

Technical Memorandum

# VTA Tamien Station TOD Access Study

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**Proposed Access Improvements – Final Report**



Prepared for Santa Clara Valley Transportation Authority (VTA)  
by IBI Group  
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## Table of Contents

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<b>1</b>	<b>INTRODUCTION .....</b>	<b>4</b>
1.1	STUDY BACKGROUND .....	4
1.2	PURPOSE OF REPORT.....	4
1.3	PROJECT SETTING .....	4
1.4	PROPOSED JOINT DEVELOPMENT PROJECT .....	5
<b>2</b>	<b>COMMUNITY ENGAGEMENT .....</b>	<b>7</b>
2.1	POP-UP EVENTS.....	7
2.2	ONLINE SURVEY .....	9
<b>3</b>	<b>PROPOSED STATION ACCESS IMPROVEMENTS .....</b>	<b>12</b>
3.1	BICYCLE, PEDESTRIAN, AND ON-SITE ACCESS IMPROVEMENTS.....	12
3.2	TRANSIT ACCESS IMPROVEMENTS .....	27
3.3	VEHICULAR ACCESS IMPROVEMENTS .....	29
3.4	TEMPORARY ACCESS DURING TOD CONSTRUCTION .....	31
<b>4</b>	<b>TRAVEL DEMAND MANAGEMENT STRATEGIES .....</b>	<b>34</b>
4.1	VTA TRAVEL DEMAND MANAGEMENT (TDM) PLAN .....	34
4.2	TDM RECOMMENDATIONS .....	34
<b>5</b>	<b>COST ESTIMATES.....</b>	<b>36</b>
<b>6</b>	<b>IMPLEMENTATION .....</b>	<b>37</b>
	<b>APPENDIX A – COMMUNITY OUTREACH SUMMARY .....</b>	<b>39</b>
	<b>APPENDIX B – COST ESTIMATES.....</b>	<b>44</b>

## List of Figures

---

FIGURE 1.1 STATION AREA MAP .....	6
FIGURE 3.1 SAN JOSE BETTER BIKE PLAN 2025 IN-PROGRESS DRAFT NETWORK .....	13
FIGURE 3.2 GUADALUPE RIVER TRAIL MASTER PLAN .....	13
FIGURE 3.3 GUADALUPE RIVER TRAIL CROSS SECTION AT LELONG STREET .....	14
FIGURE 3.4 MAP OF PROPOSED BIKE ACCESS IMPROVEMENTS .....	25
FIGURE 3.5 MAP OF PROPOSED PEDESTRIAN ACCESS IMPROVEMENTS .....	26
FIGURE 3.6 LICK AVENUE TOD SITE PLAN.....	30
FIGURE 3.7 TAMIEN WEST TOD SITE CONCEPTUAL SITE PLAN.....	30
FIGURE 3.8 PROPOSED TEMPORARY PEDESTRIAN ACCESS ROUTES .....	32

## List of Tables

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TABLE 3.1 PROPOSED BICYCLE, PEDESTRIAN, AND ON-SITE IMPROVEMENTS BY CORRIDOR .....	16
TABLE 3.1 BUS STOP CATEGORIZATION ACCORDING TO THE TRANSIT PASSENGER ENVIRONMENT PLAN .....	27
TABLE 3.2 EXISTING BUS STOP CONDITIONS.....	28

## 1 INTRODUCTION

### 1.1 Study Background

The Santa Clara Valley Transportation Authority (VTA) has initiated this Transit Oriented Development (TOD) Station Access Study for the Tamien Station to analyze multimodal access and circulation to and from the station. The analysis is to be conducted in coordination with a proposed residential mixed use joint development project on VTA property located east of State Route 87 and west of Lick Avenue, between the Willow Glen and Alma neighborhoods in San Jose. This memorandum provides proposed access improvements, travel demand management strategies, and cost estimates for the identified access improvements at Tamien Station.

### 1.2 Purpose of Report

Following Tasks 2 and 3 of the work scope, which outlined existing conditions and needs at Tamien Station, this memorandum presents proposed on-site and off-site access improvements within a half-mile buffer surrounding Tamien Station. Recommendations to improve accessibility to Tamien Station are made in response to data collected from collision and survey data, as well as community input collected during the analysis of existing conditions and needs. This Technical Memorandum consists of four primary sections: Section 2 Community Engagement, Section 3 Proposed Station Access Improvements; Section 4 Travel Demand Management Strategies; Section 5 Cost Estimates; Section 6 Next Steps. The information outlined in this report reflects deliverables for Task 4, 5, and 6.

The key objectives of this memo are to summarize results from the community engagement efforts, propose improvements for access to Tamien Station, provide travel demand management strategies, and present conceptual-level cost estimates. These improvements and strategies are made in the larger effort to more seamlessly connect transit riders to Tamien Station and the larger surrounding active transportation network in consideration of the station's future plans for development and projected ridership.

### 1.3 Project Setting

Tamien Station is located southeast of Downtown San Jose and currently serves both VTA and Caltrain transit services. The west side of the station provides access to VTA light rail and bus service, while the east side of the station provides access to Caltrain commuter rail service. Figure 1.3 illustrates the station area.

The VTA light rail station platform sits in the median of SR-87 between West Alma Avenue and Willow Street. It serves the Blue Line, providing light rail access to communities to the south and east of Downtown San Jose. The station receives an average of 521 riders boarding light rail service (boardings) and 520 riders exiting transit service (alightings), daily. The station also provides access to VTA bus service, specifically Routes 25 and 56. Route 25 sees an average of 229 boardings at the station daily, with 204 alightings. Route 56 was recently implemented to replace Route 82, which previously would

see an average of 66 boardings daily, with 74 alightings<sup>1</sup>. The VTA parking lot is accessed from Lelong Street and currently provides 269 free parking spaces for transit station access. The lot north of the SR-87 on/off ramps provides an additional 92 parking spaces.

The Caltrain platform is located east of SR-87 off Lick Avenue, serving communities from Gilroy in the south to San Francisco in the north. Northbound Caltrain service sees an average of 1,275 boardings and 194 alightings daily, while southbound Caltrain service sees an average of 15 boardings and 1,021 alightings daily<sup>2</sup>. The Caltrain parking lot is accessed from Lick Avenue and provides 275 free parking spaces.

#### **1.4 Proposed Joint Development Project**

The Tamien Station TOD is a mixed-use, transit oriented development to be located on the existing parking lot off of Lick Avenue, which is owned by VTA, but primarily used by transit passengers accessing the Caltrain platform. The proposed TOD will provide a total of 569 apartment units (135 affordable, 434 market rate) and 3,000 square feet of retail space. The development proposes 158 parking spaces for the affordable units, and 434 for the market rate units, for a total of 592 residential parking spaces, which will be provided in a below ground parking garage. The project will also provide 288 bicycle parking spaces, amongst the affordable and market rate buildings. The project provides a wide kiss and ride area along the loop road of the project which will allow access to the VTA and Caltrain stations.

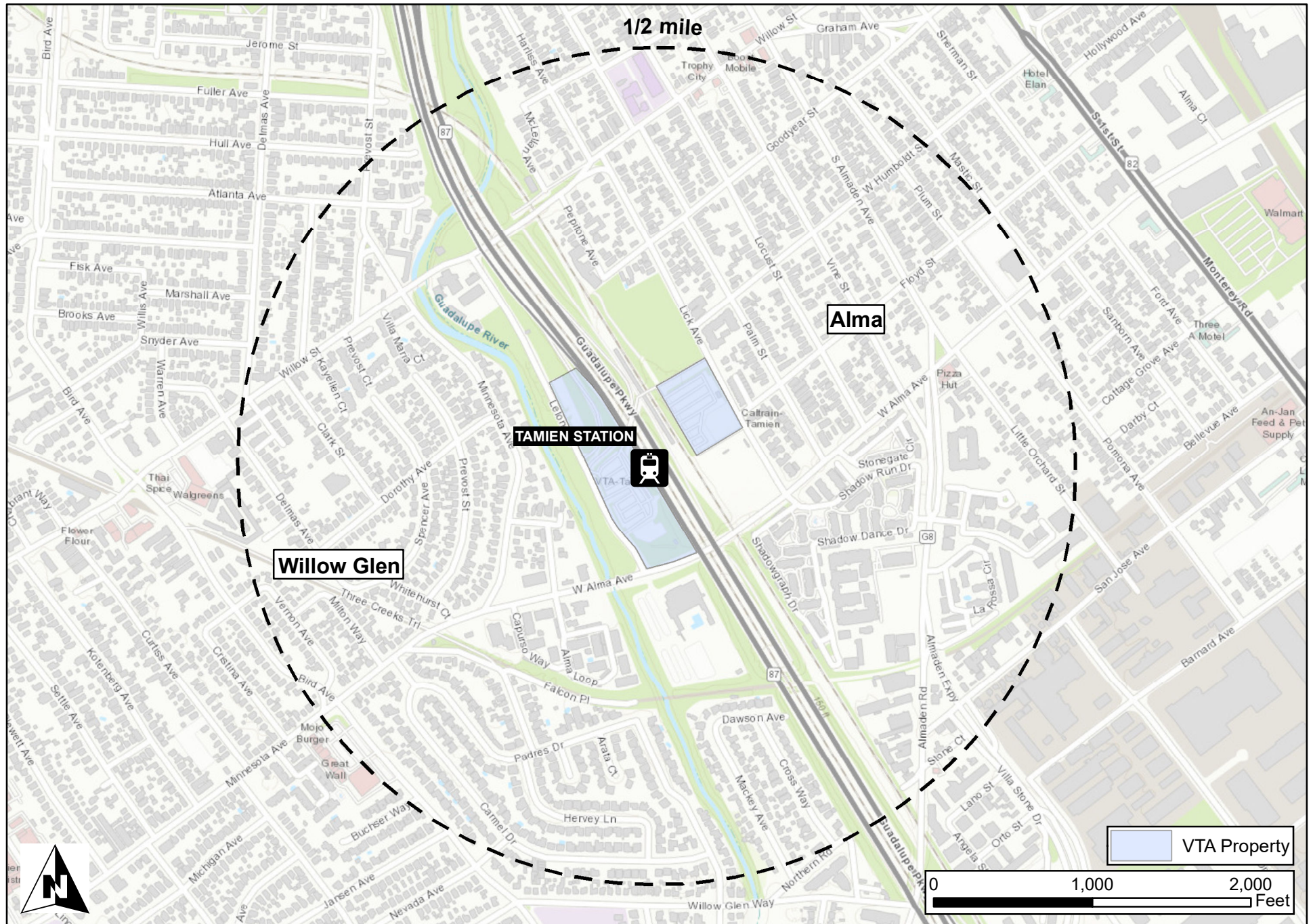
The Tamien West TOD is an additional housing development proposed for the western portion of the existing VTA parking lot. While Tamien West is a future TOD phase, and not an active project, the proposed development is projected to provide both additional housing and parking. The proposed TOD will provide a total of 96 residential units, with a total of 58 covered parking spaces for residents and approximately 145 surface parking spaces for transit.

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<sup>1</sup> Source: VTA ridership data – average weekday boardings for the April 2019 quarter (4/1/19 – 6/30/19).

<sup>2</sup> Source: Caltrain ridership data – 2018.

# FIGURE 1.1: TAMIEN STATION AREA MAP



## 2 COMMUNITY ENGAGEMENT

Following the assessment of existing conditions and needs conducted in Tasks 2 and 3, the community was engaged through a series of pop-up events and a supplemental online survey, conducted in two phases. Phase 1 introduced the community to the project and collected thoughts regarding transit rider access to the station via multiple modes of transportation. Phase 2 collected feedback on initial proposed recommendations that were developed based on the first phase of feedback. All materials, including boards at the pop-up events and online survey, were provided in English, Spanish, and Vietnamese. This section presents a summary of both phases of the community engagement effort.

### 2.1 Pop-Up Events

Two phases of pop-up events were held to gather input from existing station users and the surrounding community regarding access improvements to the Tamien Station Area.

#### 2.1.1 Phase 1

Phase 1 of the pop-up events were conducted to assess the existing constraints and needs related to accessing the Tamien light rail and Caltrain stations. This first round of pop-up events was held in October 2019 at the following locations:

- October 19<sup>th</sup> (Saturday) – Willow Glen Farmers Market at Willow Glen Elementary, 1425 Lincoln Ave. This event aimed to capture the neighborhood to the west of the station.
- October 20<sup>th</sup> (Sunday) – Arteaga’s Market at 204 Willow Street. This event aimed to capture the neighborhood to the east of the station.
- October 23<sup>rd</sup> & October 24<sup>th</sup> (Wednesday & Thursday) – Tamien Station during morning and afternoon peak periods at two locations: the LRT station plaza, near the ticket vending machines, and the Caltrain station plaza, near the ticket vending machines.

The purpose of these events was to engage with the community and riders at the station in the surrounding community to learn and identify existing needs and desired improvements to station access. Participants were invited to provide feedback on station access components, do a “pains and gains” exercise, and provide input on general station access improvements on comment cards.

The top three access components that participants identified were 1) safety and comfort, 2) signage and wayfinding, and 3) crossing and connections. Generally, participants desired enhanced safety and security, including lighting improvements; enhanced parking signage/stripping; improved bike facilities and wayfinding; and more seamless transit connections. See Appendix A for a detailed summary of results.

The feedback, in combination with the first phase of the online survey, was used to develop initial suggestions for bicycle, pedestrian, and on-site access improvements to the half-mile radius around Tamien Station.

### **2.1.2 Phase 2**

Following identification of these suggestions, Phase 2 of the pop-up events was held to gather the public’s opinion on the initial improvements. The events were held in March 2020 at the following locations:

- March 4<sup>th</sup> (Wednesday morning peak & evening peak) – Tamien Station during morning and afternoon peak periods at two locations: the LRT station plaza, near the ticket vending machines, and the Caltrain station plaza, near the ticket vending machines.
- March 7<sup>th</sup> (Saturday) – Willow Glen Farmers Market at Willow Glen Elementary, 1425 Lincoln Ave. This event aimed to capture the neighborhood to the west of the station.
- March 8<sup>th</sup> (Sunday) – Arteaga’s Market at 204 Willow Street. This event aimed to capture the neighborhood to the east of the station.

At these pop-up events, the public was presented with maps showing the proposed bicycle, pedestrian, and on-site improvements. Participants were also given the opportunity to provide feedback on the proposed recommendations, as well as propose additional improvements both at the station itself and within the half-mile study area. The following sections summarize the input received related to bicycle, pedestrian, and on-site access improvements from this round of pop-ups.

#### **Bicycle Improvements**

Bicycle improvements proposed further supported those made by the San Jose Better Bike Plan. More specifically, participants who attended the pop-up events proposed the following additional bicycle improvements:

- Class IV bikeways along Vine Street and South Almaden Avenue
- Traffic calming measures along Vine Street, Goodyear Street, and South Almaden Avenue

#### **Pedestrian Improvements**

Comments reflected support for previous recommendations within the Tamien station study area. While few comments pertaining to additional pedestrian access improvements were collected, some comments regarding safety concerns were collected. Proposed pedestrian safety improvements included:

- Improved lighting at the intersection of Willow Street and Minnesota Avenue

#### **On-Site Improvements**

On-site improvement suggestions, aside from those previously proposed, strongly emphasized the public’s desire for enhanced security measures at the station and along key access routes, improved lighting, traffic calming measures, wind protection at the station, and new or improved crosswalks, as follows:

- Enhanced security presence in the northeast parking lot and at the western entrance to the station



- Improved lighting at the station
- Provide traffic calming measures at the entrance to the northeast parking lot, the entrance to the southwest parking lot, the freeway on and off-ramps, and at the intersection of West Alma Avenue and Lelong Street
- Wind protection at the western entrance to the station
- New or improved crosswalks at the intersection of West Alma Avenue and Lelong Street

## 2.2 Online Survey

In coordination with the pop-up events, online surveys were created using SurveyMonkey to supplement the feedback gathered at the pop-ups. To ensure accessibility, the online survey was made available in English, Spanish, and Vietnamese during both phases of survey data collection.

### 2.2.1 Phase 1

The first survey collected responses from participants between October 6<sup>th</sup> and November 10<sup>th</sup>, 2019. The survey collected information regarding challenges faced in accessing the station. A total of 167 participants responded to the survey.

Of the 167 participants, the majority of survey respondents (75.9%) were identified to live near Tamien Station. 54.5% of respondents reported that they arrived by car and 41.3% reported that they visited Tamien Station five or more days a week. Due to the high volume of automobile traffic visiting the station on a daily basis, 58 respondents identified parking as their main challenge when attempting to visit the station. Similarly, 21 respondents identified traffic as their main challenge when accessing the station. Numerous participants highlighted the need for active transportation solutions in order to improve accessibility to the station.

In an attempt to propose access improvements to Tamien Station and the surrounding area, the survey identified key areas which required urgent attention. To address these concerns, respondents identified several improvements which could be implemented to mitigate these effects:

- 53% of survey participants identified that personal safety was a key challenge, and supported the following improvements:
  - Traffic calming measures
    - Along Lick Avenue & Lelong Street
  - Improved lighting
    - Lick Avenue, the SR-87 underpass at Willow Street, in the pedestrian pathway underneath the station, and in the station parking lots
- 42.2% of survey participants expressed the need for the following pedestrian access improvements:
  - New or improved crosswalks

- Along Lelong St, at the intersection of Alma Ave and Lelong St, and on Minnesota Avenue
- Improved Wayfinding
  - In the SR-87 underpass at the station and at parking lot exits
- 27.7% of survey participants expressed the need for bicycle access improvements in the following locations:
  - At the SR-87 on/off ramps, along Minnesota Avenue, Alma Avenue, Willow Street, Lick Avenue, and especially the SR-87 underpass on Willow Street

A detailed summary of responses collected is found in Appendix A.

### 2.2.2 Phase 2

The second survey collected responses from participants between March 2<sup>nd</sup> and March 27<sup>th</sup>. The survey collected feedback regarding the draft maps presenting proposed improvements developed based on the first phase of pop-up events and first online survey. A total of 40 participants responded to the survey. The relatively low number of participants in comparison to the first survey may have been due to the COVID19 pandemic that began to evolve in March, with county-wide shelter in place orders that began on March 16<sup>th</sup>. Likewise, the observed level of participation might have resulted from station visitors who felt they had already participated in the first round of surveys.

Phase 2 of the online survey sought to identify specific improvements which would have the greatest benefit at the station.

- Of the 40 survey participants, the majority of participants (74.4%) expressed their support for the following personal safety improvements:
  - Improved lighting was necessary
    - On site at Tamien Station, along Lelong Street and Lick Avenue, in the SR-87 underpass at the station, and on Willow Street
  - Traffic calming measures
    - Along west Alma Avenue, Minnesota Avenue, and Bird Avenue
- 43.6% of survey participants expressed the need for the following pedestrian access improvements:
  - Widened sidewalks
    - Along Lelong Street and West Alma Avenue
  - Pedestrian crossing beacons (or flashing beacons alerting traffic that a pedestrian is crossing)
    - At the SR-87 on/off ramps on Lelong Street
  - New or improved crosswalks

- Along Lick Avenue, West Alma Avenue, Willow Street, and Lelong Street
- 30.8% of survey participants expressed a need for the following bicycle accessibility improvements:
  - Bicycle friendly intersections
    - At the intersection of Minnesota Avenue and West Alma Avenue, Willow Street and Lelong Street, and West Alma Avenue and Lelong Street
  - Class IV bike lanes
    - Alma Avenue, Almaden Road, Willow Avenue, and Lick Avenue
  - Bike lockers
    - On site at Tamien Station
  - Support for the Guadalupe trail alignment

A detailed summary of responses is found in Appendix A.

### 3 PROPOSED STATION ACCESS IMPROVEMENTS

Task 2 and 3 of this study documented the existing and future conditions around the Tamien Station Area regarding multimodal access to the station. The report identified access patterns and issues and assessed multimodal access improvement needs. This section supplements those findings by incorporating the community feedback discussed in Section 2 to develop specific proposed improvements to enhance multimodal access to the station. The following sections provide suggested improvements for bicycle, pedestrian, on-site, transit, and vehicle access to the Tamien Station Area.

#### 3.1 Bicycle, Pedestrian, and On-Site Access Improvements

This section presents suggested improvements by providing a general summary of off-site and on-site access to the station, organized by corridor, as well as proposed improvements in each category, and the information that led to the proposed improvements (Table 3.1). This may include existing conditions data, current local or regional plans, and/or community feedback from online survey responses and pop-up events. Geographical illustrations of the suggested improvements resulting from these efforts are also provided. These exhibits lay out the various suggestions that led to the proposed improvements.

##### **Bicycle Improvements**

The San Jose Better Bike Plan 2025 (Figure 3.1) and Guadalupe River Trail Master Plan (Figure 3.2) efforts introduce improvements to the bicycle network and associated infrastructure surrounding the station. To ensure collaborative efforts from both plans, it is important to note that the Guadalupe River Trail cross-section represented in Figure 3.3 shows a proposed Class II Bikeway along Lelong Street. However, the more recent San Jose Better Bike Plan, proposed by the City, proposes a Class IV Bikeway for this corridor to further separate cyclists from oncoming vehicle traffic and maximize cyclist safety. VTA has confirmed with the City of San Jose that the implementation of a Class IV Bikeway along Lelong Street is the best course of action to complement the Class I path along the east bank of the creek for purposes of access. This recommendation aligns with the common goals identified in the San Jose Vision Zero Plan.

In addition, the VTA Bicycle Program ensures bike racks are equipped on buses and light rails, and provides bike racks and lockers at park and ride lots. The existing conditions assessment found that bike routes surrounding the area generally lack separation from vehicle traffic, therefore limiting cyclist visibility.

Figure 3.1 San Jose Better Bike Plan 2025 In-Progress Draft Network

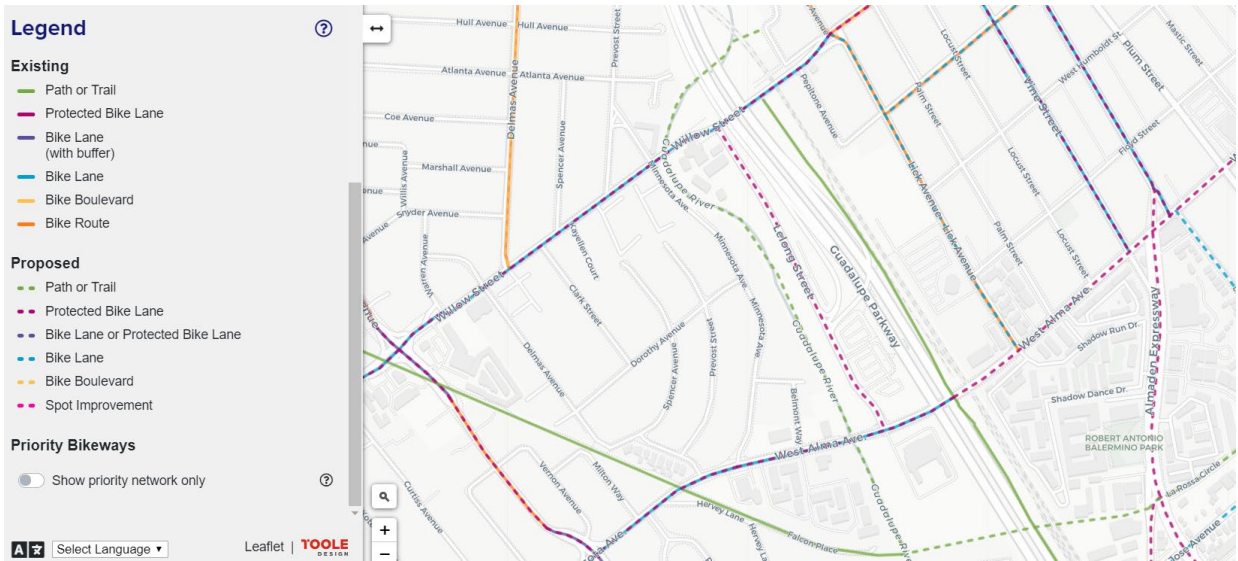


Figure 3.2 Guadalupe River Trail Master Plan

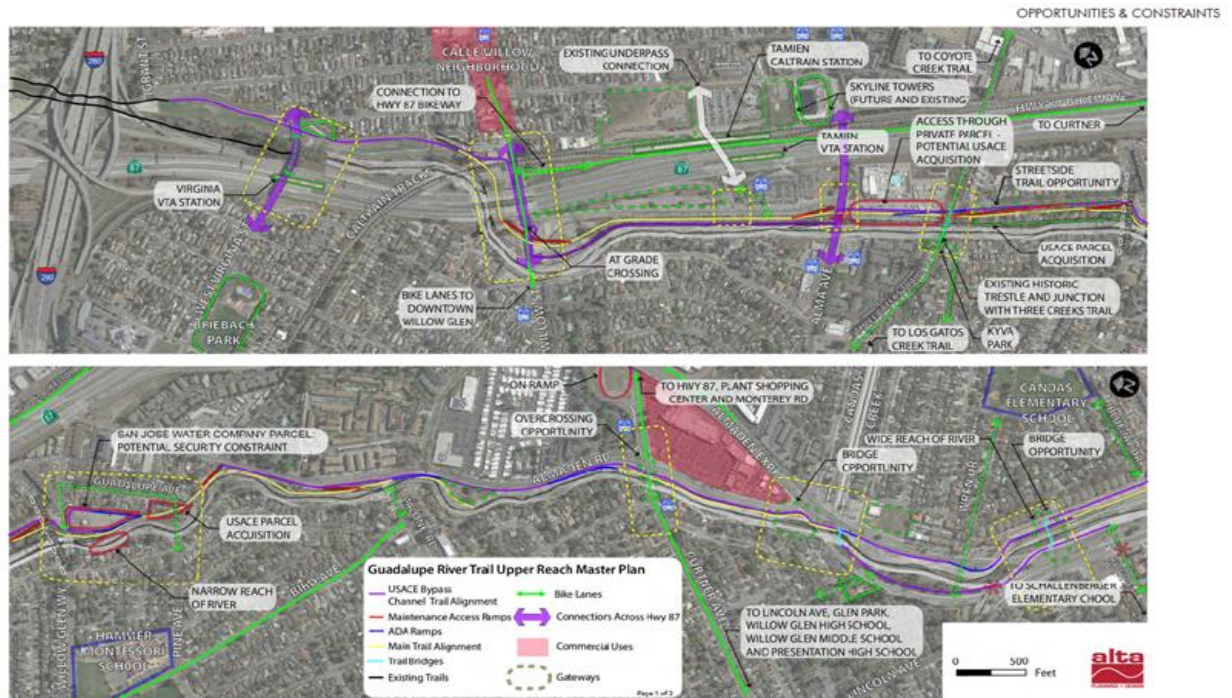
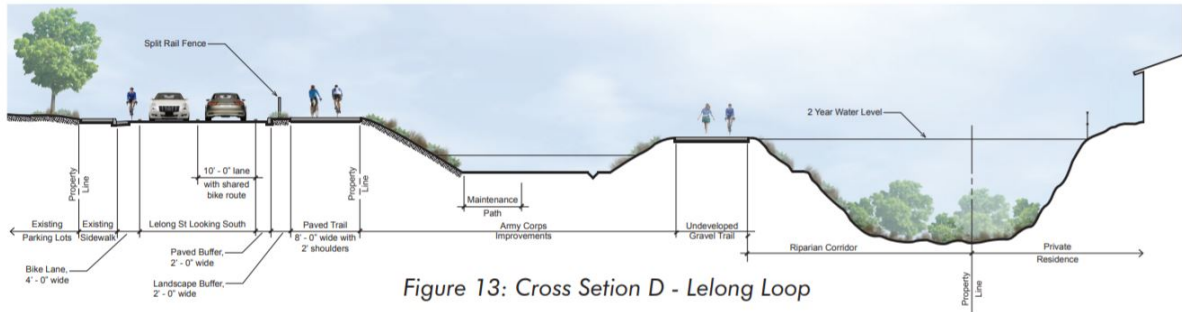


Figure 4: Opportunities and Constraints Map

Figure 3.3 Guadalupe River Trail Cross Section at Lelong Street



Pop-up results indicated a desire for additional traffic calming measures and improved bicycle access, including Class IV bikeways. Bikeways are typically categorized into four classes, as follows:

- Class I Bikeway – A bikeway or shared-use path completely separated from vehicle traffic. These bikeways give bicyclists the right of way.
- Class II Bikeway – A bikeway that runs alongside vehicle traffic on streets in the same direction. These bikeways are designated by pavement striping and signage.
- Class III Bikeway – A bikeway, also known as a “bike route”, creates a shared route between motorists and bicyclists. These routes are typically implemented on roadways with low traffic speeds and volumes.
- Class IV Bikeway – A bikeway physically separated from vehicle traffic. Protection and separation from traffic can be provided through grade separation, flexible posts, inflexible barriers, or on street parking.

These improvements were proposed at several locations, however pop-up participants highlighted their need particularly along Vine Street and South Almaden Avenue. Community members who participated in the online survey echoed similar desires, expressing support for Class IV bike lanes and bicycle friendly intersections, particularly along West Alma Avenue, Lelong Street, and Willow Street.

Figure 3.4 provides a geographical illustration of these suggestions. Specific suggested improvements by corridor/area are detailed in Table 3.1.

### Pedestrian Improvements

Planned improvements to existing pedestrian infrastructure around the Tamien Station Area include the integration of the Guadalupe River Trail Master Plan, which will provide improvements to connect not only bicycles, but pedestrians as well, to the larger trail network in the area. The improvements also align with the goals set by the Envision San Jose 2040 General Plan, which prioritizes pedestrian safety in traffic collisions, as well as the City of San Jose’s Vision Zero plan, a traffic safety initiative to eliminate deaths and severe injuries on all of the City’s roadways.

Additionally, VTA has two initiatives related to pedestrian infrastructure: 1) the VTA Pedestrian Program emphasizes the importance of county-wide vibrant, safe, and comfortable pedestrian environments; 2) the VTA Pedestrian Access to Transit Plan, which reviews the current state of pedestrian conditions within Santa Clara County, has identified the area around Tamien Station (Focus Area K) to have particularly high speed vehicle turns, long crossing distances, and high pedestrian demand. Potential improvements include improved pedestrian crosswalk access, traffic calming measures, and additional roadway buffers.

Community feedback from pop-up events regarding pedestrian improvements included suggestions for improved lighting in the station area, particularly in the SR-87 underpass. Online survey responses indicated a need for new or improved crosswalks along each street bordering the station, and traffic calming measures along West Alma Avenue and Minnesota Avenue, among other corridors.

Figure 3.5 provides a geographical illustration of these suggestions. Specific suggested improvements by corridor/area are detailed in Table 3.1.

### **On-Site Access Improvements**

On-site access improvements refer to improvements pertaining to the station itself, which includes the VTA parking lot, overflow lot, Caltrain parking lot, station platforms, station underpass, pedestrian pathways, bus stop area, and kiss-and-ride area.

Input from pop-up events indicated that Tamien Station visitors were concerned with safety and security, supporting suggestions for improved lighting and additional security at the station. In addition, participants indicated a need for traffic calming measures and improved crosswalk features, particularly at the entrances to the station and at the SR-87 on and off ramps. Survey respondents mentioned a need for bike lockers, as well as wind protection at the station platforms.

Specific suggested improvements are detailed in Table 3.1.

Table 3.1 Proposed Bicycle, Pedestrian, and On-Site Improvements by Corridor

CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
<p><b>W Alma Ave</b></p>	<p>Currently, there are no bike lanes present on Alma Ave. Residents and visitors to the station have complained about a lack of shade, narrow sidewalks, and maintenance issues such as broken glass and trash along the corridor.</p>	<p><b>Bike:</b></p> <ul style="list-style-type: none"> <li>A Protected Bike Lane (Class IV) is suggested to mitigate cyclist’s concerns of traveling alongside high speed traffic. The protected bike lane is described as an on street space that is separated from traffic by parked cars, raised curbs, or posts. This would also calm traffic and increase bike safety where W Alma Ave intersects with Lelong St, Lick Ave, Vine St, and Almaden Rd.</li> </ul> <p><b>Pedestrian:</b></p> <ul style="list-style-type: none"> <li>A new or improved crosswalk at the intersection of W Alma Ave &amp; Lelong St.</li> <li>“Pedestrian crossing” signage at W Alma Ave &amp; Lelong St.</li> <li>An improved crosswalk at the intersection of W Alma Ave &amp; Locust St.</li> <li>Widened sidewalks along the entire corridor.</li> <li>A curb extension at W Alma Ave &amp; Almaden Rd.</li> </ul> <p><b>Both:</b></p> <ul style="list-style-type: none"> <li>Wayfinding signage at the intersection of W Alma Ave &amp; Lick Ave and W Alma Ave &amp; Vine St to direct cyclists and pedestrians towards the station.</li> </ul>	<p>Proposed improvements made along this corridor are based on:</p> <p><b>Bike:</b></p> <ul style="list-style-type: none"> <li>Proposed improvements align with those made in the San Jose “Envision 2040” Plan and the “Better Bike Plan”, which proposes a Class IV bikeway along W Alma Ave.</li> <li>Traffic collision data collected from 2011 until 2015. During this period, 7 traffic collisions were reported along W Alma Ave within the half mile study area between cyclists and cars.</li> <li>Survey participant responses (16). Respondents highlighted the need for improved bicycle infrastructure to improve cyclist visibility to oncoming traffic along W Alma Ave.</li> </ul> <p><b>Pedestrian:</b></p> <ul style="list-style-type: none"> <li>Survey participant responses (16). Respondents highlighted the need for improved pedestrian and cyclist infrastructure.</li> <li>Pop-up event input. Participants highlighted the need for improved pedestrian safety at W Alma Ave &amp; Lelong St.</li> <li>Proposed pedestrian improvements are in line with the VTA’s “Pedestrian Access to Transit Plan” which seeks to “improve safety, comfort and convenience” and will achieve this goal through the redesign crosswalks and addition of curb extensions along Alma Ave.</li> <li>Traffic collision data collected from 2011 until 2015. During this period, 4 traffic collisions were</li> </ul>



CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
Lick Ave	<p>Currently, a Bike Route (Class III) exists on Lick Ave. A Bike Route is described as an on-street space where cyclists share the road with cars. Lick Ave. is also dominated by long crossing distances and high exposure to high speed traffic.</p>	<p>Bike:</p> <ul style="list-style-type: none"> <li>A Bike Lane (Class II) is proposed to calm traffic and reduce traffic collisions between cyclists and oncoming auto traffic. A Class II Bike Lane is described as on street space with a paint stripe designating the separation between the bike lane and oncoming traffic.</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>Suggestions for pedestrian infrastructure improvements include new or improved crosswalks at the intersection of Lick Ave and Willow St, the intersection of Lick Ave and Humboldt St, and the intersection of Lick Ave and Floyd St. These crosswalks may include high visibility markings and bulb outs.</li> <li>Pedestrian crossing signage is suggested at the intersection of Lick Ave and Humboldt St.</li> <li>Improved lighting along the corridor.</li> </ul>	<p>reported along W Alma Ave within the half mile study area between pedestrians and cars.</p> <p>Proposed Improvements made along this corridor are based on:</p> <p>Bike:</p> <ul style="list-style-type: none"> <li>Survey participant responses (16). Visitors of Tamien Station highlighted the need for traffic calming measures along Lick Ave, as they raised concerns about high exposure to high speed traffic along this corridor, in particular. These suggestions are in line with the suggestions proposed in the San Jose “Better Bike Plan”, which proposed a Class II bikeway along Lick Ave, and the “Envision 2040” Plan.</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>Pop-up event input. Participants noted the need for crosswalk improvements and an improved bike lane along the corridor.</li> <li>Survey participant responses (16). Respondents highlighted the need for improved pedestrian infrastructure, particularly at the exits from the station.</li> </ul> <p>Both:</p> <ul style="list-style-type: none"> <li>Traffic collision data collected from 2011 until 2015. During this period, 3 traffic collisions were reported along Lick Ave within the half mile study area between pedestrians and cars.</li> </ul>
Locust St	<p>Currently, there are no bike lanes present along Locust St. Long distances between</p>	<p>Pedestrian:</p> <ul style="list-style-type: none"> <li>New or improved crosswalks are suggested to break up long distances between street crossing</li> </ul>	<p>Proposed improvements made along this corridor are based on:</p> <p>Pedestrian:</p>



CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
	<p>street crossing opportunities were also noted along Locust St.</p>	<p>opportunities observed along Locust St at Willow St, Goodyear St, Floyd St, and W Alma Ave.</p>	<ul style="list-style-type: none"> <li>• Traffic collision data collected from 2011 until 2015. During this period, 2 traffic collisions were reported along Locust St within the half mile study area between pedestrians and cars.</li> <li>• Anticipated increase in ridership at Tamien Station. With increased ridership and volume of visitors to the station, traffic calming measures are necessary at both the intersection of Locust St and Willow St, as well as Locust St and Alma Ave. As the volume of visitors to the station is expected to increase, so too will the volume of traffic along both Willow St and W Alma St, thus requiring new or improved crosswalks at both intersections to maximize pedestrian safety. This suggestion is in line with the goals stated in the “Vision Zero” plan.</li> </ul>
<p><b>Vine St</b></p>	<p>Currently, there is a Bike Lane (<b>Class II</b>) present on Vine St. A Bike Lane is described as an on street space where cyclists share the road with cars. Vine St is also dominated by long crossing distances along the corridor</p>	<p>Bike:</p> <ul style="list-style-type: none"> <li>• A Protected Bike Lane (Class IV) is suggested to calm traffic along the corridor and mitigate cyclist’s concerns of traveling alongside high-speed traffic. A protected bike lane is separated from traffic by parked cars, raised curbs, or posts.</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Additional crosswalks at Humboldt St and Floyd St to break up corridor crossing distances.</li> <li>• Additional wayfinding signage at Willow St and W Alma Ave directing visitors toward the station.</li> <li>• High visibility crosswalk at intersection of Vine St &amp; Willow St.</li> </ul>	<p>Proposed improvements made along this corridor are based on:</p> <p>Bike:</p> <ul style="list-style-type: none"> <li>• Traffic collision data collected from 2011 until 2015. Since data collection began in 2011, four traffic collisions have been reported along Vine St within the half mile study area between both cyclists and cars, and pedestrians and cars. Traffic collision data reflected most urgent need for improvements made to bicycle infrastructure, as most incidents reported were due to cars broadsiding cyclists. This issue could be mitigated through the addition of a Protected Bike Lane.</li> <li>• Suggestions proposed in the San Jose “Better Bike Plan”, which proposed the addition of a</li> </ul>

CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
			<p>Class IV bikeway along Vine St. Similarly, the proposed improvements are also in alignment with the “Envision 2040” plan, and “Vision Zero” plan directed by the city.</p> <ul style="list-style-type: none"> <li>• Pop-up event input. Participants noted the need for safer bicycle infrastructure and high speeds on Vine St.</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Proposed improvements are in line with the goals set in the VTA’s “Pedestrian Access to Transit Plan”. The plan proposes curb extensions to the SW corners of Vine St where it intersects the Almaden Expressway. The improvements proposed would also assist the VTA in achieving its goals to create streets that are, “safe, comfortable, and convenient to transit for all customers”.</li> </ul>
<p><b>S Almaden Ave</b></p>	<p>Currently, a Bike lane (<b>Class II</b>) exists on Almaden Ave. A Bike Lane is described as an on street space with a paint stripe designating the separation between the bike lane and oncoming traffic. Almaden Ave is also impacted by a high volume of high speed traffic.</p>	<p>Bike:</p> <ul style="list-style-type: none"> <li>• A Protected Bike Lane (Class IV) is suggested to mitigate cyclist’s concerns of traveling alongside high speed traffic. A protected bike lane is described as an on-street space that is separated from traffic by parked cars, raised curbs, or posts. This would increase bike safety at the intersection of Almaden Ave &amp; Willow St</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Curb extensions to the NW and SE corners of S Almaden and W Alma Ave.</li> </ul>	<p>Proposed improvements made along this corridor are based on:</p> <p>Bike:</p> <ul style="list-style-type: none"> <li>• Proposed improvements align with those made in the San Jose “Better Bike Plan” and “Envision 2040” Plan, which proposes the addition of a Class IV bikeway along S Almaden Ave.</li> <li>• Pop-up event input. Participants noted the need for safer bicycle infrastructure and high vehicular speeds along Almaden Ave.</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Proposed improvements are in line with those made in the VTA’s “Pedestrian Access to Transit” plan which proposes the addition of curb</li> </ul>

CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
			<p>extensions to the NW and SE corners of S Almaden Ave.</p> <p>Both:</p> <ul style="list-style-type: none"> <li>• Traffic collision data collected from 2011 until 2015. During this period, 4 traffic collisions were reported along S Almaden Ave within the half mile study area between pedestrians and cars.</li> <li>• Anticipated increase in ridership at Tamien Station. With increased ridership and volume of visitors to the station, traffic calming measures will be necessary at the intersection of Almaden Ave and W Alma Ave.</li> </ul>
<p><b>Lelong St</b></p>	<p>Currently, there are no bike lanes present along Lelong St. Lelong St. is also characterized by long crossing distances and high exposure to high speed traffic.</p>	<p><b>Bike:</b></p> <ul style="list-style-type: none"> <li>• A Protected Bike Lane (Class IV) is suggested to mitigate cyclist’s concerns of traveling alongside high-speed traffic. The protected bike lane is described as an on-street space that is separated from traffic by parked cars, raised curbs, or posts. This would also increase bike safety at the intersections of Lelong St &amp; W Alma Ave and Lelong St &amp; Willow St, as well as at the SR-87 on/off ramps.</li> </ul> <p><b>Pedestrian:</b></p> <ul style="list-style-type: none"> <li>• Widening the sidewalks on the east side of Lelong St along the corridor.</li> <li>• Landscaping and shade along the entire corridor</li> </ul> <p><b>Both:</b></p> <ul style="list-style-type: none"> <li>• Wayfinding signage at the intersection of Lelong St &amp; Willow St and Lelong St &amp; W Alma Ave to direct cyclists and pedestrians towards the station.</li> </ul>	<p>Proposed improvements made along this corridor are based on:</p> <p><b>Bike:</b></p> <ul style="list-style-type: none"> <li>• The goals proposed in the “Vision Zero” and San Jose “Better Bike Plan”, which proposes the addition of a Class IV bikeway along Lelong St.</li> <li>• Survey participant responses (16). Visitors to Tamien Station highlighted the need for improved bicycle infrastructure along Lelong St. Concerns stemmed from vehicular traffic interfering with cyclist safety particularly at the entrance &amp; exit from the Station onto Lelong St.</li> <li>• Pop-up event input. Participants noted the vehicular traffic on Lelong St and the need for bicycle safety improvements.</li> <li>• Traffic collision data collected from 2011 until 2015. During this period, 2 traffic collisions were reported along Lelong St within the half mile study area between cyclists and cars.</li> </ul>

CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
			<p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Survey participant responses (16). Visitors to Tamien Station highlighted the need for traffic calming measures along the corridor, especially in front of the station, in an effort to reduce current high exposure to traffic.</li> <li>• Anticipated increase in transit ridership. As ridership is expected to increase in the coming years, “pedestrian crossing” signage or beacons were proposed to maximize pedestrian safety and driver awareness of pedestrian traffic.</li> <li>• Proposed improvements are in line with those proposed in the VTA’s “Pedestrian Access to Transit” plan. The plan proposes additional and widened sidewalks on the east and west sides of Lelong St in front of Tamien Station.</li> </ul> <p>Pop-up event input. Participants noted the vehicular traffic on Lelong St and the need for pedestrian safety improvements.</p>
<p><b>Willow St</b></p>	<p>Currently, a Bike Lane (<b>Class II</b>) exists on Willow St. A Bike Lane is described as an on street space with a paint stripe designating the separation between the bike lane and oncoming traffic. Willow St is also characterized by a high density of traffic collisions. Visitors to the station have also complained about inadequate lighting along</p>	<p>Bike:</p> <ul style="list-style-type: none"> <li>• A Protected Bike Lane (Class IV) is suggested to mitigate cyclist’s concerns of traveling alongside high speed traffic. A Protected Bike Lane is described as an on street space that is separated from traffic by parked cars, raised curbs, or posts. This would also increase bike safety at intersections and calm traffic along the corridor.</li> <li>• Wayfinding signage for bicyclists is suggested along Willow St near the Guadalupe Trail head</li> <li>• A shared cycle track stop is proposed at bus stops along Willow St</li> </ul>	<p>Proposed improvements made along this corridor are based on:</p> <p>Bike:</p> <ul style="list-style-type: none"> <li>• Traffic collision data collected from 2011 until 2015. Since 2011, seven traffic collisions have been reported within the half mile study area between cyclists and cars. This reflected an urgent need for improvements to bicycle infrastructure, in order to meet the goals set by the “Vision Zero” plan. Bicycle collisions are expected to be significantly reduced through the addition of a Protected Bike Lane, and the</li> </ul>

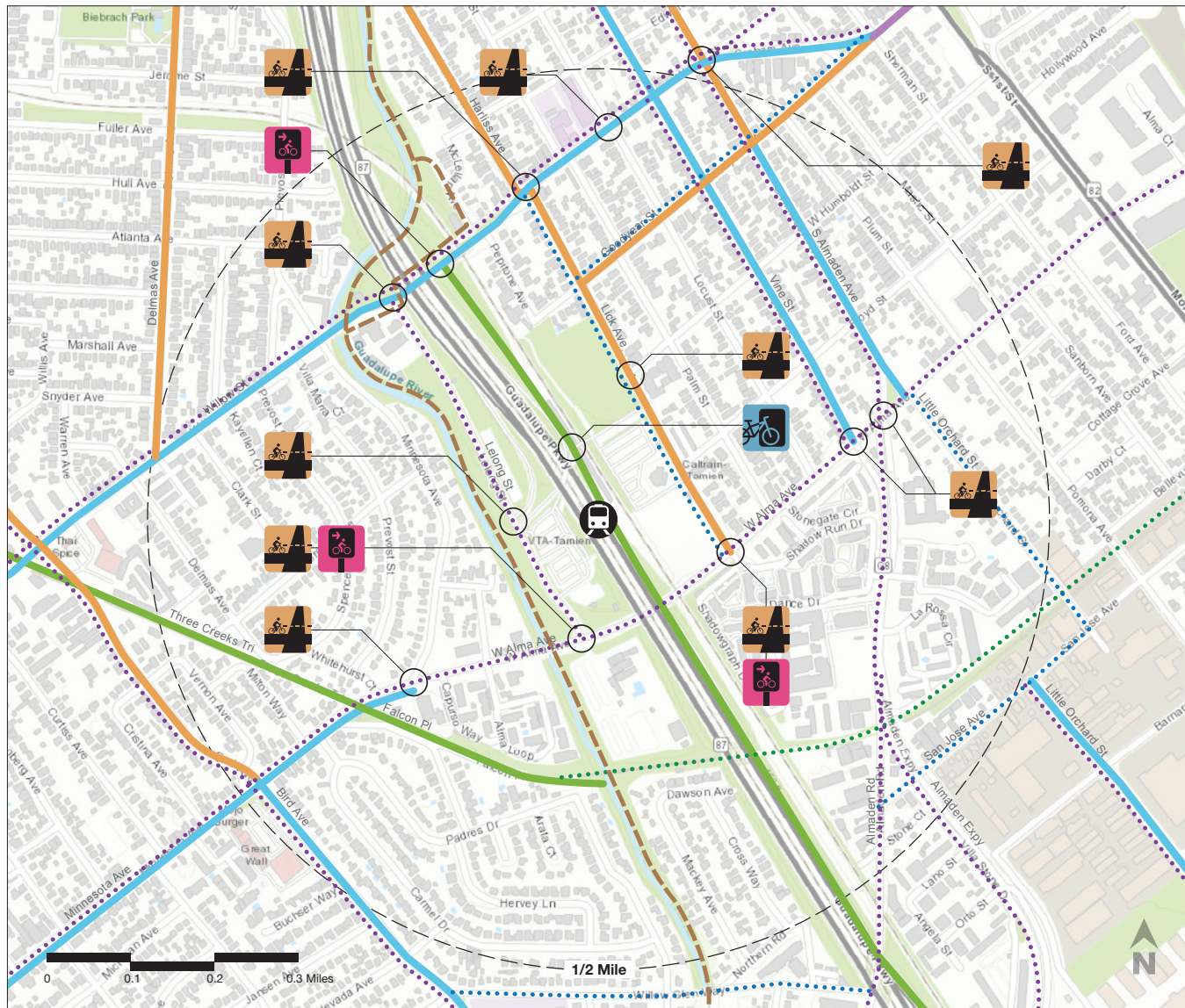
CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
	<p>Willow St, in the underpass of the SR-87 freeway.</p>	<p>Pedestrian:</p> <ul style="list-style-type: none"> <li>Improved lighting in the SR-87 underpass and at the bus stop near Minnesota Ave.</li> <li>Improved crosswalks at the intersection of Willow St and Minnesota Ave.</li> <li>Additional wayfinding signage should be implemented in the SR-87 underpass, directing visitors to the station portals.</li> </ul>	<p>addition of a bicycle friendly intersection of Willow St and Lelong St.</p> <ul style="list-style-type: none"> <li>The goals set by the “Vision Zero” plan and the San Jose “Better Bike Plan”, which proposes the addition of a Class IV bikeway along Willow St.</li> <li>A shared cycle track stop is proposed at the bus stops along Willow St in order to ensure that adequate space is designated for both a Class IV Bikeway and existing bus stops along the corridor. The addition of shared cycle track stops aligns with the goals of the San Jose Better Bike Plan and the Transit Passenger Environment Plan.</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>Comments gathered during pop-up community engagement events at Tamien Station. A high volume of visitors to Tamien Station raised significant concern that they feel unsafe at Tamien Station due to a lack of adequate lighting along Willow St at the SR-87 underpass. While this suggested improvement does not directly affect access to the stations, if visitors feel unsafe at the station, they are less likely to utilize transit. Participants also noted high vehicular speeds along Willow St.</li> <li>Traffic collision data collected from 2011 until 2015. Since 2011, seven traffic collisions have been reported within the half mile study area between pedestrians and cars. Traffic collision data reflected urgent need for improvements to pedestrian infrastructure, in order to meet the goals set by the “Vision Zero” plan.</li> </ul>

CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
			<p>Proposed pedestrian access improvements are in line with the VTA’s “Pedestrian Access to Transit” plan’s goals to improve pedestrian safety, comfort, and convenience within the walking environment.</p>
<p><b>SR-87 On/Off ramps</b></p>	<p>Currently, there are no bike lanes present along Lelong St, and therefore, no bike lanes present at the intersection of Lelong St and the SR-87 on/off ramps. A crosswalk is present at this intersection. However, visitors to Tamien Station have complained of high exposure to high speed vehicles entering and exiting the freeway.</p>	<p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Pedestrian improvements include traffic calming measures at Lelong St and the SR-87 on/off ramps. Measures should include high visibility crosswalk markings.</li> <li>• A pedestrian crossing beacon at Lelong St and the SR-87 on/off ramps.</li> <li>• Treatments that shorten the pedestrian crossing distance, such as a median refuge island, should be further studied through an operations analysis and design feasibility.</li> </ul>	<p>Proposed improvements made for this intersection are based on:</p> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Survey participant responses (16) and pop-up event input. Visitors to the station highlighted the significant need for traffic calming measures at this intersection, as they expressed concern for the current exposure to high speed vehicles entering and exiting the freeway.</li> <li>• The proposed improvements in the “Vision Zero” plan.</li> <li>• The proposed improvements are in alignment with those proposed in the VTA’s “Pedestrian Access to Transit” plan, which proposes the addition of high-visibility crosswalks.</li> </ul>
<p><b>Tamien Station</b></p>	<p>Tamien Station is currently a centralized hub for several light rail, Caltrain, and bus lines connecting riders from the greater San Jose and Santa Clara County region. While volume of visitors to the station is already significant, ridership is projected to increase in the coming years in response to goals set by several plans</p>	<p>Bike:</p> <ul style="list-style-type: none"> <li>• Bike lockers/storage at the station on both the VTA and Caltrain sides.</li> <li>• Addition of bike share facility.</li> </ul> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Improved wayfinding signage on the VTA light rail, Caltrain, and bus platforms.</li> <li>• Improved lighting at the Caltrain platform, within parking lots, as well as in the underpass off Lick Ave under the station itself.</li> </ul>	<p>Proposed improvements made for improvements to Tamien Station are based on:</p> <p>Bike:</p> <ul style="list-style-type: none"> <li>• Survey participant responses (16). Survey responses indicated a concern for inadequate bike parking. As some survey participants also indicated a concern for personal safety at the station as well, the addition of secure bike lockers is recommended. Survey participants noted that bringing their own bike was inconvenient. However, if a bike share facility</li> </ul>

CORRIDOR	EXISTING CONDITION	PROPOSED IMPROVEMENTS	ORIGIN
	<p>published by the city. Visitors to the station have raised significant concern about safety at the station.</p>	<ul style="list-style-type: none"> <li>• Wind protection at the bus stop in the VTA parking lot, on the VTA platform, and the Caltrain platform.</li> <li>• Wayfinding signage at parking lot entrances and platform entrances.</li> <li>• Parking signage at both parking lot entrances.</li> <li>• Additional security at both parking lots and both VTA and Caltrain platforms. This may include the use of security personnel or CCTV cameras.</li> <li>• Street furniture at bus stop in VTA lot.</li> <li>• Parking space re-striping in the VTA lot.</li> </ul>	<p>was offered, participants stated that they would be more likely to bike the first/last mile of their trip.</p> <p>Pedestrian:</p> <ul style="list-style-type: none"> <li>• Comments received both from surveys distributed to visitors and from comments collected at several pop-up events at the station. A significant amount of comments and suggestions gathered highlight the crucial need for improved safety conditions at the station. Visitors to the station felt unsafe, especially at night, when visiting the station. Many visitors highlighted concern about a high volume of car break-ins and homeless individuals taking shelter at the station. Visitors also raised concern that corporate shuttles take up parking spaces intended for visitors, making access to the station by car more difficult.</li> <li>• Proposed improvements are also in line with those proposed in the VTA’s “Pedestrian Access to Transit” plan. The plan calls for additional wayfinding signage to direct traffic toward the station. Furthermore, the plan proposes passive streetscape improvements in an effort to achieve its goals of creating a comfortable walking environment.</li> </ul>








# Figure 3.4: Map of Proposed Bike Access Improvements



- Existing Bikeways**
- Existing Class I Bikeway
  - Existing Class II Bikeway
  - Existing Class III Bikeway
  - Existing Class IV Bikeway

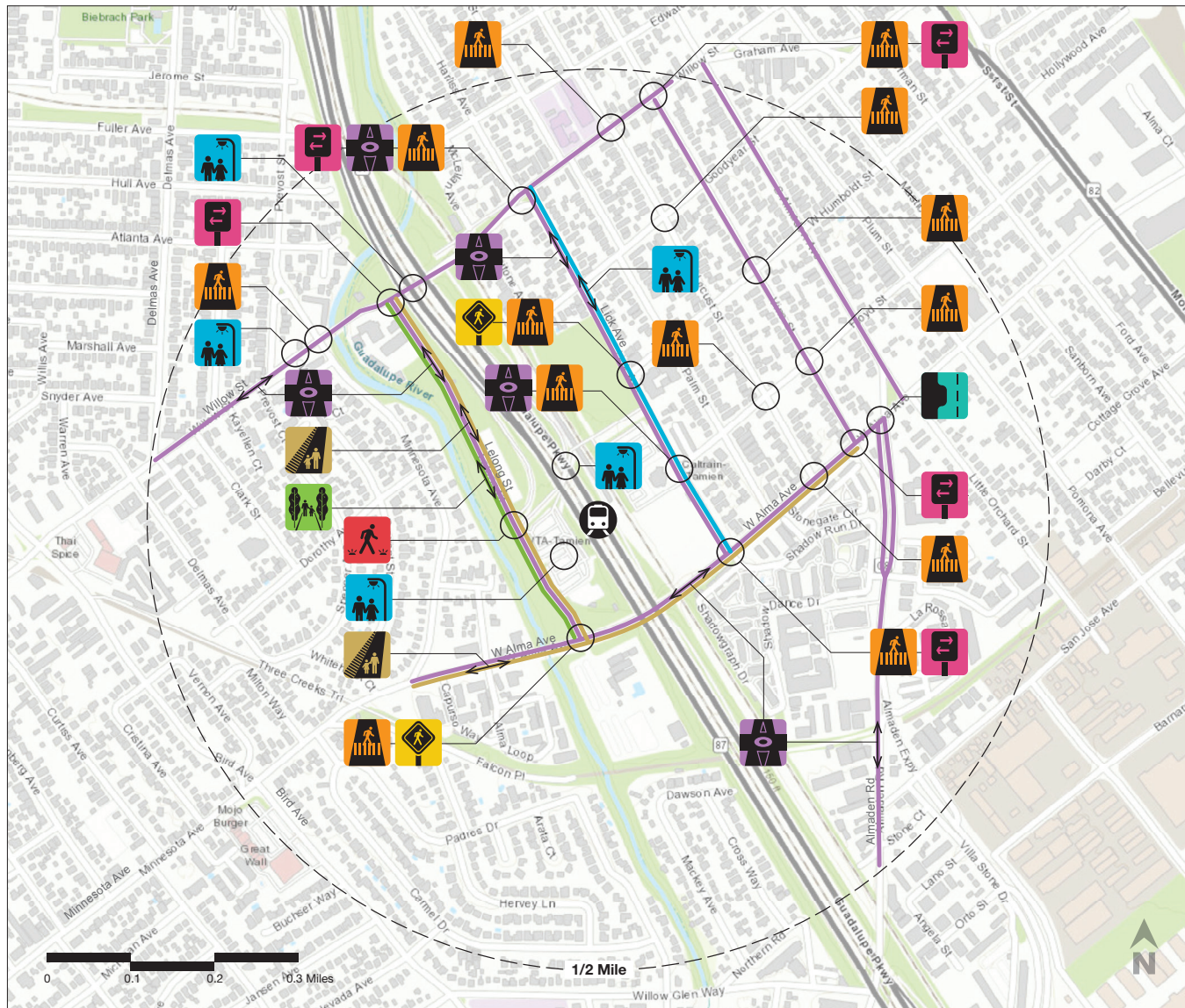
- Proposed Bikeway Improvements**
- ⋯ Proposed Class I Bikeway
  - ⋯ Proposed Class II Bikeway
  - ⋯ Proposed Class III Bikeway
  - ⋯ Proposed Class IV Bikeway
  - - - Guadalupe Trail Alignment

-  Wayfinding Signage
-  Bicycle Friendly Intersection
-  Bike Lockers
-  Traffic Calming Measures
-  Tamien Station

Santa Clara Valley Transportation Authority + IBI Group  
March 2020



# Figure 3.5: Map of Proposed Pedestrian Access Improvements



### Proposed Pedestrian Improvements

- Traffic Calming Measures
- Improved Pedestrian Lighting
- Widen Sidewalk
- Landscaping and Shade
- Pavement Repairs
- Curb Extension
- Improved Pedestrian Lighting
- New or Improved Crosswalk
- Pedestrian Crossing Beacons
- Pedestrian Signage
- Traffic Calming Measures
- Wayfinding Signage
- Widen Sidewalks
- Landscape and Shade
- Tamien Station

Santa Clara Valley Transportation Authority + IBI Group  
March 2020



### 3.2 Transit Access Improvements

The existing conditions assessment found arrivals to Tamien Station are highest in the morning, corresponding with northbound VTA Blue Line and Caltrain service times. Peaks in departure occur in the afternoons, corresponding with southbound Caltrain service times, as people are returning to Tamien Station from the northern areas along the VTA and Caltrain system. The most common transfers were to light rail and bus from Caltrain, followed by transfers to Caltrain from VTA light rail and bus services. Sufficient infrastructure is needed to support transfers to and from light rail, VTA bus, and Caltrain platforms, especially during the construction of the proposed joint development project.

Tamien Station was previously served by two local VTA bus routes, Route 82 and Route 25. It is currently served by Route 25 and Route 56. Under VTA’s 2019 New Transit Service Plan, the following changes were recently implemented:

- Route 25 has been upgraded to a more frequent bus route, increasing its headway from 15 minutes to 10-12 minutes between De Anza College and the Alum-Rock Transit Center.
- Route 82 has been discontinued and replaced primarily with Route 56, a new route that also comprises portions previously part of Route 28, providing service between Lockheed Martin Transit Center and Tamien Station. Other segments of Route 82 have been replaced by Routes 56, 66, and 68.

Transit access improvements should be made to bus stops serving these routes in accordance with the VTA “Transit Passenger Environment Plan”. This plan classifies all bus stops in the VTA service area into four categories: basic, core, major, or community destination. Based on ridership data received from the VTA, the bus stops in the half mile radius study area were classified into their appropriate categories:

Table 3.1 Bus Stop Categorization According to the Transit Passenger Environment Plan

Category	Bus Stop	Route #	Boardings	Alightings
Basic	Willow & Minnesota	25	19	15
	Willow & Spencer	25	2	3
Core	Willow & Palm	25	91	84
Major	Tamien Station	25 & 56	228	204

The “Transit Passenger Environment Plan” assigns a typical set of amenities that should be available to passengers according to the bus stop category. Through a review of the existing conditions, it was determined that these bus stops were in compliance with the “Transit Passenger Environment Plan”.

Table 3.2 Existing Bus Stop Conditions

Amenities required by Transit Passenger Environment Plan	Basic		Core	Major
	Willow & Minnesota	Willow & Spencer	Willow & Palm	Tamien Station
Waiting bench	✓		✓	✓
Standard bus stop sign	✓	✓	✓	✓
Real-time Information (RTI) decal on standard bus stop sign	✓	✓	✓	✓
One “U-rack” bicycle rack along facility; more if demand warrants				
Relies on street lighting	✓	✓	✓	✓
Leaning bar, if space permits				
Shelter			✓	✓
Scheduled stop display / system map if shelter provided				✓
Trash can if space permits			✓	✓
In-shelter lighting; either solar or pedestrian-activated, if possible			✓	

However, minor improvements could be made to improve the appearance of the station. By making improvements to minor features, such as street furniture, the overall aesthetic of the bus stop is likely to be improved. Thus, meeting the goals of the “Transit Passenger Environment Plan” by creating a more comfortable and enjoyable transit experience for the rider.

Input from pop-up events indicated that the community is interested in more seamless connections to transit, a safe pick-up/drop-off area at the station, and more seating near bus waiting areas. Visitors to Tamien Station noted that there is one escalator and one set of stairs to the Caltrain platform, which can get crowded, especially if transit passengers with bikes are using the same pathways. Those who must use the elevator at the station noted that it is sometimes not working and not clean.

Considering these factors, it is recommended to:

- Designate a safe pick-up/drop-off zone at the station, in addition to the three existing kiss-and-ride spaces at the station, with special regard to the Tamien West TOD discussed in the next section.
- Provide additional seating at the bus stop located on the west side of the station.

- Install improved wayfinding at the station between platforms to direct passengers to transit connections more seamlessly.
- Ensure the provision of sufficient lighting at the bus stop for passengers waiting for the bus.
- Implement a regular maintenance schedule to ensure that access to transit platforms are safe and clean.

### **3.3 Vehicular Access Improvements**

The existing conditions assessment found that a majority of passengers arrive to Tamien Station by vehicle. 82% of passengers arrived by personal vehicle or by car drop-off, with the highest amount of arrivals accessing the station from the east side of the station through the Caltrain parking lot.

Consistent with these results, a common concern that was expressed in both the online survey and pop-up events was the need for sufficient parking. There were many mentions of parking in the unpaved lot next to the Caltrain lot, as well as increased need for parking due to users of commuter shuttles parking at the station. During potential TOD project construction, there will be a consistent demand for sufficient vehicle parking.

The Caltrain parking lot currently provides 275 free parking spaces for transit station access, which would be displaced by the Lick Avenue TOD on the east side of the station. The Lick Avenue TOD (Figure proposes a total of 592 residential parking spaces in a below ground parking garage, along with a kiss and ride area along a loop road, providing access to the VTA and Caltrain station platforms (Figure 3.6).

The VTA parking lot currently provides 269 parking spaces, with the second lot to the north of the SR-87 on/off ramps providing 92 spaces. The Tamien West TOD on the west side of the station is planned to provide 145 surface spaces for transit and 58 covered spaces for residents (Figure 3.7). Pedestrians would access the station via an internal path connecting the public sidewalk to the station access points. A continuous shared drop off/pick up area would be located on the east side of the lot, with no obstruction between vehicular and pedestrian traffic.



### 3.4 Temporary Access During TOD Construction

Temporary remote parking during construction of the Lick Avenue TOD is planned to be provided to ensure that the same number of striped parking stalls will be available at all times during the construction process. Similar solutions should be implemented during construction of the Tamien West TOD. Figure 3.8 illustrates the potential locations for provision of temporary parking spaces during construction of the Lick Avenue TOD. Specifically, there is potential to extend the second VTA parking lot east of the SR-87 on/off ramp by 57 spaces (lot C on the map) to mitigate the loss of some of the parking spaces on the east side of SR-87 during construction. Additionally, there is potential to add 250 parking spaces in the empty lot owned by the Silicon Valley Water District (SCVWD) on the southwest corner of the intersection at Willow Street and Lelong Street (lot D on the map). These locations were identified on a step by step plan to replace parking using the SCVWD lot during the construction phases of the Lick Avenue TOD. The developer may also propose temporary parking at the Elks Lodge and the Skyline apartment building. While the specific number of parking spaces that each area would provide has not yet been confirmed, the general locations of these potential areas are illustrated in the map as lots E and F, respectively.

While parking at the Caltrain parking lot is temporarily displaced, Tamien Station users who would usually access the station via the Caltrain parking lot will need safe alternative pathways to access the Caltrain station from these temporary parking areas. Figure 3.8 also illustrates these routes.

- From lots C and D, a potential route is to travel southbound along Lelong Street and crossing the SR-87 on/off ramps to access the pedestrian pathway under the SR-87 to the Caltrain platform. A temporary pedestrian route may be implemented at the northwest corner of the VTA parking lot with signage or a temporary barricaded route to direct pedestrians to the SR-87 underpass at the station. The proposed upgraded lighting along Lelong Street and at the pedestrian pathway under the SR-87, along with the proposed pedestrian crossing improvements at the SR-87 on/off ramps can provide a safer pathway for pedestrians to access the station from remote parking during construction.
- From lot E, pedestrians would cross Alma Avenue to access the west side of the station directly. The pedestrian improvements proposed at this busy intersection can provide a safer crossing for pedestrians.
- From lot F, pedestrians may be able to travel along the southern boundary of the proposed TOD. Coordination would be required to ensure that the sidewalk currently existing along the parking lot would be available for pedestrian travel and could be temporarily barricaded during construction to ensure safety and a clear path for pedestrians.

# FIGURE 3.8 PROPOSED TEMPORARY PEDESTRIAN ACCESS ROUTES





In addition to providing alternatives for displaced parking and related pedestrian access during construction, the following improvements are also recommended to address vehicle access to the station, especially during construction:

- Install enhanced parking signage at the entrances of current and temporary parking areas, with applicable wayfinding.
- Maintain parking space striping to ensure parking spaces are clearly designated.
- Explore signalizing the southbound SR-87 off-ramp intersection at Lelong Street to improve pedestrian crossing.
- Install protected left turns at the existing signal for Lelong Street at Alma Avenue to remove conflicts between the pedestrian crossing of Alma Avenue and left turn vehicle movements from Lelong Street.
- Signal timing improvements have not yet been analyzed by the City of San Jose, but can be another option for consideration to improve the congestion issues surrounding the station area during peak times.

## 4 TRAVEL DEMAND MANAGEMENT STRATEGIES

A Travel Demand Management (TDM) Plan for Tamien Station was completed in 2018 by Hexagon Transportation Consultants, Inc., which recommended a variety of strategies to reduce single-occupancy trips and relieve traffic congestion, parking demand, and air pollution in light of development of the Lick Avenue TOD. This section presents a summary of the plan as well as strategies that are recommended to support the access improvements proposed in the previous section.

### 4.1 VTA Travel Demand Management (TDM) Plan

The study found that the new development would generate 2,172 new daily vehicle trips, with 185 new trips occurring during the AM peak hour and 184 new trips occurring during the PM peak hour. Using the inbound/outbound splits recommended by the City of San Jose, the project would produce 51 net inbound and 134 net outbound trips during the AM peak hour, and 134 net inbound and 50 net outbound trips during the PM peak hour. These trips are expected to be generated primarily by residents of the development and Tamien station users, and not necessarily the associated retail uses at the development. The study's traffic impact assessment found that the project would not have an adverse effect on existing transit, bicycle, or pedestrian facilities in the study area.

Particular traffic congestion and turn issues due to long vehicle queueing were observed at the intersections of Lelong Street & Willow Street, Lelong Street & the SR-87 on/off ramps extending to Lelong Street & West Alma Avenue, Vine Street & West Alma Avenue, and Almaden Avenue & West Alma Avenue. After project construction, the intersections of Almaden Avenue & West Alma Avenue, Lick Avenue & West Alma Avenue, and Lelong Street & West Alma Avenue would continue to be impacted by the project.

The TDM report recommended the following strategies:

- Provide appropriate visible warning signs and audible warning signals at the parking garage exits to alert pedestrians and bicyclists of vehicles exiting the garages.
- Provide a designated loading zone on the loop road adjacent to the condominium building just west of Lick Avenue.
- Coordinate with City of San Jose staff to determine the emergency vehicle access requirements for the condominium component of the project.
- Produce a detailed site plan in order to conduct a comprehensive evaluation of vehicular circulation within the parking structures. The site plan should also show the number of bicycle parking spaces, micro mobility spaces, and motorcycle parking spaces that are being proposed.

### 4.2 TDM Recommendations

While the management strategies mentioned in the previous section mostly focus on how vehicular access could be streamlined at Tamien Station, this station access study has proposed a number of

recommendations to encourage mode shift. These recommendations provide an opportunity to address some of the findings and strategies proposed in the TDM plan previously conducted for Tamien Station:

- While a safe pick-up/drop-off zone is proposed at the VTA parking lot on the west side of the station, it is also beneficial to designate a pick-up/drop-off zone on the east side of the station adjacent to the development for both general loading and emergency vehicle access. The presence of a pick-up/drop-off zone may help to encourage less single-occupancy vehicle trips and reduce the demand for parking.
- Additionally, the implementation of a car-share program near the TOD may be considered to also reduce single-occupancy vehicle trips and reduce the number of vehicles parked on site, by reducing the need for residents to own their own car. Car-share programs such as ZipCar, allow users to access vehicles on an hourly or daily basis. This program may be made available to transit users to reduce the number of vehicles arriving at the station.
- Since the time of the TDM Plan, a site plan has been produced showing a total of 288 bicycle parking spaces. As the site plan does not specify the number of spaces available to the public, VTA may want to consider coordinating to ensure that spaces are provided for transit passenger use. The additional bicycle parking facilities, in combination with the enhanced on-street bicycle facilities and traffic calming measures proposed in Section 3 will provide Tamien Station users with an improved and more feasible option to travel to the station by bicycle.
- A bikeshare program can also be implemented at the station to further encourage trips by active transportation to the station. Bicycle share facilities can help fulfill first-last mile connections to and from transit and decrease demand for automobiles.
- Given the station's proximity to the Guadalupe River Trail, connectivity between the station and the multi-use trail is critical to ensuring ease of access for cyclists and pedestrians visiting the station. Enhanced pedestrian amenities around the station and around the trail will also improve safety for users to walk to the station and reduce the vehicle travel demand and associated intersection congestion currently observed.
- To assist with encouraging travel by transit and active transportation modes, it is also recommended to consider providing monthly VTA transit passes for residents of the TOD development. This can facilitate increased use of VTA transit service at Tamien Station and throughout the VTA network.
- VTA can also explore integrating technology-based solutions with their existing app-based technology for booking transit trips. This could be in the form of Mobility as a Service (MaaS) technology, which would streamline the booking of trips using multiple transit types as well as first-last mile connections for passengers to transit.

## 5 COST ESTIMATES

Cost estimates for on-site and off-site access improvements were developed based on a combination of sources available, including unit cost information provided by VTA from the Story-Keyes Corridor Complete Streets Study completed near Tamien Station in 2018. Unit costs have been adjusted for inflation to the year 2020. Unit cost sources are outlined in Appendix B, with a description of escalation factors applied to the original sources based on inflation. Cost estimates may vary, with increasing magnitudes, for future years and should be updated accordingly. It is advised that the escalation factor for future costs be developed in a similar manner to those presented in the Appendix - based on inflation between the base and target years. Similar to the proposed improvements presented in Section 3, cost estimates for both near-term and long-term improvements are presented by corridor.

Assumptions for all cost estimates are included in the cost estimate sheets presented in Appendix B. In general, cost estimates do not include construction inspection, engineering, right-of-way, or utility costs unless noted.

## 6 IMPLEMENTATION

Implementation of the access improvements proposed requires a plan that can be carried out efficiently and with flexibility. To facilitate this, the improvements proposed can be separated into near-term, mid-term, and long-term improvements.

Near-term improvements include improvements that can be implemented relatively quickly (within a year), due to minimal materials, low cost, or more urgent safety needs because of project construction. Mid-term improvements may be implemented within 1-2 years and include improvements that can still be implemented rather quickly, but may require more cost or materials. Longer term improvements may require 2 or more years for implementation and include improvements that may require larger infrastructural changes, more materials, higher cost, or further feasibility analysis.

Near-term improvements include:

- Wayfinding signage pointing bicyclists and pedestrians towards the station
- Parking signage at each of the parking lot entrances
- Provision of additional security measures at the station
- Provision of additional seating at the VTA bus stop at the station and surrounding bus stops

Mid-term improvements include:

- Improvements that require paint striping, including crosswalks, bike lanes, and re-striping of parking spaces
- Installation of pedestrian crossing beacons for high visibility crosswalks
- Lighting upgrades that would improve pedestrian access during and after project construction

Longer-term improvements include:

- Installation of Class IV bike lanes
- Installation of larger traffic calming measures, including curb extensions and widened sidewalks
- Provision of protected turn lanes at the intersection of Lelong Street and West Alma Avenue
- Signalization of the SR-87 on/off ramps at Lelong Street

In consideration of how to prioritize these improvements, it will be important to consider not only the length of time required for implementation, but also the direct impacts that each improvement type has on access to the station. Because many of these improvements are recommended in this study due to the impact that the joint development project would bring to Tamien Station, these improvements may be provided by the TOD developer. These improvements include:

- Wayfinding signage at the station
- Security upgrades at the station
- Lighting upgrades at the station

- Provision of additional bus stop seating on the west side of the station
- Provision of temporary remote parking and associated temporary pedestrian access improvements
- Improvements along Lick Avenue, such as high-visibility crosswalk amenities

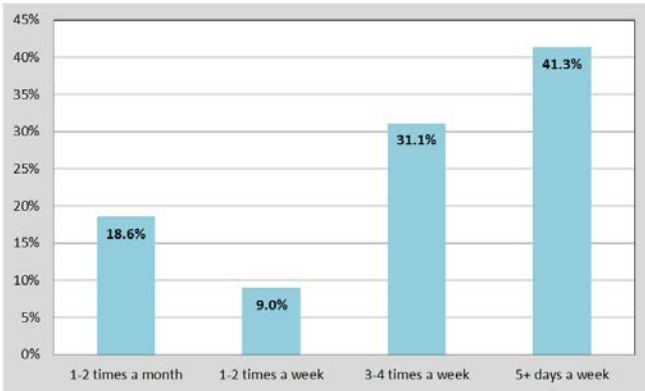
In light of the joint development project construction, these improvements are considered high priority, and VTA may require that these improvements are conditioned to the developer in accordance with approved construction plans. These improvements directly affect private and public access to the TOD and Tamien Station and should be planned for implementation accordingly.

## **APPENDIX A – COMMUNITY OUTREACH SUMMARY**

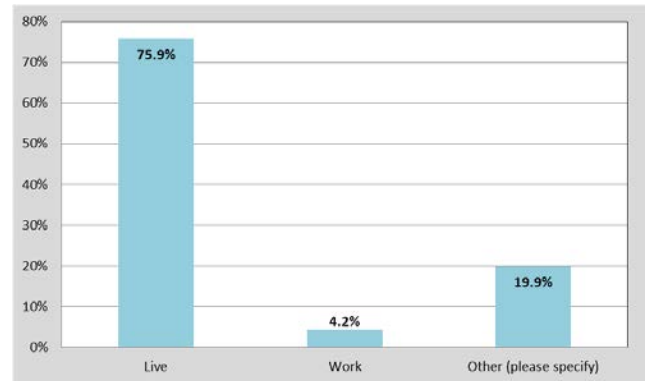
## TAMIEN STATION ACCESS SURVEY SUMMARY

- There were 167 respondents for the Tamien Station Access Survey.
- Data was collected from October 6 to November 10.
- Out of the 167 completed surveys, 1 respondent completed the Vietnamese Survey.
- The survey had 6 station access related questions, 5 demographic questions, and an option to submit an email for more information.
- Average age of respondent is between 35 and 44. 50% of respondents were male and 50% of respondents were female. 46% of respondents are white, 27% Asian, 10% Hispanic.

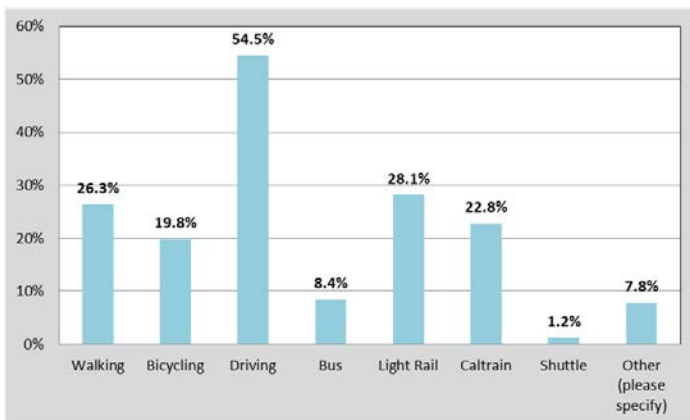
### How often do you use the Tamien light rail rail/bus or Caltrain Station?



### Do you live or work near the Tamien Station?



### What modes of travel do you use to get to the Tamien Station?



### What challenges do you face today in accessing the station?

There were 154 individual open ended responses.

There were:

- 58 mentions of parking
- 21 mentions of traffic
- 20 mentions of safety/homelessness
- 17 mentions of bike access
- 16 mentions of pedestrian access
- 7 mentions of lighting
- 32 mentioned that no improvements need to be made

### Where should the improvements be located?

There were 142 open ended responses.

#### New/ Improved Crosswalks:

- Lelong St (8)
- Alma/ Lelong (2)
- Minnesota Ave (2)

#### Bike Improvements:

- I-87 underpass (4)
- I-87 on/off ramps (2)
- Minnesota/ Alma (1)
- Willow St (1)
- Lick Ave (1)

#### Traffic Calming:

- Lelong (1)
- Lick (1)

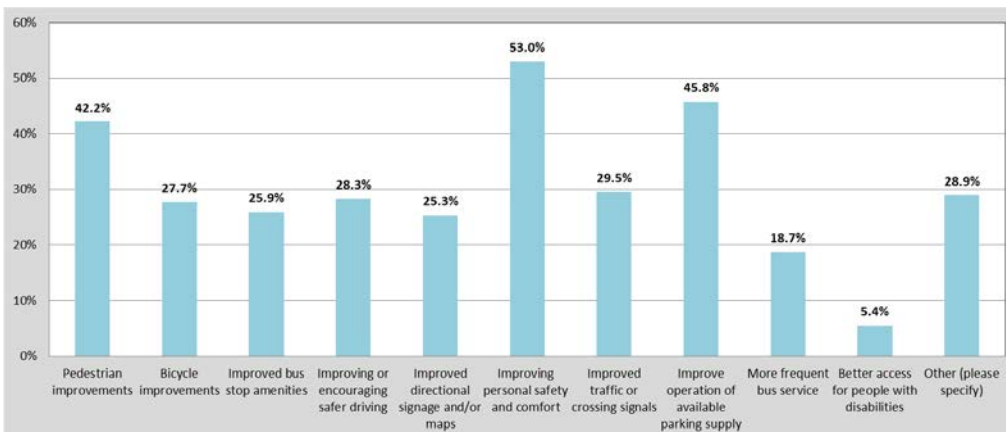
#### Improved Lighting:

- Lick (1)
- I-87 underpass (1)
- Parking lots (1)

#### Improved Wayfinding:

- Tamien exits (3)
- I-87 underpass (1)

### How could access to the Tamien Station be improved?





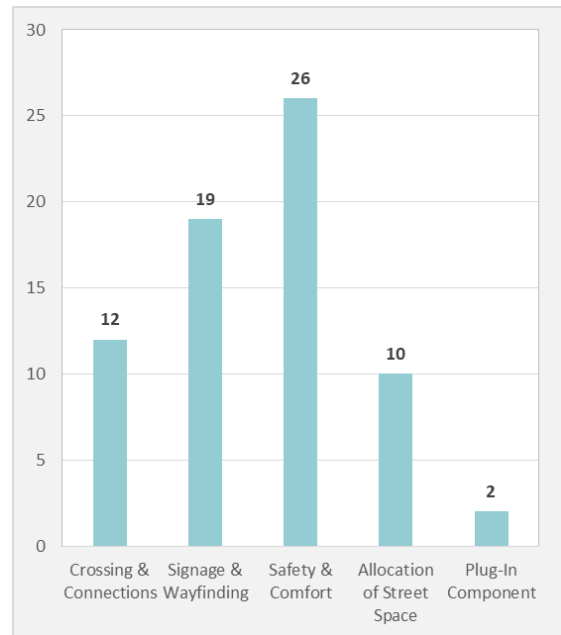
## TAMIEN STATION POP-UP WORKSHOP SUMMARY

- There were four pop-up workshops held in October.
  - Willow Glen Farmers Market October 19<sup>th</sup>
  - Arteaga's Market on October 20<sup>th</sup>
  - Tamien Station on October 23<sup>rd</sup> and October 24<sup>th</sup>. Pop-ups were conducted during both the morning and evening peak periods for both days.
- At each pop-up, respondents could provide feedback on station access components, 'pains and gains', and general Tamien comment card improvements.

### Top Station Access Components

All components were presented to the respondent, and respondents chose which components they would like to have. There were 69 responses.

- Crossing and Connections (12 total)
  - Enhanced Existing Crosswalks (7)
  - Raised Crossings (2)
- Signage and Wayfinding (19 total)
  - Medallion Signage (4)
  - Time-to-Station Signage (4)
  - Real-time Signage Adjacent to Station (4)
  - Smart Technologies (4)
  - VTA Signage and Maps (3)
- Safety and Comfort (26 total)
  - Lighting (16)
  - Street Furniture (4)
  - Landscaping and Shade (2)
  - Traffic Calming (2)
  - Sidewalk Paving and Surface (2)
- Allocation of Street Space (10 total)
  - Enhanced Bike Facilities (7)
  - Rolling Lane (2)
- Plug-In Component (2 total)
  - Vanpool and Kiss and Ride (1 each)



### Categorized Pains and Gains Comments

Pains and Gains were open-ended responses on a single community board.

#### Pains (Things to Be Improved)

- Safety and Security (26)
- Maintenance and Cleanliness (12)
- VTA Routes, Connections, and Punctuality (12)
- Lack of Parking (11)
- Bicyclist Accessibility and Facilities (9)
- Wayfinding (6)
- Existing Parking Conditions (6)
- Pedestrian Accessibility and Facilities (3)
- Vehicle Accessibility (2)

#### Gains (Things that Work Well)

- Convenience (7)
- No Parking Fee (3)
- VTA Connections and Punctuality (2)
- Customer Service (1)
- Cleanliness (1)
- Vehicle Accessibility (1)
- Real-Time Signage (1)

### Categorized Comment Card Responses

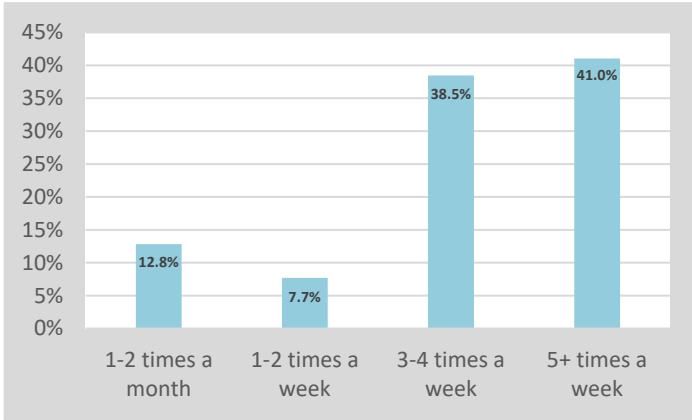
There were 84 submitted comment cards for a total of 164 suggested improvements. The top mentioned improvements are:

- Lighting Improvements (21)
- Safety Improvements (17)
- Increased Security Presence/ Cameras (16)
- Improved Parking Signage / Line Painting (14)
- Restrooms (12)
- Improved Bike Facilities (12)
- Improved Maintenance (12)
- Improved Wayfinding in Station (8)
- Improved Wayfinding to and from Station (7)
- New or Improved Crosswalks (7)
- Increased LRT frequency/ schedule (4)
- Improved LRT punctuality (4)
- Improved striping on adjacent streets (3)
- Improved traffic flow (3)
- More benches at platform (3)
- Improved VTA and Caltrain synchronization (3)
- Like Free Parking (3)

## TAMIEN STATION ACCESS SURVEY SUMMARY

- There were 40 respondents for the Tamien Station Access Survey.
- Data was collected from March 2<sup>nd</sup> to March 27<sup>th</sup>.
- The survey had 6 station access related questions, 3 demographic questions, and an option to submit an email for more information.
- Average age of respondent is between 45 and 54. 58% of respondents were male and 43% of respondents were female. 58% of respondents are white, 23% Asian, 10% Hispanic.

### How often do you use the Tamien light rail rail/bus or Caltrain Station?

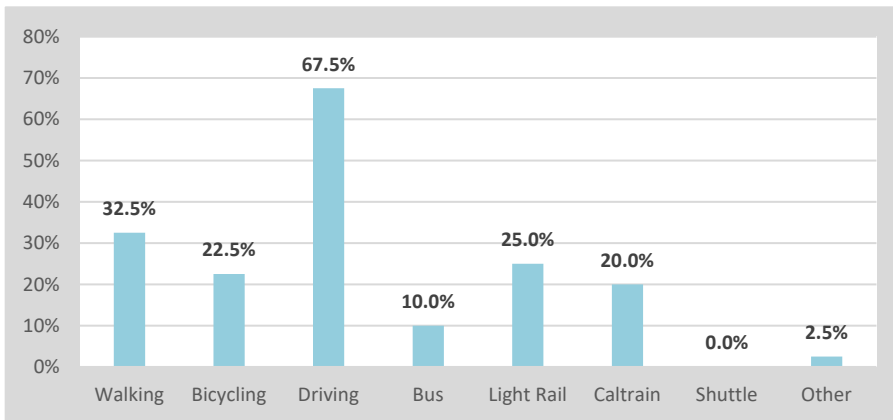


### What challenges do you face today in accessing the station?

There were 32 individual open-ended responses. There were:

- 14 mentions of pedestrian access
- 8 mentions of bike access
- 6 mentions of lighting
- 6 mentions of traffic/parking
- 4 mentions of safety/homelessness
- 3 mentions of traffic calming measures
- 2 mentioned that no improvements need to be made

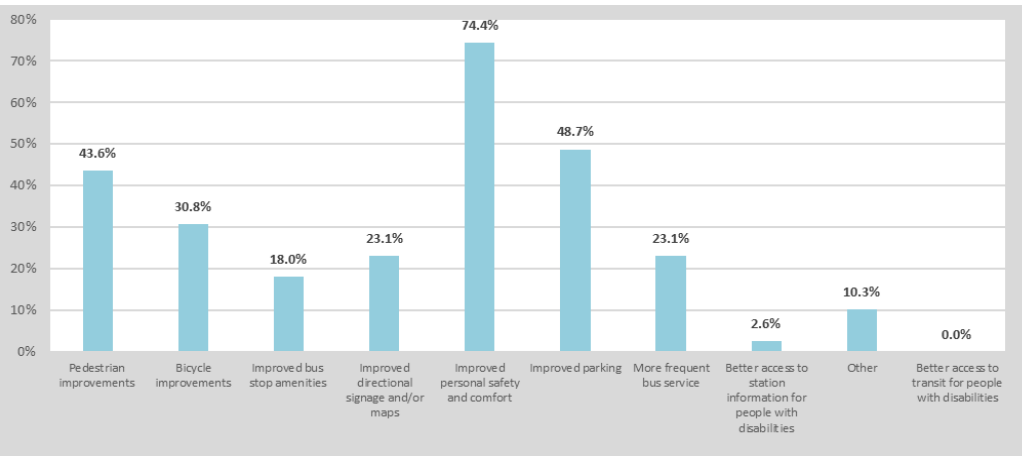
### What modes of travel do you use to get to the Tamien Station?



### Where should the improvements be located?

There were 28 open ended responses.

### How could access to the Tamien Station be improved?



### New/ Improved Crosswalks:

- Lelong (1)
- Alma/ Lelong (1)
- Lick (1)

### Bike Improvements:

- I-87 on/off ramps (2)
- Minnesota/ Alma (1)
- Willow & Lelong (1)
- Alma & Lelong (2)

### Traffic Calming:

- Alma (3)
- Minnesota (1)

### Improved Lighting:

- Lick (1)
- Lelong (1)
- I-87 underpass (1)
- On site (10)

### Pedestrian Crossing Beacons:

- I-87 on/off ramps (5)
- I-87 underpass (1)

## TAMIEN STATION POP-UP WORKSHOP SUMMARY

- There were four pop-up workshops held in March 2020.
  - March 4<sup>th</sup> at Tamien Station. The pop-up was conducted during both the morning and evening peak periods of the day.
  - March 5<sup>th</sup> at the Willow Glen Farmers Market
  - March 8<sup>th</sup> at Arteaga's Market

### Initial Improvements

All components were presented to the respondent, and respondents proposed additional improvements and potential locations.

There were 13 responses.

At each pop-up, respondents could provide feedback on station access components and initial bicycle, pedestrian, and on-site improvements.

The pop-up focused on two key audiences: Existing users of the Tamien LRT/ Caltrain stations and residents in the communities surrounding the Tamien station area.

### On Site Improvements

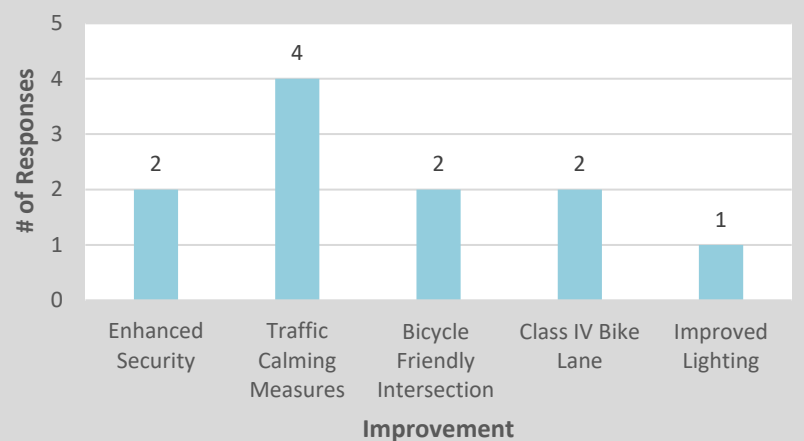
- Enhanced Security
  - Northeast Parking Lot
  - West Station Entrance
- Traffic Calming Measures
  - Northeast Parking Lot Entrance
  - Southwest Parking Lot Entrance
  - I-87 FWY On/Off Ramp
  - Intersection of W Alma Ave & Lelong St

### Bicycle Improvements

- Bicycle friendly Intersection
  - Goodyear St & S Almaden Ave
  - Goodyear St & Vine St
- Class IV Bicycle Lane
  - Vine St
  - S Almaden Ave

### Pedestrian Improvements

- Improved Lighting
  - Willow St & Minnesota Ave



## **APPENDIX B – COST ESTIMATES**

Note	Description
1	The cost estimates are probable construction costs based on IBI Group's experience with the design of similar projects. The estimated are prepared as a guide only, and are subject to change based on further development of the design. These estimates were prepared based on general improvements identified in the VTA Tamien Station TOD Access Study.
2	The estimates are based on general assumptions for each of the segments. Assumptions for each segment are provided in the "Assumptions" section of their respective segment.
3	Right of Way and/or Easement costs were not assessed and included. Formal consultation with a Right of Way acquisition expert is advised and may change the costs presented herein.
4	Costs associated with special material imports, geotechnical costs, hazardous materials, or other special circumstances were not included.
5	Prices include an escalation factor as noted below. Costs were modified to be consistent with expected 2020 costs.

Source	Date	Escalation Factor
IBI Group roadway improvement project directory.	2020	N/A
Countermeasure Cost Report (UNC-Highway Safety Research Center 2013)	2013	An increase of 11% was applied based on inflation between 2013 and 2020.
Story-Keys Corridor Complete Streets Study	2018	An increase of 3% was applied based on inflation between 2018 and 2020.
Willow-Keys Complete Streets Improvements	2018	An increase of 3% was applied based on inflation between 2018 and 2020.

**COST SOURCES**

ROADWAY				
Proposed				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Curb (6") & Gutter (24")	LF	\$ 51.50	Story-Keys Corridor Complete Streets Study
	Curb (6")	LF	\$ 20.00	IBI Group roadway improvement project directory.
	Curb (6") - Divider	LF	\$ 30.00	IBI Group roadway improvement project directory.
	Curb Ramp - Corner	EA	\$ 2,800.00	IBI Group roadway improvement project directory.
	Curb Ramp - Mid Block	EA	\$ 2,500.00	IBI Group roadway improvement project directory.
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Detectable Warning Tiles	SF	\$ 63.90	Willow-Keys Complete Streets Improvements
	Traffic Circle	EA	\$ 55,500.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Roundabout	EA	\$ 277,500	Countermeasure Cost Report (UNC-HSRC 2013)
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Traffic Diverter	EA	\$ 20,000.00	IBI Group roadway improvement project directory.
	Median / Median Island	SF	\$ 15.50	Story-Keys Corridor Complete Streets Study
	Raised Crosswalk	EA	\$ 9,100.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Raised Intersection	EA	\$ 56,600.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Speed Hump	EA	\$ 3,000.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Speed Bump	EA	\$ 1,800.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Speed Table	EA	\$ 2,200.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00	IBI Group roadway improvement project directory.
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00	IBI Group roadway improvement project directory.
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00	IBI Group roadway improvement project directory.
	Asphalt Paving (3.5")	SF	\$ 4.00	IBI Group roadway improvement project directory.
	Asphalt Paving (5")	SF	\$ 5.00	IBI Group roadway improvement project directory.
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00	IBI Group roadway improvement project directory.
	PCC - Filler Strip (6" wide)	LF	\$ 5.20	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50	Story-Keys Corridor Complete Streets Study
	PCC Driveway	SF	\$ 14.40	Story-Keys Corridor Complete Streets Study
	Stamped Concrete - 6" Depth	SF	\$ 20.00	IBI Group roadway improvement project directory.
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50	IBI Group roadway improvement project directory.
	Cement Treated Base (12")	SF	\$ 4.00	IBI Group roadway improvement project directory.
	Cement Treated Base (16")	SF	\$ 5.00	IBI Group roadway improvement project directory.
	Slurry Seal + Crack Sealing	SF	\$ 0.75	IBI Group roadway improvement project directory.
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00	IBI Group roadway improvement project directory.
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00	IBI Group roadway improvement project directory.
	Install Fence	EA	\$ 50.00	IBI Group roadway improvement project directory.
	Install Gate	EA	\$ 1,000.00	IBI Group roadway improvement project directory.
	Reset Survey Markers	EA	\$ 2,000.00	IBI Group roadway improvement project directory.
	Adjust Utility Boxes to Grade	EA	\$ 300.00	IBI Group roadway improvement project directory.
Removals				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Roadway Excavation	CY	\$ 20.00	IBI Group roadway improvement project directory.
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00	IBI Group roadway improvement project directory.
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00	IBI Group roadway improvement project directory.
	Remove existing concrete pavement (roadway)	SF	\$ 10.00	IBI Group roadway improvement project directory.
	Remove existing Curb & Gutter	LF	\$ 20.00	IBI Group roadway improvement project directory.
	Remove existing Fence	LF	\$ 12.00	IBI Group roadway improvement project directory.
	Remove existing Tree	EA	\$ 1,000.00	IBI Group roadway improvement project directory.
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00	IBI Group roadway improvement project directory.
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50	IBI Group roadway improvement project directory.
	Remove Existing PCC Sidewalk	SF	\$ 3.00	IBI Group roadway improvement project directory.

SIGNING / STRIPING				
Proposed				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Install Limit Line	LF	\$ 8.50	IBI Group roadway improvement project directory.
	Install Centerline w/ Reflectors	LF	\$ 3.00	IBI Group roadway improvement project directory.
	Install 4" Striping - Paint	LF	\$ 0.50	IBI Group roadway improvement project directory.
	Install 4" Striping - Thermoplastic	LF	\$ 5.00	IBI Group roadway improvement project directory.
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25	IBI Group roadway improvement project directory.
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50	IBI Group roadway improvement project directory.
	Install 8" Striping - Thermoplastic	LF	\$ 10.00	IBI Group roadway improvement project directory.
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00	IBI Group roadway improvement project directory.
	Install Parking Stripes (stall)	EA	\$ 10.00	IBI Group roadway improvement project directory.
	Install Roadside Sign	EA	\$ 300.00	IBI Group roadway improvement project directory.
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00	IBI Group roadway improvement project directory.
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	IBI Group roadway improvement project directory.
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00	IBI Group roadway improvement project directory.
	Install Crosshatching - Thermoplastic	LF	\$ 12.00	IBI Group roadway improvement project directory.
	Install Stop Bar - Thermoplastic	LF	\$ 16.65	Countermeasure Cost Report (UNC-HSRC 2013)
	Install Text Pavement Marking - per word	EA	\$ 400.00	IBI Group roadway improvement project directory.
	Bike Route Signing	MI	\$ 1,650.00	IBI Group roadway improvement project directory.
	Bike Lane Marking - Paint	EA	\$ 100.00	IBI Group roadway improvement project directory.
	Install Sharrow - Paint	EA	\$ 120.00	IBI Group roadway improvement project directory.
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00	IBI Group roadway improvement project directory.
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00	IBI Group roadway improvement project directory.
	Install Curb Paint	LF	\$ 3.33	Countermeasure Cost Report (UNC-HSRC 2013)
	Install Cycle Track Paint	SF	\$ 6.00	IBI Group roadway improvement project directory.
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00	IBI Group roadway improvement project directory.
	Install Sharrow - Thermoplastic	EA	\$ 500.00	IBI Group roadway improvement project directory.
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00	IBI Group roadway improvement project directory.
	Install Green Thermoplastic	SF	\$ 10.00	IBI Group roadway improvement project directory.
	Install Sign on Existing Post	EA	\$ 80.00	IBI Group roadway improvement project directory.
	Install Sign on New Post	EA	\$ 360.00	IBI Group roadway improvement project directory.
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00	IBI Group roadway improvement project directory.
Removals				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Remove Delineation	LF	\$ 1.00	IBI Group roadway improvement project directory.
	Remove Turn Arrow	EA	\$ 75.00	IBI Group roadway improvement project directory.
	Remove Crosswalk	LF	\$ 5.00	IBI Group roadway improvement project directory.
	Relocate Sign and Pole	EA	\$ 400.00	IBI Group roadway improvement project directory.
	Remove Sign and Pole	EA	\$ 175.00	IBI Group roadway improvement project directory.
	Remove "Stop" Text	EA	\$ 100.00	IBI Group roadway improvement project directory.
	Remove Sign	EA	\$ 150.00	IBI Group roadway improvement project directory.

LANDSCAPING / IRRIGATION				
Proposed				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Proposed Landscaping / Irrigation	SF	\$ 16.50	Story-keys Corridor Complete Streets Study
Removals				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Clearing and Grubbing	SF	\$ 1.50	IBI Group roadway improvement project directory.
	Landscaping / Irrigation Removals	LS		IBI Group roadway improvement project directory.

Traffic / Electrical				
Proposed				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Modify Controller	EA	\$ 7,500.00	IBI Group roadway improvement project directory.
	Modify Intersection traffic Signal System	LS	\$ 566,500.00	Willow-Keys Complete Streets Improvements
	Vehicle Heads	EA	\$ 1,200.00	IBI Group roadway improvement project directory.
	Ped Heads	EA	\$ 1,700.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Audible Ped Signal	EA	\$ 900.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Ped Countdown Timer	EA	\$ 800.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Loops	EA	\$ 700.00	IBI Group roadway improvement project directory.
	Ped Buttons	EA	\$ 400.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bike Button, Pole, and Sign	EA	\$ 1,100.00	IBI Group roadway improvement project directory.
	EVP Sensor	EA	\$ 3,000.00	IBI Group roadway improvement project directory.
	Type 17 Poles, Luminaires, and Foundation	EA	\$ 18,000.00	IBI Group roadway improvement project directory.
	Type 26-3 Pole, Luminaires, and Foundation	EA	\$ 22,000.00	IBI Group roadway improvement project directory.
	Type 61-5 Pole, Luminaires, and Foundation	EA	\$ 24,000.00	IBI Group roadway improvement project directory.
	Pedestrian Push Botton Post	EA	\$ 1,100.00	IBI Group roadway improvement project directory.
	Pullboxes	EA	\$ 750.00	IBI Group roadway improvement project directory.
	2" Conduit	LF	\$ 40.00	IBI Group roadway improvement project directory.
	3" Conduit	LF	\$ 50.00	IBI Group roadway improvement project directory.
	Traffic Signal Wiring	LS	\$ 15,000.00	IBI Group roadway improvement project directory.
	Bike Detector Loop	EA	\$ 800.00	IBI Group roadway improvement project directory.
	Mast Arm Sign	EA	\$ 400.00	IBI Group roadway improvement project directory.
	Street Light - Basic	EA	\$ 7,500	IBI Group roadway improvement project directory.
	Street Light - Stone	EA	\$ 515,000	IBI Group roadway improvement project directory.
	Pedestrian Scale Lighting	EA	\$ 56,180	Story-Keys Corridor Complete Streets Study
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00	IBI Group roadway improvement project directory.
	Ped Barricade and R49 Sign	EA	\$ 600.00	IBI Group roadway improvement project directory.
	Install HAWK Ped Signal	EA	\$ 45,000.00	IBI Group roadway improvement project directory.
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Street Name Signs	EA	\$ 1,500.00	IBI Group roadway improvement project directory.
	Install APS (including sign and button)	EA	\$ 1,000.00	IBI Group roadway improvement project directory.
Removals				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE

Site Furnishings				
Proposed				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Trash Receptacle	EA	\$ 1,000.00	IBI Group roadway improvement project directory.
	Recycle Receptacle	EA	\$ 1,000.00	IBI Group roadway improvement project directory.
	Pre-Fabricated Kiosk	EA	\$ 2,600.00	IBI Group roadway improvement project directory.
	Benches - 6' length	EA	\$ 1,200.00	IBI Group roadway improvement project directory.
	Bike Locker	EA	\$ 2,200.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bike Rack	EA	\$ 800.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bus Rack	EA	\$ 1,100.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bike Station	EA	\$ 277,500	Countermeasure Cost Report (UNC-HSRC 2013)
	Bollard (Decorative Stone)	EA	\$ 800.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00	Market research.
	Gateway Sign	EA	\$ 400.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Gateway Structure	EA	\$ 25,300.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Gazebo	EA	\$ 58,800.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Information Kiosk	EA	\$ 178,800.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Shade Shelter	EA	\$ 33,300.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Picnic Table	EA	\$ 1,900.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Tree Grates	EA	\$ 1,600.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Street Tree (includes irrigation)	EA	\$ 2,060.00	Story-Keys Corridor Complete Streets Study
	Bus Shelter	EA	\$ 20,600.00	Story-Keys Corridor Complete Streets Study
	Street Furnishing (includes wayfinding)	LF	\$ 36.10	Story-Keys Corridor Complete Streets Study
Removals				
#	DESCRIPTION	UNIT	UNIT PRICE	SOURCE
	Remove Bike Rack	EA	\$ 1,100.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Relocate Bike Rack	EA	\$ 1,300.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Remove Bench	EA	\$ 1,000.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Remove Bus Shelter	EA	\$ 4,100.00	Countermeasure Cost Report (UNC-HSRC 2013)

**Tamien Station**

Item	Amount
Roadway	\$ 72,000.00
Signing / Striping	\$ 7,444.00
Traffic / Electrical	\$ 227,600.00
Traffic / Electrical Labor (25% of T/E)	\$ 56,900.00
Furnishing	\$ 55,400.00
Landscaping / Irrigation	\$ -

Traffic Control	\$ -
Water Pollution Control	\$ -
Maintain WPCP / Perform Filings	\$ -
Project Construction Survey	\$ -

**Materials and Permits Subtotal \$ 419,344**

Mobilization (10% of Mat./Perm. Subtotal) \$ 41,934

**Construction Subtotal \$ 461,278**

Contingency (5% of Constr. Subtotal) 15%  
Contingency Amount \$ 69,192

**Total Construction Cost \$ 530,470**

Eng./Design (10% of Constr. Total) \$ 53,047

Administration (5% of Constr. Total) \$ 26,524

Constr. Mgmt (7% of Constr. Total) \$ 37,133

**Total Project Cost \$ 647,174**

**Assumptions**

Install bike lockers (10)
Install bike racks (10)
Slurry Seal and restripe both lots along Lelong, excluding lot where future TOD will occur.
New bus shelter (1) and benches (4) at bus stop in station.
New signage for parking lot entrances.
Wayfinding signage at lots on Lelong and Lick.
Replace all parking lot lights in lots along Lelong, excluding lot where future TOD will occur.

NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

**ROADWAY**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00		\$ -
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.00		\$ -
	Asphalt Paving (5")	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75	96,000	\$ 72,000.00
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00		\$ -
	Install Fence	LF	\$ 50.00		\$ -
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00		\$ -
	Remove existing Fence	LF	\$ 12.00		\$ -
	Remove existing Tree	EA	\$ 1,000.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00		\$ -
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -

**ROADWAY SUBTOTAL \$ 72,000.00**

**SIGNING / STRIPING**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00		\$ -
	Install 4" Striping - Paint	LF	\$ 0.50	1,028	\$ 514.00
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00	213	\$ 2,130.00
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00		\$ -
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65		\$ -
	Install Text Pavement Marking - per word	EA	\$ 400.00		\$ -
	Bike Route Signage	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00		\$ -
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00	6	\$ 480.00
	Install Sign on New Post	EA	\$ 360.00	12	\$ 4,320.00
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00		\$ -
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00		\$ -
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00		\$ -
	Remove "Stop" Text	EA	\$ 100.00		\$ -
	Remove Sign	EA	\$ 150.00		\$ -

**SIGNING / STRIPING SUBTOTAL \$ 7,444.00**

**LANDSCAPING / IRRIGATION**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50		\$ -
	Landscaping / Irrigation Removals	LS		1	\$ -

**LANDSCAPING / IRRIGATION SUBTOTAL \$ -**

**Traffic / Electrical**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00		\$ -
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00	26	\$ 104,000.00
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Botton Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 57,500		\$ -
	Street Light - Stone	EA	\$ 15,000		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,180	20	\$ 123,600.00
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
					\$ -

**TRAFFIC / ELECTRICAL SUBTOTAL \$ 227,600.00**

**Site Furnishings**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00	4	\$ 4,800.00
	Bike Locker	EA	\$ 2,200.00	10	\$ 22,000.00
	Bike Rack	EA	\$ 800.00	10	\$ 8,000.00
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00		\$ -
	Bus Shelter	EA	\$ 20,600.00	1	\$ 20,600.00
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,100.00		\$ -
	Relocate Bike Rack	EA	\$ 1,300.00		\$ -
	Remove Bench	EA	\$ 1,000.00		\$ -
	Remove Bus Shelter	EA	\$ 4,100.00		\$ -

**SITE FURNISHINGS SUBTOTAL \$ 55,400.00**

**Willow St. (Delmas Ave. - Almaden Ave.)**

Item	Amount
Roadway	\$ 132,750.00
Signing / Striping	\$ 87,530.00
Traffic / Electrical	\$ 55,900.00
Traffic / Electrical Labor (25% of T/E)	\$ 13,975.00
Furnishing	\$ -
Landscaping / Irrigation	\$ -

**Materials and Permits Subtotal \$ 363,155**

Mobilization (10% of Mat./Perm. Subtotal) \$ 36,316

**Construction Subtotal \$ 399,471**

Contingency (% of Constr. Subtotal) 10%  
 Contingency Amount \$ 39,947

**Total Construction Cost \$ 439,418**

Eng./Design (10% of Constr. Total) \$ 43,942

Administration (5% of Constr. Total) \$ 21,971

Constr. Mgmt (7% of Constr. Total) \$ 30,759

**Total Project Cost \$ 536,090**

Assumptions
Limits: Willow St. between Eastern crosswalk at Delmas Ave. / Shepherd Ave. to Almaden Ave.
Slurry seal along entire segment; remove thermoplastic markings; restripe all lane lines and markings.
All new street markings to be in thermoplastic.
Upgrade crosswalks at Locust St. to high-visibility crosswalks.
Upgrade crosswalks at Vine St. to high-visibility crosswalks.
Install new crosswalks on north/south side at Minnesota Ave.
Install high-visibility, flashing crosswalks at Lick Ave.
Improved lighting at bus stop near Minnesota.
Improved lighting at I-87 underpass.
Install signs on new post at Minnesota, Lick, and Guadalupe Trail entrance.
NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

ROADWAY					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00		\$ -
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.00		\$ -
	Asphalt Paving (5")	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75	177,000	\$ 132,750.00
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00		\$ -
	Install Fence	LF	\$ 50.00		\$ -
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00		\$ -
	Remove existing Fence	LF	\$ 12.00		\$ -
	Remove existing Tree	EA	\$ 1,000.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00		\$ -
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -
<b>ROADWAY SUBTOTAL</b>					<b>\$ 132,750.00</b>

SIGNING / STRIPING					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00	3,800	\$ 11,400.00
	Install 4" Striping - Paint	LF	\$ 0.50	7,600	\$ 3,800.00
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00	250	\$ 2,500.00
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00		\$ -
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	590	\$ 47,200.00
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00	6	\$ 3,000.00
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65		\$ -
	Install Text Pavement Marking - per word	EA	\$ 400.00	10	\$ 4,000.00
	Bike Route Signing	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00	15	\$ 5,250.00
	Install Sharrow - Thermoplastic	EA	\$ 500.00	13	\$ 6,500.00
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00		\$ -
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00		\$ -
	Install Sign on New Post	EA	\$ 360.00	8	\$ 2,880.00
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00		\$ -
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00	200	\$ 1,000.00
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00		\$ -
	Remove "Stop" Text	EA	\$ 100.00		\$ -
	Remove Sign	EA	\$ 150.00		\$ -
<b>SIGNING / STRIPING SUBTOTAL</b>					<b>\$ 87,530.00</b>

LANDSCAPING / IRRIGATION					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50		\$ -
	Landscaping / Irrigation Removals	LS		1	\$ -
<b>LANDSCAPING SUBTOTAL</b>					<b>\$ -</b>

Traffic / Electrical					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00		\$ -
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 57,500		\$ -
	Street Light - Stone	EA	\$ 15,000		\$ -
	Pedestrian Scale Lighting	EA	\$ 56,180	5	\$ 30,900.00
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00	1	\$ 25,000.00
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
<b>TRAFFIC / ELECTRICAL SUBTOTAL</b>					<b>\$ 55,900.00</b>

Site Furnishings					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00		\$ -
	Bike Locker	EA	\$ 2,200.00		\$ -
	Bike Rack	EA	\$ 800.00		\$ -
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00		\$ -
	Bus Shelter	EA	\$ 20,600.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -
					\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,100.00		\$ -
	Relocate Bike Rack	EA	\$ 1,300.00		\$ -
	Remove Bench	EA	\$ 1,000.00		\$ -
	Remove Bus Shelter	EA	\$ 4,100.00		\$ -
<b>SITE FURNISHINGS SUBTOTAL</b>					<b>\$ -</b>



**Lelong St. (Willow St. - Alma Ave.)**

Item	Amount
Roadway	\$ 247,510.00
Signing / Striping	\$ 22,785.00
Traffic / Electrical	\$ 70,000.00
Traffic / Electrical Labor (25% of T/E)	\$ 17,500.00
Furnishing	\$ 146,260.00
Landscaping / Irrigation	\$ 4,050.00

**Materials and Permits Subtotal \$ 561,105**

Mobilization (10% of Mat./Perm. Subtotal) \$ 56,111

**Construction Subtotal \$ 617,216**

Contingency (% of Constr. Subtotal) 25%

Contingency Amount \$ 154,304

**Total Construction Cost \$ 771,520**

Eng./Design (10% of Constr. Total) \$ 77,152

Administration (5% of Constr. Total) \$ 38,576

Constr. Mgmt (7% of Constr. Total) \$ 54,006

**Total Project Cost \$ 941,254**

Assumptions
Remove existing sidewalks and install new 8' wide sidewalk along east side of Lelong St. north of freeway ramps. Existing corner ramps to be preserved.
HAWK pedestrian signal and flashing crosswalk at intersection of SR-87 ramps.
Relocate fence and signs where in conflict.
Remove trees in conflict with sidewalk extensions.
Install new trees (15)
Slurry seal along entire segment; remove thermoplastic markings; restripe all lane lines and markings.
Class IV bikeway with striped buffer and bollards (10 ft spacing)
High visibility crosswalk and wayfinding signage at Willow.
NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

**ROADWAY**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00		\$ -
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.00		\$ -
	Asphalt Paving (5")	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40	1,350	\$ 111,240.00
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75	85,000	\$ 63,750.00
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00		\$ -
	Install Fence	LF	\$ 50.00	160	\$ 8,000.00
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00	3	\$ 900.00

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00		\$ -
	Remove existing Fence	LF	\$ 12.00	160	\$ 1,920.00
	Remove existing Tree	EA	\$ 1,000.00	5	\$ 5,000.00
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00	8100	\$ 56,700.00
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -
<b>ROADWAY SUBTOTAL</b>					<b>\$ 247,510.00</b>

**SIGNING / STRIPING**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00	1,400	\$ 4,200.00
	Install 4" Striping - Paint	LF	\$ 0.50	5,000	\$ 2,500.00
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00		\$ -
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	50	\$ 4,000.00
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00	5	\$ 2,500.00
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65		\$ -
	Install Text Pavement Marking - per word	EA	\$ 400.00	4	\$ 1,600.00
	Bike Route Signing	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00	8	\$ 2,800.00
	Install Sharrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00		\$ -
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00		\$ -
	Install Sign on New Post	EA	\$ 360.00	11	\$ 3,960.00
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00		\$ -
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00		\$ -
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00	7	\$ 1,225.00
	Remove "Stop" Text	EA	\$ 100.00		\$ -
	Remove Sign	EA	\$ 150.00		\$ -
<b>SIGNING / STRIPING SUBTOTAL</b>					<b>\$ 22,785.00</b>

**LANDSCAPING / IRRIGATION**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50	2,700	\$ 4,050.00
	Landscaping / Irrigation Removals	LS		1	\$ -
<b>LANDSCAPING / IRRIGATION SUBTOTAL</b>					<b>\$ 4,050.00</b>

**Traffic / Electrical**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00		\$ -
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 7,500		\$ -
	Street Light - Stone	EA	\$ 15,000		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,180		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00	1	\$ 25,000.00
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00	1	\$ 45,000.00
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
<b>TRAFFIC / ELECTRICAL SUBTOTAL</b>					<b>\$ 70,000.00</b>

**Site Furnishings**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00		\$ -
	Bike Locker	EA	\$ 2,200.00		\$ -
	Bike Rack	EA	\$ 800.00		\$ -
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00	280	\$ 115,360.00
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00	15	\$ 30,900.00
	Bus Shelter	EA	\$ 20,600.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -
					\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,100.00		\$ -
	Relocate Bike Rack	EA	\$ 1,300.00		\$ -
	Remove Bench	EA	\$ 1,000.00		\$ -
	Remove Bus Shelter	EA	\$ 4,100.00		\$ -
<b>SITE FURNISHINGS SUBTOTAL</b>					<b>\$ 146,260.00</b>

**Lick Ave. (Willow St. - Alma Ave.)**

Item	Amount
Roadway	\$ 129,750.00
Signing / Striping	\$ 45,620.00
Traffic / Electrical	\$ 75,000.00
Traffic / Electrical Labor (25% of T/E)	\$ 18,750.00
Furnishing	\$ -
Landscaping / Irrigation	\$ -

**Materials and Permits Subtotal \$ 382,120**

Mobilization (10% of Mat./Perm. Subtotal) \$ 38,212

**Construction Subtotal \$ 420,332**

Contingency (% of Constr. Subtotal) 25%

Contingency Amount \$ 105,083

**Total Construction Cost \$ 525,415**

Eng./Design (10% of Constr. Total) \$ 52,542

Administration (5% of Constr. Total) \$ 26,271

Constr. Mgmt (7% of Constr. Total) \$ 36,779

**Total Project Cost \$ 641,007**

**Assumptions**

Street lights along west side of Lick Ave. (10)

Install crosswalk (mid-block) at Floyd St. and s/o Humboldt St.

All new street markings to be in thermoplastic.

Pedestrian signage at Humboldt crossing.

Pavement rehabilitation split between slurry seal (70%) and grind/overlay (30%).

All new street markings to be in thermoplastic.

Install Class II bikeway.

NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

**ROADWAY**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00		\$ -
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00	28,000	\$ 84,000.00
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.00		\$ -
	Asphalt Paving (5")	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75	61,000	\$ 45,750.00
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00		\$ -
	Install Fence	LF	\$ 50.00		\$ -
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00		\$ -
	Remove existing Fence	LF	\$ 12.00		\$ -
	Remove existing Tree	EA	\$ 1,000.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00		\$ -
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -
<b>ROADWAY SUBTOTAL</b>					<b>\$ 129,750.00</b>

**SIGNING / STRIPING**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00	2,300	\$ 6,900.00
	Install 4" Striping - Paint	LF	\$ 0.50		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00		\$ -
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	70	\$ 5,600.00
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00	4	\$ 2,000.00
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65		\$ -
	Install Text Pavement Marking - per word	EA	\$ 400.00		\$ -
	Bike Route Signage	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00	4,600	\$ 27,600.00
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00	8	\$ 2,800.00
	Install Sharrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00		\$ -
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00		\$ -
	Install Sign on New Post	EA	\$ 360.00	2	\$ 720.00
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00		\$ -
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00		\$ -
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00		\$ -
	Remove "Stop" Text	EA	\$ 100.00		\$ -
	Remove Sign	EA	\$ 150.00		\$ -
<b>SIGNING / STRIPING SUBTOTAL</b>					<b>\$ 45,620.00</b>

**LANDSCAPING / IRRIGATION**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50		\$ -
	Landscaping / Irrigation Removals	LS		1	\$ -
<b>LANDSCAPING / IRRIGATION SUBTOTAL</b>					<b>\$ -</b>

**Traffic / Electrical**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00		\$ -
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 7,500	10	\$ 75,000.00
	Street Light - Stone	EA	\$ 15,000		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,180		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -

**TRAFFIC / ELECTRICAL SUBTOTAL \$ 75,000.00**

**Site Furnishings**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00		\$ -
	Bike Locker	EA	\$ 2,200.00		\$ -
	Bike Rack	EA	\$ 800.00		\$ -
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00		\$ -
	Bus Shelter	EA	\$ 20,600.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -

**SITE FURNISHINGS SUBTOTAL \$ -**

**Alma Ave. Lelong - Almaden**

Item	Amount
Roadway	\$ 189,978.00
Signing / Striping	\$ 91,720.00
Traffic / Electrical	\$ 566,500.00
Traffic / Electrical Labor (25% of T/E)	\$ 141,625.00
Furnishing	\$ 173,040.00
Landscaping / Irrigation	\$ 2,580.00

**Materials and Permits Subtotal \$ 1,283,443**

Mobilization (10% of Mat./Perm. Subtotal) \$ 128,344

**Construction Subtotal \$ 1,411,787**

Contingency (% of Constr. Subtotal) 20%  
Contingency Amount \$ 282,357

**Total Construction Cost \$ 1,694,144**

Eng./Design (10% of Constr. Total) \$ 169,414

Administration (5% of Constr. Total) \$ 84,707

Constr. Mgmt (7% of Constr. Total) \$ 118,590

**Total Project Cost \$ 2,066,855**

**Assumptions**

Widen sidewalks from 4' to 6' on south side of Alma Ave. between Lelong St. and Vine St.  
Reconstruct ramps at Stonegate Cir.  
Modify intersection at Alma-Lelong to provide protected left-turns for the NB/SB directions  
Install signage at Lelong, Lick, and Vine.  
Install crosswalk at Lelong, Lick, and Vine.  
Upgrade crosswalk at Locust to continental crosswalk.  
Class IV bikeway with striped buffer and bollards (10ft spacing).  
Slurry seal along entire segment; remove thermoplastic markings; restripe all lane lines and markings.  
All new street markings to be in thermoplastic.  
NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

**ROADWAY**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00	2	\$ 5,600.00
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00		\$ -
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00	100	\$ 5,600.00
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.00		\$ -
	Asphalt Paving (5")	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80	860	\$ 53,148.00
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75	131,000	\$ 98,250.00
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00	100	\$ 300.00
	Install Fence	LF	\$ 50.00		\$ -
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00	2	\$ 600.00

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00		\$ -
	Remove existing Fence	LF	\$ 12.00		\$ -
	Remove existing Tree	EA	\$ 1,000.00	1	\$ 1,000.00
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00	3,640	\$ 25,480.00
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -

**ROADWAY SUBTOTAL \$ 189,978.00**

**SIGNING / STRIPING**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00	3,600	\$ 10,800.00
	Install 4" Striping - Paint	LF	\$ 0.50	310	\$ 155.00
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00		\$ -
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00	40	\$ 1,600.00
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	560	\$ 44,800.00
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00	10	\$ 5,000.00
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65	100	\$ 1,665.00
	Install Text Pavement Marking - per word	EA	\$ 400.00		\$ -
	Bike Route Signing	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00	4,200	\$ 25,200.00
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00		\$ -
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00	4	\$ 320.00
	Install Sign on New Post	EA	\$ 360.00	6	\$ 2,160.00
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00	20	\$ 20.00
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00		\$ -
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00		\$ -
	Remove "Stop" Text	EA	\$ 100.00		\$ -
	Remove Sign	EA	\$ 150.00		\$ -

**SIGNING / STRIPING SUBTOTAL \$ 91,720.00**

**LANDSCAPING / IRRIGATION**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50	1,720	\$ 2,580.00
	Landscaping / Irrigation Removals	LS		1	\$ -

**LANDSCAPING SUBTOTAL \$ 2,580.00**

**Traffic / Electrical**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00	1	\$ 566,500.00
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 57,500		\$ -
	Street Light - Stone	EA	\$ 15,000		\$ -
	Pedestrian Scale Lighting	EA	\$ 56,180		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -

**TRAFFIC / ELECTRICAL SUBTOTAL \$ 566,500.00**

**Site Furnishings**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00		\$ -
	Bike Locker	EA	\$ 2,200.00		\$ -
	Bike Rack	EA	\$ 800.00		\$ -
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00	420	\$ 173,040.00
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00		\$ -
	Bus Shelter	EA	\$ 20,600.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,100.00		\$ -
	Relocate Bike Rack	EA	\$ 1,300.00		\$ -
	Remove Bench	EA	\$ 1,000.00		\$ -
	Remove Bus Shelter	EA	\$ 4,100.00		\$ -

**SITE FURNISHINGS SUBTOTAL \$ 173,040.00**

**Locust St. (Willow St. - Alma Ave.)**

Item	Amount
Roadway	\$ -
Signing / Striping	\$ 27,638.00
Traffic / Electrical	\$ -
Traffic / Electrical Labor (25% of T/E)	\$ -
Furnishing	\$ -
Landscaping / Irrigation	\$ -

Traffic Control	\$ 20,000.00
Water Pollution Control	\$ -
Maintain WPCP / Perform Filings	\$ -
Project Construction Survey	\$ -

**Materials and Permits Subtotal \$ 47,638**

Mobilization (10% of Mat./Perm. Subtotal) \$ 4,764

**Construction Subtotal \$ 52,402**

Contingency (% of Constr. Subtotal) 10%  
Contingency Amount \$ 5,240

**Total Construction Cost \$ 57,642**

Eng./Design (10% of Constr. Total) \$ 5,764

Administration (5% of Constr. Total) \$ 2,882

Constr. Mgmt (7% of Constr. Total) \$ 4,035

**Total Project Cost \$ 70,323**

**Assumptions**

Install crosswalks, stop bar, and text markings for all approaches at Goodyear and Floyd.  
All new street markings to be in thermoplastic.

NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

**ROADWAY**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00		\$ -
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5')	SF	\$ 4.00		\$ -
	Asphalt Paving (5')	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2" Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75		\$ -
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00		\$ -
	Install Fence	LF	\$ 50.00		\$ -
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00		\$ -
	Remove existing Fence	LF	\$ 12.00		\$ -
	Remove existing Tree	EA	\$ 1,000.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00		\$ -
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -

**ROADWAY SUBTOTAL \$ -**

**SIGNING / STRIPING**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00		\$ -
	Install 4" Striping - Paint	LF	\$ 0.50		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00		\$ -
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	280	\$ 22,400.00
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65	120	\$ 1,998.00
	Install Text Pavement Marking - per word	EA	\$ 400.00	6	\$ 2,400.00
	Bike Route Signing	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00		\$ -
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00		\$ -
	Install Sign on New Post	EA	\$ 360.00		\$ -
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00	240	\$ 240.00
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00		\$ -
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00		\$ -
	Remove "Stop" Text	EA	\$ 100.00	6	\$ 600.00
	Remove Sign	EA	\$ 150.00		\$ -

**SIGNING / STRIPING SUBTOTAL \$ 27,638.00**

**LANDSCAPING / IRRIGATION**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50		\$ -
	Landscaping / Irrigation Removals	LS		1	\$ -

**LANDSCAPING SUBTOTAL \$ -**

**Traffic / Electrical**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00		\$ -
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 7,500		\$ -
	Street Light - Stone	EA	\$ 15,000		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,180		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
					\$ -

**TRAFFIC / ELECTRICAL SUBTOTAL \$ -**

**Site Furnishings**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00		\$ -
	Bike Locker	EA	\$ 2,200.00		\$ -
	Bike Rack	EA	\$ 800.00		\$ -
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00		\$ -
	Bus Shelter	EA	\$ 20,600.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,100.00		\$ -
	Relocate Bike Rack	EA	\$ 1,300.00		\$ -
	Remove Bench	EA	\$ 1,000.00		\$ -
	Remove Bus Shelter	EA	\$ 4,100.00		\$ -

**SITE FURNISHINGS SUBTOTAL \$ -**

**Vine St. (Willow St. - Alma Ave.)**

Item	Amount
Roadway	\$ 65,625.00
Signing / Striping	\$ 50,380.00
Traffic / Electrical	\$ -
Traffic / Electrical Labor (25% of T/E)	\$ -
Furnishing	\$ -
Landscaping / Irrigation	\$ -

Traffic Control	\$ 50,000.00
Water Pollution Control	\$ 40,000.00
Maintain WPCP / Perform Filings	\$ 3,000.00
Project Construction Survey	\$ -

**Materials and Permits Subtotal \$ 209,005**

Mobilization (10% of Mat./Perm. Subtotal) \$ 20,901

**Construction Subtotal \$ 229,906**

Contingency (% of Constr. Subtotal) 10%

Contingency Amount \$ 22,991

**Total Construction Cost \$ 252,897**

Eng./Design (10% of Constr. Total) \$ 25,290

Administration (5% of Constr. Total) \$ 12,645

Constr. Mgmt (7% of Constr. Total) \$ 17,703

**Total Project Cost \$ 308,535**

Assumptions
Slurry seal along entire segment; remove thermoplastic markings; restripe all lane lines and markings.
Class IV bikeway with striped parking lane buffer.
All new street markings to be in thermoplastic.
Wayfinding signage at Willow and Alma.
Install continental crosswalk at Willow, Humboldt, and Floyd.
Upgrade bikeway markings to greenbacked sharrows.

NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

ROADWAY					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00		\$ -
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.00		\$ -
	Asphalt Paving (5")	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75	87,500	\$ 65,625.00
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00		\$ -
	Install Fence	LF	\$ 50.00		\$ -
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00		\$ -
	Remove existing Fence	LF	\$ 12.00		\$ -
	Remove existing Tree	EA	\$ 1,000.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00		\$ -
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -
<b>ROADWAY SUBTOTAL</b>					<b>\$ 65,625.00</b>

SIGNING / STRIPING					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00		\$ -
	Install 4" Striping - Paint	LF	\$ 0.50	6,000	\$ 3,000.00
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25	2,000	\$ 500.00
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00		\$ -
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	350	\$ 28,000.00
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00	6	\$ 3,000.00
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65		\$ -
	Install Text Pavement Marking - per word	EA	\$ 400.00	2	\$ 800.00
	Bike Route Signage	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00	6	\$ 4,200.00
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00		\$ -
	Install Sign on New Post	EA	\$ 360.00	8	\$ 2,880.00
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00	400	\$ 8,000.00
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00		\$ -
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00		\$ -
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00		\$ -
	Remove "Stop" Text	EA	\$ 100.00		\$ -
	Remove Sign	EA	\$ 150.00		\$ -
<b>SIGNING / STRIPING SUBTOTAL</b>					<b>\$ 50,380.00</b>

LANDSCAPING / IRRIGATION					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50		\$ -
	Landscaping / Irrigation Removals	LS		1	\$ -
<b>LANDSCAPING SUBTOTAL</b>					<b>\$ -</b>

Traffic / Electrical					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00		\$ -
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 57,500		\$ -
	Street Light - Stone	EA	\$ 15,000.00		\$ -
	Pedestrian Scale Lighting	EA	\$ 56,180		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
					\$ -
<b>TRAFFIC / ELECTRICAL SUBTOTAL</b>					<b>\$ -</b>

Site Furnishings					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00		\$ -
	Bike Locker	EA	\$ 2,200.00		\$ -
	Bike Rack	EA	\$ 800.00		\$ -
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00		\$ -
	Bus Shelter	EA	\$ 20,600.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -
					\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,100.00		\$ -
	Relocate Bike Rack	EA	\$ 1,300.00		\$ -
	Remove Bench	EA	\$ 1,000.00		\$ -
	Remove Bus Shelter	EA	\$ 4,100.00		\$ -
<b>SITE FURNISHINGS SUBTOTAL</b>					<b>\$ -</b>

**Almaden Ave. (Willow St. - Alma Ave.)**

Item	Amount
Roadway	\$ 127,595.00
Signing / Striping	\$ 33,466.00
Traffic / Electrical	\$ 20,000.00
Traffic / Electrical Labor (25% of T/E)	\$ 5,000.00
Furnishing	\$ -
Landscaping / Irrigation	\$ -

**Materials and Permits Subtotal \$ 299,061**

Mobilization (10% of Mat./Perm. Subtotal) \$ 29,906

**Construction Subtotal \$ 328,967**

Contingency (% of Constr. Subtotal) 10%

Contingency Amount \$ 32,897

**Total Construction Cost \$ 361,864**

Eng./Design (10% of Constr. Total) \$ 36,186

Administration (5% of Constr. Total) \$ 18,093

Constr. Mgmt (7% of Constr. Total) \$ 25,330

**Total Project Cost \$ 441,473**

**Assumptions**

Slurry seal along entire segment; remove thermoplastic markings; restripe all lane lines and markings.  
 Class IV bikeway with striped parking lane buffer.  
 All new street markings to be in thermoplastic.  
 Curb extensions for NW and SE corners of signalized intersection of Alma-Almaden.  
 Install continental crosswalks at Willow.  
 Install continental crosswalks at Goodyear.  
 Upgrade bikeway markings to greenbacked sharrows.

NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

**ROADWAY**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 51.50		\$ -
	Curb (6")	LF	\$ 20.00		\$ -
	Curb (6") - Divider	LF	\$ 30.00		\$ -
	Curb Ramp - Corner	EA	\$ 2,800.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,500.00		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,400.00	2	\$ 28,800.00
	Detectable Warning Tiles	SF	\$ 63.90		\$ -
	Traffic Circle	EA	\$ 55,500.00		\$ -
	Roundabout	EA	\$ 277,500		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 111,000.00		\$ -
	Traffic Diverter	EA	\$ 20,000.00		\$ -
	Median / Median Island	SF	\$ 15.50		\$ -
	Raised Crosswalk	EA	\$ 9,100.00		\$ -
	Raised Intersection	EA	\$ 56,600.00		\$ -
	Speed Hump	EA	\$ 3,000.00		\$ -
	Speed Bump	EA	\$ 1,800.00		\$ -
	Speed Table	EA	\$ 2,200.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00	155	\$ 8,680.00
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.00		\$ -
	Asphalt Paving (5")	SF	\$ 5.00		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.20		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.60		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 41.20		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 61.80		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 82.40		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 103.00		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 154.50		\$ -
	PCC Driveway	SF	\$ 14.40		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.00		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50		\$ -
	Cement Treated Base (12")	SF	\$ 4.00		\$ -
	Cement Treated Base (16")	SF	\$ 5.00		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.75	110,000	\$ 82,500.00
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00	155	\$ 465.00
	Install Fence	LF	\$ 50.00		\$ -
	Install Gate	EA	\$ 1,000.00		\$ -
	Reset Survey Markers	EA	\$ 2,000.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 300.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.00		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.00		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.00	25	\$ 500.00
	Remove existing Fence	LF	\$ 12.00		\$ -
	Remove existing Tree	EA	\$ 1,000.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00	950	\$ 6,650.00
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.00		\$ -
<b>ROADWAY SUBTOTAL</b>					<b>\$ 127,595.00</b>

**SIGNING / STRIPING**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.50		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.00		\$ -
	Install 4" Striping - Paint	LF	\$ 0.50	6,000	\$ 3,000.00
	Install 4" Striping - Thermoplastic	LF	\$ 5.00		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25	2,000	\$ 500.00
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.00		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.00		\$ -
	Install Roadside Sign	EA	\$ 300.00		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00	340	\$ 13,600.00
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00		\$ -
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.00		\$ -
	Install Stop Bar - Thermoplastic	LF	\$ 16.65	40	\$ 666.00
	Install Text Pavement Marking - per word	EA	\$ 400.00	7	\$ 2,800.00
	Bike Route Signing	MI	\$ 1,650.00		\$ -
	Bike Lane Marking - Paint	EA	\$ 100.00		\$ -
	Install Sharrow - Paint	EA	\$ 120.00		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00		\$ -
	Install Curb Paint	LF	\$ 3.33		\$ -
	Install Cycle Track Paint	SF	\$ 6.00		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 500.00		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00	7	\$ 4,900.00
	Install Green Thermoplastic	SF	\$ 10.00		\$ -
	Install Sign on Existing Post	EA	\$ 80.00		\$ -
	Install Sign on New Post	EA	\$ 360.00		\$ -
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00	230	\$ 4,600.00

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.00		\$ -
	Remove Turn Arrow	EA	\$ 75.00		\$ -
	Remove Crosswalk	LF	\$ 5.00	680	\$ 3,400.00
	Relocate Sign and Pole	EA	\$ 400.00		\$ -
	Remove Sign and Pole	EA	\$ 175.00		\$ -
	Remove "Stop" Text	EA	\$ 100.00		\$ -
	Remove Sign	EA	\$ 150.00		\$ -
<b>SIGNING / STRIPING SUBTOTAL</b>					<b>\$ 33,466.00</b>

**LANDSCAPING / IRRIGATION**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 16.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.50		\$ -
	Landscaping / Irrigation Removals	LS		1	\$ -
<b>LANDSCAPING / IRRIGATION SUBTOTAL</b>					<b>\$ -</b>

**Traffic / Electrical**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,500.00		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 566,500.00		\$ -
	Vehicle Heads	EA	\$ 1,200.00		\$ -
	Ped Heads	EA	\$ 1,700.00		\$ -
	Audible Ped Signal	EA	\$ 900.00		\$ -
	Ped Countdown Timer	EA	\$ 800.00		\$ -
	Loops	EA	\$ 700.00		\$ -
	Ped Buttons	EA	\$ 400.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,100.00		\$ -
	EVP Sensor	EA	\$ 3,000.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,000.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,100.00		\$ -
	Pullboxes	EA	\$ 750.00		\$ -
	2" Conduit	LF	\$ 40.00		\$ -
	3" Conduit	LF	\$ 50.00		\$ -
	Traffic Signal Wiring	LS	\$ 15,000.00		\$ -
	Bike Detector Loop	EA	\$ 800.00		\$ -
	Mast Arm Sign	EA	\$ 400.00		\$ -
	Street Light - Basic	EA	\$ 7,500		\$ -
	Street Light - Stone	EA	\$ 515,000		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,180		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 25,000.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 600.00		\$ -
	Install HAWK Ped Signal	EA	\$ 45,000.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 24,800.00		\$ -
	Street Name Signs	EA	\$ 1,500.00		\$ -
	Install APS (including sign and button)	EA	\$ 1,000.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Signal Pole Relocation	LS	\$ 20,000.00	1	\$ 20,000.00
<b>TRAFFIC / ELECTRICAL SUBTOTAL</b>					<b>\$ 20,000.00</b>

**Site Furnishings**

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,000.00		\$ -
	Recycle Receptacle	EA	\$ 1,000.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,600.00		\$ -
	Benches - 6' length	EA	\$ 1,200.00		\$ -
	Bike Locker	EA	\$ 2,200.00		\$ -
	Bike Rack	EA	\$ 800.00		\$ -
	Bus Rack	EA	\$ 1,100.00		\$ -
	Bike Station	EA	\$ 277,500		\$ -
	Bollard (Decorative Stone)	EA	\$ 800.00		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 400.00		\$ -
	Gateway Structure	EA	\$ 25,300.00		\$ -
	Gazebo	EA	\$ 58,800.00		\$ -
	Information Kiosk	EA	\$ 178,800.00		\$ -
	Shade Shelter	EA	\$ 33,300.00		\$ -
	Picnic Table	EA	\$ 1,900.00		\$ -
	Tree Grates	EA	\$ 1,600.00		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,060.00		\$ -
	Bus Shelter	EA	\$ 20,600.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 36.10		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,100.00		\$ -
	Relocate Bike Rack	EA	\$ 1,300.00		\$ -
	Remove Bench	EA	\$ 1,000.00		\$ -
	Remove Bus Shelter	EA	\$ 4,100.00		\$ -
<b>SITE FURNISHINGS SUBTOTAL</b>					<b>\$ -</b>