

City of San Dimas

Contract Number ML18148A

Purchase and Installation of Traffic Signal Cameras

10/23/2024

*Prepared for the Mobile Source Air Pollution Review  
Committee (MSRC) under the AB 2766 Discretionary Fund  
Work Program*

## Acknowledgements

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Grant Garcia – Management Analyst

This report was submitted in fulfillment of ML18148 and Bicycle Detection Traffic Signal Cameras Upgrade Project by City of San Dimas under the partial sponsorship of the Mobile Source Air Pollution Reduction Review Committee (MSRC). Work was completed as of 10/23/2024.

*Disclaimer: The statement and conclusions in this report are those of the contractor and not necessarily those of the Mobile Source Air Pollution Reduction Review Committee (MRSC) or the South Coast Air Quality Management District (SQAQMD). The mention of commercial products, their sources, or their uses in connection with material reported herein is not to be construed as either an actual or implied endorsement of such products.*

## Summary and Conclusions

The City of San Dimas originally received a grant approval from the South Coast Air Quality Management District (SQAQMD) to fund a regional bike share program in conjunction with the San Gabriel Valley Council of Governments. With the onset of the pandemic and impacts of restrictions and associated delays to the bike share program, at the February 23, 2021 meeting, the City Council directed staff to request the funds be reallocated to another grant category for installation of bicycle detection systems at intersections and authorized the City Manager to execute the modified contract with necessary changes.

There are two methods for detecting vehicles and bicycles on the roadway. One method is ground metal loops installed in the pavement and the second method is by using traffic signal cameras that are installed on existing traffic signal mast arms or poles. Most of the City's traffic signals have in ground loop detection. In order to detect bicycles, the loops must be upgraded to a new design. This upgrade is required when a street project is paved or the existing loop has a defect. Installation of loops requires physically cutting into the pavement which causes pavement degradation. Additionally, because the loops are in the ground just beneath the pavement surface, they are more prone to maintenance problems. Consequently, the camera technology is a much more effective and less impactful approach.

Traffic signal cameras are a newer technology and provide more advantages and flexibility than the loop technology. The cameras work with detection zones that can be modified with a software upgrade to incorporate bicycle detection. The cameras also provide more flexibility to adjust to new traffic patterns such as new lane configurations or other requirements. Additionally, the cameras are more reliable and easier to repair. When the loops get damaged during pavement or utility repairs it causes the intersection to revert to a fixed timing pattern that does not recognize and cannot prioritize traffic streams. This adds to congestion increasing the frustration of motorists and is inefficient. Cameras can be adjusted without disruption.

Due to the advantages, staff has been upgrading and replacing the older loop system with the camera system starting at key intersections. The City's traffic signal cameras are all manufactured by Iteris to provide system continuity for ease of maintenance.

As part of this project, the Los Angeles County Public Works Department performed an analysis of the signal timing to develop a new signal timing sequence to account for the bicycle detection equipment. The signal timing was reviewed and accepted for all 3 intersections. Traffic signal camera systems were installed at:

Arrow Highway/Cataract Avenue  
Arrow Highway/Eucla/Cienega Avenue  
Arrow Highway/Walnut Avenue

Engineering staff determined the intersections needed additional equipment to operate efficiently. Per staff's recommendation, the City Council approved the purchase of additional equipment on March 28, 2023. Installation of the equipment was done in one phase to reduce the impact to traffic. The end result of the additional equipment was to provide for more efficient vehicle and bike detection on all 4 legs of each of the 3 intersections. The original proposal had equipment to detect only 2 legs of each of the intersections.

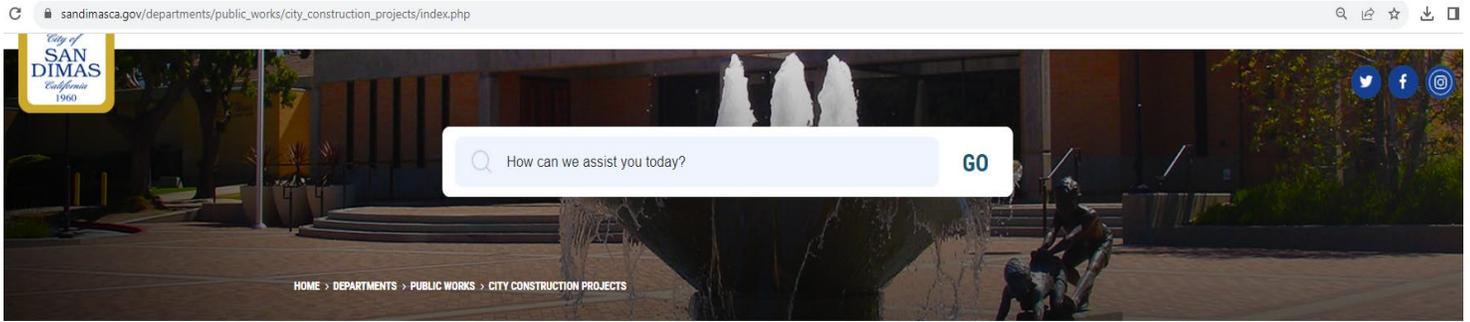
The first two intersections went smoothly with full installation. The third intersection at Eucla/Arrow/Cienega had issues with the existing conduit line and not enough space to accommodate the new wiring. Staff solicited three proposals to complete the last intersection which involved trenching 100 linear feet to install a new 3" conduit line to house the required wiring for the Iteris equipment. After reviewing the quotes, existing City-contractor Crosstown was chosen to complete the work. The cost of this work was approximately \$37,500 and not anticipated during the original grant funding. As a result, the City contributed about \$120,000 from the City Traffic Signal Upgrades budget towards the project. The MSRC grant is in the award of \$50,000.

Recommended future actions should include promoting active means of transportation in City projects such as the Downtown Specific Plan aimed at increasing development and the Arrow Highway Traffic Signal Synchronization Project. Another project that is in the works is the updating of the City's Bike Master Plan. These projects should lead to increased bicycle usage and improve the existing bike network and infrastructure.

The emission benefits from this project encourage physical activity which takes cars off the road. With improved flow of traffic and queueing, there is less time spent idling and exhausting greenhouse gas emissions. Research indicates choosing a bike over a car once per day reduces a person's carbon emissions from transportation by 67%. More than half of all daily trips are less than three miles, which is a great distance to choose alternative modes of active transportation. The intersections that were upgraded allow people to access services without needing a vehicle. This promotes active means of transportation.

Per the grant guidelines, staff conducted bicycle counts pre- and post- equipment installation. The same day, timeframe, and location was used to best compare the data. The days were a Saturday from 8am-10am and a Tuesday from 7am-9am at the Eucla/Arrow/Cienega intersection. During the pre-counts, there were 5 bikes and 16 pedestrians on Saturday. On Tuesday, there were 11 bikes and 17 pedestrians. Post-install counts showed 9 pedestrians and 8 bikes on Saturday and 15 pedestrians and 7 bikes on Tuesday. Every gallon of gasoline saved equates to about 22 pounds of CO2 avoided.

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### AQMD - MSRC Grant Program

The City of San Dimas has received a grant from the Mobile Source Air Pollution Reduction Committee through the [South Coast Air Quality Management District](#). The grant will be used towards upgrading traffic signals to meet state requirements for bicycle detection at three intersections in San Dimas. For more information, please visit the [MSRC website](#) or view this [flyer](#).

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City of San Dimas, CA Government

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### City of San Dimas, CA Government

June 20, 2023 · 🌐

The City of San Dimas is pleased to announce the partnership with MSRC and SCAQMD to help fund bicycle detection cameras at three intersection along Arrow Highway.



## BICYCLE DETECTION UPGRADE PROJECT

-  Cataract Avenue
-  Eucla Avenue/Cienega Avenue
-  Walnut Avenue

The City of San Dimas is pleased to announce the partnership with MSRC and SCAQMD to help fund bicycle detection cameras at three intersection along Arrow Highway. For more information please contact Public Works at 909-394-6240 or via email [publicworks@sandimasca.gov](mailto:publicworks@sandimasca.gov)

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# BICYCLE DETECTION UPGRADE PROJECT



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April 11

Traffic Signals Pre-Installation Walnut & Arrow



Traffic Signals Post-Installation Walnut & Arrow

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Traffic Signals Pre-Installation Cataract & Arrow



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Traffic Signals Pre-Installation Cataract & Arrow



Traffic Signals Post-Installation Cataract & Arrow



Traffic Signals Pre-Installation Eucla/Cienega & Arrow





Traffic Signals Post-Installation Eucla/Cienega & Arrow





