

Pedestrian Signal Retiming Project Summary
San Jose Department of Transportation
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The City of San José Department of Transportation (DOT) strives to provide its residents and visitors with a transportation network that is safe, efficient, and convenient. With strategically set goals and focused transportation policies, San José has already begun its transition into a multi-modal transportation community and has placed creating bicycle and pedestrian-oriented streets at the forefront of this transition. Among the many strategies is creating signalized intersections pedestrian accessible and friendly. Over the last three years, San Jose has reprogrammed traffic signals to provide longer crossing times at intersections within the transit oriented Downtown and near schools, community centers and senior housing to increase safety and promote mobility. Priority on order of work was given to the population that was most vulnerable.

This paper summarizes the work completed in these three areas:

Downtown

The city operates and maintains over 900 traffic signals, and of these signals 135 control the downtown San José area. With an abundance of restaurants, retail stores, entertainment venues, a major university and a major transit hub within walking distance of residences and offices, walkable streets are key to community vitality. In support of this, traffic signals were reviewed to ensure pedestrians had ample opportunity to cross safely and with minimal delay. Beginning in November 2013, the San Jose DOT evaluated and adjusted pedestrian signal operations in the downtown area where appropriate to optimize pedestrian mobility while maintaining a proper balance of vehicular flow. All 135 intersections in the downtown area were reviewed and evaluated for adjustment, with a primary focus on automating pedestrian crossings with every phase. Retiming adjustments have been implemented to promote pedestrian travel with vehicles travelling in parallel.

Since project implementation, downtown intersections operating with automated (or concurrent) pedestrian crossings have increased from 51% to 62%. These improvements primarily were implemented along The Alameda and Almaden Boulevard. Additional pedestrian corridors will be reviewed for such opportunities with future pedestrian and bicycle enhancements projects. With few exceptions, signalized intersections in the heart of Downtown now provide concurrent pedestrian phases whereby pedestrians no longer need to push the button to get a WALK signal.

Pedestrian signals automatically display the WALK signal and remain on with parallel vehicle movements, as well as during non-conflicting vehicle movements. When appropriate, exclusive pedestrian phases or pedestrian phase queue-jump is implemented to enhance pedestrian safety and mobility. Effort was made to ensure all roadway users, including transit, can travel safely and efficiently.

School Zones

In 2011, traffic signals within 1/3 mile radius of school clusters were reprogrammed to provide extended walking time before school and after school when pedestrian activity is generally highest within neighborhoods. This change ensured that the typical larger school pedestrian platoons en route to school can travel as a group (safer in numbers). Traffic signals were also optimized to provide longer “WALK” time during peak hours so that pedestrians had ample opportunity to cross major streets. Over 450 signals were evaluated and 39 public school communities (14 high schools, 12 middle schools, 13 elementary schools) benefitted from this project.

Senior Housing and Community Centers

The senior center/housing pedestrian retiming project took place from June 2013 to May 2014. The objective of the project was to improve pedestrian safety near senior centers and senior housing, emphasizing those senior community hubs in close proximity to dining and recreational services. Using a list composed of 13 senior hub centers and 43 senior housing areas, signalized intersections within ¼ mile radius of these areas were compiled and prioritized based on the number of relative pedestrian crashes. The project analyzed 145 signalized intersections, of which 124 were retimed. The analysis consisted of evaluating intersection crosswalk lengths, current signal timing, and facility hours for optimal retiming implementation. The retiming adjustments made to these intersections applied a 2.8 ft/sec pedestrian walking speed (California state option) compared to the 3.5 ft/sec (California state standard), during AM and PM hours of high pedestrian activity. In cases where 2.8 ft/sec pedestrian walking speed could not be applied due to timing constraints, 3 ft/sec and then 3.2 ft/sec were used accordingly. This reduced walking speed and provided pedestrians on average an additional five seconds of crossing time.