

PROGRAM FOR ARTERIAL SYSTEM SYNCHRONIZATION (PASS) FY12/13 CYCLE

Curtner Ave/Tully Rd ■ Traffic Signal Timing Project

City of San Jose | Metropolitan Transportation Commission

PROJECT OVERVIEW

The City of San Jose received a Program for Arterial System Synchronization (PASS) grant from the Metropolitan Transportation Commission (MTC) to conduct a signal timing study for 14 signals along Curtner Ave/Tully Rd between Almaden Rd and Senter Rd. The goal of the project was to develop and implement signal coordination during the Weekend AM and PM peak periods. This east-west arterial provides access to the Almaden Expressway and SR 87 near the west end, the Fairgrounds on the east end, and commercial and shopping centers, including the 650,000 square-foot Plant Shopping Center.

This PASS project involved the completion of the following major tasks: collecting traffic volumes and turning movement counts -- including bike and pedestrian counts -- at all project intersections; analyzing this traffic data including collision data to develop optimized signal timing plans; implementing and fine-tuning the plans in the field; and conducting travel time surveys to analyze the performance of the new timing plans.



...PROJECT OVERVIEW

During all Saturday peak periods, there was a decrease in average travel time, delay, and stops in both directions. Field fine-tuning consisted of driving the corridors and standing at critical intersections to review traffic progression and intersection operations. Minor adjustments to offsets and splits were made during fine-tuning to further improve traffic progression along the corridors and to optimize intersection operations.

BENEFITS TO VARIOUS MODES



BENEFITS TO PEDESTRIANS:

The minimum pedestrian clearance time was reviewed and updated at all project intersections to provide enhanced safety for the pedestrians in accordance to the 2012 California MUTCD standards.



BENEFITS TO TRANSIT:

To assess the impacts on transit, travel time runs on transit vehicles were conducted both before and after the new timings were implemented. These evaluation results, as shown in the table to the right, demonstrate that the project provides significant benefits to transit.



BENEFITS TO TRAFFIC SAFETY:

The project updated the yellow clearance intervals according to the current standards.

Project Costs

| | |
|---|-----------------|
| Consultant Costs (Weekday Peak Coordination Plans, Transit Travel Time) | \$36,870 |
| Other Project Costs (GPS Clocks, Communications Equipment, etc.) | \$0 |
| Agency Staff Costs (Estimate) | \$8,225 |
| Total Costs | \$45,095 |

Project Benefits

| Measures | Annual Average | | Lifetime (5 Years) | |
|---|----------------|-------------------|--------------------|--------------------|
| | Savings | Monetized Savings | Savings | Monetized Savings |
| Travel Time Savings | 10,637 hrs. | \$203,030 | 53,184 hrs. | \$1,015,152 |
| Fuel Consumption Savings | 31,146 gal. | \$125,167 | 155,729 gal. | \$625,837 |
| ROG Emissions Reduction | 0.24 tons | \$307 | 1.22 tons | \$1,534 |
| NOx Emissions Reduction | 0.31 tons | \$5,524 | 1.53 tons | \$27,620 |
| PM10 Emissions Reduction | 0.05 tons | \$6,636 | 0.23 tons | \$33,179 |
| CO Emissions Reduction | 1.35 tons | \$104 | 6.75 tons | \$522 |
| Total Lifetime Benefits | | | | \$1,703,844 |
| Transit Travel Time Savings | 321 hrs. | \$6,135.45 | 1,607 hrs. | \$30,677 |
| Total Lifetime Benefits with Transit | | | | \$1,734,521 |

| Overall Project Benefits | Auto | Transit |
|--------------------------------------|------|---------|
| Average Decrease in Travel Time | 20% | 10% |
| Average Speed Increase | 25% | 6% |
| Average Fuel Savings | 15% | N/A |
| Average Reduction in Signal Delay | 41% | N/A |
| Average Reduction in Number of Stops | 44% | N/A |

Overall Benefit-Cost Ratio 38:1



PROJECT BENEFITS SUMMARY



Average Reduction in Auto Signal Delay: 41%

Average Reduction in Number of Stops: 44%

Auto Fuel Consumption Savings: 15% or 155,729 gallons



Total Emissions Reduced (ROG, Nox, PM10, CO): 9.73 tons

Auto Travel Time Savings: 20% or 53,184 hours



Average Transit Travel Time Savings: 10% or 1,607 hours

Overall Project Benefit-cost Ratio = 38:1



MTC CONTACT:

Vamsi Tabjulu

Arterial Operations Program Manager

VTabjulu@mtc.ca.gov

510.325.3462

Project Consultant:

Kimley-Horn and Associates, Inc.

