1.0 Introduction

1.1 Background

The I-280 Corridor Study within Santa Clara County is a high-level highway planning study led by the Santa Clara VTA, in partnership with the City of Cupertino. The study extends approximately 22 miles between the San Mateo county line at the west and I-280/I-680/US 101 interchange in the City of San Jose at the east. The I-280 corridor within Santa Clara County serves residential and commercial uses, as well as high-tech industries, with surrounding land uses that vary between residential, commercial, and industrial. It is primarily used as a commute corridor between San Jose/Silicon Valley and San Francisco and carries commuter traffic from San Jose, Milpitas and Alameda County to the north to destinations in downtown San Jose and Silicon Valley jobs in other cities of Santa Clara County. Figure 1 illustrates the study corridor and the project limits.

1.2 Goals of Study

The goal of this study is to evaluate the I-280 corridor in Santa Clara County at a high level and identify strategic improvements that can help improve mobility for all modes of transportation.

Study Goals

- Improve mobility for all modes within existing right-of-way
- Improve mainline and interchange operations
- Improve travel time and reliability
- Improve bicycle and pedestrian facilities to enhance bicycle/pedestrian safety
- Promote multiple modes of travel
- Promote transit alternatives
- Preserve and enhance the environment

This study provides a useful tool for the planning and programming of short-term, mid-term, and long-term projects that include mobility, safety, and connectivity for all modes of transportation.
1.3 Existing Corridor

The Santa Clara County I-280 corridor is in relatively flat terrain in urbanized settings from US 101 to SR-85 and in rolling terrain in rural/urbanized settings from SR-85 to the Santa Clara County line in Palo Alto. The number of travel lanes varies from seven to nine lanes with HOV lanes extending through sections of the I-280 corridor in Santa Clara County. A northbound HOV lane exists between Leland Avenue in the City of San Jose and Magdalena Avenue in City of Los Altos, and there is a southbound HOV lane between Magdalena Avenue and Meridian Avenue in San Jose.

The I-280 study corridor has 24 interchanges and local road crossings within the study area (some minor local roads are paired with a nearby local road or interchange). The 24 interchanges and local road crossings are:

- Page Mill Road
- El Monte Avenue
- Magdalena Avenue
- Foothill Expressway
- State Route 85 (SR-85)
- De Anza Boulevard
- Wolfe Road
- Stevens Creek Boulevard
- Lawrence Expressway
- Saratoga Avenue
- Winchester Boulevard
- Interstate 880 (I-880)
- Bascom Avenue
- Leigh Avenue
- Leland Avenue
- Meridian Avenue/Race Street
- Bird Avenue
- State Route 87 (SR-87)
- Almaden Boulevard/First Street
- 4th Street
- 6th Street/7th Street
- 10th Street
- 11th Street
- McLaughlin Avenue, and

These interchange areas are briefly described in Section 2 with interchange configuration, local street configuration, and multimodal facilities on the local streets.
1.4 Key Corridor Issues

Freeway Mobility Issues: The I-280 corridor within Santa Clara County serves residential communities, commercial areas, and high-tech industries due to its surrounding land uses that vary between residential, commercial, and industrial. It is primarily used as a commute corridor between San Jose/Silicon Valley and San Francisco. I-280 is not a major freight corridor; there is limited goods movement demand beyond basic service and delivery needs throughout the corridor.

Since 2011-12, with recovery in high-tech jobs and developments around the corridor, I-280 mainline operating condition has become the 3rd worst commute corridor in the Bay Area, according to MTC’s “Vital Signs”.

At present, the I-280 mainline is heavily congested in the GP lanes in peak periods, and the four (4) system interchanges are at capacity for the current traffic demands. According to VTA’s CMP report, existing levels of service along majority of the freeway corridor segments are Level of Service (LOS) F in the northbound direction during the AM peak period and in the southbound direction for the PM peak period.

Travel times in the GP lanes along I-280 corridor are 52 minutes in the northbound direction during the AM peak and 78 minutes in the southbound direction during the PM peak hour as compared to a free flow travel time of 21 minutes. The travel time run results indicate that the HOV lane is providing travel time savings and higher speeds as compared to that of the General Purpose (GP) lanes. Within the HOV lane section, there was approximately 2-10 minutes of travel time savings measured in the northbound direction during the AM peak hour and 4-12 minutes of travel time savings measured in the southbound direction in the PM peak hour as compared to GP lanes. The violation rate on existing HOV lanes is high during both AM and PM peak periods due to heavy congestion on GP lanes. The northbound HOV Lane was observed to be congested from Meridian Avenue to Saratoga Avenue due to heavy traffic merge and weave between HOV lane and SOV lane at SR-17/I-880 interchange.

Issues with Interchange Spacing and Lane Drops: There are 24 interchanges along I-280 within the study area including four system interchanges. The system interchanges are: I-280/US 101, I-280/SR-87, I-280/I-880/ SR-17 and I-280/SR-85. The number of travel lanes varies between three and five lanes in each direction with auxiliary lanes between some of the interchanges.

Significant congestion occurs at the interchange locations with peak period queuing due to limited freeway and ramp capacity. Several bottlenecks and queues at the interchange locations were observed along the study corridor in both directions. The bottlenecks and queues are attributed to closely spaced ramps, inadequate interchange capacities, heavy merge and weave volumes, and lane drops on the mainline.

Lack of Pedestrian/Bicycle Connectivity: The freeway ramp interfaces with the local roadway expose pedestrians and bicyclists to conflicts with high speed turning traffic on and off the freeway, which is the result of the absence of bicycle and pedestrian features meeting current standards and practices. Additionally, there is a lack of pedestrian/bicycle connectivity moving parallel to the I-280 corridor. There are currently no continuous low stress bikeways paralleling the corridor on the north or south. This has resulted in auto travel, currently, being the most viable form of transportation for trips in the area.
Lack of Exclusive Transit Opportunities: VTA provides Express Bus services along I-280 corridor benefiting from existing HOV lanes in each direction. The benefits to transit along I-280 corridor are not to the maximum potential for multiple reasons: existing congestion in the HOV lanes; no exclusive right-of-way for transit operations; and no transit priority features at the ramps to provide quicker access to the freeway.

Lack of ITS Infrastructure: I-280 corridor has limited ITS infrastructure and could significantly benefit from its inclusion. Having a robust infrastructure provides a multitude of benefits: real-time data feeds from an array of sensors can be used for motorist information and implemented operational strategies to improve traffic flow; creates a path for the future to accommodate technologies such as connected and autonomous vehicles, which could further enhance mobility and safety on the corridor.

Noise Complaints: Noise complaints submitted by the public gathered from online map based crowdsourcing survey, and a broad inventory and need analysis of conceivable placement of noise reduction measures identified several potential locations to study noise abatement improvements.

1.5 Stakeholder Outreach

The key stakeholders in this study are VTA, Caltrans, The County of Santa Clara, City of Cupertino, City of San Jose, City of Los Altos Hills, City of Sunnyvale, City of Santa Clara, and City of Los Altos. Stakeholder coordination meetings were held periodically to inform on the study progress and seek their input. I-280 Corridor Study project conducted a map-based online survey to seek community input. This survey allowed the public to provide feedback on existing facilities and to identify gaps at specific locations within the study corridor. In addition to the web based input, two public meetings were held for this study. VTA Outreach staff led the public engagement by posting the notice of public meetings, the contribution period, and a link to the Crowdspot map for the I-280 corridor on various websites and social media outlets. The Crowdspot survey offers public to identify multimodal issues,
Based on the comments received through the Crowdspot survey, there is considerable interest in carpool and EL. There were 2549 total submissions on the survey for this corridor with 1018 comments and 712 supports at 819 locations/spots. The heatmap shows the locations with most comments received. The top 10 locations are listed in order of priority and by mode of travel in Table 1. Detailed Crowdspot survey report is presented in Appendix 4.
### Table 1: Top Ten Comment Locations from Crowdspot Survey

<table>
<thead>
<tr>
<th>CAR COMMENT LOCATIONS</th>
<th>PEDESTRIAN COMMENT LOCATIONS</th>
<th>BICYCLE COMMENTS LOCATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magdalena Ave&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Race Street&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Foothill Expy&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>SB I-280 between El Monte Rd and Magdalena Ave</td>
<td>Lawrence Expy</td>
<td>Saratoga Ave</td>
</tr>
<tr>
<td>Saratoga Ave</td>
<td>N Wolfe Rd</td>
<td>Page Mill Rd</td>
</tr>
<tr>
<td>Page Mill Rd&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Bird Ave.</td>
<td>Lawrence Expy</td>
</tr>
<tr>
<td>Winchester Ave.</td>
<td>N De Anza Blvd</td>
<td>Meridian Ave</td>
</tr>
<tr>
<td>Highway 17</td>
<td>Foothill Expy</td>
<td>Bird Ave</td>
</tr>
<tr>
<td>Lawrence Expy.</td>
<td>Winchester Blvd.</td>
<td>Mary Ave. Ped Bridge</td>
</tr>
<tr>
<td>NB On-Ramp from 85 to NB merger</td>
<td>S 7&lt;sup&gt;th&lt;/sup&gt; St.</td>
<td>Monroe Ped Bridge</td>
</tr>
<tr>
<td>El Monte Rd</td>
<td>Montclair Elementary School</td>
<td>Steven Creek Blvd</td>
</tr>
<tr>
<td>Off-Ramp at Meridian</td>
<td>McLaughlin Ave</td>
<td>Grant</td>
</tr>
</tbody>
</table>

**Notes:**
1. Top congested location for vehicular traffic
2. Top unsafe location for vehicular traffic
3. Top unsafe location for pedestrians (poor lighting)
4. Top location with high risk of bicycle collisions (no bicycle lanes)