

Mace Boulevard Capital Improvement Project

Background

The origin of the Mace Blvd Improvements dates to early 2013 when the Sacramento Area Council of Governments (SACOG) released one of their biennial grant funding cycles. For this cycle, SACOG allowed road rehabilitation projects with meaningful non-motorized transportation improvements since many local agencies were hit hard by the recession. Since Mace Boulevard needed resurfacing and had opportunities for non-motorized improvements, it was selected as one of the projects to submit.

At the same time, the City had recently completed a Safe Routes to School parent survey, and was nearing completion of the Walk Bike Audit Report, which identified needed safety improvements at all 11 public elementary and junior high schools. These efforts indicated that Pioneer Elementary had the lowest rates of walking and bicycling to school in the District. Additionally, the surveys revealed parents' reasons for their children not walking or bicycling to school. A major physical and psychological barrier for them was Mace Blvd. Concerns expressed from parents included high vehicle speeds, long intersection crossing distances, and overall lack of comfort on and across Mace Boulevard. Safe Routes to School infrastructure design experts, City staff, the Bicycling, Transportation and Street Safety Commission (BTSSC) and Council all agreed with these concerns.

The need for road resurfacing on Mace Blvd and the opportunity for non-motorized improvements made this project an excellent fit for the SACOG grant program. Prior to submitting the grant application in Summer 2013, a public workshop was held at Pioneer Elementary in June 2013, which was attended by approximately 20 people. All residents east of Ohlone Dr / Willowbank Road were sent notifications of the workshop. The purpose was to show proposed improvements for increased safety and comfort of all users, including schoolchildren, bicyclists, and pedestrians. The proposed improvements included:

- Resurfacing and refreshed striping and markings on Mace Blvd between Red Bud Drive and Cowell Blvd.
- Repair broken sidewalk and make ramps accessible where needed.
- Construct protected intersection at Mace / Cowell Blvd to make it safer and more comfortable for bicyclists and pedestrians by eliminating free right movement for vehicles.
- Reconfigure Mace Blvd from four lanes to three (two plus turn lanes).
- Construct protected bike lanes, with parking-protected bike facility on the west side between El Macero and San Marino.
- Improve visibility of crosswalks.
- Install a bicycle/pedestrian activated High Intensity Activated Crosswalk (HAWK) signal at Mace Blvd and San Marino.

Key Changes Included in the New Design

1. **Mace / Cowell Blvd Protected Intersection.** The design follows the City's General Plan Transportation Element policy to eliminate channelized right turns at intersections as they present an additional conflict point between drivers and more vulnerable non-motorized users, encourage high speeds around corners, and encourage drivers to pay

more attention to safely merging at high speed rather than to other users potentially crossing the street. Physics and traffic safety studies confirm that higher vehicle speeds result in higher injury severity for non-motorized users. Protected intersections provide greater protection by reducing vehicle and bike/ped conflict points at intersections, removing free right turn movements, and providing separate paths of travel for bicycles and pedestrians at intersection approaches, which increases safety for all users, particularly at high volume intersections. For these reasons, this design solution was selected for the Mace / Cowell intersection. While some vehicular convenience may be reduced at the Mace / Cowell Blvd intersection, overall intersection safety should improve.

- 2. Mace Blvd Lane Reduction & Protected Bike Lanes.** Research and best practices in street design support construction of protected bike lanes on higher volume, higher speed arterials to reduce the level of stress non-motorized users experience on a corridor. Average corridor speed is 37 mph on Mace Blvd, which is too high for bicyclists to comfortably (and willingly) ride, especially school-age riders. On many Davis arterials, multi-use paths are constructed separate from and parallel to the street to provide this comfort. Mace Blvd does not have multi-use paths, so protected bike lanes are being constructed, enabled by the lane reduction. The lane width reduction and the inclusion of the Class IV or protected bike lanes are also consistent with the 2016 Street Standards. In addition to their inclusion in the Street Standards, the use of protected bike lanes has been encouraged by the Bicycling, Transportation and Street Safety Commission (BTSSC).

Traffic Data

When the grant application was submitted in summer 2013, traffic volumes supported reducing the number of travel lanes from four to three. The most recent Mace Blvd traffic volumes show a low of 3,150 cars per day (294 in the peak hour) north of Montgomery Ave and a high of 13,200 (1,150 in the peak hour peak) south of Chiles. Traffic volumes south of Cowell Blvd are within the capacity of a three-lane street. As a result, the lane reduction begins south of Cowell Blvd, which should allow for adequate vehicle queuing capacity at the intersection while achieving non-motorized safety improvement objectives.

Emergency Vehicles

Accommodating emergency vehicle access has been coordinated with the City's Police and Fire Departments and they are comfortable using the dual left turn lane south of El Macero and navigating the corridor north of there to Cowell with the current design.

Mobile Apps

Since 2013, mobile applications have emerged that route traffic around the eastbound I-80 evening backup and through Davis streets, including Mace Blvd, which the City did not anticipate. While a peak hour frustration for drivers, it supports the need to prioritize safety for non-motorized users. As freeway drivers recognize minimal travel time savings diverting to Mace Blvd, it is hoped traffic conditions will equalize to their current state until Caltrans can address the congestion issue on I-80. For the segment between El Macero Dr and San Marino Dr where parking-protected bike lanes are constructed, ADA accessible ramps were designed with the project.

Community Outreach

Since the initial public workshop at Pioneer Elementary School and the project was awarded funding, public outreach has been pursued by bringing the project to the BTSSC twice for review and input and the City Council once for approval and award of a construction contract. Since construction has begun, project notifications have been broadcast via Nextdoor to the community as well as included in monthly articles in the Davis Enterprise newspaper.

Current status (January 4, 2019)

Project construction continues with remaining work to be completed on the concrete curbs, relocated signal at Cowell and new Pedestrian/Bike signal at San Marino. It is anticipated that the areas where ponding water has occurred will be addressed with the final paving still to be performed. Following paving, the final striping will be installed that will put traffic back into the permanent travel lanes. In order to perform the final paving and striping, dry weather with temperatures into the high 50 to 60 degree range will be necessary. It is presently estimated all work will be done by late February, or early March pending acceptable weather.