (CURRENT)		LOS (With Modification)	
		AM Peak	PM Peak	AM Peak	PM Peak
DIRECTION	NB	F	F	A	A
	SB	F	F	A	A
	EB	B	B	B	B
	WB	B	B	B	B

LEVEL OF SERVICE



Location Map for Adaptive Signal Coordination Along Panama Ln



Regional Map for Adaptive Signal Coordination Along Panama Ln