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SR 49 Corridor Improvement Project

The SR 49 Corridor Improvement Project begins at the limits of the previous La Barr Meadows Signalization Project (PM 11.1) and ends just south of the McKnight Way Interchange (PM 13.3), connecting to the four lane Golden Center Freeway. The project (STIP 4E170) will make improvements to this segment focused on safety, evacuation capacity, operations, goods movement, accessibility, providing a new entrance and improved access to the Nevada County Transit Operations Center Zero Emission Bus charging infrastructure and multi-modal mobility improvements. This project is designed to be funded in three phases as state and federal transportation funding allow.

The ultimate project includes redirecting numerous entrances to a newly constructed frontage road system to access the highway at two new at-grade intersections that will either be roundabouts or signalized. It will also construct portions of northbound and southbound truck climbing lanes and will eliminate merge points that currently exist to the north and south of the project limits, connecting to the existing four-lane northbound/southbound sections. This project also proposes to further address safety concerns through the installation of a continuous median barrier, 10' shoulders with rumble strips, wildlife crossing tunnel with fencing, enhanced wet night visibility striping, and pavement edge treatments.

Phase 1: The construction phase was approved for funding in the 2020 State Highway Operations Protection Program. It includes construction of the northbound truck climbing lane, a 16' wide continuous two way left turn lane, 10' multi-use shoulders, and elimination of the northbound merge point improving operations and improving northbound evacuation capacity. This phase also includes southbound right turn lanes at Wellswood Way, Bethel Church Way, Smith Road, and Crestview Drive. Other safety features include enhanced wet night visibility striping, rumble strips, and

pavement edge treatments. A wildlife undercrossing with fencing will be installed as part of this phase to help reduce deer strikes. Construction is scheduled to begin in 2025.

Phase 2: This phase includes construction of the southbound truck climbing lane, construction of a new entrance on SR 49 to the new Nevada County Transit Operations Center. and elimination of the lane drop/merge point south of the McKnight Way Interchange improving safety, operations, goods movement, and evacuation capacity. This phase will also include enhanced wet night visibility striping, rumble strips, and pavement edge treatments. The proposed RTIP funding will complete the funding necessary to construct Phase 2 congruently with Phase 1.

Phase 3: This phase will be funded in a future STIP cycle and is dependent on future state and federal funding opportunities. It includes construction of frontage roads, elimination of ingress/egress points, construction of two access-controlled intersections initially proposed in the vicinity of Wellswood Way and Smith Road, and installation of a center median barrier.

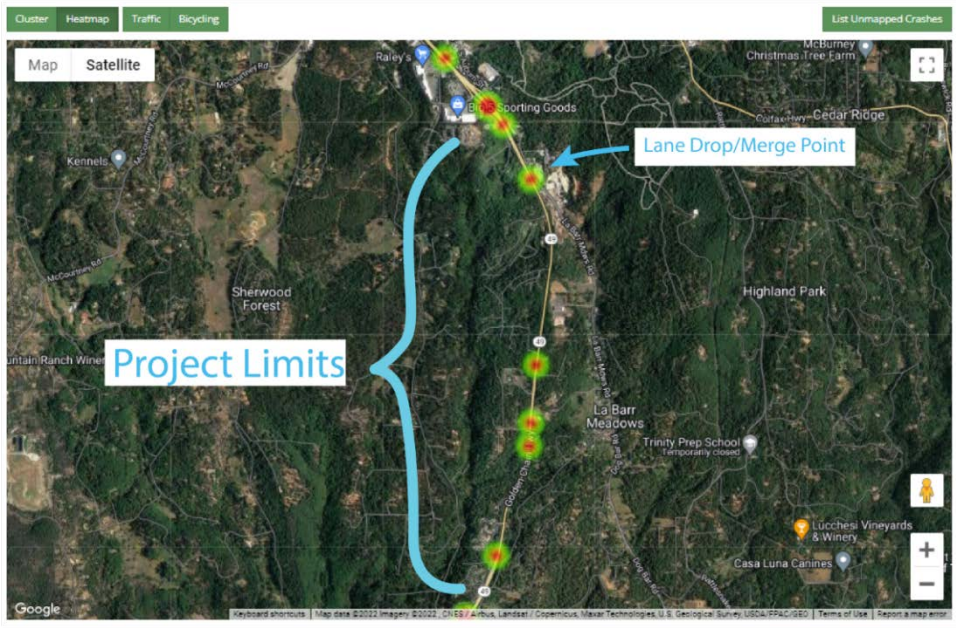
The project will enhance connectivity and accessibility for the rural communities in Nevada County along State Route 49 from La Barr Meadows Road to McKnight Way. The project will enhance safety and mobility of vehicular, pedestrian, and cyclist traffic on State Route 49. The project will also enhance daily commuting, mobility, freight, transit (Nevada County Connects, fixed route transit, Route 5 Commuter Service to Auburn Multi-modal station), access to employment and essential services, and provide a long-term benefit for emergency readiness for evacuations caused by climate change stressors.

The project accomplishes the goals of the 2021 Interregional Transportation Strategic Plan (ITSP) by balancing local community and interregional travel needs and improving emergency evacuation. The project segment is also designated a Critical Rural Freight Corridor by the Federal Highway Administration.

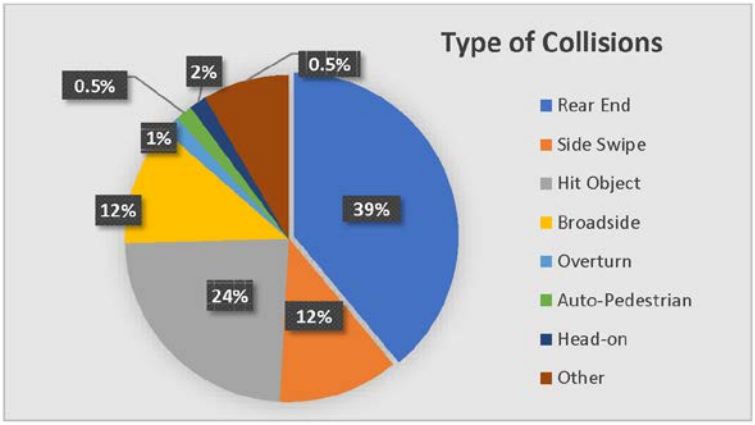
Safety

The project eliminates a lane drop/merge point on southbound SR 49 and constructs a truck climbing lane and operational improvements that directly addresses the primary collision type occurring in the project segment. The Traffic Accident Surveillance and Analysis System (TASAS) provides a snapshot of collisions occurring during a three-year period from July 2017 to June 2020.

During the 3-year timeframe, 59 collisions were reported with 21 injuries, 4 serious injuries, and 34 property damage only (PDO) 0 fatalities occurring. A heatmap of collisions was obtained from the Transportation Injury Mapping System (TIMS), managed by UC Berkely, to illustrate the location and clustering of collisions in the project limits. The heatmap shows the location of the lane drop/merge point in relation to a cluster of accidents.



The primary pattern of collisions identified for this location is congestion related. The evidence of the pattern is the high percentage (30 collisions or 51%) of the rear-end and sideswipe type of collisions shown in the chart below. Another evidence is the relatively high percentage of property damage only (PDO) collisions that likely occurred at lower speeds, due to the congestion experienced on the roadway. There were 34 PDO collisions (58%), which is close to 1.5 times the injury collisions (42%).



The proposed project will improve safety by reducing rear-end collisions, sideswipes, and head-on collisions through the elimination of the lane drop/merge point and construction of the truck climbing lane.

Emission Reduction Benefits

The emission analysis prepared for the project identified that the project would reduce air quality pollutants (ozone precursors) and Green House Gas (GHG) emissions. GHG emissions are expected to be more than 90,000 tons per year lower than the No Build during the horizon year (2044) due to changes in fuel efficiency and improved traffic operations. Under horizon year (2044) conditions, annual VMT would increase slightly with the build alternatives compared to the no build alternative, but the annual GHG emissions would decrease due to changes in network vehicle speeds. Although the VMT would increase slightly, the additional VMT would occur at speeds ranges where GHG emissions are lower. Adding the northbound truck climbing lane and operational improvements on SR 49 (Phase 1) would decrease annual GHG emissions by about 1,400 tons per year compared to the No Build. The addition of both the northbound improvements in Phase 1 and the Phase 2 southbound improvements would reduce GHG emissions by about 4,200 tons per year, three times higher than the reduction with only construction of Phase 1.

The SR 49 CIP is forecasted to save 113 tons of CO emissions, 25,696 tons of CO2 emissions, and 35 tons of NOX emissions over twenty years. This does not account for the additional air quality emission reductions that will result from the improved operations during high volume I-80 emergency detour events. Based on data collected by the Caltrans District 3 Traffic Management Center, 220 closures occurred between 2004 and 2022.