

Capitol Station and Branham Station Access Study

Task 6 - Final Access Study

Prepared for Santa Clara Valley Transportation Authority (VTA) By Arcadis IBI Group
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1 Introduction

1.1 Study Background

The Santa Clara Valley Transportation Authority (VTA) Transit-Oriented Development (TOD) Program initiated an access planning study for Capitol Station and Branham Station in November 2022. The goal of this program is to make transit use easy and convenient, resulting in less driving, more walking, and reduced impacts on existing communities through public-private partnerships for developments on VTA-owned sites that open opportunities for people of all incomes to live, work, and play nearby. This will increase transit ridership and promote integration of land use and transportation with existing neighborhoods. The Branham and Capitol Stations have been identified by VTA for this purpose, utilizing the existing park-and-ride facilities at each station to accommodate new transit-oriented housing developments in a cooperative partnership with the County of Santa Clara. This study provides the basis that will ensure the proposed developments are well integrated into the transportation network and surrounding neighborhood, and pedestrians, bicyclists, and transit needs are fully considered and incorporated in subsequent stages.

1.2 Purpose of Report

The purpose of this report is to present findings from the existing conditions, future conditions, community engagement, and the needs assessments. These findings were used to inform a suite of proposed access improvements and transportation demand management (TDM) recommendations to reduce single-occupancy trips to the station that are presented in Sections 6 and 7. Associated cost estimates and a prioritization and implementation plan are presented in Sections 8 and 9.

2 Existing Conditions

This section provides a review of existing planning documents and initiatives from the City of San Jose and the Santa Clara Valley Transportation Authority (VTA), as well as a review of existing data relevant to the study area. Existing data reviewed for this task included information about population density, ethnicity, age, commute mode share and vehicle availability, and socioeconomic status for households within a 3-mile radius of each station.

2.1 Document Review

A total of 21 documents were reviewed to gather a comprehensive understanding of current planning initiatives and projects relevant to the Capitol Station and Branham Station Access Study. Documents discussing land use and transportation planning from the City of San Jose and VTA were reviewed.

2.1.1 City of San Jose Land Use and Transportation Planning

A total of 12 documents were reviewed from the City of San Jose discussing relevant current planning initiatives and projects pertaining to land use and transportation planning.

Planning Documents

General Plan – Envision San José 2040

This plan was adopted in November 2011 and amended in November 2022 and aims to guide the City's continued growth through the year 2040. The Plan includes land use policies to shape the transformation of strategically identified and historically underutilized growth areas into higher-density, mixed-use, urban districts or "Urban Villages" which can accommodate employment and housing growth and reduce the environmental impacts of that growth by promoting transit use and walkability. Among the plan goals, policies, and implementation actions, the relationship between land use and transportation is defined as the main focus.

The following map shows the different land use policies proposed for San José and zooms into the Capitol Station and Branham Station area on the upper-right corner. One type of Growth Area specified in the plan are the Local Transit Urban Villages. The villages are defined as spaces where there is an opportunity to create and maximize new mixed-uses along Light Rail and BART lines and provide more opportunity for retail and service jobs that benefit from close proximity to residential use. The plan identifies the Capitol Expressway/Highway 87 Light Rail (VR10) as an Urban Village with the potential for growth. This area includes Capitol Station and its surrounding neighborhoods. Additionally, while neither of the stations is within the Urban Village Almaden Expressway/Hilldale Avenue (V64), it is less than a mile west of Capitol Station and could have an impact on the opportunities created in this station. Moreover, the employment area West Capitol Expressway/Vistapark Drive (VR27), one of the areas where the city plans to intensify the job market, is less than a mile east of Capitol Station and could potentially influence access and demand transportation alternatives. Finally, the positive effects of the Communications Hill Specific Plan, described in more detail below, will have a spillover effect on these stations, particularly Capitol Station.

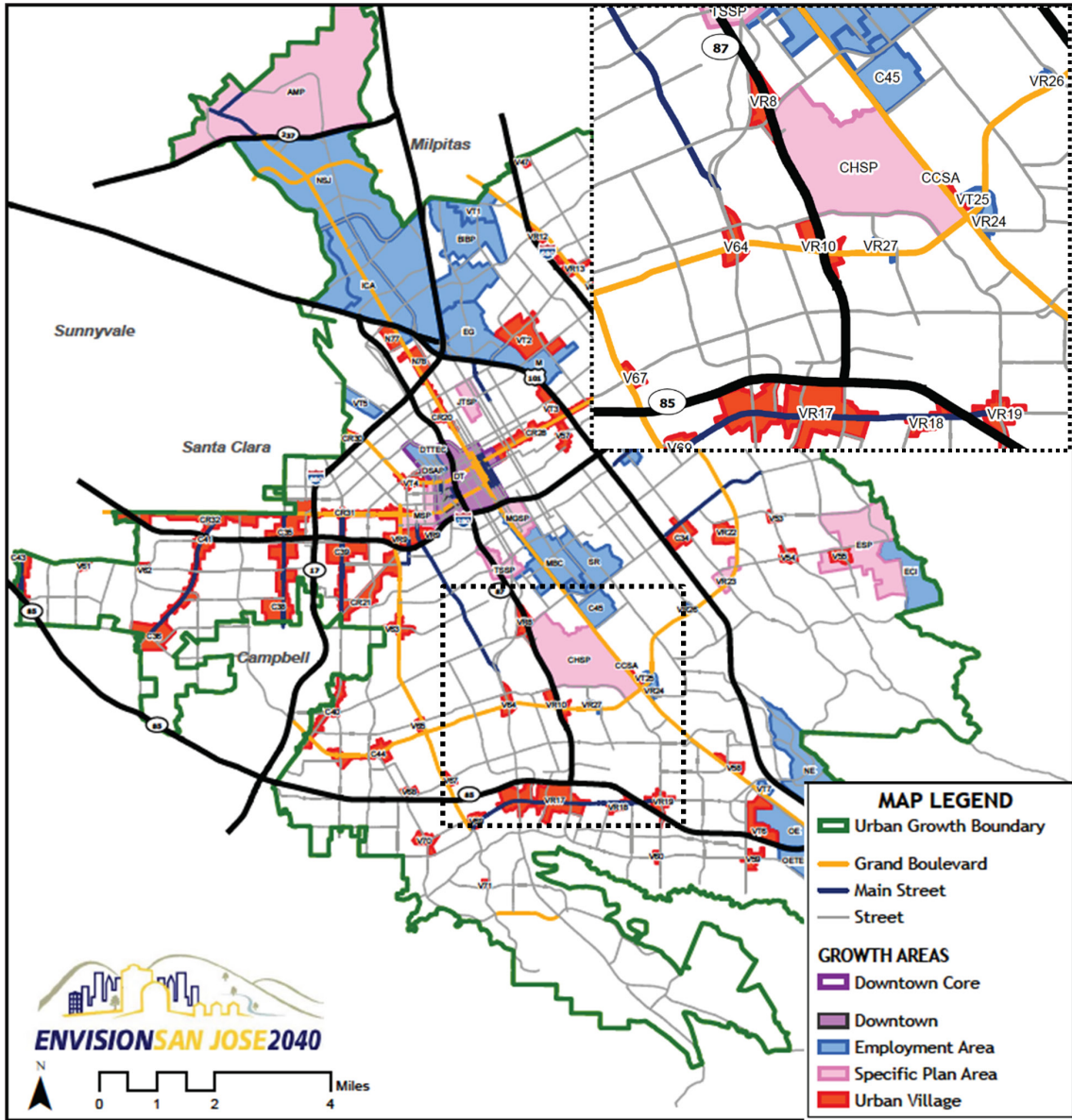


Figure 2.1
Envision San José 2040
Planned Growth Areas

Communications Hill Specific Plan

The City of San José approved the Communications Hill Specific Plan (CHSP) in 1992 as a dense, highly urbanized pedestrian-oriented residential neighborhood with industrial park uses. By 2014, when the Area Development Policy was published, approximately 2,500 of the 4,700 residential units envisioned for the CHSP had been constructed.

The plan recognizes Capitol Station as one of the two stations serving the area, and an asset for the community, as it adds onto a list of transportation alternatives that provide multimodal access. The Capitol LRT Station provides a direct connection to VTA bus service (Local Routes 37 and 70).

San José Better Bike Plan 2025

The plan updates the previous San José Bike Plan, adopted in 2009. The Better Bike Plan lays out a vision for a safe and connected network of on-street bikeways that will empower people of all ages and abilities to travel by bicycle.

While both stations are already accessible by Class II bike lanes¹, they do not fall within the focus areas defined by the city, where a dense network of bicycle facilities will be built out with higher priority. The San José Better Bike Plan 2025 includes Class IV protected bike lanes² for both stations, however, these bike lanes are not part of the 5-year priority projects, shown in the figure below. According to the plan, Class IV bike lanes make biking considerably safer and more appealing to those concerned about aggressive drivers (4 out of 5 San Joséans) or getting in a crash (3 out of 4 San Joséans).

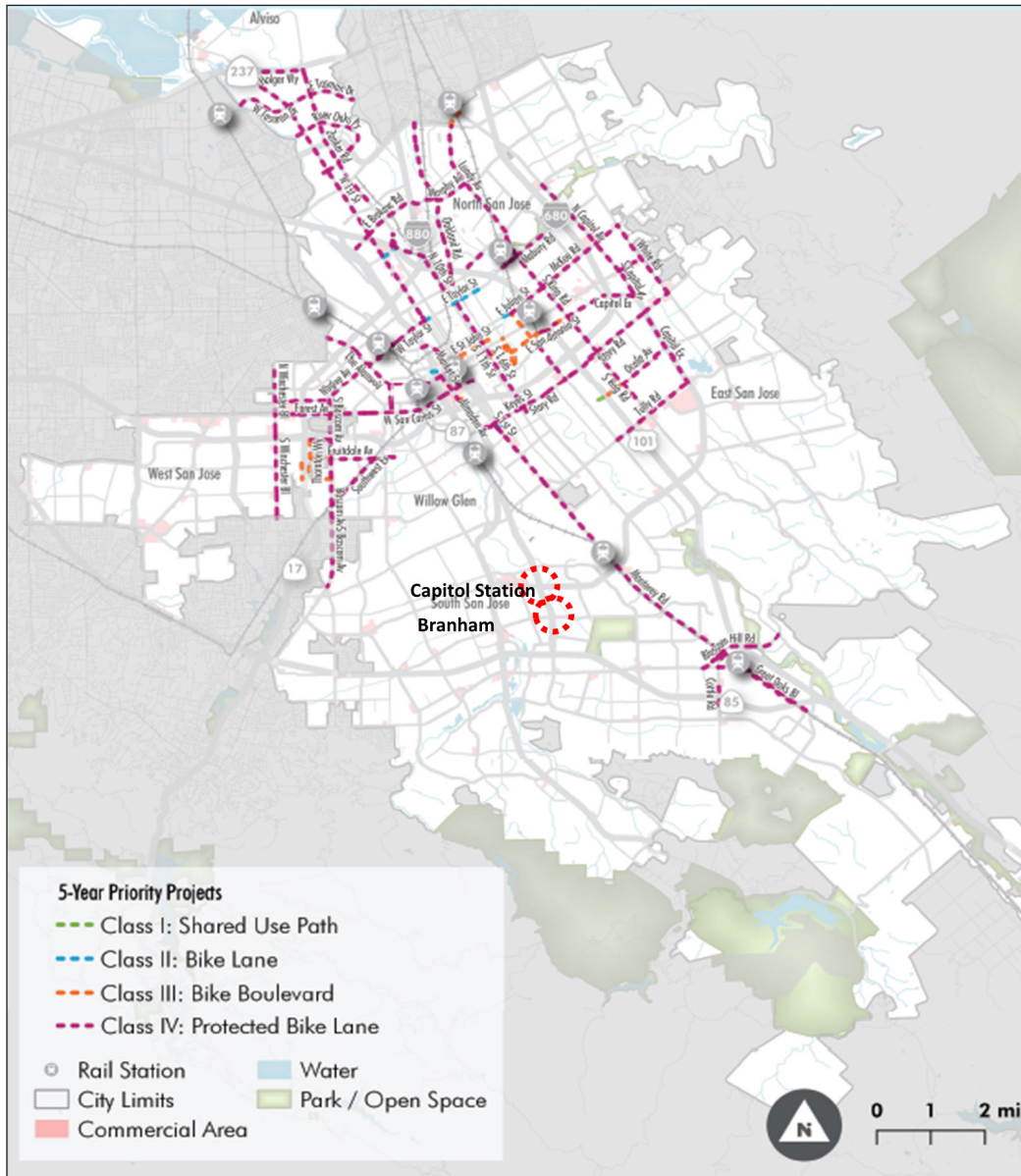


Figure 2.2
San José Better Bike Plan 2025
Priority Projects

¹ Class II Bike Lanes are dedicated on-street space for bicyclists in the roadway, delineated with painted pavement stripes and symbols on the roadway surface.

² Class IV Protected Bike Lanes, also known as cycle tracks or protected bike lanes, are dedicated bikeways that are located on a street. They are physically distinct from the sidewalk and separated from motor vehicle traffic by a vertical physical object such as parking, a curb, or posts.

Trail Program Strategic Plan

The City of San José is developing one of the nation’s largest urban and interconnected trail networks. In 2007, the city stated that Goal 10 of its Green Vision would deliver the 100-mile integrated trail network by the year 2022. The 2021 Annual Count & Survey of San José Trails reports 61 miles already developed by that year. The built network is within the study area, along Guadalupe Parkway. The map below was published in 2016 as an update to the development status of each segment of the plan.

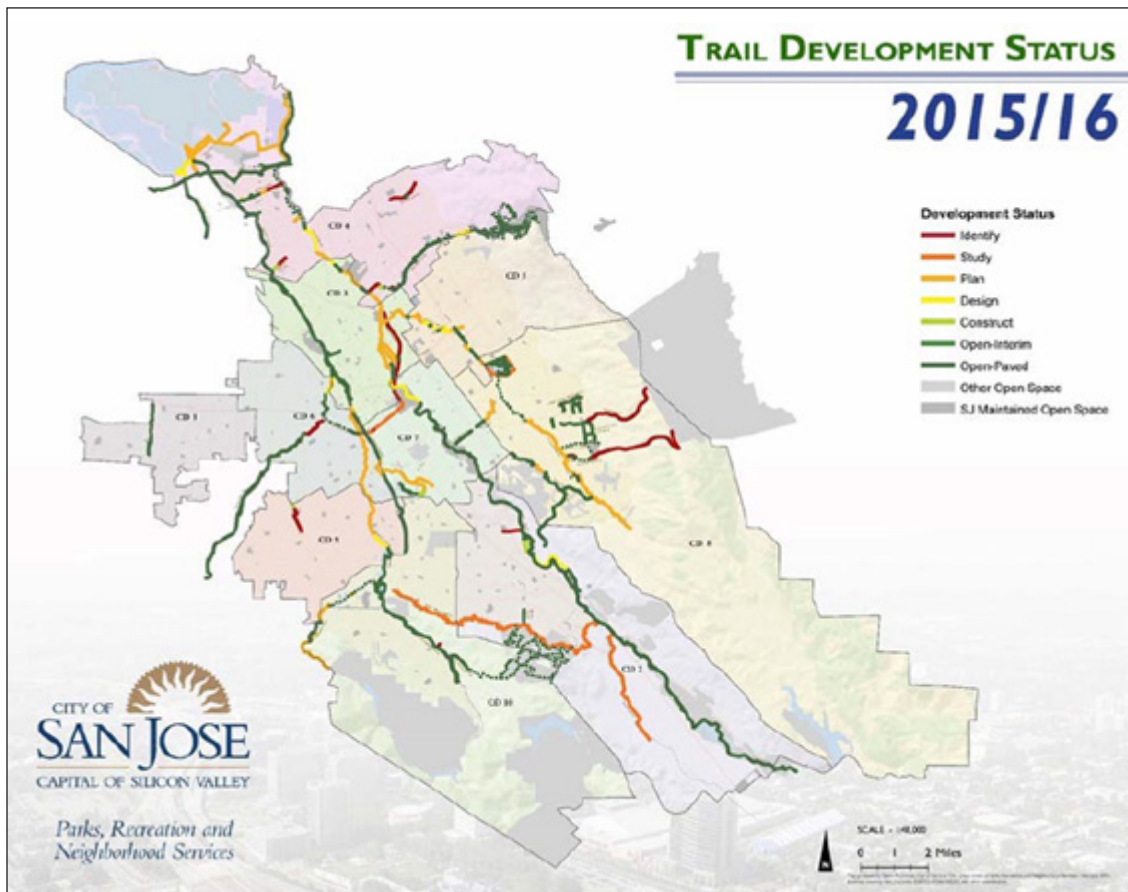


Figure 2.3
City of San José Trail
Development Status
(2016)

Carbon Neutral by 2030 Resolution

While the city’s Carbon Neutral by 2030 plan does not mention explicitly either of the stations, it defines the foundations for the Carbon Neutral Strategies pursued by the city of San José.

Climate Smart San José

Climate Smart San José has defined nine strategies for the whole city, which relate directly to the TOD strategy currently being pursued:

- 2.1** Densifying our city in focused growth areas increases walkability and cycling, and also makes our neighborhoods more vibrant, distinctive, and enjoyable.
- 2.4** Developing integrated, accessible public and active transport infrastructure reduces the dependency on the car to move within the city.
- 3.1** Creating local jobs in our city makes it possible for our residents to work close to where they live, saving time, money, and gas spent commuting.
- 3.2** Making our commercial buildings high-performance and siting them close to transit lowers water and energy use.

Additionally, the Bold Campaigns to Activate Climate Smart San José, includes the following goals related to the TOD strategy for Capitol and Branham stations:

5. By 2030, San José will create an additional 22 million square feet of commercial workspace located within a half mile of transit.
6. By 2030, San José will have developed 40,000 dwelling units in its urban villages and focused growth areas.
7. By 2040, only four out of ten commute trips in San José will be taken in single-occupancy vehicles.

Vision Zero San José

In 2015, San José became the fourth U.S. city to officially adopt a Vision Zero initiative. The goal of Vision Zero is to reduce and eventually eliminate traffic deaths and severe injuries. The City defined 17 corridors, which account for a high proportion of fatalities and severe injuries on San José streets. One of these is Branham Lane.

As part of the Vision Zero Strategy, The Department of Transportation leads several construction and maintenance projects across San José. These include safety projects, maintenance projects, emerging mobility projects, and regional freeway projects. Two of these directly or indirectly impact Branham station: Branham Lane and Kingspark Drive traffic signal; and Branham Lane safety improvements, which will be described in the following section.

Additionally, the Vision Zero Strategy includes a systematic collection of data that can be visualized and downloaded for further analysis. The City of San José offers crash and severe injury data for the entire city, including the areas surrounding Branham and Capitol Light Rail Stations, which are included in this report.

Safe Routes to School

Walk n' Roll is a program designed to increase the number of kids who walk and bike to school. While the City of San José does not offer a list of the schools currently enrolled in this program, the city does mention that of the 250+ schools in San José, each school has their own program with as much support and guidance from the City of San José's Walk n' Roll staff as needed. The San José Police Department's School Safety and Education Unit works closely with the program staff. Within a mile from the Branham and Capitol Light Rail Stations there are at least seven schools, from preschool to high school, including: Canoas Elementary School, One World Elementary Montessori School, ABC Learning Montessori, Terrell Elementary School, Rachel Carson Elementary School, Parkview Elementary School, Henry T. Gunderson High School, and the Natural Foundations Preschool (Figure 2.4).

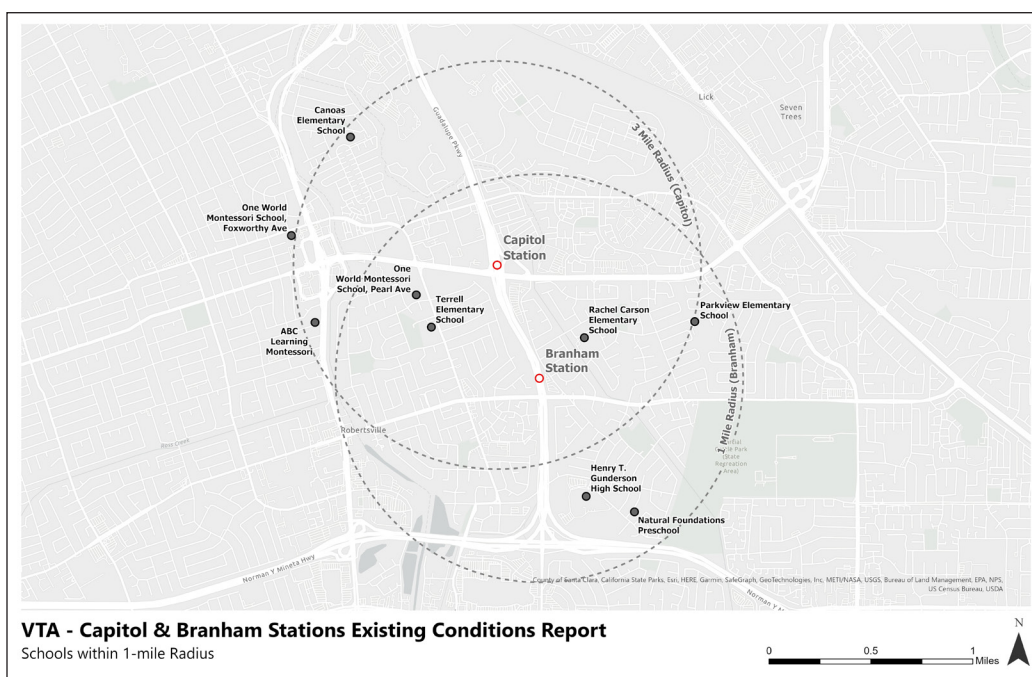


Figure 2.4
Schools within 3-Mile Radius of Capitol and Branham Stations

Shared Micromobility Projects

The City has developed regulations to promote the safe and responsible operation of these systems, especially e-scooters, with a permit program that went into effect in February 2019. Additionally, Bay Wheels is the Bay Area’s bike share system, with thousands of public bikes for use across San José, the East Bay, and San Francisco. However, the system serves mostly the downtown area of San José, with the closest station to Capitol Station being more than three miles away.

City Transportation Demand Management

The City is evaluating Transportation Demand Management (TDM) standards that focus on the use of sustainable travel options. Over the past years the City staff and project partners have evaluated existing parking, equity, and development issues in San José and reviewed parking and TDM policies implemented in other cities. At a City Council session on June 8, 2022, staff presented a number of possible alternatives for how the Zoning Ordinance could be updated. The Council voted for staff to craft an ordinance update that would establish TDM requirements in new development; and eliminate minimum parking requirements, enabling developers rather than the City to determine the level of parking that supports the development’s success.

Relevant Projects

Branham Lane Safety Project

Branham Lane has been identified as a Vision Zero Priority Safety Corridor because of the high number of fatal and severe injury crashes. The Branham Lane Quick-Build Traffic Safety Improvements will make the street safer for all by installing safety improvements that are easy to adjust and move. These include high-visibility crosswalks, protected bike lanes with added vertical posts (where possible), enhanced quick-build median island, radar speed signs to alert drivers to slow down, signal head yellow border to improve signal visibility, traffic signal timing, quick-build corner curb extensions (where feasible) to shorten pedestrian crossing distance and slow turning vehicles.

The project extends along Branham Lane, from Meridian Avenue to the west to Monterey Road to the east and is expected to be fully completed by winter 2023.



Figure 2.5
Branham Lane Safety
Project Location

Branham Lane and Kingspark Drive Safety Project

Similar to the Branham Lane Safety Project, the Branham Lane and Kingspark Drive Safety Project aims to reduce the high number of fatal and severe injury crashes as part of the Branham Lane Vision Zero Priority Safety Corridor.

The Department of Transportation (DOT) will be adding a new traffic signal at the intersection of Branham Lane and Kingspark Drive to improve safety and efficiency for walkers, rollers, bicyclists, and drivers. The project will include ADA-compliant curb ramps, corner bulb outs, new crosswalks, and pedestrian trail access from Kingspark Drive to Martial Cottle County Park. The construction is expected to be completed by fall 2023.

2.1.2 VTA

A total of nine VTA documents were reviewed pertaining to housing, station accessibility, complete streets, active transportation, and transit-oriented development (TOD).

Planning Documents and Programs

Housing Proposals

This area is an opportunity site for mixed-income developments, including affordable housing. VTA has identified both Capitol and Branham Stations as sites for future transit-oriented development, in accordance with the VTA Transit-Oriented Communities (TOC) Policy.

As illustrated in the figure below, future development at Capitol Station is split into two phases. Phase 1 will include affordable housing, community amenities, transit parking, and a reconfiguration of the bus pick up/drop off turnaround loop at Capitol Station South. Phase 2 will add additional housing and community amenities to the south, as well as additional housing and mixed-use at Capitol Station North. Branham Station is slated for affordable housing in the form of homeowner units as a part of Phase 1.



Figure 2.6
TOD Project Phasing

VTA Complete Streets Policy

In 2017, VTA published the most recent Board Memorandum on Complete Streets. The policy specifies the responsibilities that VTA will follow to ensure that Complete Streets best practices are used during the planning, design, funding, and construction of all transportation capital projects and funding programs administered by VTA, and applies to VTA employees, contractors, and consultants performing work for VTA. The document defines principles and practices that must be considered for the current access study to Capitol and Branham stations, which are: serving all users, using context sensitive design, maintaining or enhancing networks, incorporating technology, consistency with adopted plans, maintaining transportation infrastructure, seeking and responding to public input, building complete streets infrastructure, and using latest best practice design standards and guides.

SR 87 Technology Corridor Study

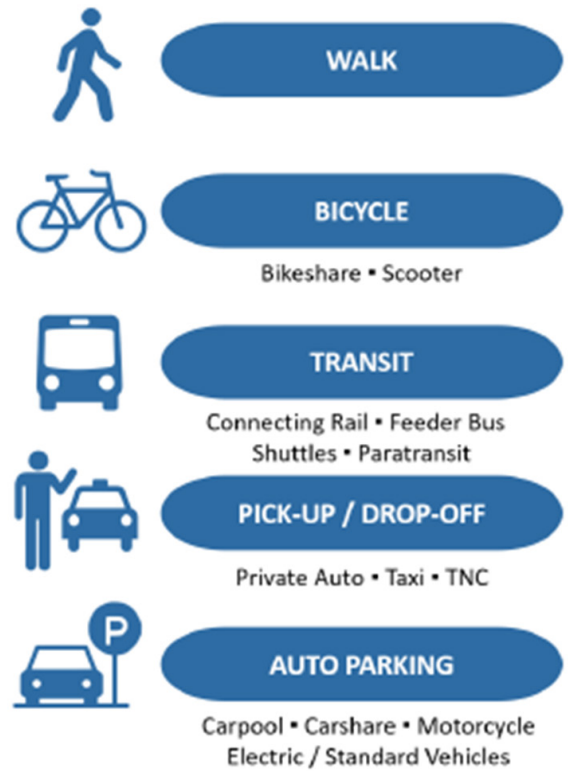
The SR 87 Technology Corridor Study highlights that SR 87 is a central corridor to the region and acts as a primary artery for the capital of Silicon Valley. This corridor provides a central connection to key employment centers in downtown San Jose, north San Jose’s golden triangle area, Mineta San Jose International Airport and Diridon Station, and many attractions in downtown San Jose including the SAP center. The document also highlights that a five-mile section of VTA’s light rail runs in the freeway median and two major bicycle trails run parallel to the freeway. Given the growing levels of congestion along this freeway and construction on new projects including Diridon Station upgrades, BART Phase II extension through downtown San Jose, land development projects along SR 87, and Google’s transit village in downtown San Jose, a new suite of transportation demand management strategies are needed. The SR 87 corridor study provides technology-based improvements and innovative solutions that can be implemented along SR 87 to maximize use of the existing infrastructure and decrease dependency on single occupancy vehicles (SOVs). Solutions are grouped into five categories: strategies that encourage efficient use of highway capacity, technology-based improvements, technology infrastructure enhancements, transportation demand management strategies, and multi-modal improvements.

VTA Station Access Policy

The 2018 VTA Station Access Policy establishes VTA’s access priorities to guide planning and investment decisions regarding station access for all modes of transportation. The guiding principles of this policy are to increase ridership, prioritize sustainable travel behavior, build effective partnerships, support sustainable development partners, and promote cost effectiveness. Additionally, the policy establishes a hierarchy for station access systemwide providing priority access to modes that can produce the highest ridership and revenue benefits for VTA at the least cost. This study incorporates the guidelines defined in the VTA Station Access Policy, to ensure these goals are met.

VTA Transit-Oriented Communities Policy

Published in 2016, originally as Transit-Oriented Development (TOD), this policy was reviewed including a name change in 2022, to VTA Transit-Oriented Communities Policy. This policy seeks to create mixed-use and mixed-income equitable Transit-Oriented Communities (TOC), through public-private and public-public partnerships on VTA-owned sites that will generate revenues, increase ridership, and create Transit-Oriented Communities. The access study for Capitol and Branham stations supports the implementation of this policy. The document includes two appendices. Appendix B’s purpose is to guarantee the optimal level of parking at VTA stations while encouraging alternatives to automobile to access the stations.



Appendix C defines the strategies to increase affordable housing in VTA TOD projects.

VTA has identified Capitol and Branham stations as Light Rail Properties available for Transit-Oriented Development (labeled as 6 and 7 on the following map), along with other sites in Santa Clara County.

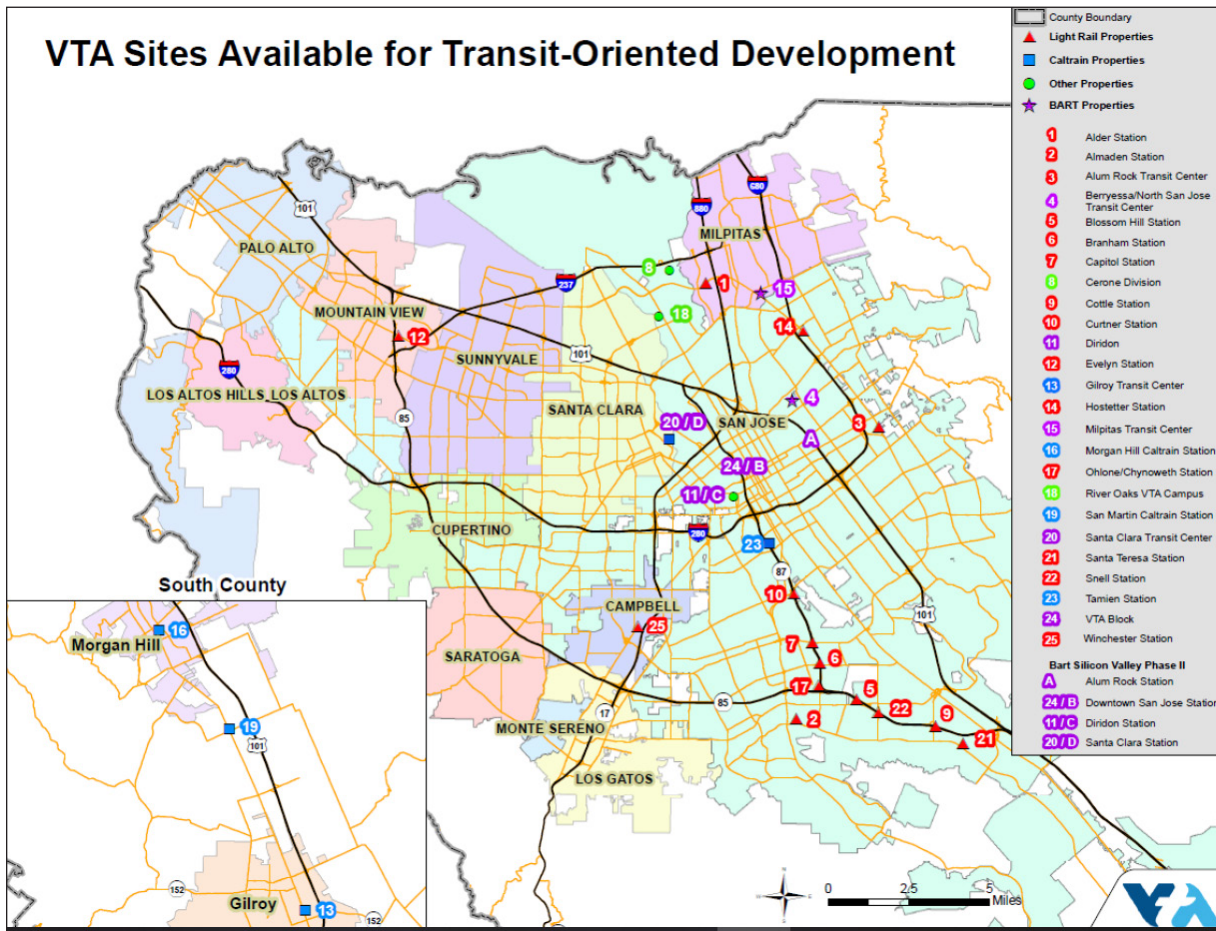


Figure 2.7
VTA Transit-Oriented Development Policy Sites

VTA Pedestrian Access to Transit Plan

The VTA’s Pedestrian Access to Transit Plan reviews the current state of pedestrian conditions within Santa Clara County. Through local observations within the county, the Pedestrian Access Plan seeks to improve the safety, comfort, and convenience of pedestrian VTA customers. While the Plan does not address either the Branham or the Capitol Stations directly as part of its focus areas (where both transit ridership and the need for pedestrian improvements are high), it does evaluate the existing conditions for pedestrians in the county. Pedestrian volumes average between 41 to 100 in a two-hour period, for this area, which is the highest range for the studied intersections in San José. In terms of road safety and vehicle-pedestrian collisions, the Branham or the Capitol Stations areas do not stand out as more or less safe than other intersections with similar pedestrian volumes.

VTA Countywide Bicycle Plan

The Countywide Bicycle Plan’s goals and policies support national, state, and regional plans and policies that view bicycling as a safe, convenient, healthy, and environmentally friendly transportation option. Additionally, nearly all local jurisdictions have adopted and updated bicycle master plans in recent years. Ideally, local plans should consider four key elements of bicycle planning: engineering, encouragement, education, and enforcement. The San José Better Bike Plan 2025 addresses these four elements.

The VTA Countywide Bicycle Plan identifies a bicycle superhighway network, which includes the Bay Trail and the Branham Corridor as ideal candidates, both of which cross the Branham or the Capitol Stations.

2016 Measure B Bicycle & Pedestrian Program

Santa Clara County voters have approved 2016 Measure B, a 30-year, half-cent countywide sales tax to enhance transit, highways, expressways and active transportation (bicycles, pedestrians and complete streets).

The Bicycle & Pedestrian Program, revised in August 2022, allocated 3.97% of the program tax revenues. VTA is yet to release a 2022 Annual Report. The 2021 report highlights five project agreements with Member Agencies for the FY 2020 – FY 2021 funding cycle, four for Final design and one for construction. It also mentions the first call-for-projects in February 2021, where eleven applications were submitted, and five projects were approved for funding by the Board. It also funded education and encouragement.

By November 2022, the 2016 Measure B had released FY22 - FY23 planning studies Call-for-Projects. It was also finalizing San Jose's Five Wounds Trail funding agreement. The allocation through FY23 is \$56.4M, and the expenditure through November 2022 had been \$3.1M.

Relevant Projects

Highway 87/Capitol Expressway Interchange

The Santa Clara Valley Transportation Authority (VTA), in partnership with the City of San Jose, is seeking to identify technology-based improvements and innovative solutions that will maximize the use of existing infrastructure without infrastructure modifications such as adding new lanes and redesigning interchanges along the State Route (SR) 87 Corridor.

However, the most recent assessments of Highway 87 and Capitol Expressway intersection suggest that an interchange is necessary, as the light-rail line creates an additional barrier for vehicles along both major corridors. There are currently three alternatives being evaluated, which involve different geometries, on-and-off-ramps and a variety of interactions with the surrounding areas. Design concepts are currently being reviewed and evaluated through the environmental review process, which is expected to take two years. Construction is projected for 2026-2029.

It is particularly relevant for this project to monitor updates and preliminary design concepts, as they will likely impact the area designated for any TOD plan at the Capitol Station.

2.2 Existing Data Review

This section provides a review of existing demographics within a 3-mile radius of Capitol and Branham Stations. Demographics discussed include population density, ethnicity, age, community mode share and vehicle availability, and socioeconomic status.

2.2.1 Population Density

The study area comprises a very diverse population. The following analysis used 2021 American Community Survey (ASC) data and estimates to understand aspects such as concentration of youth and senior populations, ethnicity, mode of access to work, vehicle ownership, median income and poverty status. These aspects play a significant role in the success of a TOD program, especially as vulnerable populations rely profoundly on access to public transportation and other non-vehicular modes of transportation.

In general, census data within a 3-mile radius from Capitol Station and Branham Station, depicts a concentration of aspects traditionally linked to vulnerability in the northeastern portion of the study area. The following maps provide a more detailed illustration of the geographic distribution of these aspects.

Population density varies within the study area. There are certain clusters where density is higher, and a few “islands” of high density surrounded by lower density neighborhoods. Since census tracts have roughly the same population in geographic areas of different sizes, the following map uses the Landscan Population Database and groups population in areas of 90x90 square feet. The first map shows the population density during day hours within the study area. This is generally associated with economic activity, schools, and other day-time activities. Squares with 2 or less people have no color. Most of the study area has a day density of between 640 to 1,600 persons per square mile, which are mostly areas where single family homes and residential land uses are located. Regions with the highest population density are (20,000 per square mile or more) clustered in the north of the study area, along the Monterey Highway office and industrial area. Other scattered pockets include schools and economic activity areas. One mile south of Branham Station, the Westfield Oakridge Mall, and the area around it, stands out as one of the most active areas during the day.

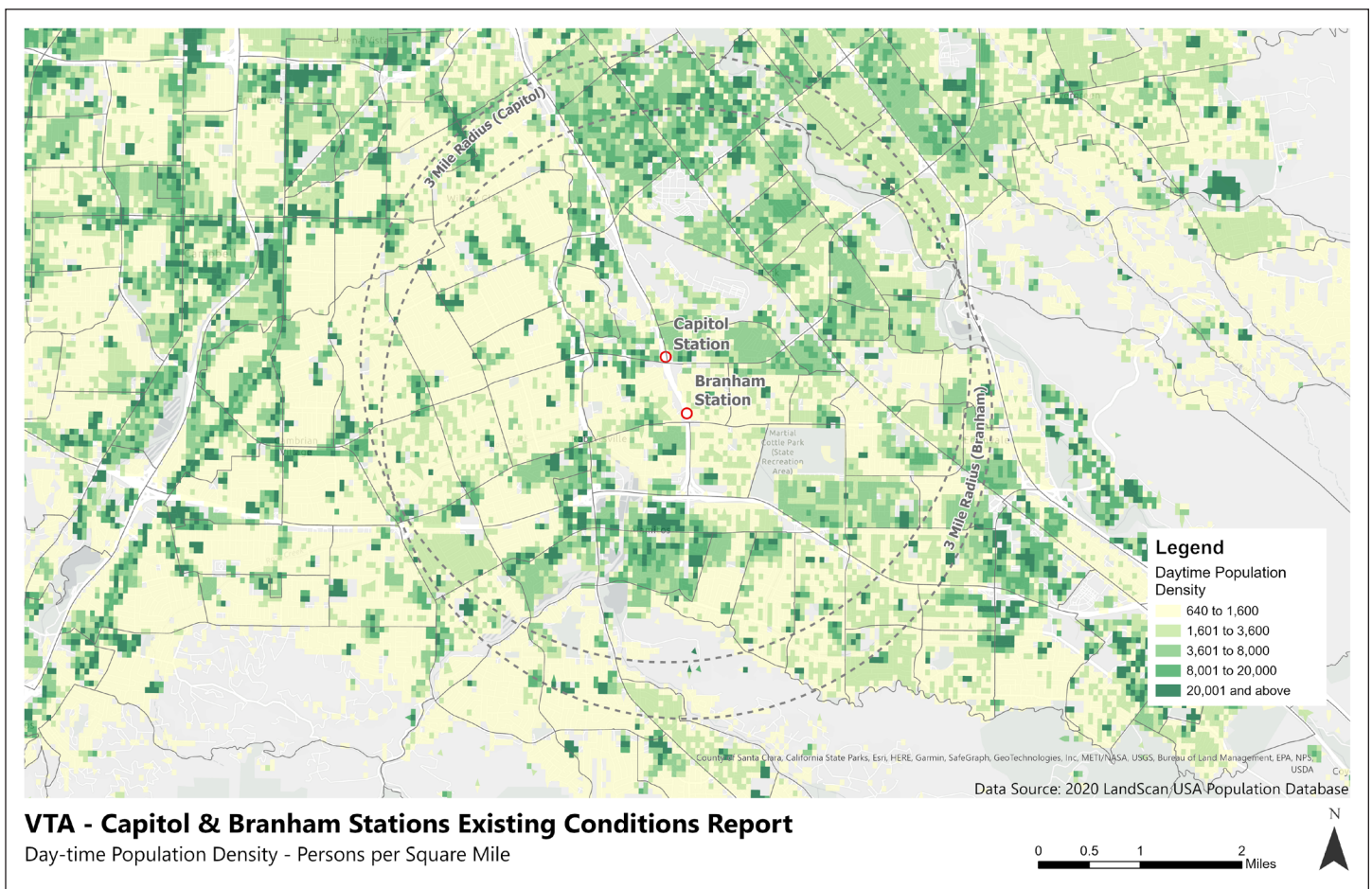


Figure 2.8
 Day-time Population Density

The night-time pattern for population density is very different. The following figure mostly illustrates where people live and spend the night. There are few areas with the lowest density category, or less than 3,000 people per square mile. Neighborhoods with the highest density, or above 15,000 people per square mile, are clustered in the northeastern portion of the study area. This likely means that people live in higher densities to the east of the stations, as opposed to the west where density is lower.

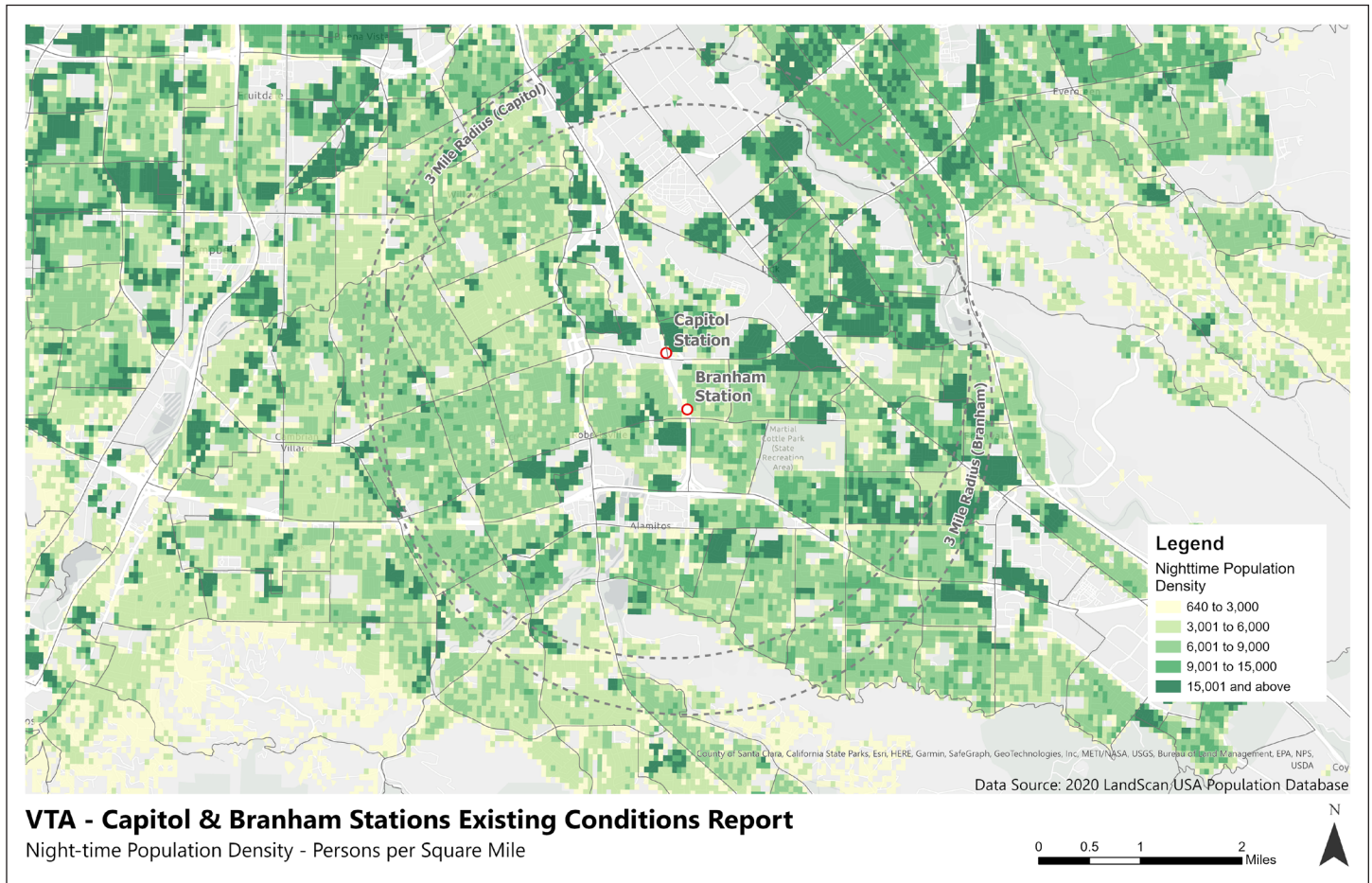


Figure 2.9
Night-time Population Density

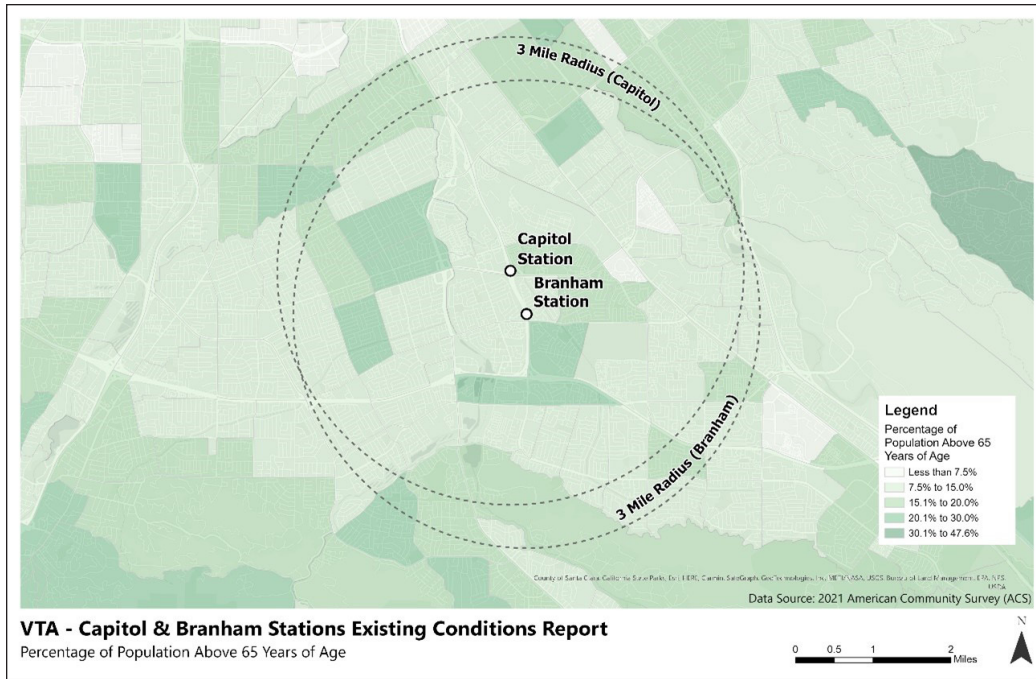


Figure 2.14
 Population Above 65 Years of Age

2.2.4 Commute Mode Share and Vehicle Availability

Regarding commuting to work patterns, the census tracts immediately surrounding both Capitol and Branham stations represent the highest share of populations commuting to work by public transportation. While the percentage of population commuting by public transportation is relatively low overall, this finding illustrates that the residents of these tracts use public transportation in a higher share than their surrounding neighborhoods.

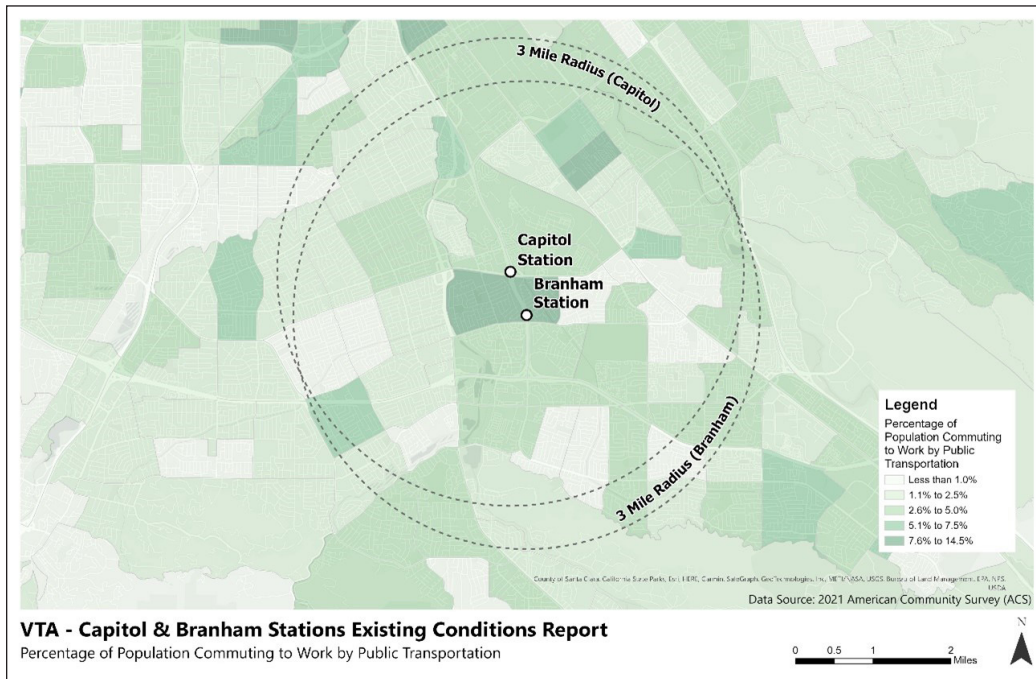


Figure 2.15
 Population Commuting by Public Transportation

2.3 Station Layout & Transit Service

Capitol and Branham Stations are located southeast of Downtown San José on the Blue Line of the Santa Clara Valley Transportation Authority Light Rail System. The Blue Line is one of three LRT lines operated by VTA, and it serves 26 stations along 17 miles. It runs from Santa Teresa in South San Jose passing through Norman Y. Mineta San Jose International Airport and Downtown to Baypointe in North San Jose.

Both VTA station platforms are in the median of Highway 87 at 0.6 miles from each other. Capitol Station is located at the intersection with Capitol Expressway, while Branham Station is one stop south at the intersection with Branham Lane.

Capitol Station is served by the Blue Line, as well as VTA bus routes 37 and 70, of which this station is the terminus. The station is immediately surrounded by Highway 87 to the west, Narvaez Avenue to the east, and is intersected by Capitol Expressway. The primary VTA parking lot is located south of Capitol Expressway and provides vehicle parking spaces, bicycle parking and lockers. A smaller VTA parking lot is located north of Capitol Expressway and provides vehicle parking spaces. At each lot, there are two driveways on Narvaez Avenue that provide vehicle access to the station parking lots, for a total of 4 driveways. Buses enter a bus-only loop via the northernmost driveway at the south lot to reach the two bus bays in the lot, located at the northern portion of the site along Capitol Expressway. The station entrance for pedestrians and bicyclists is located underneath Highway 87 to the west of the parking lots. An elevator and stairs are available on the south side to get to the station platform above on the Highway 87 median. Stairs are available on the north side. An informal pick-up/drop-off area also exists at the curb on the north side along Capitol Expressway.

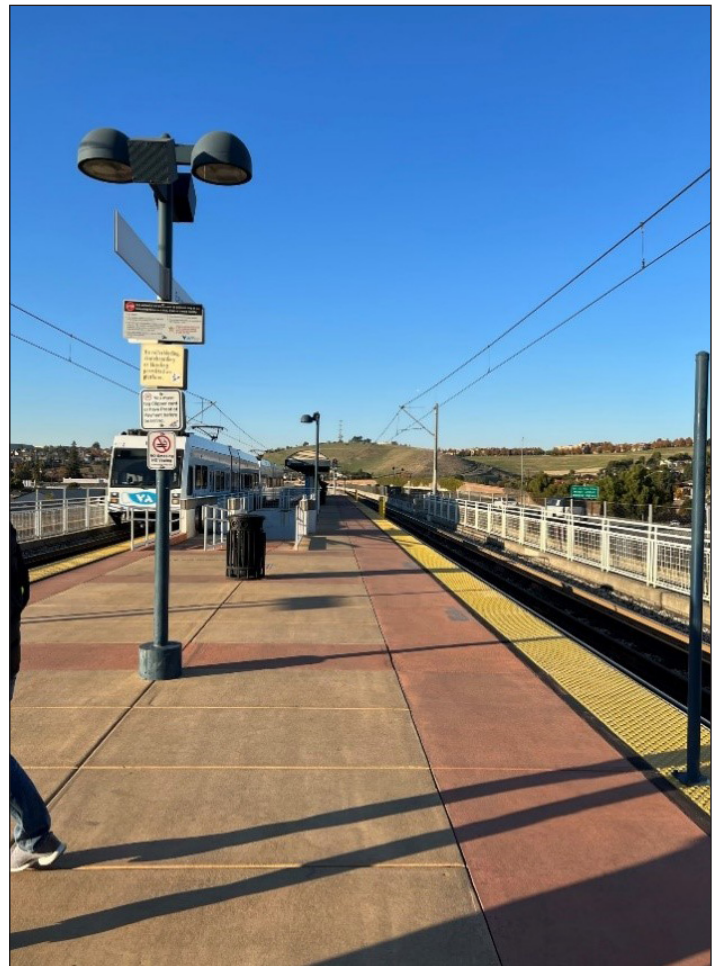


Figure 2.19
Left image: Narvaez Avenue looking south from Capitol Expressway.
Right image: Capitol Station platform in median of SR 87.

Branham Station is served by the Blue Line. It is immediately surrounded by Highway 87 to the west, Narvaez Avenue to the east, and Branham Lane to the south. The VTA parking lot currently provides vehicle parking spaces, as well as bicycle parking and lockers on the southeast corner of the lot. Vehicles may enter the lot via a driveway on Narvaez Avenue. Pedestrians and bicyclists may enter the station from the northern side of Branham Lane, which has stairs, an escalator, and an elevator going down to the station platform on the median of Highway 87. From the parking lot, pedestrians may reach the station entrance via stairs on the southwest corner of the lot or walk to the southeast corner of the site to walk up the sidewalk along Branham Lane to the station entrance.



Figure 2.20
 Left image: Entrance to Branham Station platform from Branham Lane.
 Right image: Looking west on Branham Lane along SR 87 overpass towards the station entrance.

The tables below provide average weekday, Saturday, and Sunday ridership data from VTA at Capitol Station for bus routes 37, 70, and the Blue Line.

Table 2.1: Capitol Station Weekday Ridership – October 2022

Routes	Average Daily Boardings	Average Daily Alightings
37: West Valley College - Capitol LRT	56.5	52.1
70: Capitol LRT Station - Great Mall/Main	139.7	183.7
Blue Line	205.3	189.8
Weekday Totals	401.6	425.6

Table 2.2: Capitol Station Saturday Ridership – October 2022

Routes	Average Daily Boardings	Average Daily Alightings
70: Capitol LRT Station - Great Mall/Main	66.5	150.5
Blue Line	166.6	154.9
Saturday Totals	233.1	305.4

Table 2.3 : Capitol Station Sunday Ridership – October 2022

Routes	Average Daily Boardings	Average Daily Alightings
70: Capitol LRT Station - Great Mall/Main	55.5	87.8
Blue Line	134.2	131.1
Sunday Totals	189.7	218.9

Data from VTA shows that average per trip transfers from the Blue Line to 37 and 70 and vice versa range from 4-5 transfers during off peak time and 7-8 transfers during peak time. There are not many transfers between routes 37 and 70. At the most, there are 0-1 transfers off peak and 1-2 at peak times.

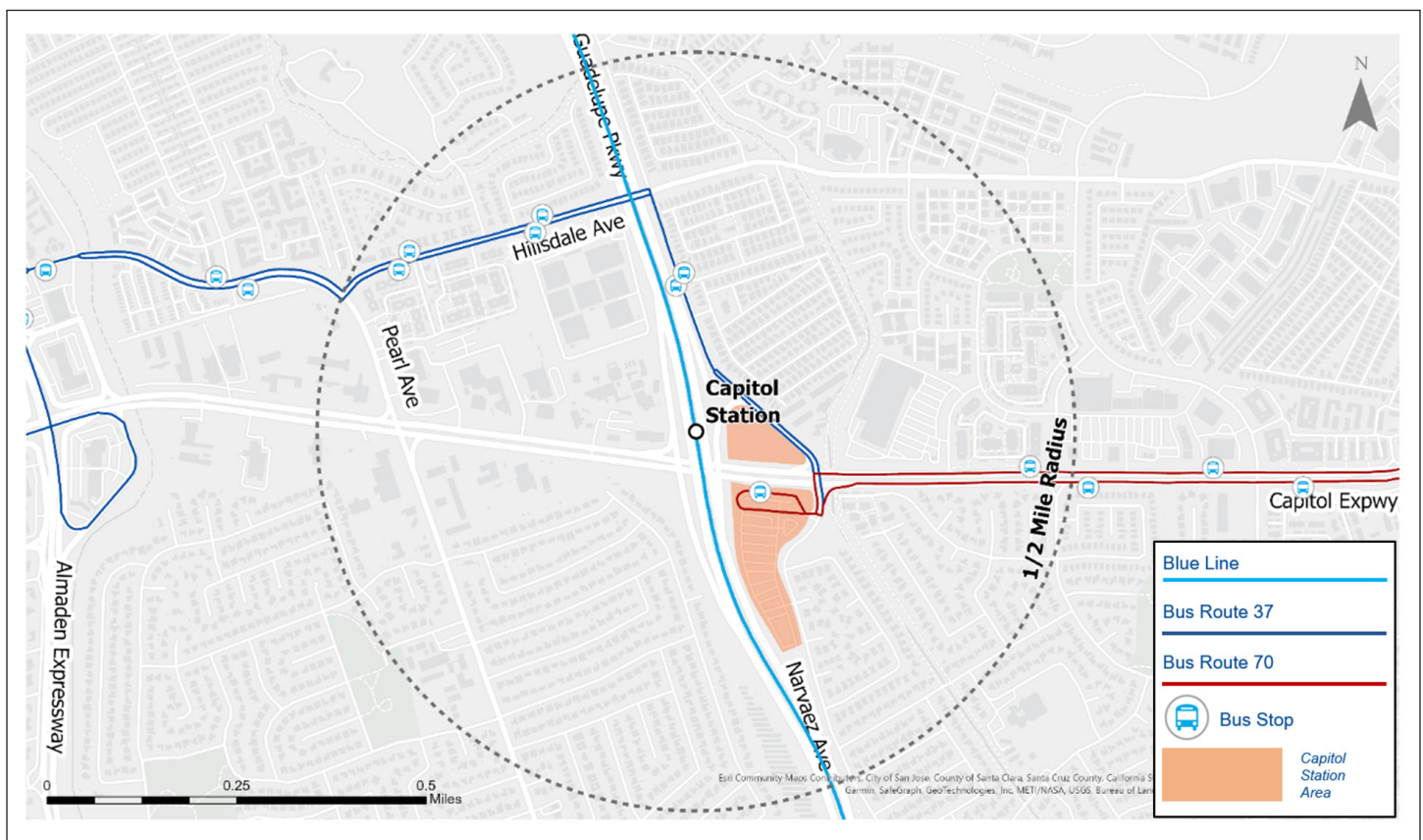


Figure 2.21
Capitol Station Transit Routes

Branham Station provides access to the Blue Line, but it is not serviced by bus. The following table offers the weekday, Saturday, and Sunday average Blue Line ridership for the month of October 2022:

Table 2.4 : Branham Station Ridership

Blue Line	Average Daily Boardings	Average Daily Alightings
Blue Line	87.4	86.6
Weekday	37.3	41.5
Saturday	31.7	37.7

2.4 Bicycle and Pedestrian Network

To take a closer look at each street surrounding the Capitol and Branham Stations, this section will provide an overview of existing conditions around the station area in terms of access points for pedestrians and bicycles. Both stations are located along the Highway 87 (Guadalupe Parkway) median creating significant accessibility challenges. Safe access paths to the stations for pedestrians and bicycles are limited and often much longer than necessary, given the surrounding multiple-lane vehicle infrastructure.

Pedestrian Access Conditions

The following figures show the area around both stations at a 1/2 mile radius from each station. One concern is the lack of sidewalks on the west side of Narvaez Ave, which runs parallel to Highway 87 and this segment of the LRT Blue Line. Additionally, the surrounding neighborhoods lack pedestrian permeability, with an urban form that restricts the movement of people in different directions. The dominance of arterial roads and cul-de-sac streets creates an additional obstacle.

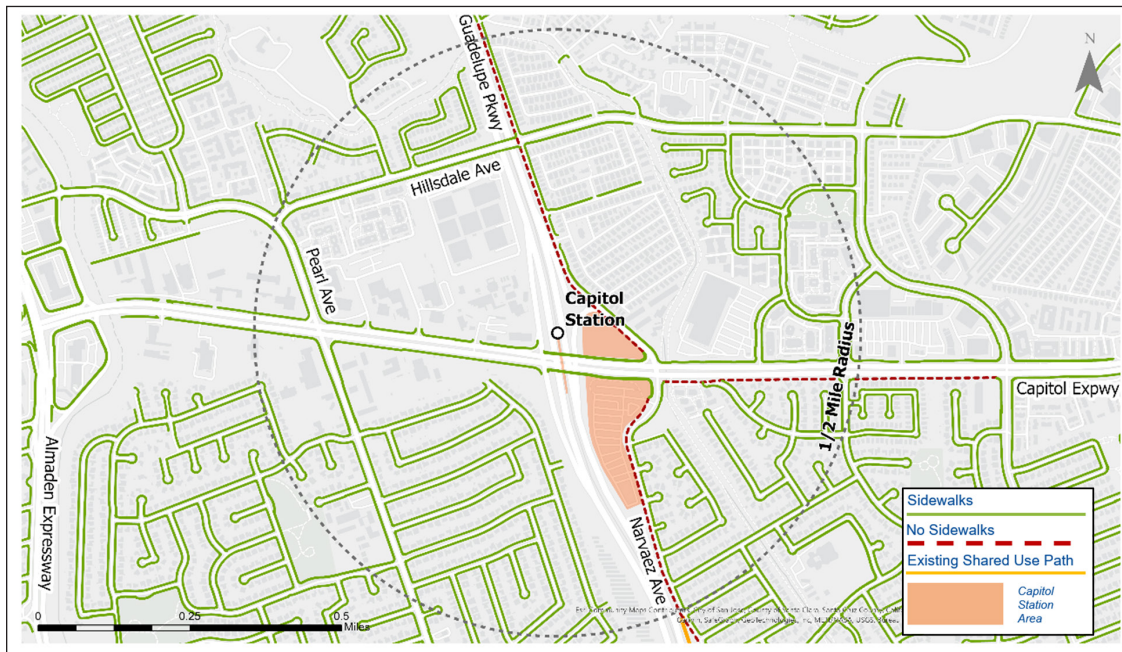


Figure 2.22
Capitol Station Pedestrian Network

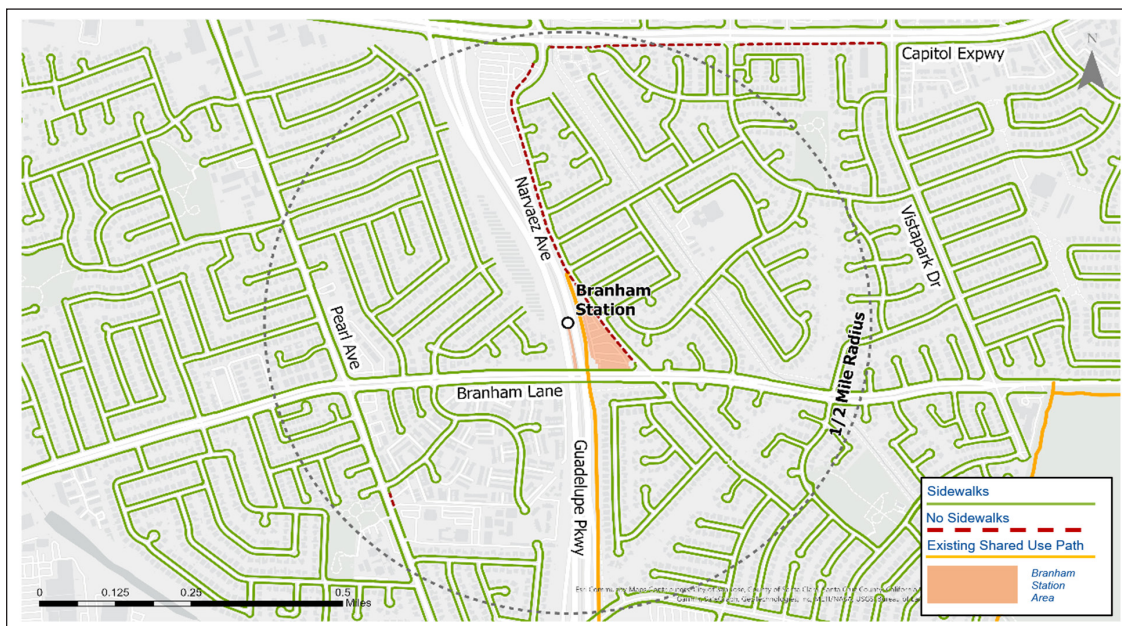


Figure 2.23
Branham Station Pedestrian Network

Bicycle Access Conditions

The following figures show the area around both stations at a 1/2 mile radius from each station. Despite the arterial roads that surround the stations, the station area is generally well connected in terms of bicycle facilities. It offers bike lanes in all four cardinal directions for both stations. However, these bike lanes are Class II bike lanes, dedicated on-street space for bicyclists in the roadway, delineated with painted pavement stripes and symbols on the roadway surface that could be upgraded with more separation from vehicles.

Class IV bike lanes are a preferred option for bicycle users as they provide additional safety, comfort and may minimize interactions with other modes of travel by introducing a vertical element of separation. Cycling along a road with vehicles moving at high speeds is rarely described as a pleasant experience, so while this area has bicycle infrastructure, this infrastructure could be improved. As noted in the San José Better Bike Plan 2025, the bike lanes near Capitol and Branham Station are not on the 5-year priority project list.



Figure 2.26
Capitol Station Bike Network



Figure 2.27
Branham Station Bike Network

When a 10-minute bike shed was created for both stations, considering an average speed of 10 miles per hour, the area appears well connected, especially along the east-west directions. While this is a good sign, it is important to better understand the local population, what their main concerns are as they use a bicycle, and whether they find that the current infrastructure meets their needs. This map accounts for elevation gain, in which, for example, biking down from Communications Hills to Capitol Station might take 6 minutes, but biking from the Capitol Station takes approximately 15 minutes.

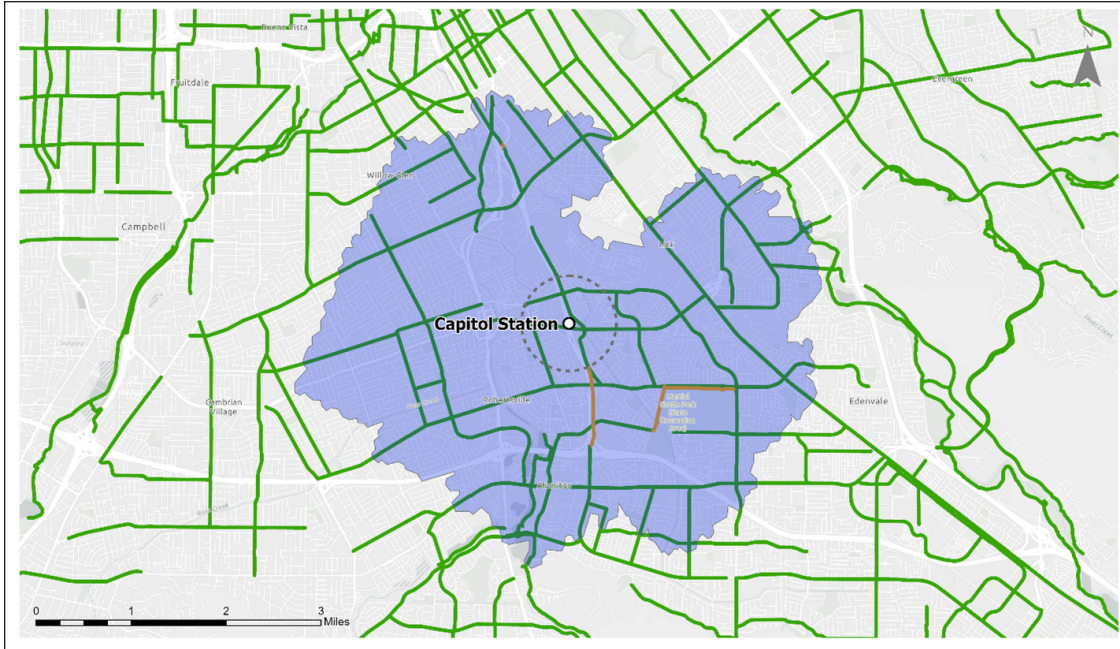


Figure 2.28
Capitol Station Ten-Minute
Bike Shed

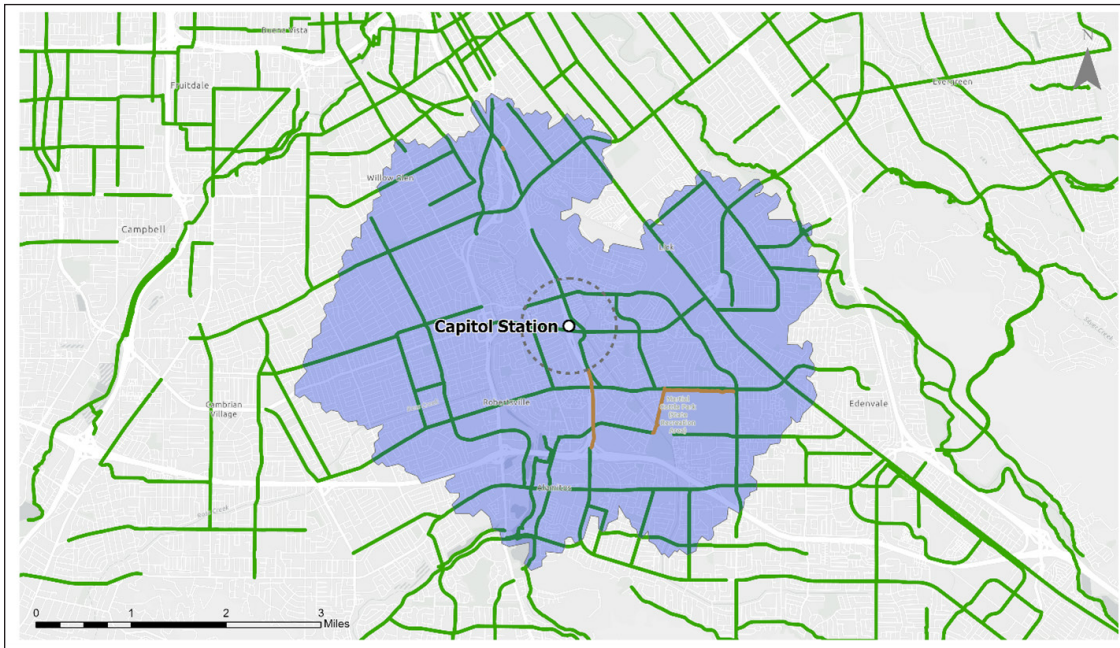


Figure 2.28
Capitol Station Ten-Minute
Bike Shed

2.5 Bicycle and Pedestrian Collisions

The safety of the existing conditions for bicyclists and pedestrians in the area can be examined by analyzing the number and location of bicycle and pedestrian collisions over a period of time. The next figures show the locations and severity of recent bicycle and pedestrian collisions within a half-mile radius of each station area. A total of five pedestrian and one bicyclist collisions were recorded within the half mile buffer of Capitol Station from 2016 to 2020 according to the Statewide Integrated Traffic Records System (SWITRS). Most notably, collisions resulting in severe or minor injuries occurred on Hillsdale Avenue and Pearl Avenue/Capitol Expressway. Collisions resulting in pedestrian fatalities occurred just outside of the study area. Similarly, a total of three pedestrian and one bicyclist collision were recorded within the half mile buffer of Branham Station during the same time period. Most collisions occurred on Branham Lane, resulting in severe or moderate injuries. Branham Lane has been identified as a Vision Zero priority corridor.

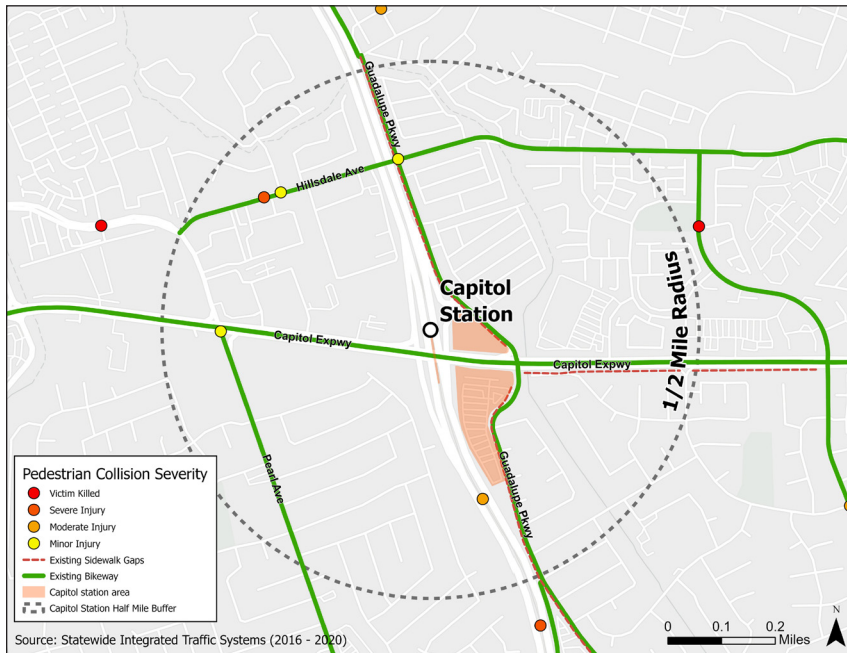


Figure 2.30
Pedestrian Collisions – Capitol Station

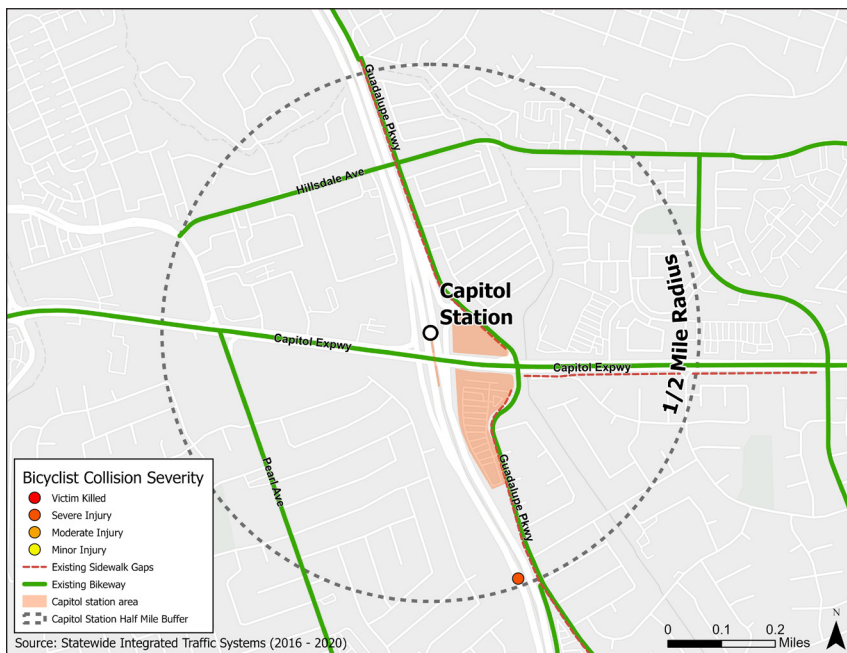


Figure 2.31
Bicycle Collisions – Capitol Station



Figure 2.32
Pedestrian Collisions – Branham Station



Figure 2.33
Bicycle Collisions – Branham Station

2.6 Volumes

The City of San José has performed traffic counts in the vicinity in recent years. While specific Average Daily Traffic (ADT) data for the intersections near the stations (Capitol Expressway and Highway 87, or Branham Lane and Highway 87) are not available, this section provides data for the surrounding area. Less than a quarter of a mile north of Capitol Station at the intersection of Narvaez Avenue and Shadow Creek Drive, ADT was 12,099 vehicles in April 2018. The next intersection north is Hillsdale Avenue along Narvaez Avenue. This intersection has had multiple volume counts over the past years, the most recent, estimates an ADT of 15,674.

For Branham Lane, the most recent volume counts were collected in August 2018, half a mile West of Branham Station. At the intersection with Glenmont Drive, the westbound ADT was 20,267 vehicles, while eastbound ADT was 20,815 vehicles.

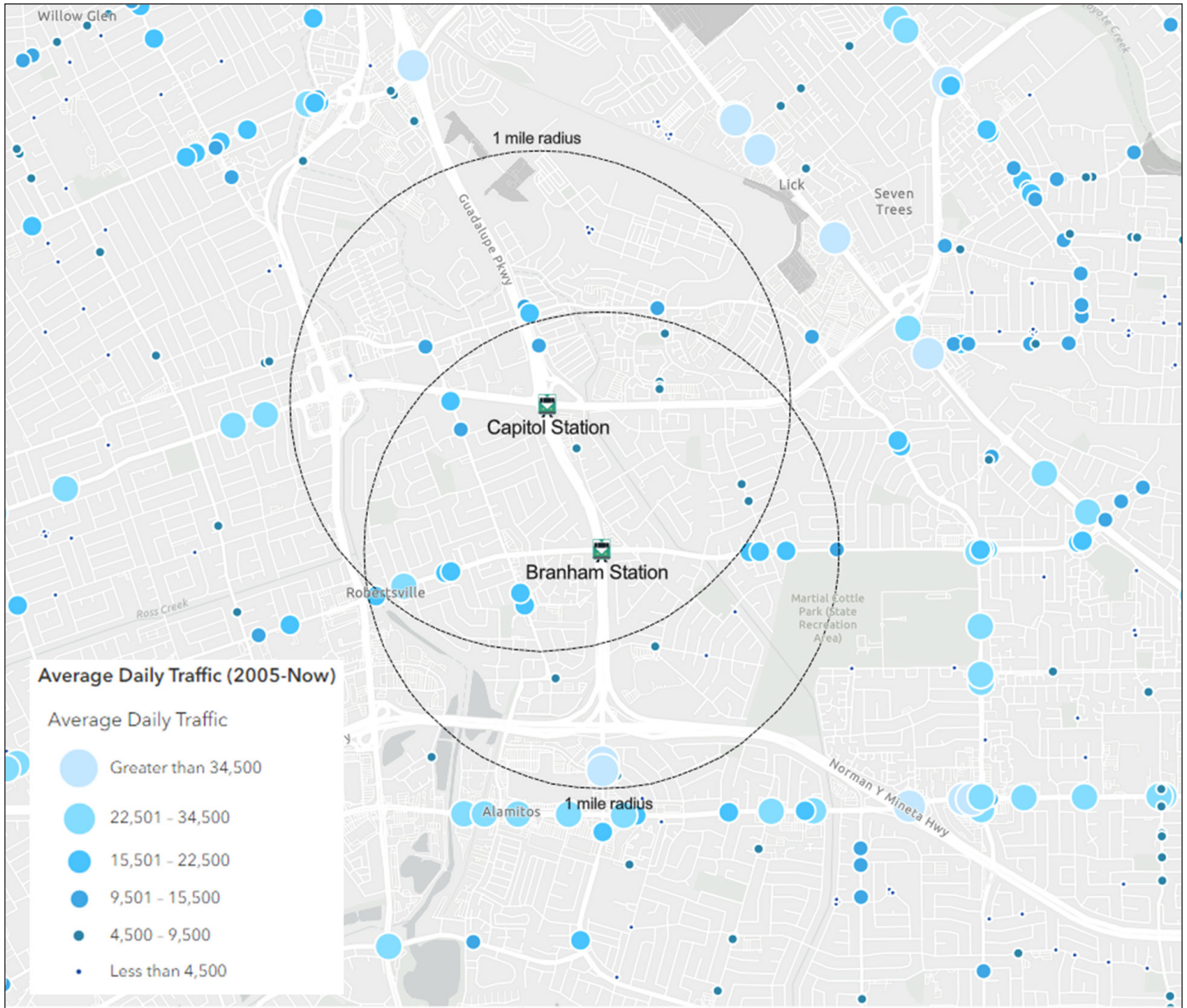


Figure 2.34
Average Daily Traffic

2.7 Data Collection and Access Mode Share

IBI Group collected mode of access and parking data at Capitol Station and Branham Station on two (2) weekdays, Tuesday, October 25, 2022, and Wednesday, October 26, 2022, between 6:00 AM and 9:00 AM, and between 3:00 PM and 6:00 PM. The morning counts observed arrivals to the stations, and the afternoon counts observed departures. These dates were chosen to provide a representative study of the area on a typical weekday. No special events were occurring in the vicinity to increase or decrease activity at either Capitol or Branham Stations on these dates.

The following data were collected:

- Arrival Time: Reported by minute
- Number of People: Reporting whether one or more people arrived.
- Type of Commutation: Mode of transportation used to get to and from the stations e.g. VTA bus, bike, scooter, skateboard, etc.
- Parking Activity: Whether the vehicle was there for a drop off, to pick up someone, or if it parked
- Parking Vehicle Volume: The number of vehicles that arrived and left park-and-ride facilities

This data was surveyed in twelve (12) areas, divided in three different zones, as illustrated in the following figures. The three zones were defined as follows:

- North Zone, with three lots/driveways (Capitol Station North)
- Middle Zone, with five lots/driveways (Capitol Station South)
- South Zone, with four lots/driveways. (Branham Station)

Additionally, parking lot activity was captured in three different locations. Data was collected in 15-minute increments during each collection period, reporting vehicles arriving and/or leaving the parking lot. These observations took place in three different parking lot locations, Capitol Expressway North, Capitol Expressway South, and Branham Station.

The top modes of arrival and departure at each of the three data collection areas in Capitol and Branham Stations are also shown in the next two figures. The mode splits are detailed further in this section. Apart from this, it was consistently found that parking lots do not have significant movement during weekdays.



Figure 2.35
Data Collection Areas – Capitol Station

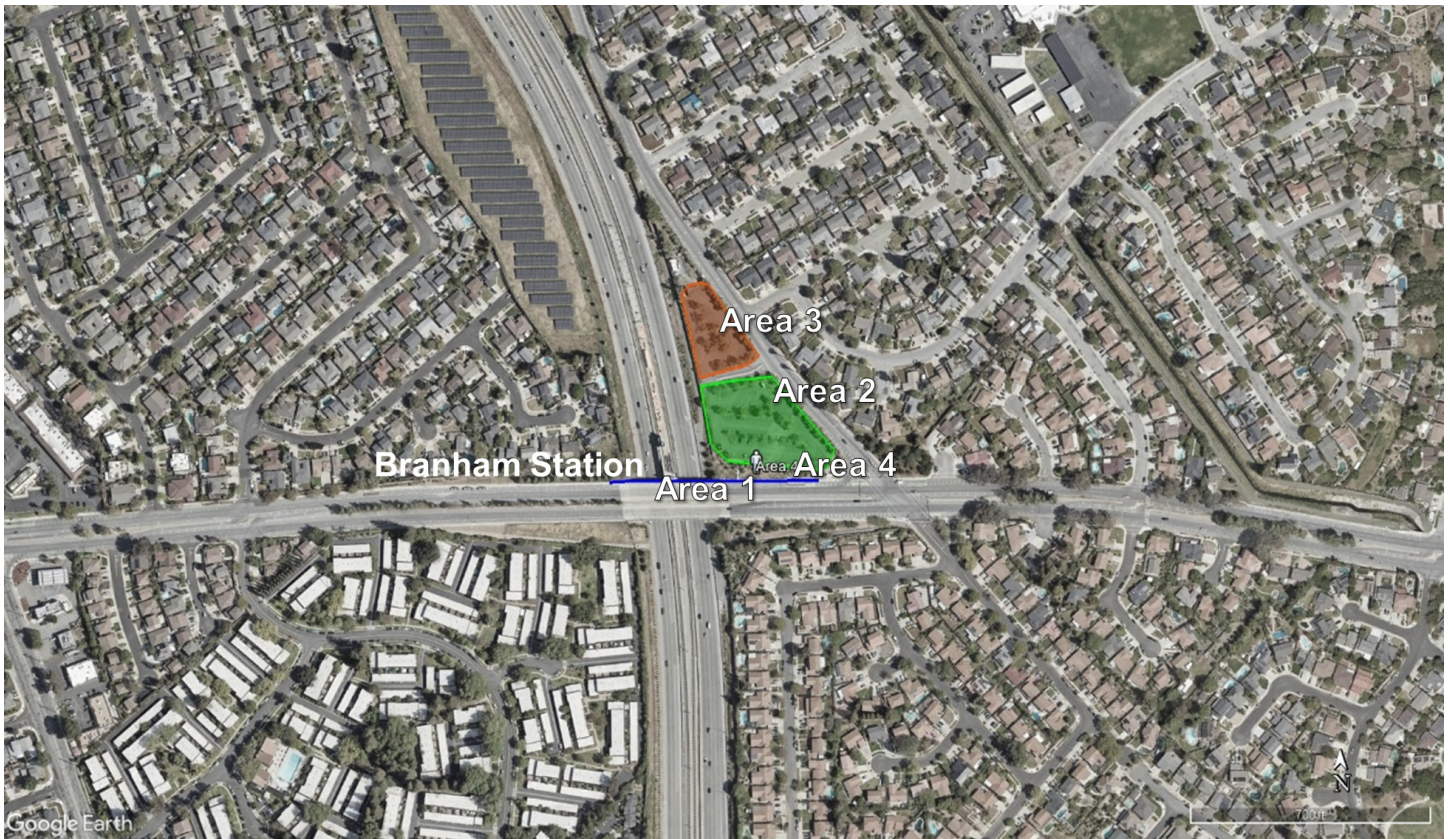


Figure 2.36
Data Collection Areas – Branham Station

Parking lot activity in the area is relatively low, with more movement through the afternoon hours. The following figures show movements in the three parking lots zones throughout the day, with Capitol Expressway South having the largest number of vehicles entering and exiting, with a total of 172 (in and out) movements during the study times. Branham Station lots have the least parking activity of the study area, with a total of 30 movements (in and out) throughout the day.

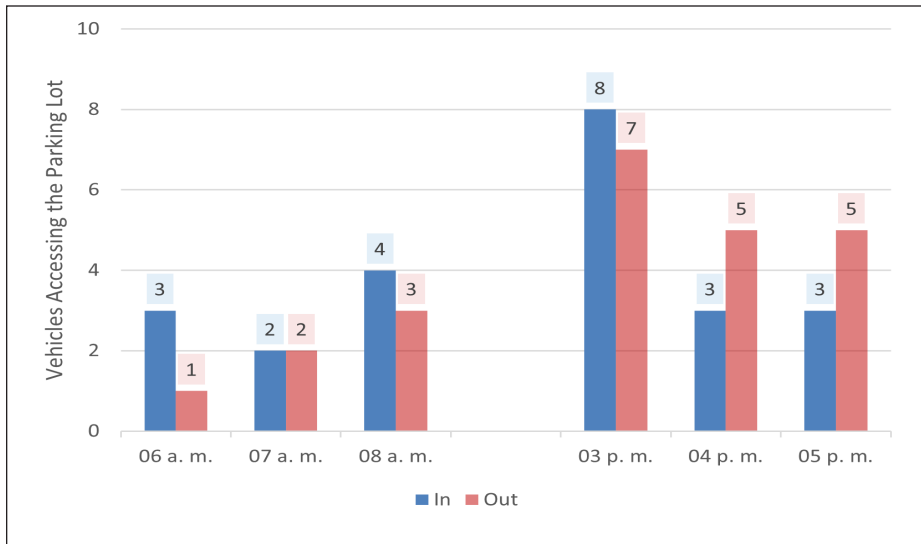


Figure 2.37
Zone 1: Capitol Expressway North Lot

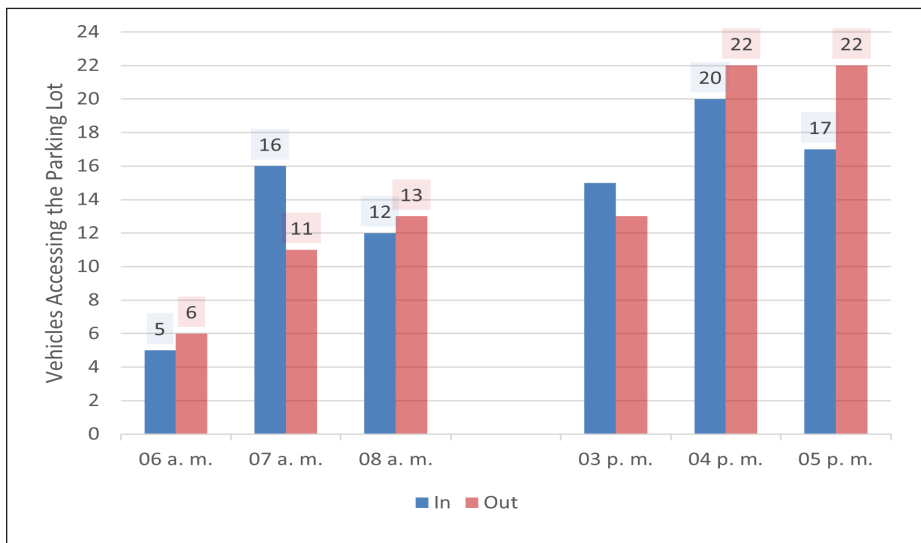


Figure 2.38
Zone 2: Capitol Expressway South Lot

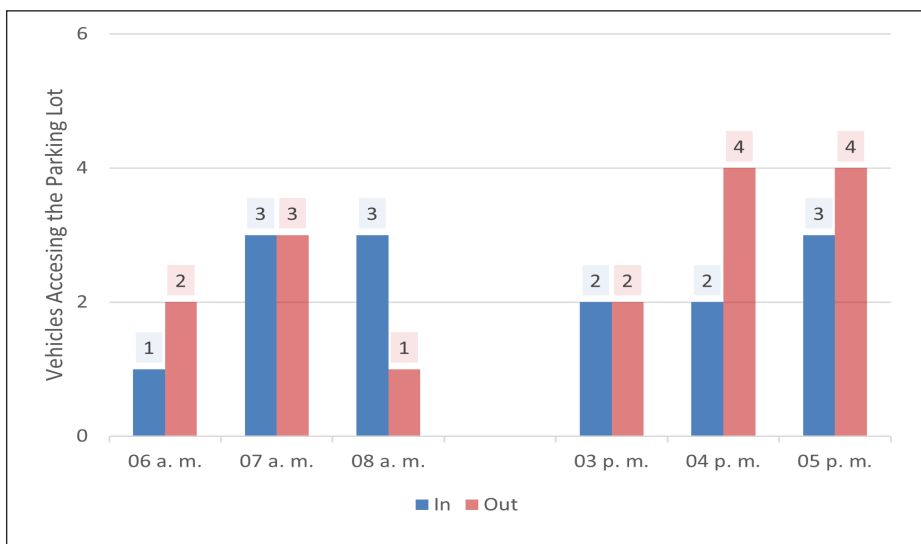


Figure 2.39
Zone 3: Branham Lane Lot

2.7.1 Mode of Arrival

The mode of arrival counts at Capitol Station North, South, and along Capitol Expressway is summarized in the figure below. All users arriving by car or car pick-up/drop-off utilize the parking lots. Capitol North Lot is accessed entirely by car, while Capitol South Lot is accessed by car (85%), walking (10%), and bus (5%). Most pedestrian activity occurs along Capitol Expressway (70%), along with bicycles, skateboards, and scooters (30%). Along Capitol Expressway, most activity occurs at the southern entrance, including drop-off by bus or charter.

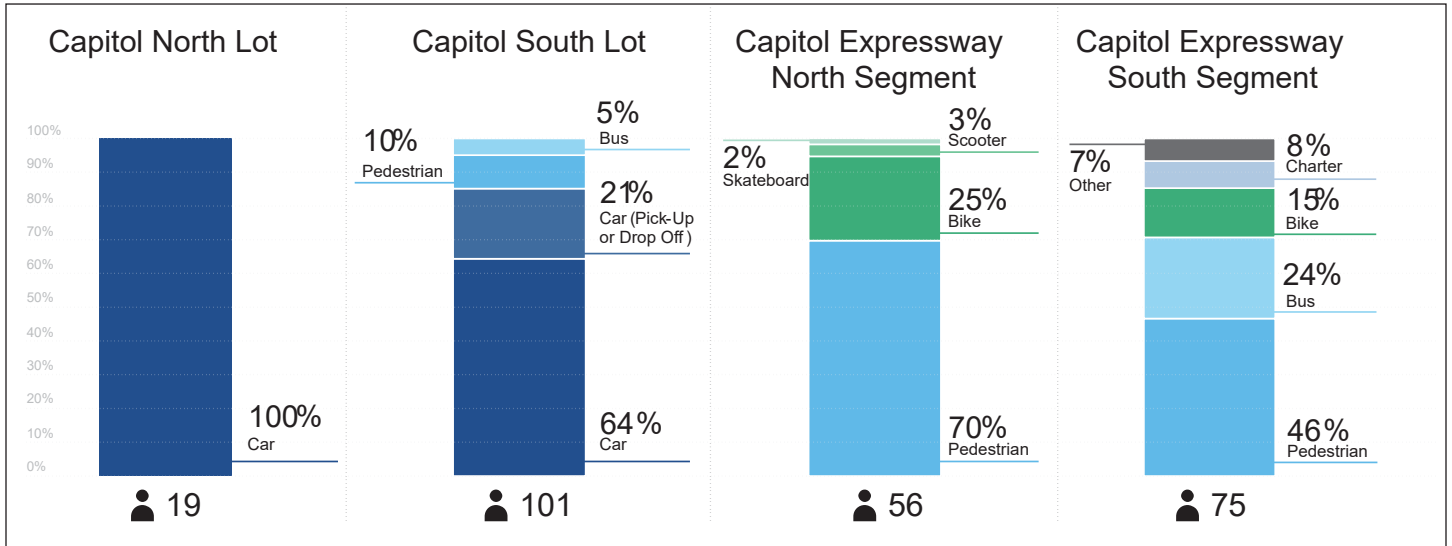


Figure 2.40
Mode of Arrival at Capitol Station

Users accessing the Branham Station lot arrived by car or car pick-up/drop-off. Users arriving to the station along Branham Lane arrived by walking (83%), car pick-up/drop-off (6%), bike (9%), or skateboard (2%).

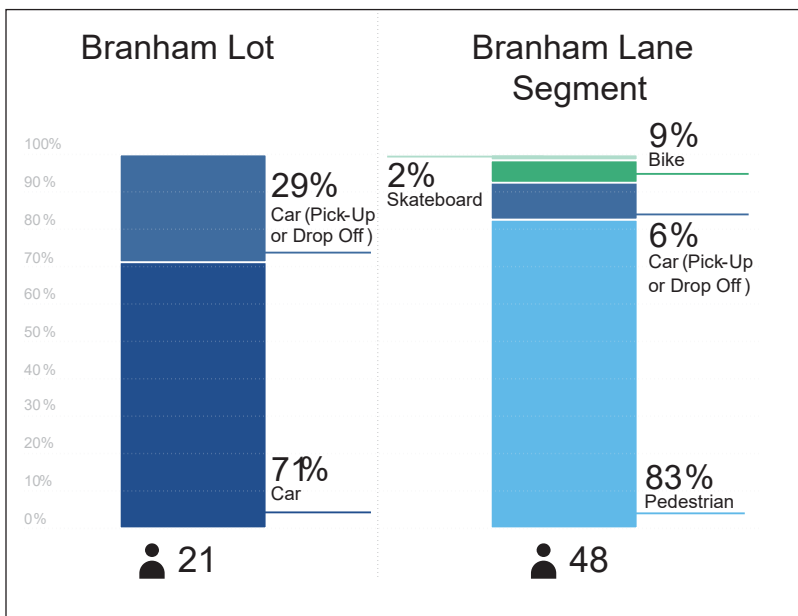


Figure 2.41
Mode of Arrival at Branham Station

2.7.2 Parking Activity

The survey also recorded the number of parked vehicles in each zone. For Capitol Station, most vehicles enter the parking lots and park with very few movements over the weekday.

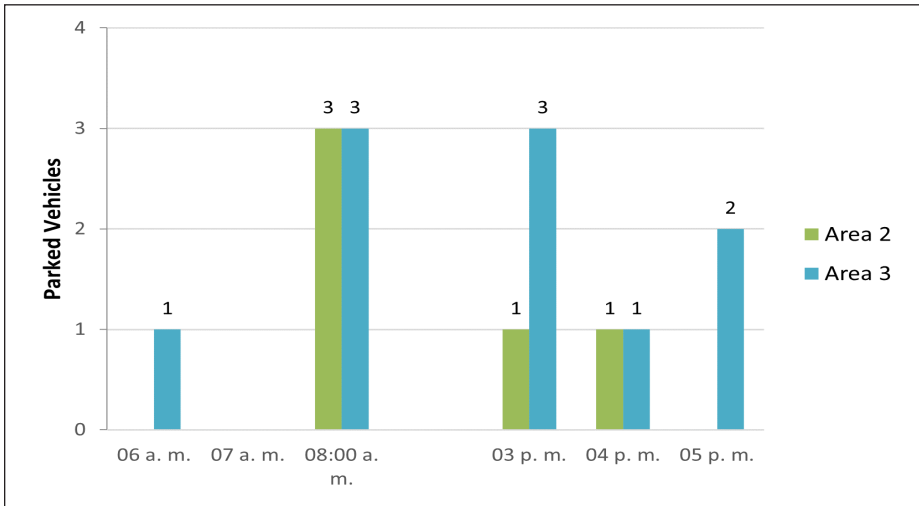


Figure 2.42
Parked Vehicles in Zone 1: Capitol North Lot

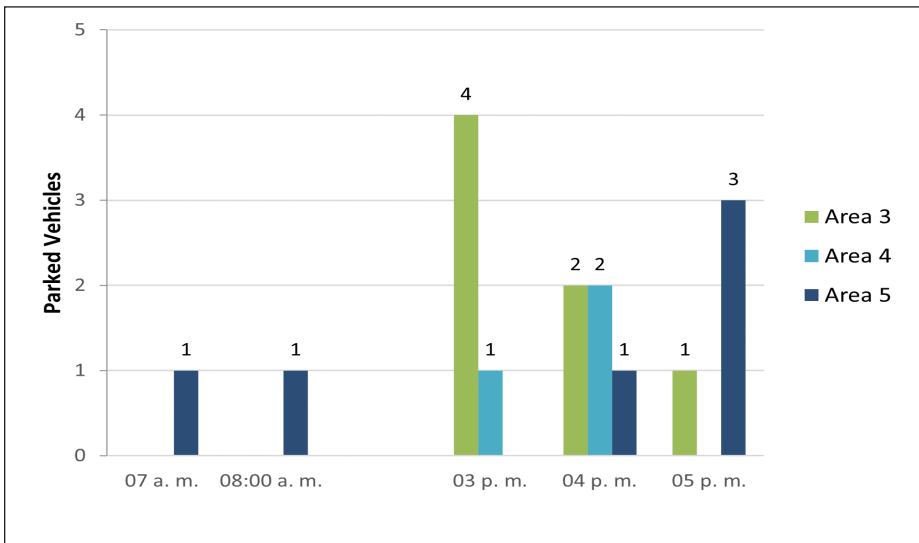


Figure 2.43
Parked Vehicles in Zone 2: Capitol South Lot

Similar to Capitol Station, parking activity at the Branham Station Lot is low, with slightly more activity in the morning. However, these numbers are too low to assume a generalized pattern.

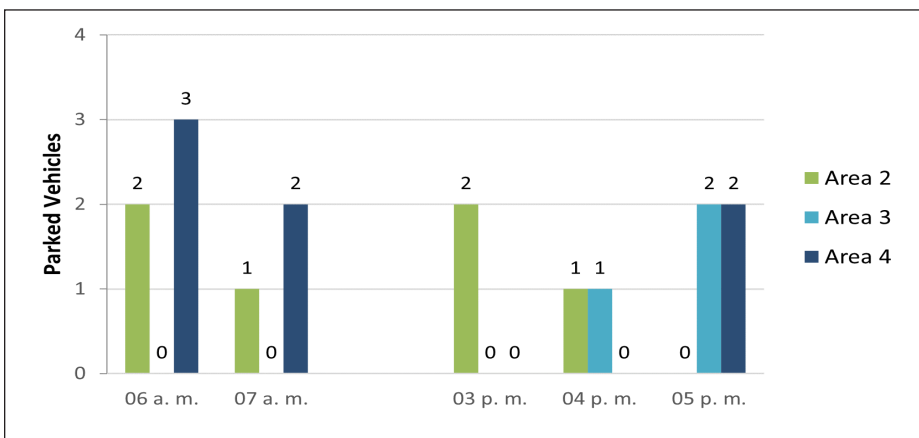


Figure 2.44
Parked Vehicles in Zone 3: Branham Station Lot

2.8 Analysis of Access Patterns and Issues

Overall, the technical analysis conducted for this study found that the built environment in the area largely privileges private vehicle and low-density development, discouraging transit-oriented lifestyles. Transit ridership and activity at each of the stations is generally low. The environment surrounding the stations does not currently facilitate direct and rapid access to the stations for non-vehicular modes of transportation.

Walking paths are complex, limited by sidewalks that follow longer than necessary routes given the road infrastructure, and often require pedestrians to walk between blind facades and fast-moving traffic. The walking permeability of the area is currently not ideal, especially with the lack of sidewalk along Narvaez Avenue along both stations. At Capitol Station in particular, pedestrians who begin their trip on the northern side of the station and may have accessibility needs, currently need to cross Capitol Expressway to reach the southern side of the station entrance, which has elevator access. The northern side of the station entrance does not have elevator access. Additionally, cul-de-sacs in the surrounding neighborhoods limit efficient access to the station for both pedestrians and bicyclists who live in those neighborhoods.

While there is infrastructure for bicyclists, the current infrastructure is unlikely to welcome the “interested-but-concerned” occasional cyclists, where people of different age ranges and all genders feel safe enough riding a bicycle to Capitol or Branham Stations, particularly due to the lack of physical separation from vehicles travelling at high speeds along the wide arterials surrounding the stations. The bikeway adjacent to SR 87, which is a Class I multi-use path, is not well-marked and its entrance near Branham Station is generally unwelcoming. The path ends at the northern tip of the Branham Station parking lot on the west side of Narvaez Avenue with no crosswalk across Narvaez Avenue to reach the sidewalk on the eastern side of the street.

Finally, the parking infrastructure was found to be highly underutilized. The transit-oriented developments planned for these sites will bring a higher number of residents to the area and an opportunity to plan for better access around the developments and to the stations to encourage transit use.

3 Future Conditions

To further analyze station access needs, the following section provides an analysis of future anticipated conditions for each site. This includes preliminary TOD site plans, SR 87 interchange alternatives currently under consideration, and proposed recommendations from other plans for the study areas.

As described in existing conditions section of this report, the first phase of future TOD development at Capitol Station is planned to include affordable housing, bus pick-up/drop-off, community amenities, and transit parking in the northern half of the Capitol South Lot. At Branham Station, this phase includes affordable housing, likely affordable homeownership units. There will be no replacement parking at Branham Station and all transit parking will be redirected to Capitol Station. As such, it will be important to improve access not only to the individual stations, but between the stations as well. A future phase will include additional development at Capitol Station, including housing and mixed-use development at Capitol North Lot, and further housing and community amenities on the southern half of the Capitol South Lot.



Figure 3.1
Future TOD Project Phasing

3.1 Capitol Station

There are preliminary site plans for the development at Capitol Station, as well as interchange alternatives that can potentially impact the site.

Capitol Station Preliminary Site Plan

The preliminary site plan for the Capitol Station South lot includes north and south residential buildings on the eastern side of the lot, a relocated bus loop/turnaround and transit plaza on the western side of the lot, and potential future development on the south half of the lot (Figure 3.2).

Figure 3.3 illustrates the associated circulation plan. Pedestrian paths are illustrated in orange, along Capitol Expressway, Narvaez Avenue including through the eastern side of the site, as well as a north-south vehicle-free paseo through the center of the lot between the bus turnaround and residential buildings. Bicycles may use similar pathways. Buses and rideshare may utilize the west turnaround, entering from the southern entrance on Narvaez Avenue, while other vehicles will access the site from the northernmost driveway on Narvaez Avenue.

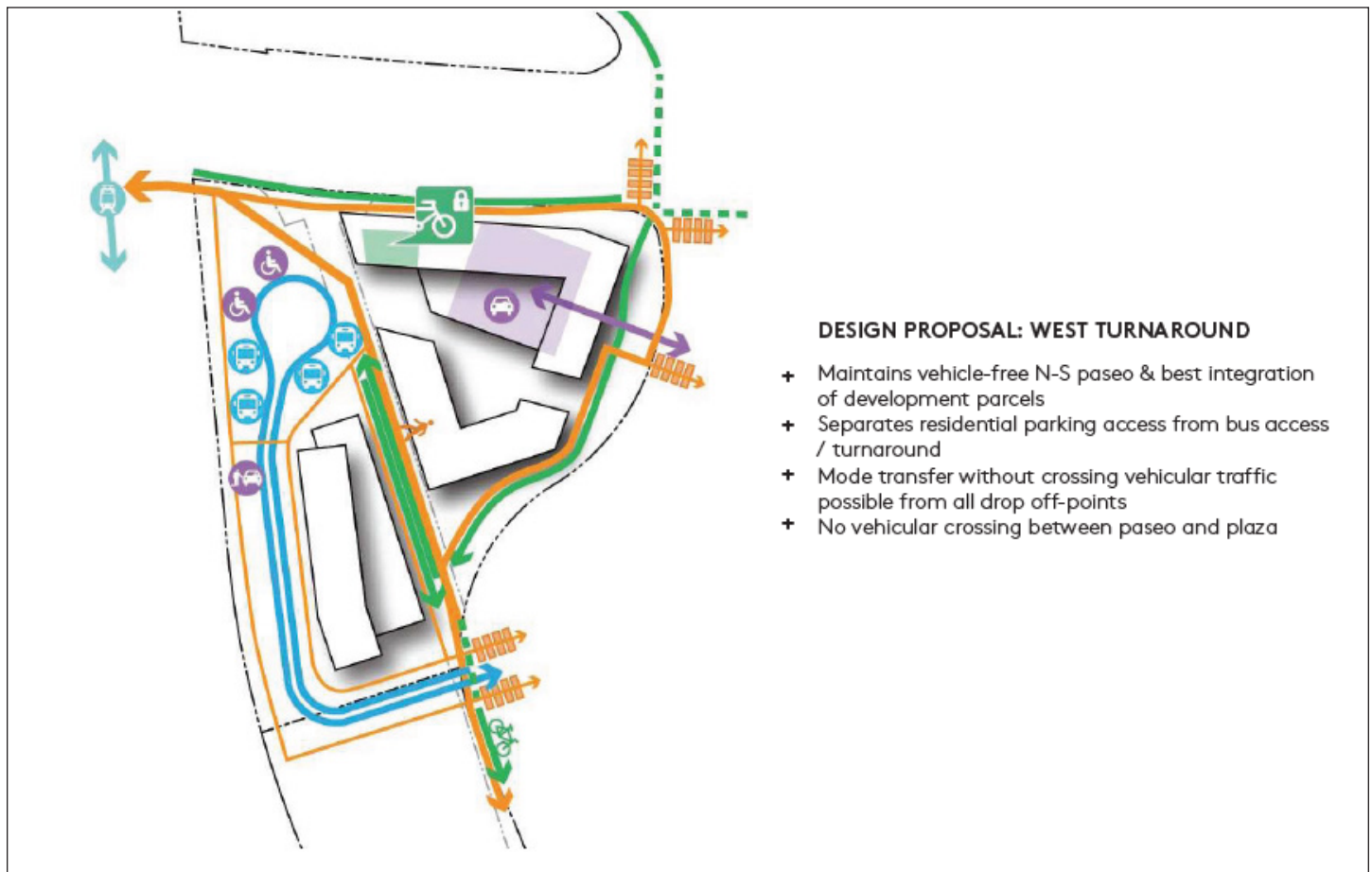


Figure 3.3
West Turnaround Design Proposal

The proposed circulation plan addresses some of the current access issues by providing a mobility hub that is accessed by the southern entrance of the site and introduces a new crosswalk at Bridget Drive. This consolidates the bus bays and pick-up/drop-off area conveniently close to the station entrance and away from the intersection of Capitol Expressway and Narvaez Avenue, where there tend to be vehicle congestion issues. This also separates residential vehicle access from transit access. The vehicle-free paseo provides a convenient path for pedestrians and bicyclists to travel directly through the site, creating dedicated space for those traveling without a vehicle. However, the development itself will likely increase vehicle traffic to the area by introducing the need for residential vehicle access to the site, so additional transportation demand management strategies should be considered.



Figure 3.2
Capitol Station South Preliminary Proposed Site Plan (Roof View)

SR-87 Interchange Alternatives

The City of San Jose and VTA are currently studying possible interchange configurations to improve traffic circulation, bicycle and pedestrian connectivity, and multimodal connections at the SR 87/Capitol Expressway Interchange that may impact the site plans discussed above. A preliminary alternative analysis included the following alternatives. Draft diagram illustrations are also included below.³

- **Tight Diamond:** The Tight Diamond Alternative would reconfigure the existing SR 87/Capitol Expressway northbound off-ramp to connect to the south side of Capitol Expressway and realign the northbound on-ramp to connect to the north side of Capitol Expressway. Ramp connections to Narvaez Avenue would be removed. Sidewalks and Class IV bikeways would be provided along Narvaez Avenue and Capitol Expressway.
- **Braided Ramp:** The Braided Ramp Alternative would reconfigure the existing SR 87/Capitol Expressway northbound on-ramp from a hook ramp from Narvaez Avenue to a tight diamond connection to Capitol Expressway. The existing alignment of the northbound off-ramp would remain; however, the ramp would be lowered to accommodate the grade-separated crossing of the northbound on-ramp. A roundabout would be provided at the terminus of the northbound off-ramp on Narvaez Avenue to mitigate potential wrong-way movements onto the ramp. Sidewalks and Class IV bikeways would be provided along Narvaez Avenue and Capitol Expressway. Roadside and median landscaping would be provided along Narvaez Avenue.
- **Loop Off-Ramp:** The Loop Off-Ramp Alternative would reconfigure the existing SR 87/Capitol Expressway northbound off-ramp to connect to the north side of Capitol Expressway and realign the northbound on-ramp to connect to the north side of Capitol Expressway. Sidewalks and Class IV bikeways would be provided along Narvaez Avenue and Capitol Expressway.

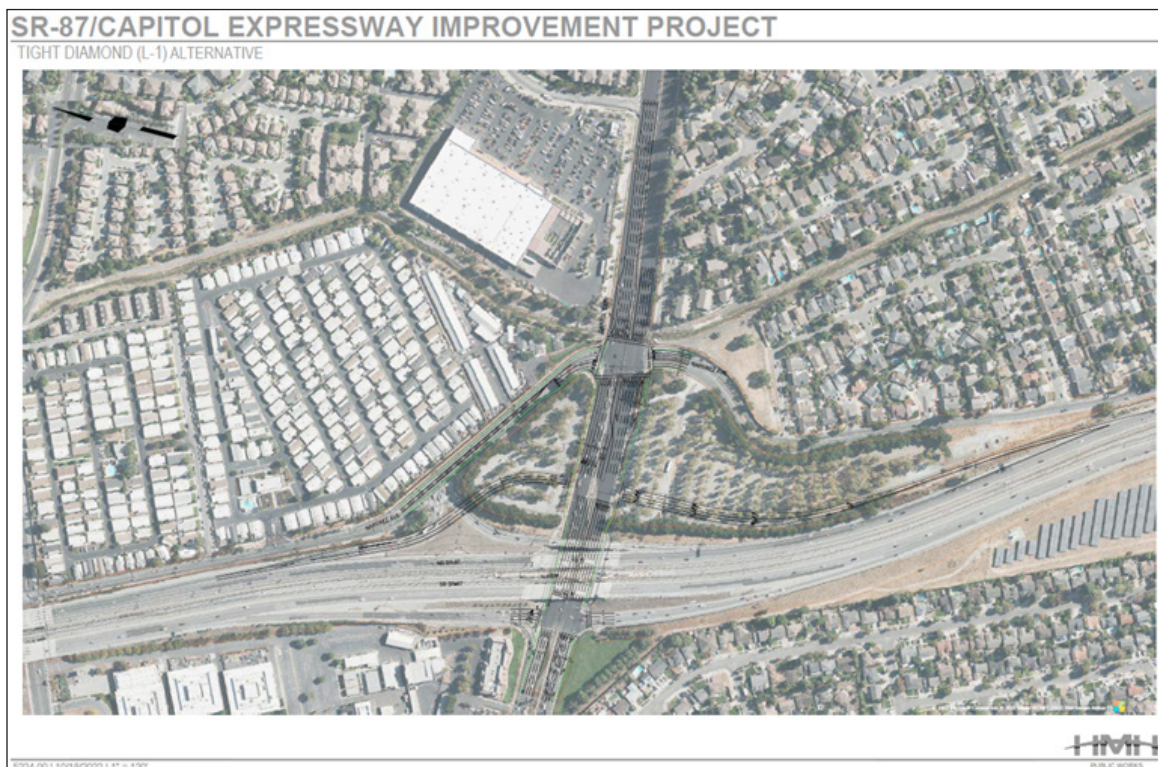


Figure 3.4
Tight Diamond
Alternative

³ The diagrams are conceptual and created for preliminary planning. This document should be used for illustrative purposes and discussion only. VTA assumes no responsibility or liability for reliance upon this document by unauthorized third parties.



Figure 3.5
Braided Ramp
Alternative



Figure 3.6
Loop Off-Ramp
Alternative

The Tight Diamond alternative is the only alternative that impacts the South Lot, and thus the potential TOD development and bus loop shown in the preliminary site plan. It also routes vehicle traffic onto both eastbound and westbound Capitol Expressway. If this alternative is implemented, the bus loop will need to be shifted to the east of its current proposed location on the South Lot.

The Braided Ramp and Loop Off-Ramp alternatives do not impact the South Lot but will instead impact the North Lot. These alternatives will also reroute vehicle traffic onto or off of westbound Capitol Expressway. If any of these alternatives are implemented, it is especially recommended that a central mobility hub and designated pick-up/drop-off for the station is located on the South Lot, as is currently proposed, and that wayfinding to this area is well placed. Pedestrian pathways through the South Lot to the station, including the paseo, should be well marked. Pathways along Narvaez Avenue should direct pedestrians through the lot as to avoid Capitol Expressway due to an anticipated increase in traffic.

Future Bike/Pedestrian Overcrossing

To address the existing gap in the SR 87, the interchange project has the opportunity to accommodate a future bike/pedestrian overcrossing facility that would eliminate the need for trail users to cross Capitol Expressway at grade. At the time of this report, construction of a bike/pedestrian overcrossing is not a part of the project; however, the interchange project alternatives will consider overcrossing alignments that are feasible and have the potential for inclusion in the PA&ED and PS&E phases of the project or as a separate project in the future. Preliminary locations and Class I trail configurations are provided below for the Braided Ramp and Loop Off-Ramp alternatives, based on the interchange project Alternatives Analysis Report (January 2023). These alignments are not comprehensive or prescriptive, but demonstrate potential accommodations that could be made in the future.

If implemented, these overcrossings would close the gap in the SR 87 Bikeway and provide a connection between the Bikeway and the proposed Class IV along Narvaez Avenue.

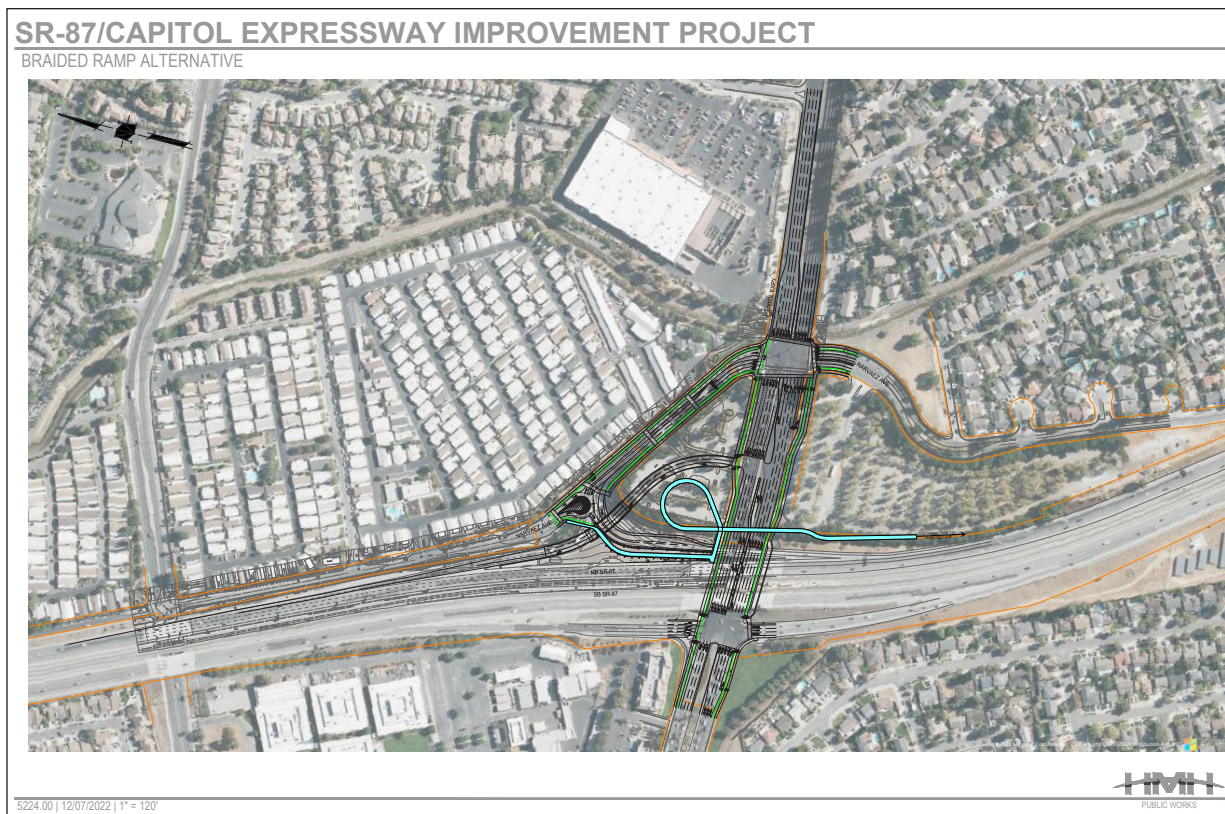


Figure 3.7
Overcrossing
with Braided
Ramp Alternative

SR-87/CAPITOL EXPRESSWAY IMPROVEMENT PROJECT

LOOP OFF-RAMP (L-8) ALTERNATIVE



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5224.00 | 11/30/2022 | 1" = 120'



Figure 3.8
Overcrossing
with Loop Off-
Ramp Alternative

3.2 Branham Station

The site plan for the Branham Station TOD is currently being developed. At the time of this report, the site access plan was shared with the project team and is illustrated below. According to this preliminary illustration, the primary driveway for vehicle access will move to align with Indigo Drive. A secondary access point on the southern end of Narvaez Avenue will be for emergency vehicle access. Bike/scooter share is anticipated at the corner of Narvaez Avenue and Branham Lane. The site access plan also calls out an informal access path via an informal opening in the gate along the SR 87 Bikeway, which is anticipated to remain.

Realigning the driveway for vehicle access with Indigo Drive provides an opportunity for a mid-block crosswalk that connects the site to the existing sidewalk and existing residential east of Narvaez Avenue. The informal pathway to Branham Lane from the SR 87 Bikeway currently consists of stairway access up the slope from the site, so if the pathway is to remain, there is opportunity to improve it by formalizing the pathway and also adding a ramp for ADA access. Although the bike/scooter share is proposed at the corner of Narvaez Avenue and Branham Lane, VTA may consider locating the bike/scooter share closer to the station entrance for convenience and visibility, especially due to the grade change on Branham Lane.

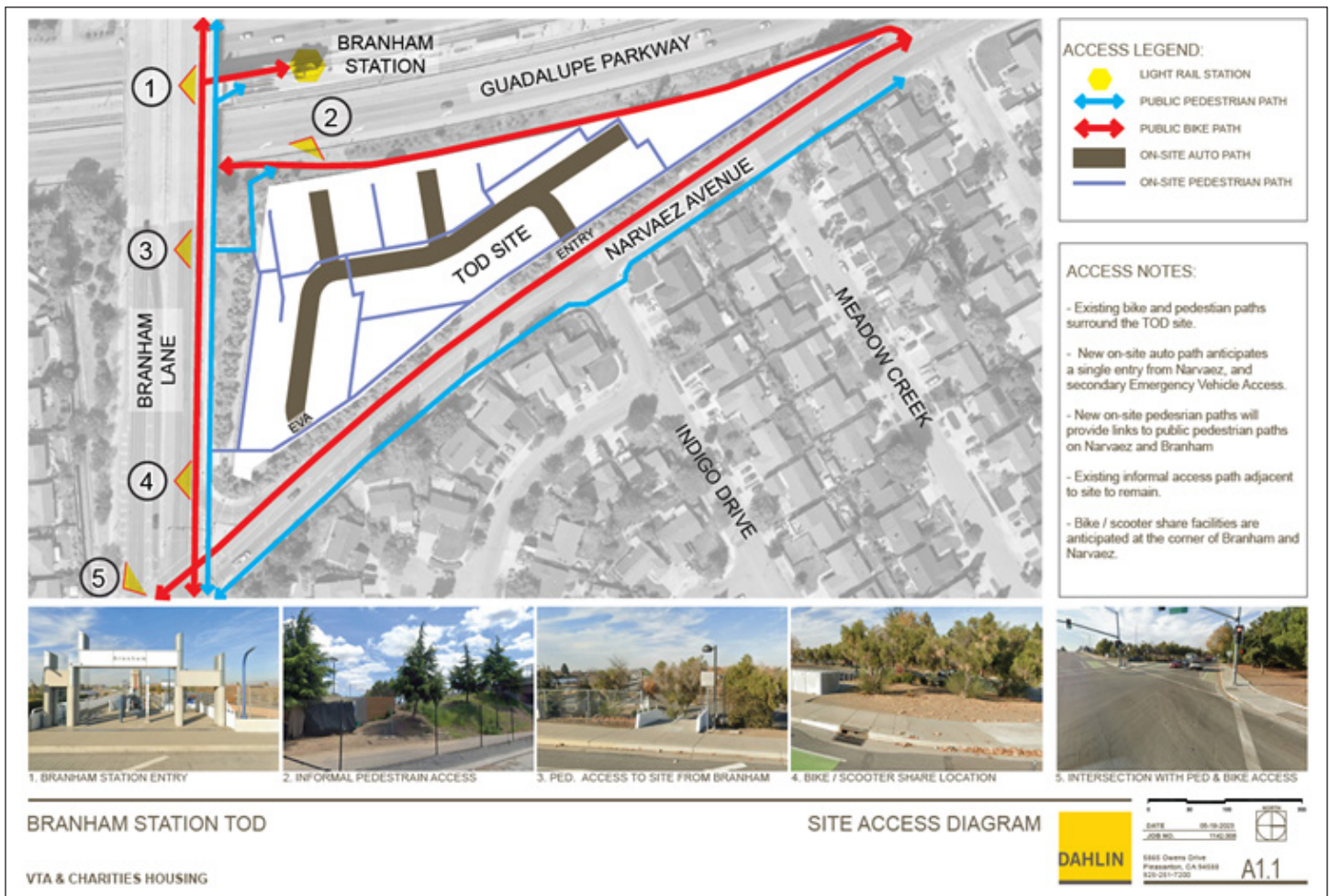


Figure 3.9
Preliminary Site Access Plan – Branham Station

3.3 Proposed Projects

In addition to the anticipated developments described in the previous section, this access study includes consideration of roadway or access improvements that have already been proposed by other local or regional plans, as reviewed in Section 2 of this plan. This section further summarizes key projects proposed within these plans to be incorporated into this access study's recommendations.

San José Better Bike Plan

According to the San José Better Bike Plan 2025, protected bike lanes are proposed along Capitol Expressway, Hillsdale Avenue, and Pearl Avenue. The protected bike lane currently existing along Branham Lane over SR 87, which is a quick-build project, is proposed to be permanent and extend both east and west of its current limits.

Branham Lane Safety Project

Improvements to Branham Lane as a part of this project led by the City's Department of Transportation will be implemented through the study area and extend to Meridian Avenue in the west and Monterey Road in the east. Improvements include high-visibility crosswalks, protected bike lanes with added vertical posts, enhanced quick-build median island, radar speed signs to alert drivers to slow down, signal head yellow border to improve signal visibility, traffic signal timing, quick-build corner curb extensions to shorten pedestrian crossing distance and slow turning vehicles. Construction is anticipated to be complete in Winter 2023. Within this plan's study area, a high visibility crosswalk has already been implemented at the intersection of Branham Lane and Narvaez Avenue as well as on Branham Lane and Sidlaw Court. Additionally, the quick-build protected bike lane over SR 87 is also part of the Branham Lane Safety Project.

SR 87 Technology Corridor Study

As described in Section 2, the SR 87 Technology Corridor study called out specific multimodal improvement recommendations. The table below provides a list of pedestrian-related intersection improvements from the study. These recommended projects were considered for incorporation into the final proposed access improvements for this study.

Table 3.1 : Relevant High-Priority Projects from SR 87 Technology Corridor Study

PROJECT	DESCRIPTION	COST
Capitol Expy & Vistapark Dr	Add high-visibility crosswalk, widen the sidewalk	less than \$500,000
Capitol Expy & Copperfield Dr	Add crosswalk to east leg of intersection, add high-visibility crosswalk, redesign the Bluefield Drive to reduce the turning radii, add median	less than \$500,000
Capitol Expy & Narvaez Ave	Remove the pork-chop island at north-west corner, add crosswalk to east leg of intersection, add median, add high-visibility crosswalk, realign the crosswalk at south side of intersection	\$500,000 to \$5 million
Capitol Expy & SR 87/on and off ramp	Add median to west leg of intersection, add high-visibility crosswalk, redesign the north side of intersection, consider possibility of removing the porkchop island at north side of intersection, widen the sidewalk, improve the curb cuts	\$500,000 to \$5 million

PROJECT	DESCRIPTION	COST
Capitol Expy & Pearl Ave	Add median, add high-visibility crosswalk, remove the pork-chop islands and reduce the turning radii, widen the sidewalk \$500,000 to \$5 million	\$500,000 to \$5 million
Capitol Expy & Under SR 87	Improve lighting, improve signage and wayfinding to LRT station	less than \$500,000
Branham Ln over SR 87	Remove the fence, add a crosswalk from south side of Branham to the LRT station, widen the sidewalk, add signage and wayfinding elements for LRT station	\$500,000 to \$5 million
Branham Ln & Pearl Ave	Tighten the turning radii, add median, add high-visibility crosswalk	less than \$500,000
Branham Ln & Narvaez Ave	Redesign the intersection and tighten the turning radii, add median, remove the pork-chop island at north-west corner, add high-visibility crosswalk	\$500,000 to \$5 million
Branham Ln & Heppner Lm/Joseph Special Dr	Add crosswalk/RRFB (rectangular rapid flash beacon) or HAWK (high-intensity activated crosswalk)	\$500,000 to \$5 million
Branham Ln & Sidlaw Ct	Add high-visibility crosswalk	less than \$500,000

4 Community Engagement

Prior to this study, VTA conducted two community meetings in 2021. The first was a Community Visioning meeting conducted virtually in April 2021. This meeting provided information on the existing conditions at Branham Station and potential design improvements, with feedback solicited from the community in breakout sessions. The second meeting was a Meet the Developer meeting conducted virtually in September 2021 to discuss the potential transit-oriented developments at both Capitol and Branham Stations. It also included a question-and-answer session to allow the community to ask questions and allow VTA to address community concerns.

Community engagement for this access study included two rounds of both in-person and online outreach consisting of the following.

Round 1:

- Walk audit with community members
- Pop-up events near the station
- Online survey, available in English and Spanish
- Technical Advisory Committee meeting #1

Round 2:

- Pop-up events near the station
- Online survey, available in English and Spanish
- Technical Advisory Committee meeting #2

4.1 Walk Audit

Walk audits are conducted to assess on-the-ground conditions for pedestrians and bicyclists. Community groups and stakeholders around the station areas were invited to participate in the walk audit for this study. The walk audit was conducted on March 2, 2023, with 22 participants, including VTA staff and the consultant team. The two station areas were divided into quadrants with a designated walking route each, for a total of 8 designated walking routes.

Participants noted barriers, strengths, and observations on a map. Detailed results from this exercise are in Appendix A.



Figure 4.1
Walk audit orientation



Figure 4.2
Walk audit participant noting conditions on Pearl Avenue

Participants also filled out a post-walk survey to rate various elements of their experience walking in the station area from 1-5 in 4 categories: safety, aesthetics, accessibility, transfers. The walking routes around both stations scored high (above 3) for safety buffers for bicyclists/pedestrians and sufficient curb ramps and high-quality sidewalks. Both stations scored low for safe traffic speeds, clear safety signage, pedestrian-friendly amenities, sense of place, insufficient bicycle facilities and signage, and most transfer-related concerns. Capitol Station scored high for adequate lighting, a general feeling of safety and pleasant landscaping, clear and safe crossings, and an intuitive public realm. Branham Station scored low under streamlined parking/drop-off and in all aesthetic-related categories.

Participants generally scored the walking routes around Capitol Station higher than those around Branham Station. However, both stations exhibited clear room for improvement in safety, aesthetics, accessibility, and transfers. These findings were incorporated into the needs assessment for this study.

4.2 Pop-Up Events

Pop-up events were held during both rounds of engagement. During the first round of engagement, 4 pop-up events were held at locations around Capitol and Branham Stations between January 25-29 to capture community members who were traveling or visiting community destinations in the area. The pop-ups aimed to identify current barriers to station access and engaged over 100 community members. The second round consisted of 3 pop-up events around the stations between May 18-19 and engaged over 130 community members. Boards displaying the draft improvement recommendations were presented on boards and allowed participants to vote or suggest other improvements. Results from these pop-up events were incorporated into the needs assessment and proposed improvements for this study and are presented in Appendix A.



Figure 4.3
VTA staff and pop-up attendee during first round of engagement

4.3 Online Survey

Online surveys were deployed during both rounds of engagement using the Maptionnaire platform. The surveys coincided with the timing of in-person pop-ups and the content mirrored the in-person pop-up materials. The surveys were available in both English and Spanish. QR codes to the survey were also distributed during in-person engagement so that community members could provide their feedback at their convenience. The first round's survey was deployed between January 17, 2023 and February 28, 2023 and received 105 respondents. The second survey was deployed between May 5, 2023 and May 31, 2023 and received 38 respondents. Detailed results from these surveys are in Appendix A.

4.4 Technical Advisory Committee Meetings

A Technical Advisory Committee (TAC) was organized for this study, consisting of VTA staff, City of San Jose Department of Transportation staff, and the TOD developer team. Two TAC meetings were held during the course of the study to provide study updates and gather feedback from TAC members. The first meeting was held on March 24, 2023 and provided an overview of the access study, the existing conditions reviewed by the consultant team, and a summary of the first round of engagement. The second meeting was held on June 5, 2023 and provided a summary of the needs assessment and future conditions analysis conducted by the consultant team, proposed access recommendations, and a summary of the second round of engagement. Both meetings included an opportunity for TAC members to provide their input on the consultant team's findings and recommendations, as well as provide updates on VTA or City projects that may impact the access study. Feedback was incorporated into the needs assessment and overall recommendations of the study.

5 Needs Assessment

The existing and future conditions analysis summarized access patterns and issues gleaned from a background literature review, summary of ongoing projects, and data collection analysis. These findings, along with feedback gained from the first round of community engagement and walk audit results, paint a picture of access needs at the stations. The needs summarized in this section will be integrated into the proposed access improvements presented in Section 6.

Overall, the built environment in the area surrounding Capitol and Branham Stations largely privileges private vehicle and low-density development, discouraging transit-oriented lifestyles. Given that both stations are slated for TOD project development, it is especially important to plan for multimodal access improvements that can improve travel for multiple modes and encourage transit use. This section highlights critical multimodal access needs that should be considered.

Mode of Access Results

Transit ridership and activity at each of the stations is generally low. However, mode of access counts conducted at the stations showed that of those who do access the station, many people reach the stations by walking. Others access by car or car pick-up/drop-off. Additionally, it is important to remember that those who arrive to the stations by driving become pedestrians upon parking and walking to the station entrance.

At Capitol Station, 100% of users observed at the Capitol Station North Lot arrived by car, while the South Lot was accessed by car, car pick-up/drop-off, walking, or bus. Users along Capitol Expressway traveled by foot, bicycle, skateboard, scooter, VTA bus, or charter bus. Most activity on Capitol Expressway occurred at the southern entrance of the station.

At Branham Station, the majority of people observed were found to be accessing the station by walking. Pick-up and drop-off occurs most commonly inside the parking lot, with a small number occurring at the station entrance on Branham Lane. This is particularly a challenge as a protected bike lane is currently located along Branham Lane, which would not allow for safe pick-up/drop-off at the station entrance.

Similarly, when asked what mode of travel they utilized to access the station, 48% of participants in the online community engagement survey responded that they walk or roll to the Capitol Station, followed by 35% responded that they drive and utilize parking. As for Branham Station, 52% of respondents said that they walked/rolled to the station, with 32% arriving by bicycle or scooter.

When coupled with low parking utilization and the anticipation of several new housing units at these stations, station access improvements will need to prioritize accessibility and safety for non-vehicular travelers.

Pedestrian and Bicycle Access Needs

The walking permeability of the area is currently harsh for pedestrians, especially with the lack of sidewalk on the west side of Narvaez Avenue along and between both stations (Figure 5.1) and culs-de-sac in surrounding neighborhoods that limit efficient access to the stations for both pedestrians and bicyclists. Both stations also lack a crosswalk from the neighborhood east of the stations, to the station side of Narvaez Avenue, at any of the intersections between Capitol Expressway and Branham Lane, such as Narvaez Avenue at Albion Drive or Indigo Drive (Figure 5.2). Station entrances also need accessibility improvements. Currently, pedestrians with accessibility needs who begin their trip on the northern side of the Capitol Station need to cross Capitol Expressway to reach the southern side of the station, which is the only side with elevator access. Additionally, the area lacks amenities like bench seating as rest areas for those with accessibility needs to rest. While curb ramps are generally present throughout, several cracked and uneven sidewalks or faded crosswalks were also present in the surrounding station area. Specifically, walk audit participants identified a few elements in the area that would help improve their experience, such as safe midblock crosswalks, wide sidewalks, well-maintained landscaping, and pedestrian-leading intervals such as the one along Pearl Avenue near Terrell Elementary School. At Branham Station, the station entrance is located in the middle of the Branham Lane overcrossing, which creates accessibility challenges due to the grade change and lack of ADA ramp next to the existing stairs from the site. Additionally, as previously mentioned, pick-up/drop-off was observed occurring on Branham Lane, which is a competing use and safety issue with the protected bike lane.



Figure 5.1
Lack of sidewalk on west side of Narvaez Avenue



Figure 5.2
Narvaez Avenue

The two stations and surrounding station areas are generally served by existing bicycle infrastructure, but the current infrastructure should be improved with low-stress facilities to physically separate bikeways from vehicle travel lanes with vehicles traveling at high speeds, especially along Hillsdale Avenue and Branham Lane. The City has implemented several improvements and has others planned, such as Class IV facilities on Capitol Expressway. There is also opportunity for a bike boulevard through residential streets with low vehicular traffic and slower speeds, such as Albion Drive, to connect residential areas to either station. Additionally, the SR 87 Bikeway is not well-marked and its entrance near Branham Station at Faye Park Drive lacks connectivity to a crosswalk to reach the side of Narvaez Avenue with a sidewalk or the northbound bike lane (Figure 5.3). Crosswalks along Branham Lane and Capitol Expressway also include porkchops, which increase crossing distances and generally create unsafe environments for pedestrians and bicycles who have to maneuver vehicles making fast right turns at large intersections (Figure 5.4). These are seen at Branham Lane and Narvaez Avenue, Branham Lane and Pearl Avenue, Capitol Expressway and Pearl Avenue, Capitol Expressway and the SR 87 on and off-ramps, and Capitol Expressway and Narvaez Avenue.

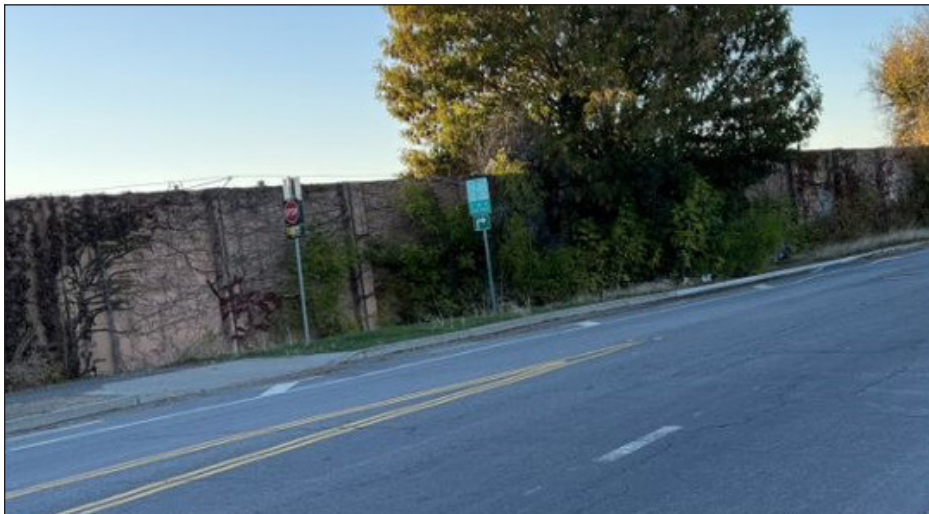


Figure 5.3
Entrance to SR 87 Bikeway



Figure 5.4
Porkchop at Narvaez Avenue and Branham Lane

Additionally, community members expressed that the stations themselves and surrounding routes feel unsafe for walking and bicycling due to lack of lighting, lack of safe infrastructure for connections to transit, lack of wayfinding, and a number of unhoused encampments particularly along Branham Lane. Pedestrian crossings to access the station are currently spaced far apart. The nearest crossings are at Narvaez Avenue to the east and Pearl Avenue to the west. The median along the Branham Lane overcrossing is fenced to prevent jaywalking to the station entrance from the south side of Branham Lane. The lack of closer crosswalks creates inconvenient walking routes to transit for residents living in neighborhoods located to the south of Branham Lane. They currently must walk a far distance to safely cross the street and access the station entrance. This creates an opportunity to add mid-block crossings where feasible.

Transit Access Needs

Results from the community engagement and walk audits found that at Capitol Station, lighting feels insufficient, especially at night. This was true for the station entrance itself underneath of Highway 87, as well as along certain walking routes near the station. Landscaping and shade at transit stops in general in the area were also desired improvements. Participants also noted a lack of transit signage for both wayfinding and travel-related signage such as real-time transit information at both stations. Participants also noted that transit service is too infrequent and that there are not enough routes to serve areas of interest. As mentioned in Section 3, the realignment of the bus loop at Capitol Station due to the new development includes a pedestrian and bicyclist paseo to the east of the loop that will lead to the new transit plaza. This realignment and transit plaza provides convenient and direct access through the site for pedestrians and bicyclists. This locates the transit plaza and pick-up/drop-off closer to the station entrance and away from Capitol Expressway. Providing this type of mobility hub is a strategy that improves placemaking and enhances visible access to transit.

Vehicular Access Needs

Early in the study, community members expressed concern over high vehicular traffic volumes along Capitol Expressway and Narvaez, especially at the entrance to Highway 87. While the City of San José considers potential realignment of the highway interchange, the City and VTA should anticipate managing the potential for new development to generate further traffic demand.

Neither station has formally designated pick-up/drop-off areas. At Capitol Station, virtually all car pick-up/drop-off was occurring at the South Lot, consisting of 21% of observed activity at that location. At Branham Station, 29% of activity at the parking lot consisted of car pick-up/drop-off, while making up 6% of the activity along Branham Lane at the station entrance. A lack of designated pick-up/drop-off areas could lead to inefficient circulation around the potential TOD developments and reduce seamlessness for those who would otherwise carpool with household members or colleagues to access the station.

6 Proposed Access Improvements

Based on the findings of the existing conditions and needs assessment, the following sections provide suggested improvements for bicycle, pedestrian, on-site, transit, and vehicle access to the Capitol and Branham Station areas.

6.1 Bicycle, Pedestrian, and On-Site Improvements

This section presents suggested improvements for both off-site and on-site access to the station organized by corridor and improvement type. The improvements proposed in this section are based on an analysis of existing transportation gaps, research methods applied locally, and feedback collected from community members through in-person engagement, the online surveys, and the walk audit performed around the stations. Additionally, the proposed improvements are made in line with those identified by the San José Vision Zero Plan, San José Better Bike Plan, and SR 87 Technology Corridor Study. Geographical illustrations of the suggested improvements resulting from this feedback are also provided.

Note that individual ID numbers were applied to each improvement presented in this section and throughout this report. ID numbers use the following naming convention in the following order:

- C or B = Capitol or Branham Station
- B or P = Presented on the Bike or Pedestrian map for that station
- Number = Improvement location on the map
- Lower-case letter = Applied in cases where more than one improvement is proposed in a particular location

6.1.1 Capitol Station

The following section identifies bicycle, pedestrian, and on-site access improvement recommendations for Capitol Station. Improvements are presented in tabular format by corridor and intersection. The table is followed by a corresponding map illustrating the improvement locations within the station area.

Table 6.1 Proposed Bike, Pedestrian, and On-Site Access Improvements by Corridor and Intersection – Capitol Station

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Capitol Expressway	Station Entrance	CP10c	<ul style="list-style-type: none"> Improved lighting beneath SR 87 underpass 	<ul style="list-style-type: none"> Pop-up participants (12) and survey respondents (12) highlighted a need for improved lighting.
		CP10b	<ul style="list-style-type: none"> Real-time transit information at both entrances 	<ul style="list-style-type: none"> SR 87 Corridor Study recommended improved lighting, signage, and wayfinding at Capitol Expressway under SR 87.
		CP10a	<ul style="list-style-type: none"> Station identification signage at both entrances 	<ul style="list-style-type: none"> Improve station identification and visibility of transit information
				<ul style="list-style-type: none"> Make a clearer connection to the proposed new transit plaza on west side of the South Lot
		CB2	<ul style="list-style-type: none"> Bike lockers closer to station entrances (5) 	<ul style="list-style-type: none"> Input received from City staff during site visit.
				<ul style="list-style-type: none"> Pop-up participants during both rounds of engagement highlighted a need for improved bike lockers closer to the station entrance.
	CB9	<ul style="list-style-type: none"> Bike access ramp on northern entrance staircase 	<ul style="list-style-type: none"> No elevator exists at northern entrance to the station. Passengers with bikes currently must use the southern entrance. 	
	Navarez Avenue	CP15a	<ul style="list-style-type: none"> High visibility crosswalks on east and west legs of the intersection 	<ul style="list-style-type: none"> Pop-up event input. Attendees highlighted concern about dangerous intersections to cross the station.
		CP15b	<ul style="list-style-type: none"> Curb extensions 	<ul style="list-style-type: none"> Improve pedestrian experience by shortening crossing distance and creating a visual narrowing to encourage vehicles to slow down as they approach the intersection.
		CP15c	<ul style="list-style-type: none"> Wayfinding signage to direct pedestrians to station 	<ul style="list-style-type: none"> Survey input. These intersection improvements received 7 votes during the second round of engagement.
		CB4	<ul style="list-style-type: none"> Bike intersection crossing lanes 	<ul style="list-style-type: none"> Improve bicyclist visibility at a busy intersection in an effort to reduce collisions. A bicycle-involved collision has occurred here in the past 5 years.

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Capitol Expressway	SR 87 off-ramp	CP8	<ul style="list-style-type: none"> Remove porkchop 	<ul style="list-style-type: none"> City DOT staff mentioned that the porkchops in the area should be removed to improve safety for pedestrians.
			<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Enhance wayfinding to the station entrance. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
		CB1	<ul style="list-style-type: none"> Bike intersection crossing lanes 	<ul style="list-style-type: none"> Improve bicyclist visibility at a busy intersection that involves freeway on- and off-ramps.
	Corridor-Wide	CB6	<ul style="list-style-type: none"> Class IV Protected bike lane 	<ul style="list-style-type: none"> Improve bicyclist safety by physically separating bicyclists from vehicle traffic to create a low-stress facility. This improvement received the second highest number of votes (10) during the second round of popup events. Attendees also commented that a lack of physical barriers makes the streets feel unsafe to ride on. Recommended by San José Better Bike Plan 2025
	Timber Loop Drive	CP16	<ul style="list-style-type: none"> High visibility crosswalk 	<ul style="list-style-type: none"> Improve pedestrian visibility for vehicles coming onto Capitol Expressway
	Copperfield Drive	CP17a	<ul style="list-style-type: none"> High visibility crosswalk 	<ul style="list-style-type: none"> Improve pedestrian visibility for vehicles coming onto Capitol Expressway
		CP17b	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Enhance wayfinding to the station entrance and improve safety and visibility of pedestrians at the intersection. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
	At traffic light between Pearl Avenue & SR 87 on/off-ramps	CP6a	<ul style="list-style-type: none"> High visibility crosswalk 	<ul style="list-style-type: none"> Provide pedestrian crossing access closer to the station.
		CP6b	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Enhance wayfinding to the station entrance and improve safety and visibility of pedestrians at the intersection. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
	Pearl Avenue	CP5a	<ul style="list-style-type: none"> Remove porkchop 	<ul style="list-style-type: none"> Improve safety and visibility of pedestrians at the intersection. City DOT staff mentioned that the porkchops in the area should be removed to improve safety for pedestrians.
		CP5b	<ul style="list-style-type: none"> High visibility crosswalk 	<ul style="list-style-type: none"> Improve pedestrian visibility on a corridor with high traffic volume and high speeds.

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Capitol Expressway	Pearl Avenue	CP5c	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Enhance wayfinding to the station entrance. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
	Navarez Avenue to Vistapark Drive	CP25	<ul style="list-style-type: none"> New sidewalk 	<ul style="list-style-type: none"> Improve pedestrian experience by closing the sidewalk gap on the south side of Capitol Expressway.
Navarez Avenue	Capitol Expressway	CP14a	<ul style="list-style-type: none"> High visibility crosswalks on north and south legs of intersection 	<ul style="list-style-type: none"> Improve safety and visibility of pedestrians at the intersection. Pop-up attendees mentioned that intersections near the station feel dangerous.
	Capitol Expressway	CP14b	<ul style="list-style-type: none"> Remove porkchop 	<ul style="list-style-type: none"> City DOT staff mentioned that the porkchops in the area should be removed to improve safety for pedestrians.
	North Station Parking Lot Driveway	CP11a	<ul style="list-style-type: none"> Station identification signage 	<ul style="list-style-type: none"> Improve wayfinding to the station and transit information visibility.
		CP11b	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
	South Station Parking Lot - Northernmost Driveway	CP18b	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Improve wayfinding to the station and improve pedestrian experience. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
		CP18a	<ul style="list-style-type: none"> New high visibility crosswalk 	<ul style="list-style-type: none"> This is the proposed primary vehicle entrance to the new residential development and will need to provide safe infrastructure for pedestrians.
	"Between Capitol Expressway and Naomi Court"	CP23	<ul style="list-style-type: none"> Improved lighting 	<ul style="list-style-type: none"> Improve pedestrian safety and visibility
	Hillsdale Avenue to Faye Park Drive	CP24	<ul style="list-style-type: none"> New sidewalk 	<ul style="list-style-type: none"> No sidewalk on southbound Navarez Avenue currently exists.
				<ul style="list-style-type: none"> Preliminary TOD site plan includes pedestrian access points along Navarez Avenue. A new sidewalk will provide better connections for pedestrians.
	Naomi Court	CP19	<ul style="list-style-type: none"> New high visibility crosswalk 	<ul style="list-style-type: none"> Connect proposed southbound sidewalk to existing northbound sidewalk and provide connectivity to neighborhood east of the station.

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Navarez Avenue	Sarah Court	CP20	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Direct pedestrians and bicyclists to entrance to vehiclefree paseo through the station site.
	SR 87 on- and off-ramps	CP7	<ul style="list-style-type: none"> High visibility crosswalk 	<ul style="list-style-type: none"> Improve pedestrian visibility and safety, especially if freeway ramps remain at this intersection.
				<ul style="list-style-type: none"> 5 pop-up attendees and 5 survey respondents voted for this improvement.
	Shadow Creek Drive	CP4a	<ul style="list-style-type: none"> Midblock street crossing with rectangular rapid-flashing beacon (RRFB) 	<ul style="list-style-type: none"> No crosswalk to connect bus stop. This was observed during the walk audit and noted as an unsafe area to board a bus.
		CP4b	<ul style="list-style-type: none"> Bus stop enhancement 	
	Between Helzer Avenue to Branham Lane	CB10	<ul style="list-style-type: none"> Class IV Protected bike lane 	<ul style="list-style-type: none"> Recommended by San José Better Bike Plan 2025.
Faye Park Drive	CP21	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Improve wayfinding to the station and improve pedestrian experience. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area. 	
Hillsdale Avenue	Pearl Avenue to Capitol Expressway	CB5	<ul style="list-style-type: none"> Class IV Protected bike lane 	<ul style="list-style-type: none"> Upgrade and complete existing bike lane to improve bicyclist safety and connectivity. Pop-up event attendees also commented that a lack of physical barriers makes the streets feel unsafe to ride on.
				<ul style="list-style-type: none"> Recommended by San José Better Bike Plan 2025.
	Dow Drive	CP1a	<ul style="list-style-type: none"> High visibility crosswalks 	<ul style="list-style-type: none"> Currently only one unsignalized crosswalk.
		CP1b	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Improve wayfinding to the station. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
	Navarez Avenue to Vistapark Drive	CP2a	<ul style="list-style-type: none"> High visibility crosswalks 	<ul style="list-style-type: none"> Improve pedestrian visibility and safety.
		CP2b	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Improve wayfinding to the station. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
Mountain Springs Drive	CP3	<ul style="list-style-type: none"> Midblock street crossing 	<ul style="list-style-type: none"> Large distance between crossings along Hillsdale was noted by walk audit participants. 	

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Pearl Avenue	Hillsdale Avenue to Chynoweth Avenue	CB8	<ul style="list-style-type: none"> Class IV Protected bike lane 	<ul style="list-style-type: none"> Upgrade existing Class II bike lane to improve bicyclist safety and physically separate bicyclists from vehicle traffic. Pop-up event attendees also commented that a lack of physical barriers makes the streets feel unsafe to ride on.
				<ul style="list-style-type: none"> Recommended by San José Better Bike Plan 2025
Albion Drive	Navarez Avenue to Bluefield Drive	CB7	<ul style="list-style-type: none"> Class III Bike boulevard 	<ul style="list-style-type: none"> Low-volume street that provides an opportunity for a residential connection from Narvaez to Capitol Expressway via Bluefield Drive.
Bluefield Drive	Capitol Expressway to Vistapark Drive	CB7	<ul style="list-style-type: none"> Class III Bike boulevard 	<ul style="list-style-type: none"> Provide residential connection from Capitol Expressway to proposed Class III on Albion Drive and existing Class II on Vistapark Drive.
Capitol Station	Station Platform	CP9a	<ul style="list-style-type: none"> Improved lighting 	<ul style="list-style-type: none"> Enhance waiting area for passengers.
		CP9b	<ul style="list-style-type: none"> Improved shade 	
	Capitol South Lot	CB3	<ul style="list-style-type: none"> Bike/scooter share facility 	<ul style="list-style-type: none"> Encourage active transportation near TOD project.
		CP12a	<ul style="list-style-type: none"> Station identification signage 	<ul style="list-style-type: none"> Preliminary TOD site plan proposes new transit plaza with pedestrian/bicycle paseo on South Lot.
		CP12b	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Improve wayfinding to the station and transit information visibility.
		CP13a	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Improve wayfinding to the station. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
		CP13a	<ul style="list-style-type: none"> Mobility hub 	<ul style="list-style-type: none"> Centralize mobility services, including bus and rideshare pick-up/drop-off, bike/scooter share. Improves visibility of these services closer to the station entrance and near the TOD.
		CP13b	<ul style="list-style-type: none"> Designated pick-up/ drop-off 	<ul style="list-style-type: none"> Provide a designated area for pick-up/drop-off activity near the station entrance with a dedicated access point separate from residential TOD vehicle traffic.



Figure 6.1
Proposed Bike Access Improvement Map – Capitol Station

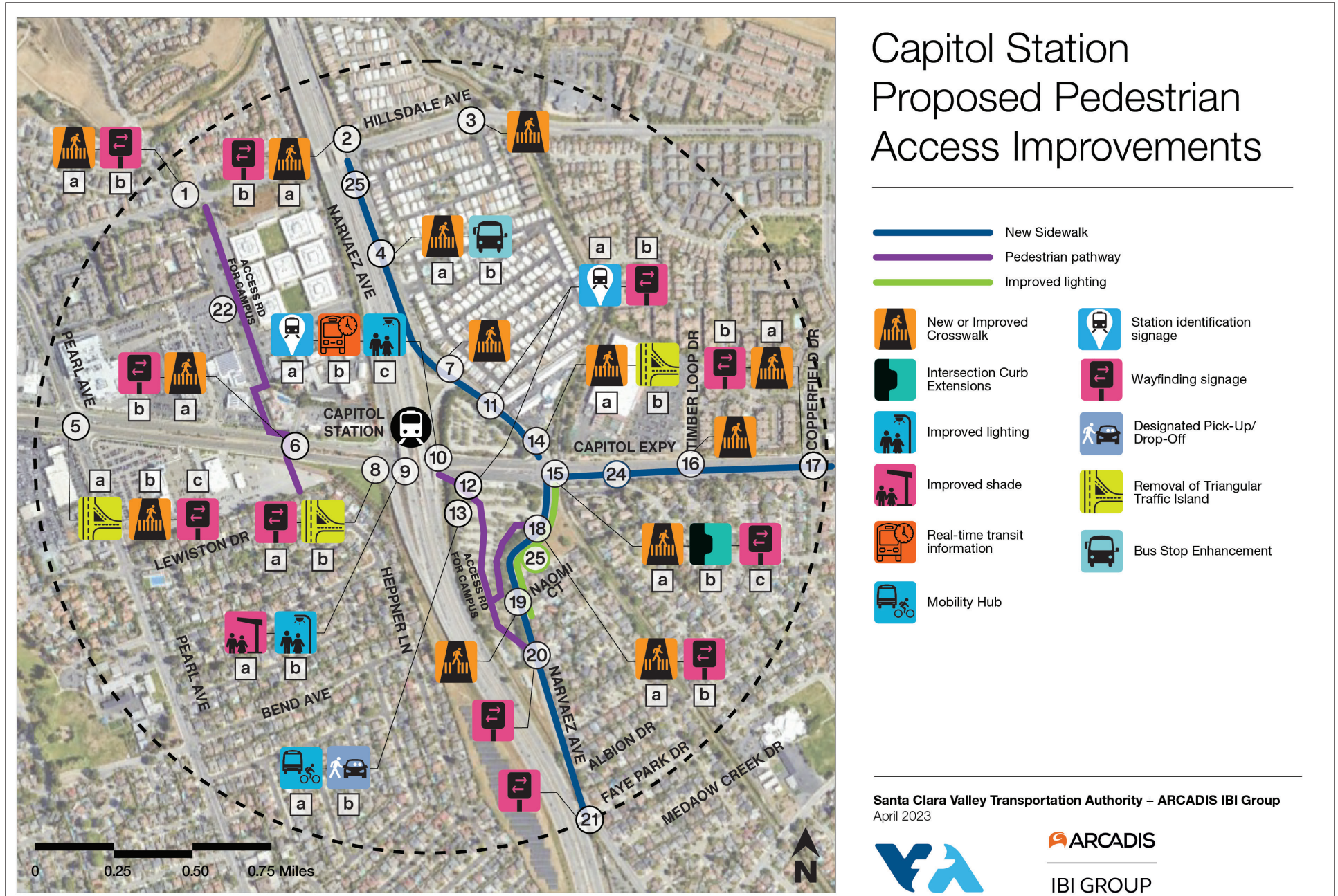


Figure 6.2
Proposed Pedestrian Access Improvement Map – Capitol Station

6.1.2 Branham Station

The following section identifies bicycle, pedestrian, and on-site access improvement recommendations for Branham Station. Improvements are presented in tabular format by corridor and intersection. The table is followed by a corresponding map illustrating the improvement locations within the station area. As the development proposal for the Branham Station TOD is currently underway, an additional map is also provided to provide a closer view of the on-site improvements.

Table 6.2 Proposed Bike, Pedestrian, and On-Site Access Improvements by Corridor and Intersection – Branham Station

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Branham Lane	Navarez Avenue	BP13	<ul style="list-style-type: none"> Station identification signage 	<ul style="list-style-type: none"> Improve station identification for all users.
		BP14a	<ul style="list-style-type: none"> Roadway median 	<ul style="list-style-type: none"> Roadway median is recommended by SR 87 Technology Corridor Study.
		BP14b	<ul style="list-style-type: none"> Remove porkchop 	<ul style="list-style-type: none"> City DOT staff mentioned that the porkchops in the area should be removed to improve safety for pedestrians. Branham Lane has been identified as a Vision Zero Priority Safety Corridor because of the high number of fatal and severe injury crashes.
	Station Entrance	BP9	<ul style="list-style-type: none"> Real-time transit information 	<ul style="list-style-type: none"> Branham Station users have expressed the need for visible real-time transit information. This will allow commuters to plan their journeys more efficiently, reduces waiting times, promotes public transportation usage, and improves overall travel experience and convenience.
	SR 87 Overpass	BP11	<ul style="list-style-type: none"> Widen sidewalk 	<ul style="list-style-type: none"> Improve pedestrian experience along a high-speed corridor.
				<ul style="list-style-type: none"> Wider sidewalks recommended by SR 87 Technology Corridor Study
		BP12	<ul style="list-style-type: none"> Designated pick-up/drop-off area in front of station entrance. On westbound side of the road, this will require shifting the protected bike lane to be adjacent to the sidewalk and separated from travel lanes by permanent raised buffers. Shift travel lanes closer to roadway median and designate a pick-up/drop-off area between the travel lanes and raised buffers. 	<ul style="list-style-type: none"> Mode of access counts observed vehicles dropping off passengers in front of the station entrance, which is a safety issue due to protected bike lane and lack of formally designated pick-up/drop-off area. Re-striping the westbound side of the street as described provides a more convenient/publicly accessible pick-up/dropoff option that is closer than the TOD site and prevents vehicles from entering the protected bike lane.

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Branham Lane	East of Station Entrance Next to Existing Stairs from TOD Site	BB2a	<ul style="list-style-type: none"> Bike/e-scooter share facility 	<ul style="list-style-type: none"> Provide micromobility parking and facilities closer to station entrance. This was highlighted as a desire by bicycle users during the project site walk. A bike/e-scooter share facility is planned as part of the preliminary TOD site circulation plan. This study recommends that it be as close to the station entrance as possible rather than on the current parking lot.
		BB2b	<ul style="list-style-type: none"> Bike lockers (5) 	
	"Meridian Avenue to Monterey Road"	BB6	<ul style="list-style-type: none"> Class IV Protected bike lane 	<ul style="list-style-type: none"> Improve bicyclist safety and make quick-build protected bike lane permanent with hardscape materials. Pop-up event attendees also commented that a lack of physical barriers makes the streets feel unsafe to ride on. Recommended by San Jose Better Bike Plan 2025 Recommended as part of the Vision Zero Priority Safety Corridor.
		BB7	<ul style="list-style-type: none"> Class IV Protected bike lane 	
	Pearl Avenue	BB1	<ul style="list-style-type: none"> Bike intersection crossing lanes 	<ul style="list-style-type: none"> Improve bicyclist visibility and enhance the protected bike lanes on Branham Lane and Pearl Avenue. Recommended by San José Better Bike Plan 2025. Enhance bicyclist comfort at busy intersection.
	Navarez Avenue	BB3	<ul style="list-style-type: none"> Bike intersection crossing lanes 	<ul style="list-style-type: none"> Improve bicyclist visibility and enhance the protected bike lanes on Branham Lane and Narvaez Avenue. Recommended by San José Better Bike Plan 2025. Enhance bicyclist comfort at busy intersection.
	Heppner Lane	BP7	<ul style="list-style-type: none"> Midblock street crossing with rectangular rapid flashing beacon (RRFB) 	<ul style="list-style-type: none"> Pedestrian crossings are currently spaced far apart along Branham Lane. Recommended by SR 87 Technology Corridor Study.
	Sidlaw Court	BP15	<ul style="list-style-type: none"> Wayfinding signage 	<ul style="list-style-type: none"> Improve wayfinding to the station. Walk audit participants and pop-up attendees mentioned that there is a lack of wayfinding signage in the area.
Narvaez Avenue	Faye Park Drive	BP4a	<ul style="list-style-type: none"> New high visibility crosswalk 	<ul style="list-style-type: none"> This intersection was observed during the project site walk as missing an important crosswalk from the end of the SR 87 Bikeway to the other side of Narvaez where a sidewalk exists. Additionally, there are no crosswalks between Branham Lane and Capitol Expressway, along Narvaez Avenue.

CORRIDOR	INTERSECTION	ID	PROPOSED IMPROVEMENT	RATIONALE
Narvaez Avenue	Faye Park Drive	BP4b	<ul style="list-style-type: none"> Wayfinding signage 	
	Naomi Court	BP2	<ul style="list-style-type: none"> Midblock street crossing 	<ul style="list-style-type: none"> The intersection marks the existing entrance to the Capitol Station South Parking lot. Vehicles are able to turn in both directions, however, pedestrians do not have a safe crosswalk at the intersection.
	Albion Drive	BP3	<ul style="list-style-type: none"> Midblock street crossing 	<ul style="list-style-type: none"> Provide safe crossing for pedestrians and visibility for bicyclists entering the proposed bike boulevard on Albion Drive.
	"W Capitol Expressway to Branham Lane"	BP1	<ul style="list-style-type: none"> New sidewalk 	<ul style="list-style-type: none"> No sidewalk along west side of Narvaez Avenue. This improvement received the second highest number of votes during the second round of pop-up events.
	Indigo Drive	BP5	<ul style="list-style-type: none"> Midblock street crossing 	<ul style="list-style-type: none"> Provide connection to and from neighborhood east of the station.
				<ul style="list-style-type: none"> Aligns with location of primary driveway proposed in preliminary site access plan for the Branham TOD.
Helzer Drive to Branham Lane	BB8	<ul style="list-style-type: none"> Class IV Protected bike lane 	<ul style="list-style-type: none"> Upgrade from a Class II bike lane to a Class IV protected bike lane is recommended by San José Better Bike Plan 2025. 	
Albion Drive	"Narvaez Avenue to Bluefield Drive"	BB5	<ul style="list-style-type: none"> Class III Bike boulevard 	<ul style="list-style-type: none"> Provide residential connection from Narvaez to Capitol Expressway via Bluefield Drive
Bluefield Drive	Capitol Expressway to Vistapark Drive	BB5	<ul style="list-style-type: none"> Class III Bike boulevard 	<ul style="list-style-type: none"> Provide residential connection from Narvaez to Capitol Expressway via Bluefield Drive
Pearl Avenue	Hillsdale Drive to Chynoweth Avenue	BB4	<ul style="list-style-type: none"> Class IV Protected bike lane 	<ul style="list-style-type: none"> Upgrade from a Class II bike lane to a Class IV protected bike lane is recommended by San José Better Bike Plan 2025.
Branham Station	Station Platform	BP8	<ul style="list-style-type: none"> Improved shade 	<ul style="list-style-type: none"> Enhance waiting area for passengers
	Branham Station Lot	BP10	<ul style="list-style-type: none"> ADA access ramp next to stairs 	<ul style="list-style-type: none"> Provide enhanced accessibility to the station from TOD site and current informal access point from SR 87 Bikeway.
		BP16	<ul style="list-style-type: none"> Pedestrian pathway 	<ul style="list-style-type: none"> An informal access point has been created from the SR 87, which can be formalized with an official entryway (i.e. gate or other). The access point should be clearly marked, visible and publicly accessible from the 87 bike path as well as from the TOD side to provide a connection from the SR 87 to the station.

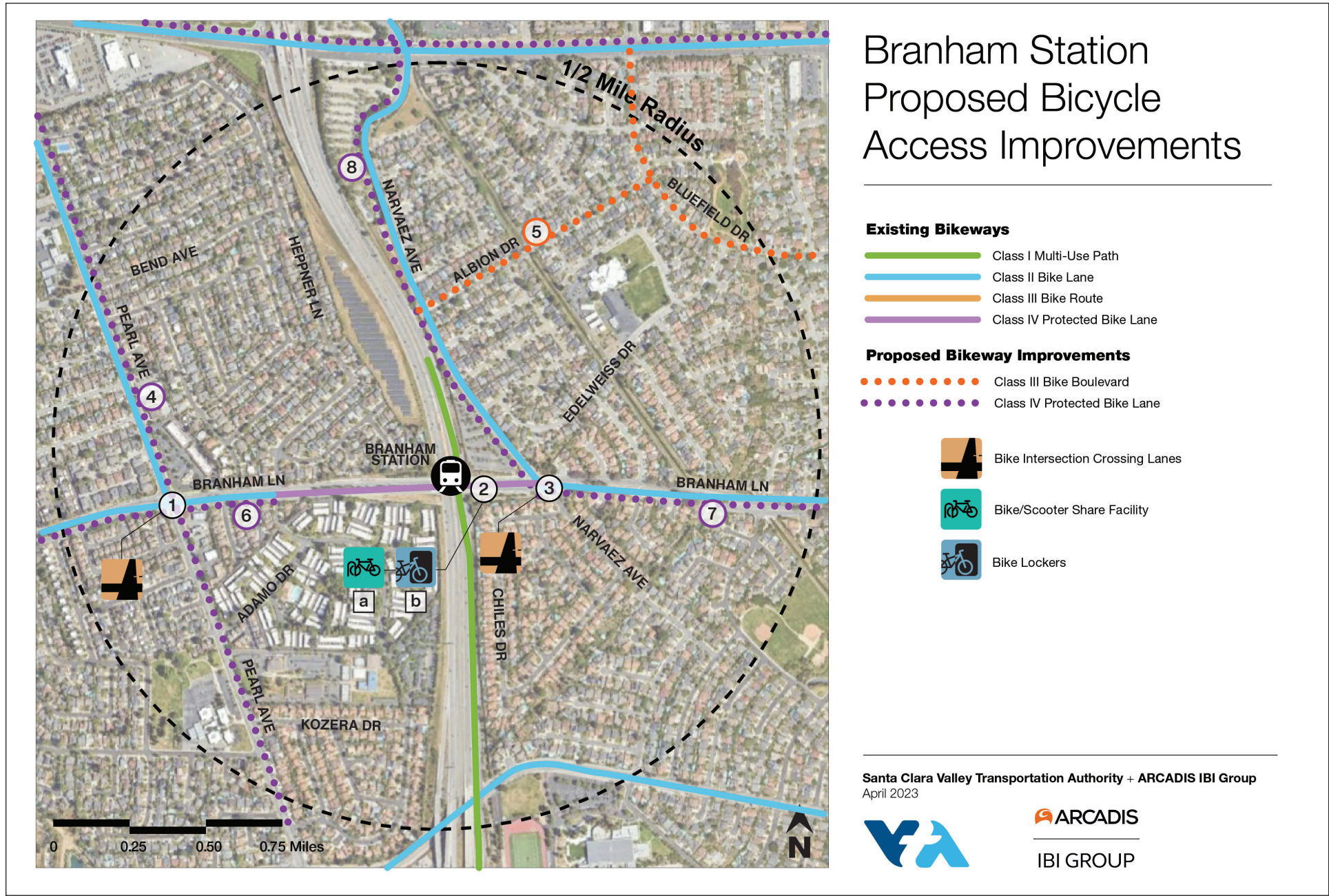


Figure 6.3
Proposed Bike Access Improvement Map – Branham Station

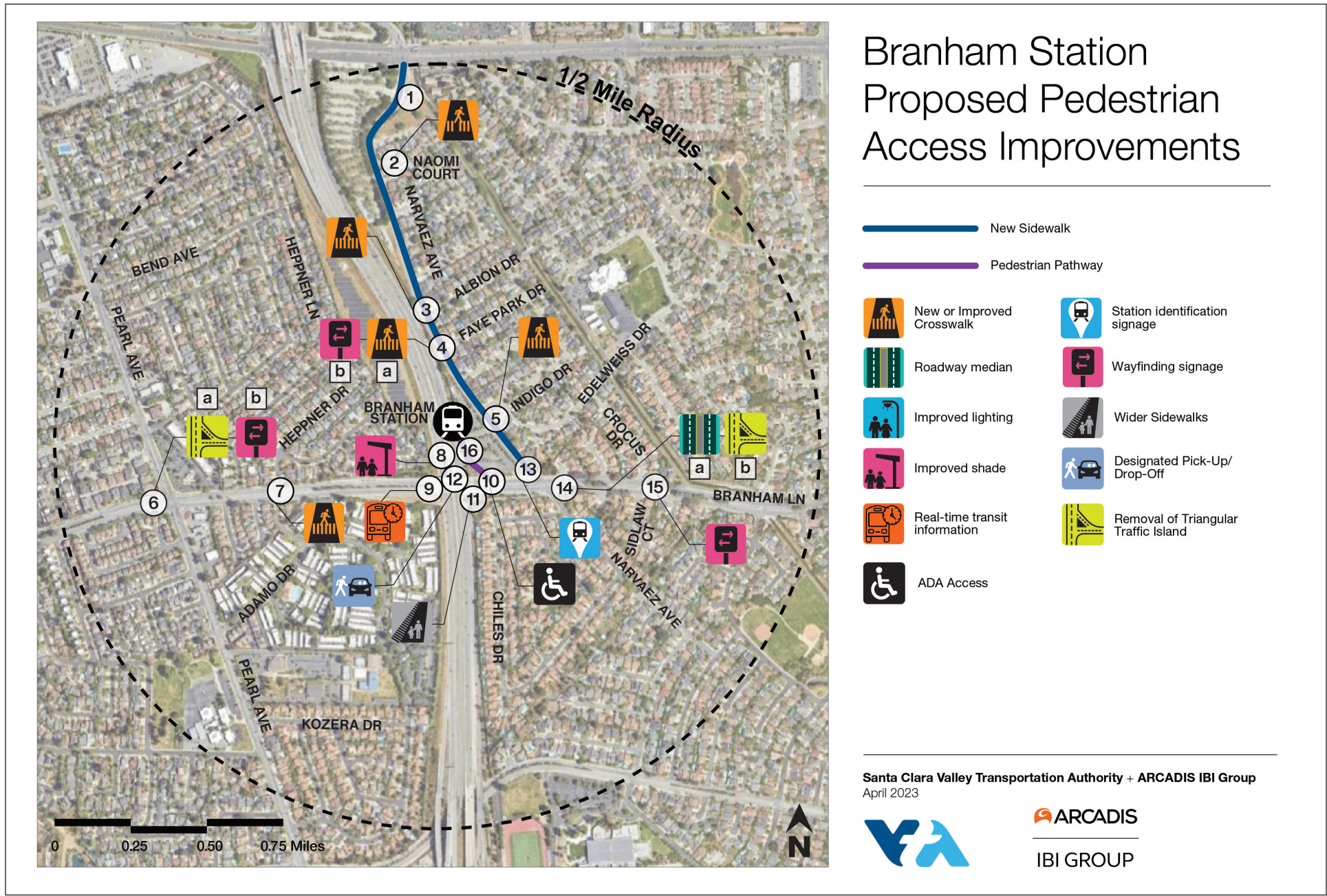


Figure 6.4
Proposed Pedestrian Access Improvement Map – Branham Station

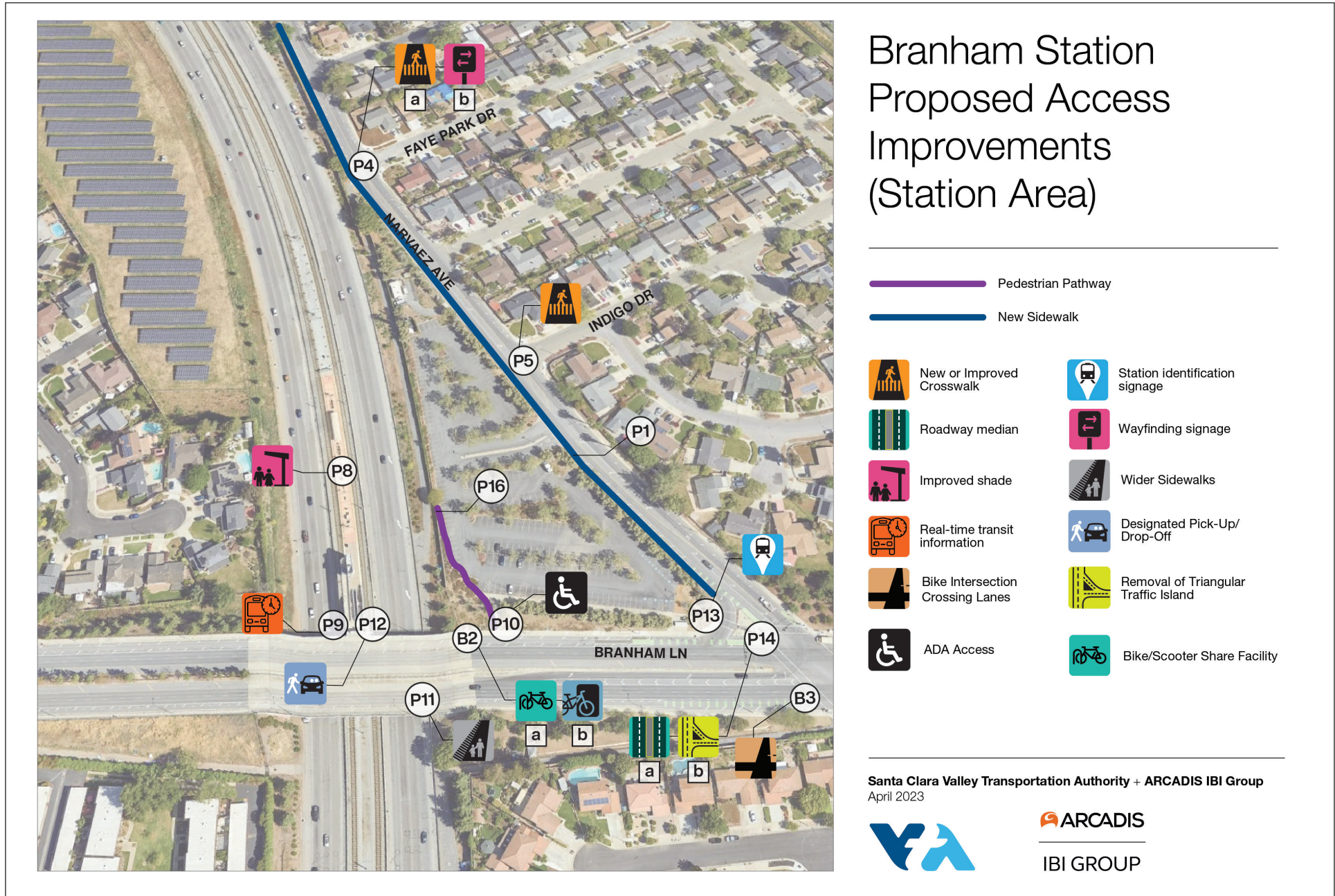


Figure 6.5
Proposed Pedestrian Access Improvement Map – Branham Station Zoom In

6.2 Transit Access Improvements

Transit access improvements at the stations should be made in accordance with the 2016 VTA Transit Passenger Environment Plan (TPEP). The Transit Passenger Environment Plan classifies all bus stops within the VTA service area into the four following categories: basic, core, major, or community destination. Bus stop classification is determined based upon the number of weekday daily boardings at each station. Basic bus stops receive fewer than 40 weekday boardings, core stops receive between 40 and 199 boardings, major stops receive over 200 weekday boardings, and community destinations are defined as major stops within a unique location within the community context.

While Branham Station is not serviced by bus, Capitol Station is served by two local VTA bus routes, Route 37 and Route 70. Based on ridership data received from VTA showing average daily ridership in October 2022, the bus stops were classified as follows:

Table 6.3 Bus Stop Categorization According to the VTA Transit Passenger Environment Plan

BUS STOP CATEGORY	BUS STOP	AVERAGE DAILY BOARDINGS	AVERAGE DAILY ALIGHTINGS	AVERAGE DAILY RIDERSHIP
Core	Route 37 – Capitol Station on Capitol Expressway (Bay 4)	36.6	34.4	71
Major	Route 70 – Capitol Station on Capitol Expressway (Bay 2)	179.0	266.2	445.2

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 at each bus stop, it was determined that these bus stops were largely in compliance with the Transit Passenger Environment Plan. A review of the existing conditions for each location is detailed in the following table. Cells in gray are amenities that are noted by the plan as “may be” provided, but not required.

Table 6.4 Existing Bus Stop Conditions

AMENITIES REQUIRED BY TPEP	CORE BUS STOP (ROUTE 37)	MAJOR BUS STOP (ROUTE 70)
Seating	✓	✓
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	✓	✓
Scheduled stop display / system map if shelter provided	✓	✓
Shelter system	✓	✓
Trash can if needed	✓	✓
In-shelter lighting, or pedestrian-activated lighting	✓	✓
Wayfinding map	✓	✓

Minor improvements could still be made to each location which would improve the overall appearance and quality of the bus stop. In particular, the bus stop on Narvaez Avenue and Shadow Creek Drive, which is a core bus stop, should receive upgraded seating on a new sidewalk for passenger safety as well as upgraded signage for more visibility. The existing bench at the stop is placed between the curb and retaining wall, a width that measures no more than 4 feet. Thus, the current amenities at the stop are in very close proximity to the curb and also blend into the existing retaining wall. While bicycle parking is located near the bus stops, additional bicycle parking near the Blue Line station entrances, as mentioned in the previous section, would improve bicycle access at the stations. This is especially important when considering what changes may be made to the bus loop as part of the TOD project to be developed at the Capitol Station parking lot. Additionally, upgraded landscaping and public art, as a part of the Capitol Station TOD project, could further enhance the bus stop waiting areas.

6.3 Vehicular Access Improvements

The mode of access survey conducted at the beginning of this study resulted in important findings about how vehicles were accessing the stations.

As mentioned earlier in this section, 100% of users observed at the Capitol Station North Lot arrived by car, while the South Lot was accessed by car, car pick-up/drop-off, walking, VTA bus, or private bus. As car pick-up/drop-off occurs at the South Lot, VTA should consider designating a formal area for pick-up/drop-off. The exact location will depend on the final TOD project development plan, but initial plans are designating a pick-up/drop-off area at the proposed loop/transit plaza on the west side of the site, which is recommended as a part of this study. In the case this transit plaza is not able to be constructed in the proposed location, another potential area for a pick-up/drop-off zone may be on Capitol Expressway westbound at the station entrance. During an initial site visit in November 2022, the area was mentioned as being used as an informal pick-up/drop-off zone. This location would prevent pick-up/drop-off from occurring in front of new development at the lots and prevent generating additional traffic along Narvaez Avenue, which was mentioned by community members as becoming congested during peak hours. Because pick-up/drop-off by private bus was also observed at the Capitol Station South Lot, VTA might consider collaboration with private bus providers to establish more efficient alternatives or pick-up/drop-off locations.

At Branham Station, the majority of people observed were found to be accessing the station by walking. However, vehicle pick-up and drop-off did occur, most commonly inside the parking lot, with a small number occurring at the station entrance on Branham Lane. As the TOD project at Branham Station is expected to include affordable homeownership units, pick-up/drop-off in the existing station parking lot may not be feasible. Designating a pick-up/drop-off area in front of the station entrance may also be a challenge because of the Class IV protected bike lane on Branham Lane. The conflict is not only due to the competing curb space, but it is also a potential safety issue due to the grade change along Branham Lane that prevents vehicles from being able to clearly see the curb space until they are close to it. Additionally, the facility is not managed by the City. As the TOD project plans are developed, VTA should consider the options provided in Appendix C for a designated pick-up/drop-off area that allows for the proper and safe functioning of both the bikeway and pick-up/drop-off activity.

It should be noted that this study also considered the addition of a mid-block crossing with rectangular rapid-flashing beacon in front of the station entrance, as was recommended by the SR 87 Technology Corridor Study. This would allow for a closer connection to the station entrance for pedestrians on the south side of Branham Lane as well as the provision of an eastbound pick-up/drop-off area. However, analysis determined that this recommendation would require additional study for feasibility, as safety is a concern due to roadway grade change, visibility, and high traffic speeds on Branham Lane.

7 Transportation Demand Management (TDM) Recommendations

With development of TOD projects at these stations comes the potential for increased traffic demand at the existing station sites and surrounding areas. This section presents a summary of strategies to reduce single-occupancy trips and relieve traffic congestion and parking demand at the station sites. To reduce single-occupancy vehicle trips to the station, the following recommendations should be considered:

- Ensure the provision of additional bicycle parking. These should be provided closer to station entrances for transit riders, as well as on the TOD project sites.
- Consider implementing bicycle share facilities on site for each station. This can encourage trips by active transportation to and from the station. Bicycle and scooter share facilities can help fulfill first/last mile connections to and from transit for passengers.
- Provide free or reduced cost monthly VTA transit passes for residents of the TOD projects. The purpose of this is to introduce the new residents of the area to VTA services in their vicinity and encourage travel by transit and active transportation modes. This can facilitate increased use of VTA transit service not only at Capitol and Branham Stations, but throughout the VTA network.
- Promote transit through targeted marketing campaigns. These campaigns can be targeted particularly to residents of the TOD projects as a supplement to free or reduced cost VTA transit passes, in order to promote the benefits of using transit and further encourage multimodal travel to alleviate single-occupancy trip demand. Campaigns may also be extended to the surrounding neighborhoods and general VTA network.
- Work with the companies providing private shuttle service at Capitol Station. As private buses are providing pick-up/drop-off service at Capitol Station, VTA may consider collaborating to promote the use of alternative modes of transportation as first-last mile connections to the station and designate pick-up/drop-off areas, such as the proposed transit plaza, that minimize generating additional vehicle traffic to the TOD project site.
- Work with the City of San Jose to integrate transit promotion into any education programming that may be planned as part of the Branham Lane Safety Project. Given that Branham Lane is identified as a priority corridor for safety improvements through the City of San Jose's Vision Zero program, VTA may consider working with the City's Department of Transportation to identify potential opportunities to promote first/last mile connections to transit through educational programming or training that may accompany infrastructure improvements along the corridor.

8 Cost Estimates

Planning-level, rough order of magnitude cost estimates for on-site and off-site 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 in 2018. 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 6, cost estimates 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, geotechnical analysis, right-of-way acquisition, or utility costs unless noted.

9 Prioritization and Implementation

This section discusses the recommended path forward for the implementation of proposed access improvements recommended in Section 6 of this report. This includes a breakdown of potential funding sources for each of the projects, as well the identification of high-priority projects for each station.

9.1 Potential Funding Sources

To aid in the implementation of prioritized projects and their associated cost estimates presented in Appendix B, the table below presents a list of potential project funding sources. Funding sources are categorized by agency, including at the Federal, State, and Local levels. Additionally, project types eligible for grant funding are provided by funding source.

Table 9.1 Funding Sources

AGENCY	FUNDING SOURCE	ELIGIBLE PROJECT TYPES			
		TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/ SUSTAINABILITY	LOCAL STREETS
Federal	FTA Section 5307 Urban Area Formula	X			
	FTA Section 5310 Specialized Transportation	X			
	FTA Section 5337 State of Good Repair	X			
	FTA Section 5339 Bus and Bus Facilities Program	X			
	FHWA Regional Surface Transportation Program	X	X	X	
	Regional Trails Program		X		
	BUILD Discretionary Grant	X			
	Highway Safety Improvement Program (HSIP)		X		
	Surface Transportation Block Grants (STBG)	X	X		
	DOT RAISE Discretionary Grants			X	
	FTA Section 5309 New Starts and Small Starts	X			

AGENCY	FUNDING SOURCE	ELIGIBLE PROJECT TYPES			
		TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/ SUSTAINABILITY	LOCAL STREETS
Federal	Congestion Mitigation & Air Quality Improvement (CMAQ)	X	X	X	
	EPA Office of Sustainable Communities Greening America's Communities Program			X	
	EPA Environmental Justice Small Grants Program			X	
State	Active Transportation Program	X	X		
	Cap & Trade: Low Carbon Transit Operations Program		X		
	Regional Improvement Program (STIP)		X		
	Low Carbon Transportation Fund (LTF)		X		
	State Transportation Assistance (STA)	X			
	State Highway Operations Protection Program (SHOPP)	X			
	SB1 – Local Streets & Roads		X	X	
	Local Partnership Program (LPP)	X	X		
	Transit & Intercity Rail Capital Program	X			
	Reconnecting Communities Program	X	X	X	X
Local	Lifeline Transportation Program Cycle 5	X			
	OneBayArea Grant (OBAG) Program	X	X	X	
	TDA Article 3 Program		X		

AGENCY	FUNDING SOURCE	ELIGIBLE PROJECT TYPES			
		TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/SUSTAINABILITY	LOCAL STREETS
Local	Transportation Fund for Clean Air (TFCA) County Program Manager Fund	X	X	X	
	Bicycle Expenditure Program (BEP)		X		
	Bike Share Partnership		X		

9.2 Project List

The following table provides the full list of project recommendations for the study. The projects are listed by station and by type, aligning with the maps and ID numbers presented in Chapter 6. The funding category for each project as presented in Table 9.1 has also been identified for each project.

Table 9.2 Project List

ID	PROJECT	LOCATION	FUNDING CATEGORY			
			TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/SUSTAINABILITY	LOCAL STREETS
Capitol Station Area Bike Projects						
CB1	Bike intersection crossing lanes	Capitol Expressway & SR 87 off-ramp		X		
CB2	Bike lockers closer to station entrances (5)	Station Entrance at Capitol Expressway	X	X		
CB3	Bike/e-scooter share facility	South Lot at Capitol Station			X	
CB4	Bike intersection crossing lanes	Capitol Expressway & Narvaez Avenue		X		
CB5	Class IV Protected bike lane	Hillsdale Avenue Between Pearl Avenue and Capitol Expressway		X		
CB6	Class IV Protected bike lane	Corridor-wide on Capitol Expressway		X		
CB7	Class III Bike boulevard	Albion Drive Between Narvaez Avenue & Bluefield Drive, Bluefield Drive Between Capitol Expressway and Vistapark Drive		X		

ID	PROJECT	LOCATION	FUNDING CATEGORY			
			TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/ SUSTAINABILITY	LOCAL STREETS
CB8	Class IV Protected bike lane	Pearl Avenue between Hillsdale Avenue and Chynoweth Avenue		X		
CB9	Bike access ramp on northern entrance staircase	Northern Station Entrance at Capitol Expressway	X			
CB10	Class IV Protected bike lane	Narvaez Avenue between Helzer Avenue and Branham Lane		X		
Capitol Station Area Pedestrian Projects						
CP1a	High visibility crosswalk	Hillsdale Avenue & Dow Drive		X		
CP1b	Wayfinding signage	Hillsdale Avenue & Dow Drive		X	X	
CP2a	High visibility crosswalk	Hillsdale Avenue & Narvaez Avenue		X		
CP2b	Wayfinding signage	Hillsdale Avenue & Narvaez Avenue		X	X	
CP3	High visibility crosswalk	Hillsdale Avenue & Mountain Springs Drive		X		
CP4a	Midblock street crossing with RRFB	Narvaez Avenue & Shadow Creek Drive		X		
CP4b	Bus stop enhancement	Narvaez Avenue & Shadow Creek Drive	X			
CP5a	Remove porkchop	Capitol Expressway & Pearl Avenue				X
CP5b	High visibility crosswalk	Capitol Expressway & Pearl Avenue		X		
CP5c	Wayfinding signage	Capitol Expressway & Pearl Avenue		X	X	
CP6a	High visibility crosswalk	At traffic light between Pearl Avenue & SR 87 on/off-ramps		X		
CP6b	Wayfinding signage	At traffic light between Pearl Avenue & SR 87 on/off-ramps		X	X	
CP7	High visibility crosswalk	Narvaez Avenue & SR 87 on- and off-ramps		X		
CP8a	Wayfinding signage	Capitol Expressway & SR 87 off-ramp		X	X	
CP8b	Remove porkchop	Capitol Expressway & SR 87 off-ramp				X

ID	PROJECT	LOCATION	FUNDING CATEGORY			
			TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/ SUSTAINABILITY	LOCAL STREETS
CP9a	Improved shade	Station Platform at Capitol Station			X	
CP9b	Improved lighting	Station Platform at Capitol Station				X
CP10a	Station identification signage at both entrances	Station Entrance on Capitol Expressway			X	
CP10b	Real-time transit information at both entrances	Station Entrance on Capitol Expressway	X			
CP10c	Improved lighting beneath SR 87 underpass	Station Entrance on Capitol Expressway				X
CP11a	Station identification signage	North Station Parking Lot Driveway on Narvaez Avenue			X	
CP11b	Wayfinding signage	North Station Parking Lot Driveway on Narvaez Avenue		X	X	
CP12a	Station identification Signage	Capitol Station South Parking Lot			X	
CP12b	Wayfinding signage	Capitol Station South Parking Lot		X	X	
CP13a	Mobility hub	Capitol Station South Parking Lot	X			
CP13b	Designated pick-up/ drop-off	Capitol Station South Parking Lot	X			
CP14a	High visibility crosswalks on north and south legs of intersection	Capitol Expressway & Narvaez Avenue		X		
CP14b	Remove porkchop	Capitol Expressway & Narvaez Avenue				X
CP15a	High visibility crosswalks on east and west legs of the intersection	Capitol Expressway & Narvaez Avenue		X		
CP15b	Curb extensions	Capitol Expressway & Narvaez Avenue		X		
CP15c	Wayfinding signage	Capitol Expressway & Narvaez Avenue		X	X	
CP16	High visibility crosswalk	Capitol Expressway & Timber Loop Drive		X		

ID	PROJECT	LOCATION	FUNDING CATEGORY			
			TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/ SUSTAINABILITY	LOCAL STREETS
CP17a	High visibility crosswalk	Capitol Expressway & Copperfield Drive		X		
CP17b	Wayfinding signage	Capitol Expressway & Copperfield Drive		X	X	
CP18a	New high visibility crosswalk	Narvaez Avenue & Capitol Station South Parking Lot Northernmost Driveway		X		
CP18b	Wayfinding signage	Narvaez Avenue & Capitol Station South Parking Lot Northernmost Driveway		X	X	
CP19	New high visibility crosswalk	Narvaez Avenue & Naomi Court		X		
CP20	Wayfinding signage	Narvaez Avenue & Sarah Court		X	X	
CP21	Wayfinding signage	Narvaez Avenue and Faye Park Drive		X	X	
CP22	Pedestrian pathway	Access Road for Campus Between Lewiston Drive and Hillsdale Ave		X		
CP23	Improved lighting	Narvaez Avenue Between Capitol Expressway and Naomi Court				X
CP24	New sidewalk	Capitol Expressway Between Narvaez Avenue and Copperfield Drive		X		
CP25	New sidewalk	Narvaez Avenue Between Hillsdale Avenue and Faye Park Drive		X		
Branham Station Area Bike Projects						
BB1	Bike intersection crossing lanes	Branham Lane & Pearl Avenue		X		
BB2a	Bike/e-scooter share facility	On Branham Lane East of the Station Entrance Next to Existing Stairs from TOD Site			X	

ID	PROJECT	LOCATION	FUNDING CATEGORY			
			TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/SUSTAINABILITY	LOCAL STREETS
BB2b	Bike lockers (5)	On Branham Lane East of the Station Entrance Next to Existing Stairs from TOD Site		X		
BB3	Bike intersection crossing lanes	Branham Lane & Narvaez Avenue		X		
BB4	Class IV Protected bike lane	Pearl Avenue Between Hillsdale Avenue to Chynoweth Avenue		X		
BB5	Class III Bike boulevard	Albion Drive Between Narvaez Avenue & Bluefield Drive, Bluefield Drive Between Capitol Expressway and Vistapark Drive		X		
BB6	Class IV Protected bike lane	Branham Lane Between Meridian Avenue to Monterey Road		X		
BB7	Class IV Protected bike lane	Branham Lane Between Meridian Avenue to Monterey Road		X		
BB8	Class IV Protected bike lane	Narvaez Avenue Between Helzer Drive and Branham Lane		X		
Branham Station Area Pedestrian Projects						
BP1	New sidewalk	Narvaez Avenue Between W Capitol Expressway and Branham Lane		X		X
BP2	Midblock street crossing	Narvaez Avenue & Naomi Court		X		
BP3	Midblock street crossing	Narvaez Avenue & Albion Drive		X		
BP4a	New high visibility crosswalk	Narvaez Avenue & Faye Park Drive		X		
BP4b	Wayfinding signage	Narvaez Avenue & Faye Park Drive		X	X	
BP5	Midblock street crossing	Narvaez Avenue & Indigo Drive		X		
BP6a	Remove porkchop	Branham Lane & Pearl Avenue				X

ID	PROJECT	LOCATION	FUNDING CATEGORY			
			TRANSIT	ACTIVE TRANSPORTATION	MULTI-MODAL/ SUSTAINABILITY	LOCAL STREETS
BP6b	Wayfinding signage	Branham Lane & Heppner Drive		X	X	
BP7	Midblock street crossing with RRFB	Branham Lane & Heppner Lane		X	X	
BP8	Improved shade	Branham Station Platform			X	
BP9	Real-Time Transit Information	Station Entrance on Branham Lane	X		X	
BP10	ADA access ramp next to stairs	Branham Station Lot	X			
BP11	Widen sidewalk on south side	SR 87 Overpass on Branham Lane		X		X
BP12	Designated pick-up/ drop-off	SR 87 Overpass on Branham Lane	X			
BP13	Station identification signage	Branham Lane & Narvaez Avenue			X	
BP14a	Roadway median	Branham Lane & Narvaez Avenue				X
BP14b	Remove porkchop	Branham Lane & Narvaez Avenue				X
BP15	Wayfinding signage	Branham Lane & Sidlaw Court		X	X	
BP16	Pedestrian pathway	Branham Station Lot		X		

9.3 Prioritization and Implementation

Implementation of the proposed access improvements 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 phasing. Additionally, many of these improvements will need to be done in coordination with the City of San José or with the TOD developer. The following section discusses these considerations, then provides a prioritized list of projects for pursuit of funding and implementation.

9.3.1 Phasing Considerations

Near-term improvements 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. Phasing will also be affected by whether projects are already planned or funded as a part of another ongoing project, study, or the TODs at either site.

Near-term improvements can include:

- Station identification signage
- Wayfinding signage pointing bicyclists and pedestrians near the station

Mid-term improvements can include:

- Real-time transit information signage
- Improvements that require paint striping, including crosswalks or bike lanes
- Installation of rectangular rapid flashing beacons for midblock high visibility crosswalks

Longer-term improvements can include:

- Installation of hardscape vertical separators for Class IV protected bike lanes
- Installation of larger traffic calming measures, such as curb extensions, roadway medians, or widened sidewalks
- Installation of bike/e-scooter share facilities
- Installation of an ADA ramp alongside the existing stairs from the Branham Parking Lot

9.3.2 Interagency Coordination Considerations

Because there are a number of roadway improvements that have been identified in other City projects, the implementation of projects should be coordinated with the City of San José Department of Transportation, County of Santa Clara, or Caltrans. For example, the Branham Lane Safety Project led by the City implemented a quick-build Class IV bikeway on Branham Lane that this study recommends making permanent with hardscape materials. As this may already be in the City's plans, VTA should coordinate with the City for implementation of permanent infrastructure. This coordination will also be particularly beneficial when attaining funding and right-of-way necessary for implementing roadway and bikeway projects.

Additionally, since the TOD projects are currently still in the planning stages, VTA may require that certain improvements are conditioned to the developer in accordance with approved construction plans. These improvements affect private and public access to the TODs and the transit stations directly.

9.3.3 High-Priority Projects

The recommended projects for this study listed in Table 9.2 are all intended to improve access to Capitol and Branham Stations and benefit non-vehicular mobility within the overall station areas. To determine which projects are of the highest priority for implementation, the projects were evaluated further and scored based on the following:

Table 9.3 Project Evaluation Criteria

CRITERION	DESCRIPTION	SCORING
Improves Connectivity to Transit	High: The project has a high direct impact on connectivity to the station by closing a current critical gap in infrastructure. The project is essential to maintain pedestrian/bicycle access in light of potential new development at the station site.	High = 1 Medium = 0.6 Low = 0.3
	Medium: The project improves the general connectivity of infrastructure in the station area (i.e. introduces additional midblock crossings).	
	Low: The project enhances or complements connectivity improvements in the station area (i.e. improves wayfinding or provides other amenities).	
Improves Accessibility	The project eliminates a barrier to ADA accessibility (i.e. by closing sidewalk gaps or providing ADA access ramps).	Yes = 1 No = 0
Improves Safety	High: The project addresses an area with high collision activity.	High = 1 Medium = 0.6 Low = 0.3
	Medium: The project addresses a safety issue that was identified by public engagement or by field review.	
	Low: The project generally improves safety issues.	
Coordination with Planned Projects	The project is planned or proposed by another project or agency, or the improvement is or can be incorporated into the TOD Plan.	Yes = 1 No = 0

Based on the results of the scoring exercise, which are found in Appendix C, the top high-priority projects for each station are presented below.

Table 9.4 High-Priority Projects for the Capitol Station Area

ID	PROJECT	LOCATION
CP13a/CB3	Mobility hub at the proposed loop on the west side of the existing lot close to the southern station entrance to facilitate pedestrian and bicyclist access to the station. Includes bus bays and the provision of a bike/e-scooter share facility.	Capitol Station South Parking Lot
CP13b	Designated pick-up/drop-off at the mobility hub to facilitate pedestrian access that utilizes a designated access point for non-resident vehicles entering from Narvaez Avenue	Capitol Station South Parking Lot
CP18a	New high visibility crosswalk to provide safe crossing for pedestrians at the proposed residential vehicle access point for the TOD	Narvaez Avenue & Capitol Station South Parking Lot Northernmost Driveway
CP24	New sidewalk to close the existing gap on the southside of Capitol Expressway	Capitol Expressway Between Narvaez Avenue and Copperfield Drive
CP25	New sidewalk to close the existing sidewalk gap on the west side of Narvaez Avenue	Narvaez Avenue Between Hillsdale Avenue and Faye Park Drive

ID	PROJECT	LOCATION
CB6	Class IV Protected bike lane to improve bicyclist safety along a major corridor in the station area	Capitol Expressway (Corridor-Wide)
CB2	Bike lockers (5) closer to the station entrance	Station Entrance at Capitol Expressway
CB5	Class IV Protected bike lane to improve safety for bicyclists in the station area	Hillsdale Avenue Between Pearl Avenue and Capitol Expressway
CB8	Class IV Protected bike lane to improve safety for bicyclists in the station area	Pearl Avenue between Hillsdale Avenue and Chynoweth Avenue
CP1a	New high visibility crosswalk to address an area with previous pedestrian collisions	Hillsdale Avenue & Dow Drive
CP2a	New high visibility crosswalk to address an area with previous pedestrian collisions	Hillsdale Avenue & Narvaez Avenue

Table 9.5 High-Priority Projects for the Branham Station Area

ID	PROJECT	LOCATION
BP1	New sidewalk to close the existing sidewalk gap on the west side of Narvaez Avenue	Narvaez Avenue between Capitol Expressway and Branham Lane
BP7	Midblock street crossing to facilitate pedestrian access closer to the station	Branham Lane and Heppner Drive
BP5	Midblock street crossing to facilitate pedestrian access into the TOD project from the neighborhood	Narvaez Avenue & Indigo Drive
BP10	New ADA access ramp next to the existing staircase	Branham Station Lot
BP16	Formalized pedestrian pathway from the informal SR 87 access point to connect to the existing sidewalk leading to the staircase and proposed ADA access ramp. This should include: 1) formalizing the access point with an official entryway, such as a gate, and be clearly marked, visible, and publicly accessible on both sides; and 2) providing a ramp up to the access point from the SR 87 with lighting and signage leading to the gate.	Branham Station Lot
BP12	Designated pick-up/drop-off in front of the station entrance. Potential options for configuration are presented in Appendix C.	SR 87 Overpass on Branham Lane
BB2a/ BB2b	Bike/e-scooter share facility and bike lockers (5) as part of a “transit plaza” leveled on Branham Lane to be used by transit riders and closer to the station entrance than existing bike lockers at Branham Lane & Narvaez Avenue	Branham Lane next to existing staircase from the station lot
BB6/BB7	Class IV Protected bike lane made permanent with hardscape materials to improve safety for bicyclists on a Vision Zero corridor	Branham Lane next to existing staircase from the station lot
BB4	Class IV Protected bike lane to improve safety for bicyclists in the station area	Pearl Avenue between Hillsdale Avenue and Chynoweth Avenue
BP4a	New high visibility crosswalk to connect the SR 87 entrance to the existing sidewalk on the east side of Narvaez Avenue	Narvaez Avenue & Faye Park Drive

It is important to note that these projects are not the only project recommendations that will benefit the station and station area, but are intended to be identified as priority for potential incorporation into the stations' ongoing TOD plans as well as ongoing City plans in coordination with the City of San José or County of Santa Clara.

Appendix

Appendix A: Community Engagement

Capitol/Branham Station Access Study
Walk Audit
3/2/23

Agenda

1. Welcome & Introductions
2. Project Background
3. Review Walk Audit Collection Tool form
 - a. Objective
 - b. What to Look For
 - i. Barriers, strengths, observed behaviors
 - ii. Photo submission
 - c. Safety Considerations and Emergency Contact
 - d. Four routes per station
 - e. Map and Notes
 - f. Survey
4. Submission of form – please submit your form to the Arcadis IBI Group or VTA representative in your group when you return to the station at the end of your walk audit.
5. Questions?
6. Split up groups for each station and route – at least two people per route.

CAPITOL AND BRANHAM STATION ACCESS STUDY WALK AUDIT DATA COLLECTION TOOL

Quadrant:

Morning / Evening

Date / Time / Weather:

OBJECTIVE

The goal of the technical walk audit is to evaluate on-the-ground conditions around the VTA Capitol and Branham Stations, with special considerations to pedestrians and cyclists.

WHAT TO LOOK FOR

Identify strengths, barriers, opportunities, and observed behavior conditions that can hinder/foster a safe, pleasant environment for pedestrians and cyclists.

Examples of conditions include but are not limited to:

- Barriers: missing/derelect sidewalk or bike paths, lack of lighting, high speeds, visibility concern, places to hide (safety concern), cleanliness, lack of crosswalk, curb ramp etc.
- Strengths: great seating, public art, high use spaces/businesses nearby, opportunities for multi-use paths, etc.
- Observed Behaviors: jaywalking, loitering, littering, transfer experience confusion, nervousness, mothers pushing strollers, aggressive driving, bicycling on sidewalks, illegal activities, etc.

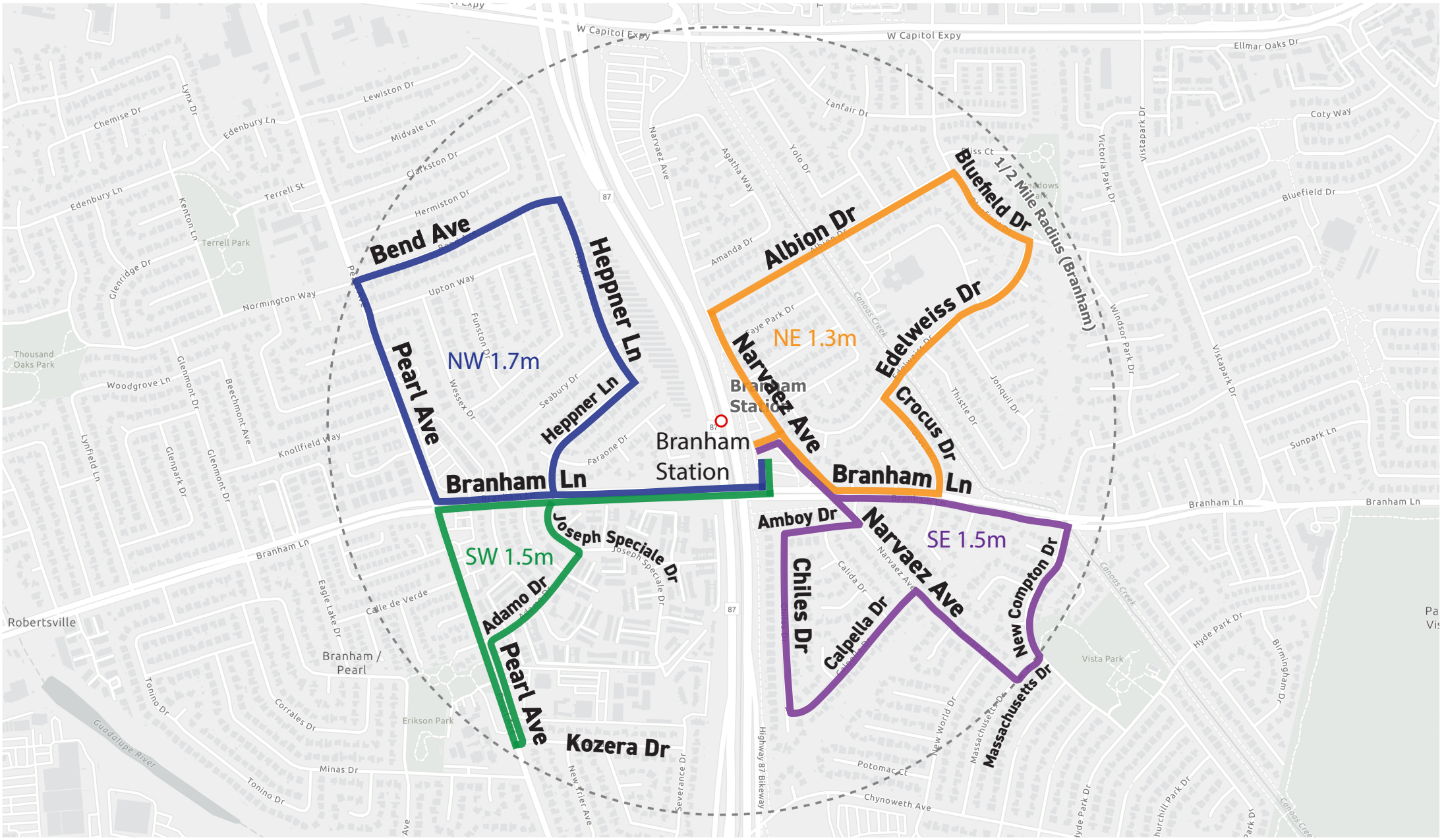
Photo examples of these conditions are provided at the end of this document.

Place yourself in the shoes of various types of individuals: older adults, youth, women, persons with disabilities, non-English speakers, etc.

Take photos! Make a note of the location where the picture is taken, and send them to jennifer.moore@ibigroup.com

SAFETY CONSIDERATIONS AND EMERGENCY CONTACT

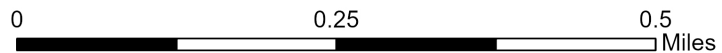
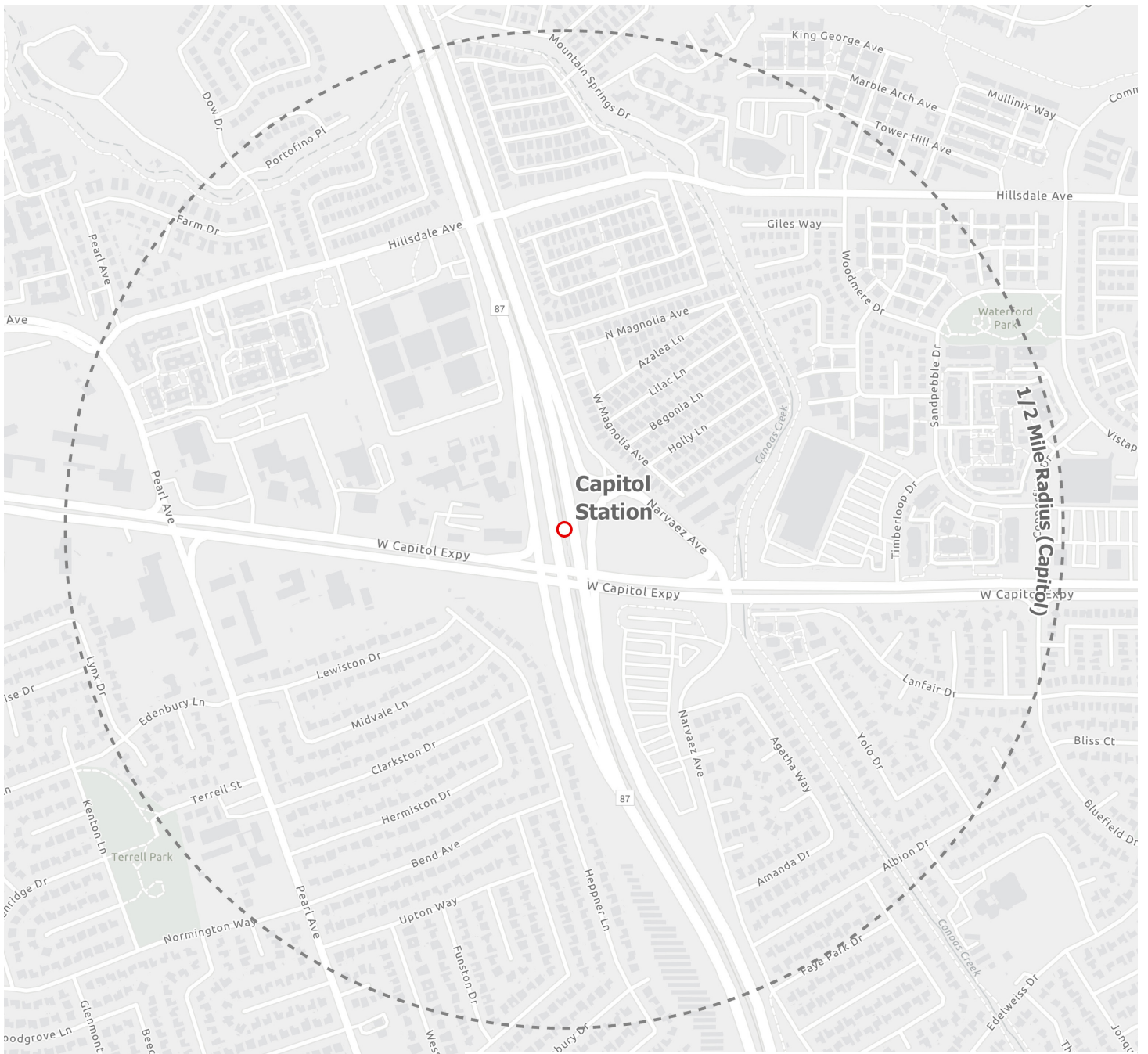
- **If you feel in danger, call 911 immediately.**
- If you have questions in the field, contact **Aiko Cuenco at 510-205-1537.**
- Stay with your group. Stay alert and wear the safety equipment provided.
- Use the flashlight at night to see and be seen.
- Observe all traffic laws. Cross the street safely at designated locations.



VTA - Branham Station Existing Conditions Report

Half-Mile Radius





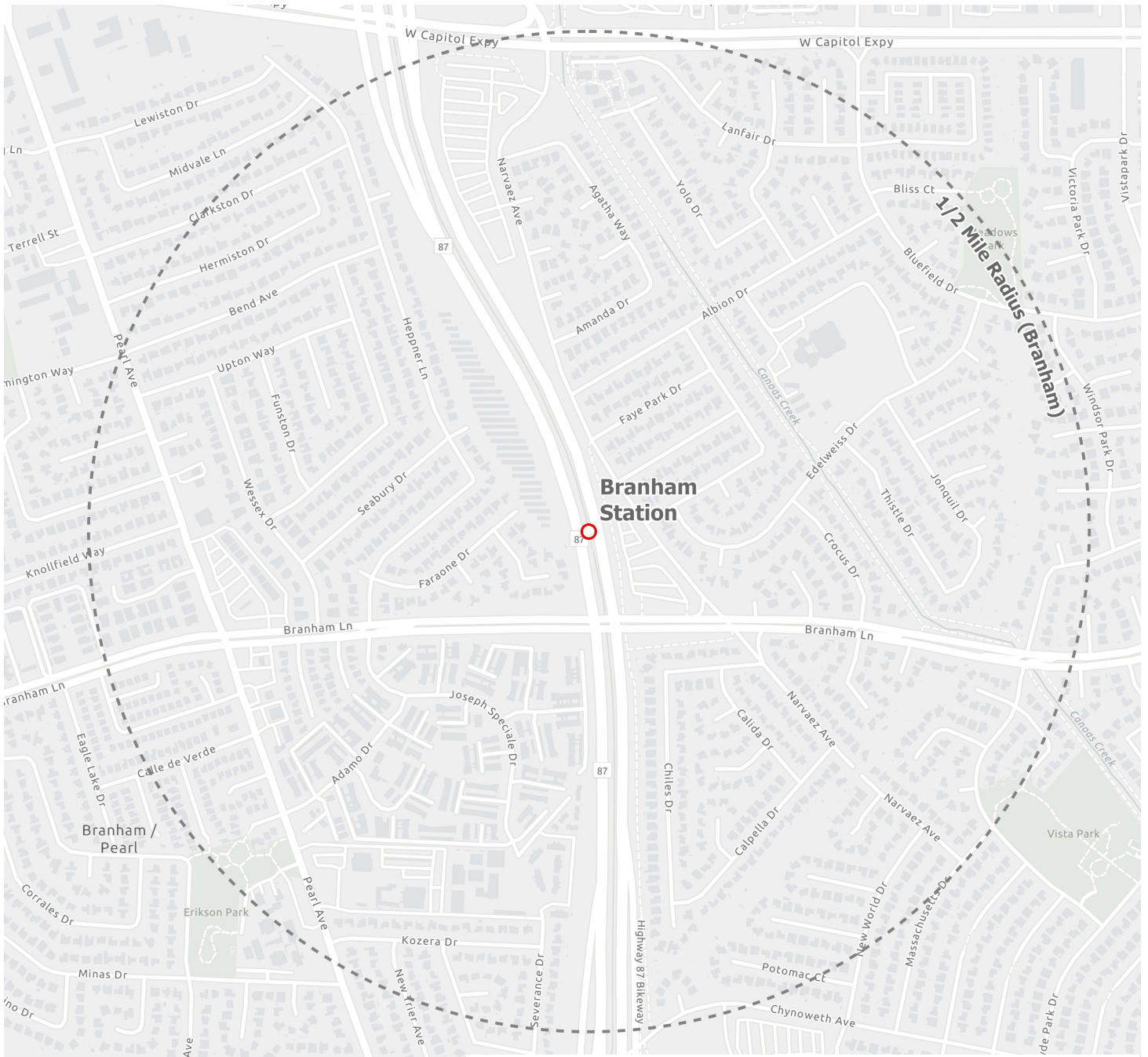
DIRECTIONS

Trace the route taken on the map. Stay within the area shown on the map.

Conditions may include strengths, barriers, or observed behaviors. Clearly mark the specific location or zone where the condition has been observed. Identify location of specific conditions with a letter (B for barrier, S for strength and O for observed behavior) and a number, and provide further explanation in the table on the following page.

Example of note:

On map mark O1 where you see some jaywalking. Add details as needed on the following page.



DIRECTIONS

Trace the route taken on the map. Stay within the area shown on the map.

Conditions may include strengths, barriers, or observed behaviors. Clearly mark the specific location or zone where the condition has been observed. Identify location of specific conditions with a letter (B for barrier, S for strength and O for observed behavior) and a number, and provide further explanation in the table on the following page.

Example of note:

On map mark O1 where you see some jaywalking. Add details as needed on the following page.

SAFETY

1.1 Adequate Lighting

Regularly spaced and frequent lighting that is directed towards the sidewalk and any bikeways which provides sufficient illumination. Potential obstacles marked with reflectors or lighting.

1.2 Eyes-on-the-Street

Presence of highly transparent ground-floors, windows, and entries.

1.3 Presence of security/police

Presence of security figures ready to intervene if trouble occurs.

1.4 Well maintained public realm

Sidewalks are smooth and without cracks, vegetation is trimmed, etc.

1.5 Safety buffer for bikes

Bikes are adequately set back from vehicles. Consider type and quality of buffer – sufficient width, painted material, and vertical separation, such as bollards.

1.6 Safety buffer for pedestrians

Pedestrians set back from travel lanes via ample sidewalk width, landscaping, and street furniture.

1.7 People-friendly traffic speeds and manners

Drivers yield to pedestrians and traffic is slowed via narrow roadways, markings, no turn on red lights, etc.

1.8 Clear safety signage

Signage is large enough for both pedestrians and motorists to see, placed in easily visible areas, and clear enough to understand.

1.9 Station area feels safe

There is a feeling of safety as you walk through the station area. Consider the safety of all users – especially women, children, persons with a disability, and the elderly.

Strongly Disagree

Strongly Agree

1 2 3 4 5
Specific Areas of Concern:

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

AESTHETICS

2.1 Sense of Place

Inclusion of unique street characteristic, landmarks, striping or a navigable streetscape or hierarchy that sets this space apart from other areas.

2.2 Pleasant Landscaping

Consistent landscaping that provides ample shade. Trees are well maintained and all tree wells are planted with street trees.

2.3 Strategically placed pedestrian amenities

There are a variety and sufficiently provided pedestrian amenities (seating, trash cans, water fountains) that are well maintained and inviting. Kiosks and vendors are present on pedestrian paths, are visually pleasing and are located in areas that do not interfere with foot traffic.

2.4 Pedestrian unfriendly elements are limited

There is a general lack of the following: unpleasant smells, blank walls, vacant lots, fences, noise pollution, unfriendly street conditions, trash.

2.5 Pleasant experience

There is a pleasant ambiance as you walk, bike, or use alternative transit throughout the station area. Consider the experience of all users – especially women, children, persons with a disability, and the elderly. Consider both day and night-time amenities. Care has been taken to make a nice environment for all users.

Strongly Disagree

Strongly Agree

1 2 3 4 5

Specific Areas of Concern:

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

ACCESSIBILITY

3.1 High quality sidewalks

Sidewalks are large enough for pedestrians to walk, pass, and jog comfortably in opposing directions. There are few disruptions to the sidewalk quality (e.g. smooth surface paving, signage, and poles are set back from the pedestrian right-of-way).

3.2 Clear, safe crossings

Signalized intersections allow ample time to cross, frequently allow passage, are a walkable distance (or provide a pedestrian refuge or median), are supplied with functioning push buttons, and are painted for safety.

3.3 Operating and sufficient bicycle facilities

Bicycle facilities are present, have a smooth surface, and provide riders with bike lanes, routes, pathways, adequate marking, parking, separated push buttons, bike stations and bike boxes.

3.4 High quality signage

Signage is located in clear view for pedestrians, bicyclists and other transit modes. Signage provides clear directional and locational information, regulatory warnings, and station area identity.

3.5 Parking and drop-off is streamlined

Adequate number of parking spaces (in park-and-ride if applicable), room for drop-off, on street parking serves as a buffer for pedestrians, parking time restrictions are in effect where necessary, and vehicles are prohibited from blocking the pedestrian right-of-way.

3.6 Curbs and curb ramps are provided

Curbs and curb ramps are present at all crossings and have a gentle slope.

3.7 Navigating the public realm is intuitive and easy

There are frequent and well marked passageways as you walk through the station area. Consider the experience of all users – especially women, children, persons with a disability, and the elderly at various times of the day.

Strongly Disagree

Strongly Agree

1 2 3 4 5
Specific Areas of Concern:

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

TRANSFERS

4.1. Clear transit transfer signage

Transit information is posted for all modes. Wayfinding directional signage directs passengers to transfer points and connection locations.

4.2. Real-time information

Real-time signage is available and easy to see.

4.3. Shaded seating and waiting areas

Shaded seating areas are provided at bus stops and other major waiting locations.

4.4. Reduced distances for transfers

Bus stops are consolidated to shorten distances between transfers and decrease street crossings. Transfer points are clustered. Stops and stations are well-positioned to minimize transfer walking distances.

4.5. Seamless transfers between transit modes

Transferring to alternate modes of transit is streamlined throughout, with the presence of well-marked, nearby and obvious pathways. Pathways are direct and intuitive while transferring. Connections to transit are visible within clear line of sight from station or stop. People do not seem confused about transit transfers.

Strongly Disagree

Strongly Agree

1 2 3 4 5
Specific Areas of Concern:

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

FINAL SCORE:

EXAMPLES OF CONDITIONS



Broken sidewalk - Photo Credit: Medium



Jaywalking - Photo Credit: City Journal



Adequate Lighting - Photo Credit: Franck Michel, Flickr



Littering - Photo Credit : Third Force News



Distracted cyclist - Photo Credit: MrTinDC - Flickr



Missing Curb Ramp - Photo Credit: Disability Rights Washington

SPOT CHECKS

FOR IBI STAFF

Information to be collected (Record on the map):

- Inventory of existing sidewalks, crosswalks, pedestrian signals, signage, lighting, ADA improvements within the 0.5 mile pedestrian catchment area [spot check]
- Record physical roadway and sidewalk widths and pavement/ sidewalk quality [spot check]
- Identify traffic signage (posted speed limit, parking restrictions, school zones, etc.) [spot check]
- Record operational roadway characteristics (number and width of travel lanes, turning lanes, center medians, and on-street parking) [spot check]
- Identification of bicycle access routes based on existing and planned bicycle facilities, input from local bicycle communities, and local knowledge of routes that provide access to the stations from all directions within the three-mile bicycle catchment area
- Record street classification (arterial, collector, local) and bicycle facility classification (Class I, II, or III)
- Record roadway ADT as well as posted and observed speeds
- Record roadway grade (none, low: less than 5%, moderate: 5%-10%, and steep: more than 10%)

VTA Capitol Station Walk Audit Results

B BARRIER

1. Broken/ Cracked/ Uneven Sidewalk
2. Missing Sidewalk
3. Narrow Sidewalk
4. Missing or Faded Crosswalk
5. Missing or Insufficient Bike Lane
6. High Traffic Speeds
7. Fast Vehicle Turn Movement
8. Maintenance/ Beautification Needed
9. Enhanced Bus Shelter and Pullout Needed
10. Improve Lighting
11. Missing Shade Trees
12. Improve Dropoff Zone
13. Access Improvement Needed
14. Pedestrian Focused Signage Needed
15. Damaged/ Poor Sign Condition

S STRENGTH

1. Wide Sidewalk
2. Sidewalk in Good Condition
3. Safe Midblock Crosswalk
4. Bike Lanes in Good Condition
5. Pedestrian Leading Interval
6. Well Maintained Landscaping
7. Good Lighting
8. Overall Pleasant Experience
9. Public Art

O OBSERVATION

1. Sidewalk Obstruction
2. Bike Lane Obstruction
3. Jaywalking
4. Pedestrian-Involved Accident
5. Vehicle Queuing in Bike Lane
6. Parked E-Scooter
7. Bus Stop in Fire Lane
8. Long Time to Cross
9. No Stores or Service
10. Unhoused Encampment
11. Low Parking Utilization
12. Pedestrian Fatality Memorial



VTA Branham Station Walk Audit Results

B BARRIER

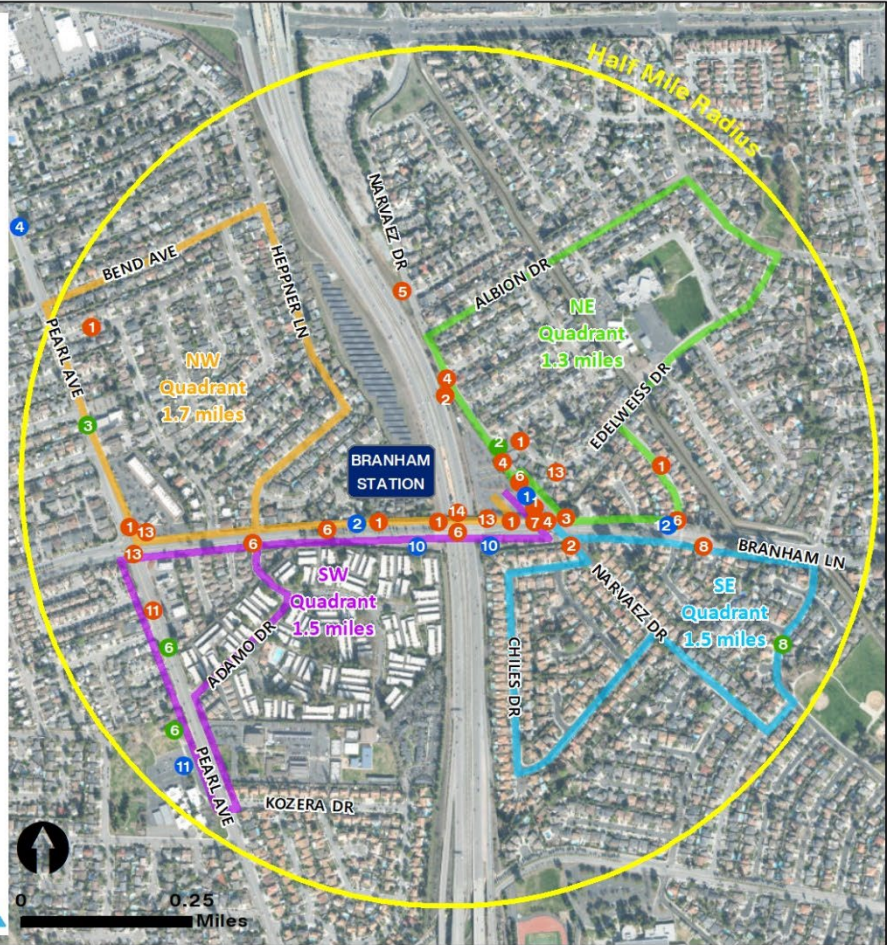
1. Broken/ Cracked/ Uneven Sidewalk
2. Missing Sidewalk
3. Narrow Sidewalk
4. Missing or Faded Crosswalk
5. Missing or Insufficient Bike Lane
6. High Traffic Speeds
7. Fast Vehicle Turn Movement
8. Maintenance/ Beautification Needed
9. Enhanced Bus Shelter and Pullout Needed
10. Improve Lighting
11. Missing Shade Trees
12. Improve Dropoff Zone
13. Access Improvement Needed
14. Pedestrian Focused Signage Needed
15. Damaged/ Poor Sign Condition

S STRENGTH

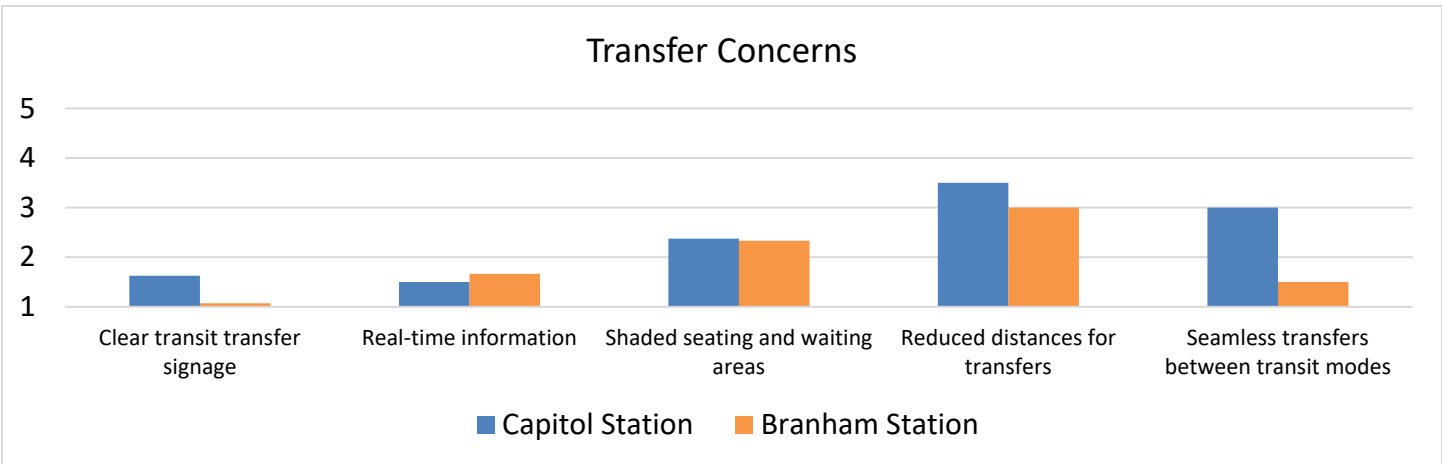
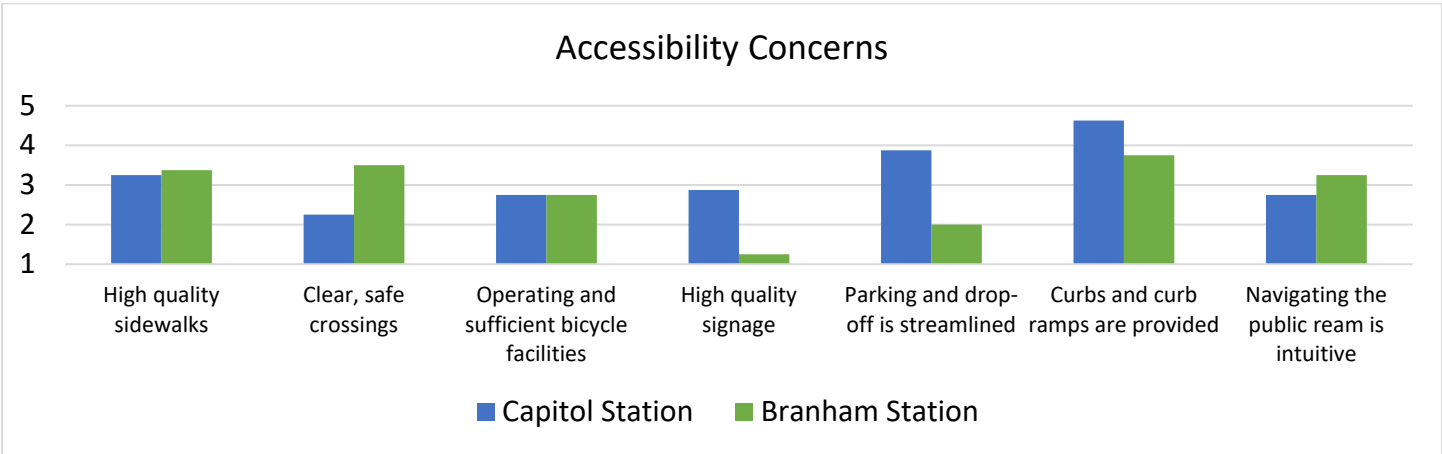
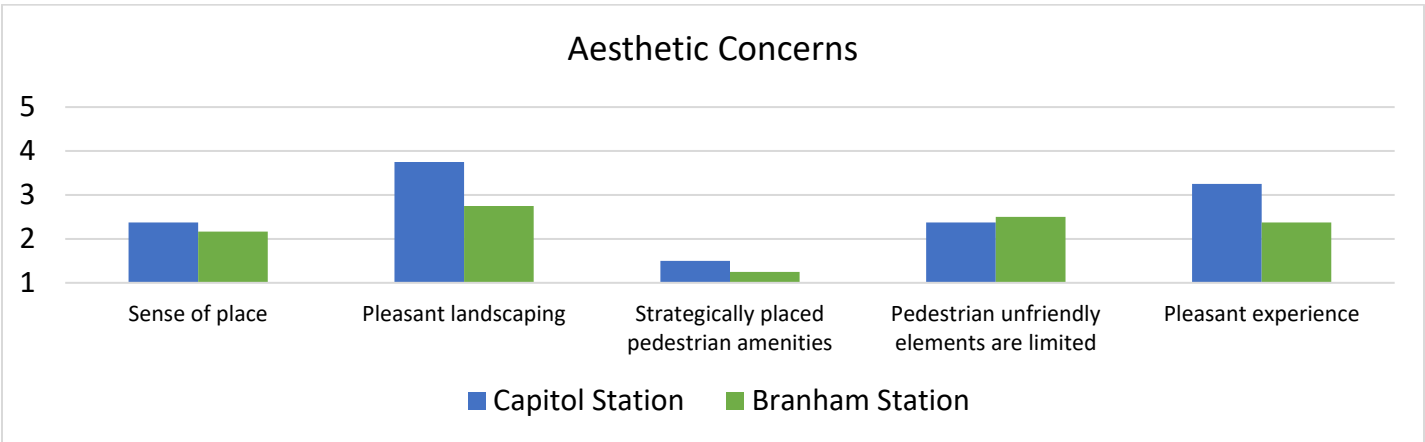
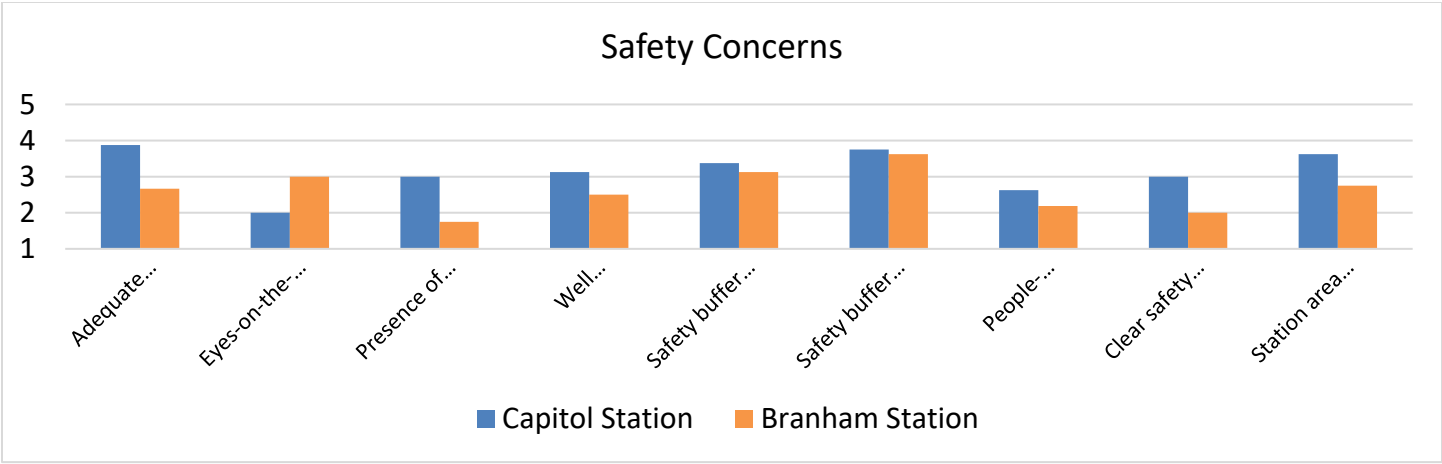
1. Wide Sidewalk
2. Sidewalk in Good Condition
3. Safe Midblock Crosswalk
4. Bike Lanes in Good Condition
5. Pedestrian Leading Interval
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4. Pedestrian-Involved Accident
5. Vehicle Queuing in Bike Lane
6. Parked E-Scooter
7. Bus Stop in Fire Lane
8. Long Time to Cross
9. No Stores or Service
10. Unhoused Encampment
11. Low Parking Utilization
12. Pedestrian Fatality Memorial



Capitol/Branham Walk Audit Survey Results		Capitol Station					Branham Station				
		NW	SW	NE	SE	AVG	NW	SW	NE	SE	AVG
1	SAFETY	3.3	3.3	3.6	2.4	3.2	3.9	1.8	1.6	3.3	2.6
1.1	Adequate Lighting	4	5	3	3.5	3.9	4	N/A	1	3	2.7
1.2	Eyes-on-the-Street	2	1	3	2	2.0	4	1	4	3	3.0
1.3	Presence of security/police	3	4	4	1	3.0	3	1	2	1	1.8
1.4	Well maintained public realm	4	3	4	1.5	3.1	4	1	1	4	2.5
1.5	Safety buffer for bikes	3	4	3	3.5	3.4	4	3.5	1	4	3.1
1.6	Safety buffer for pedestrians	3	5	4	3	3.8	4	4.5	1	5	3.6
1.7	People-friendly traffic speeds and manners	3	3	3	1.5	2.6	4	0.75	1	3	2.2
1.8	Clear safety signage	4	2	4	2	3.0	N/A	1	1	4	2.0
1.9	Station area feels safe	4	3	4	3.5	3.6	4	2	2	3	2.8
2	AESTHETICS	2.8	3.2	2.4	2.2	2.7	2.7	1.9	1.0	3.0	2.2
2.1	Sense of place	2	4	2	1.5	2.4	2	1.5	N/A	3	2.2
2.2	Pleasant landscaping	4	4	3	4	3.8	3	3	1	4	2.8
2.3	Strategically placed pedestrian amenities	1	2	2	1	1.5	2	1	1	1	1.3
2.4	Pedestrian unfriendly elements are limited	3	2	2	2.5	2.4	2.5	2.5	1	4	2.5
2.5	Pleasant experience	4	4	3	2	3.3	4	1.5	1	3	2.4
3	ACCESSIBILITY	3.7	2.9	3.6	2.5	3.2	3.8	3.6	1.1	3.3	2.8
3.1	High quality sidewalks	3	5	3.5	1.5	3.3	4	4.5	1	4	3.4
3.2	Clear, safe crossings	3	2	3	1	2.3	4	5	1	4	3.5
3.3	Operating and sufficient bicycle facilities	4	2	3	2	2.8	4	1	2	4	2.8
3.4	High quality signage	3	2	4	2.5	2.9	2	1	1	1	1.3
3.5	Parking and drop-off is streamlined	5	2.5	4	4	3.9	N/A	N/A	1	3	2.0
3.6	Curbs and curb ramps are provided	5	5	4.5	4	4.6	5	5	1	4	3.8
3.7	Navigating the public realm is intuitive	3	2	3.5	2.5	2.8	4	5	1	3	3.3
4	TRANSFERS	2.2	2.2	2.8	2.4	2.4	2.0	N/A	1.8	2.0	1.9
4.1	Clear transit transfer signage	1	1	2.5	2	1.6	N/A	N/A	1	1	1.0
4.2	Real-time information	1	1	3	1	1.5	1	N/A	3	1	1.7
4.3	Shaded seating and waiting areas	4	1	2	2.5	2.4	3	N/A	1	3	2.3
4.4	Reduced distances for transfers	4	4	3.5	2.5	3.5	N/A	N/A	3	3	3.0
4.5	Seamless transfers between transit modes	1	4	N/A	4	3.0	N/A	N/A	1	2	1.5
Total AVG		3.1	3.0	3.2	2.4	2.9	3.4	2.4	1.4	3.0	2.5



VTA Capitol and Branham Station Access Study

Engagement Summary
Round 1

January/February 2022



Introduction

The Capitol and Branham Station Access Study is focused on identifying recommendations and projects to make it easier to walk, bike, and take connecting transit to the light rail stations. These recommendations could include improvements to bicycle and pedestrian access, lighting, bus waiting areas, and directional signs.

As a part of this study, Arcadis IBI Group conducted both in-person and online public engagement throughout January and February 2023. This first round of engagement focused on station access barriers and possible improvements. A second round of engagement will occur in the Spring of 2023.



In-person Engagement



In-person Engagement

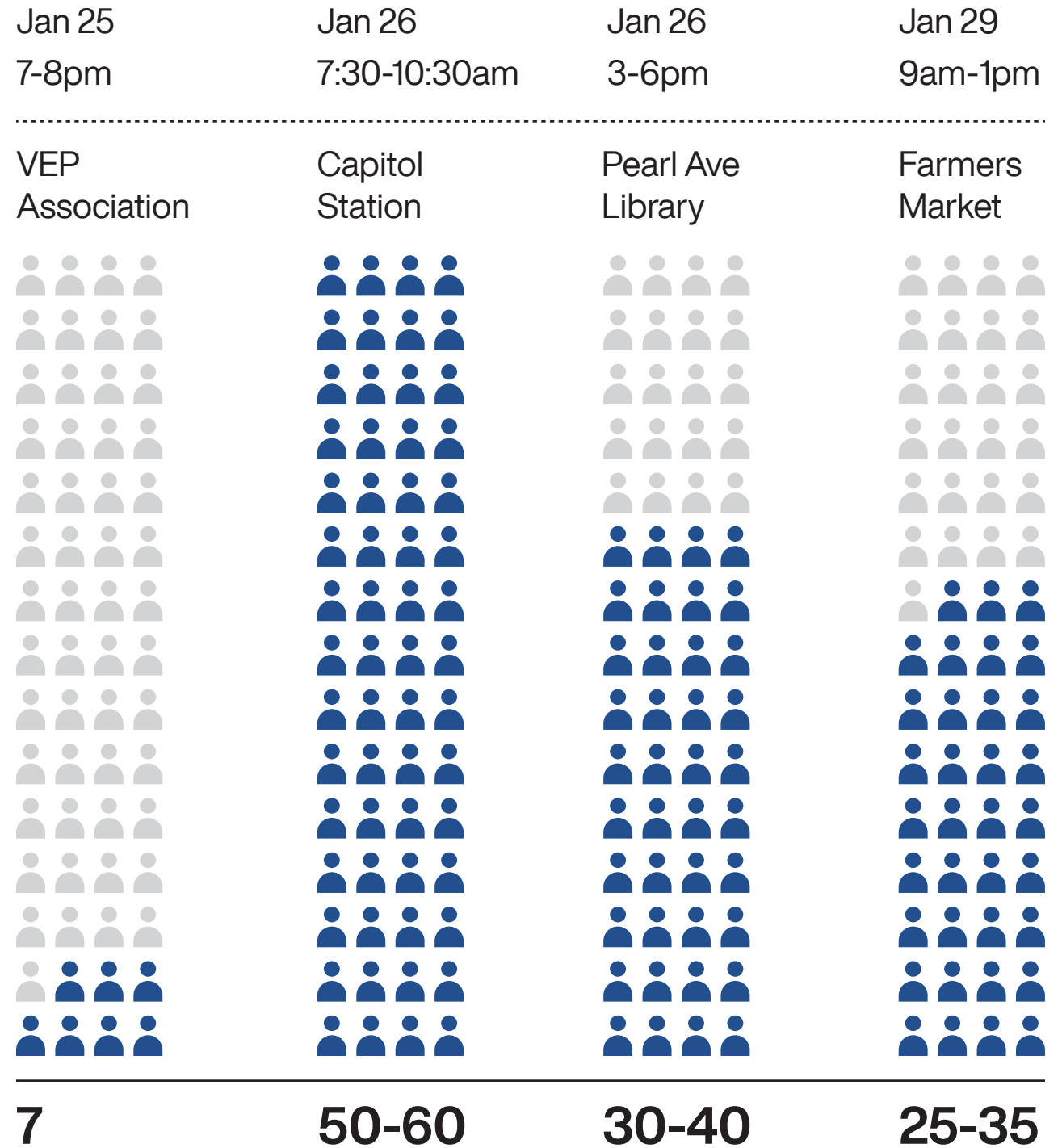
Arcadis IBI Group, with VTA staff, held 4 public engagement events at locations around Capitol and Branham station during the week of January 23rd, 2023. Our team engaged with over 100 members of the public through both conversations and the opportunity to use dot-voting on a set of boards that mirror the survey in our online public engagement. We did not collect demographic information from the in-person engagement.

This engagement summary compiles all 4 in-person events, as the same set of display boards were used and built upon with each event. Comments placed on the board at a previous event remained for subsequent events for additional dot-voting.

Additionally, a series of conversational comments were collected informally and are presented as a part of the summary.

Attendance

112-142 total



Comments Summary

VEP Association

Attendees indicated relevant concerns regarding:

- If current work will be relevant if/when TOD happens given additional usage
- A lack of safety due to homeless encampments to use existing bike infrastructure
- A lack of safety due to insufficient tree maintenance

Farmers Market

Attendees indicated relevant concerns regarding:

- A stoppage of use due to removal of direct shuttle from their office (due to Almaden LRT Station closure)
- Concerns with quality of signage and wayfinding
- Concerns with length of transit trips relative to driving trips

Capitol Station

Attendees indicated relevant concerns regarding:

- The need for improved, safe bike lockers at both Capitol and Branham station
- The long distance from bus stops to light rail platform
- Concerns about the insufficient maintenance to the sidewalks at station entrances
- Concerns about the insufficient landscaping at the bus stops to remove leaves, which often leaves sidewalks slippery

It was noticed that Apple and Microsoft shuttles are using the bus loop – there are 8-10 people waiting for a bus every 10-20 minutes

Pearl Library

Attendees indicated relevant concerns regarding:

- A lack of safety felt in painted bike lanes due to lack of physical protective measures, drivers speeding, using the bike lanes to drive or park in, lack of street sweeping in bike lane, etc. (Specifically indicated for Pearl Ave.)
- A lack of timely responsiveness for VTA paratransit to provide rides to and from the station
- Concerns that the entrance to the park-and-ride is too close to Capitol and Narvaez intersection, making entrance difficult to use
- Concerns that eliminating park-and-rides will decrease access for those currently using transit, particularly at Branham Station

Station Access

We asked participants to place stickers on destinations they regularly travel to (for example: your home, school, and regular grocery store). Participants used green stickers if they usually took transit, red stickers if they usually drove, or yellow stickers if they usually walk, biked, or used another mode to get to their destination.



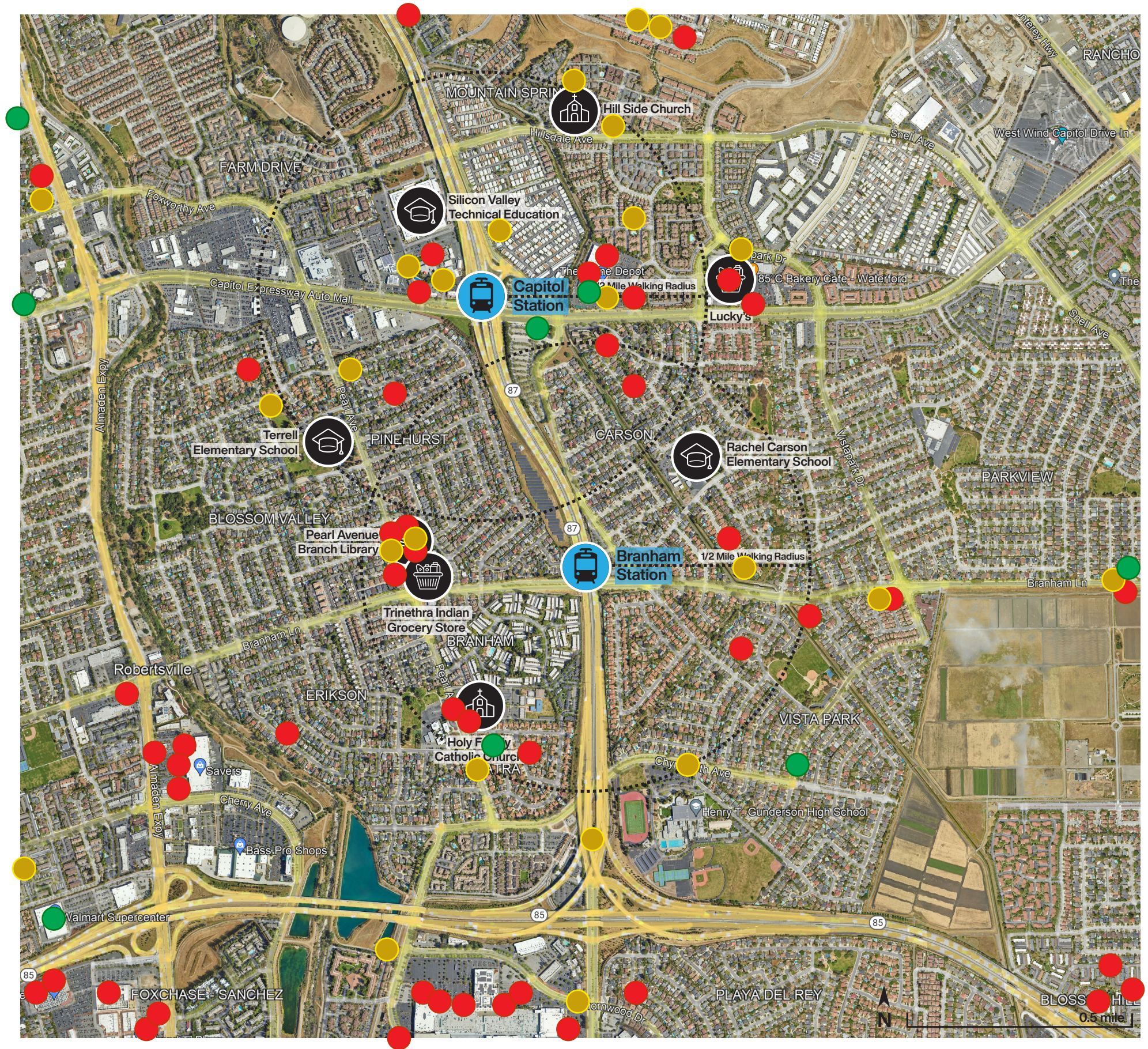
Transit



Drive



Walk/bike/use another mode



Barriers to Station Access

We asked participants to place stickers on the barriers that prevented them from reaching the light rail stations. They were also able to write additional barriers on sticky notes and have others vote on their suggestions.

It is difficult for me to reach Capitol/Branham Station because...

		CAPITOL	BRANHAM
01	There is too little shade and weather protection.	-	3
02	I have to cross busy, wide streets.	2	-
03	There is no direct route to reach the station.	1	1
04	The sidewalks are not maintained.	2	3
05	The sidewalks are missing or too narrow.	6	2
06	The route feels unsafe to me.	6	6
07	There is little or no lighting at night.	6	2
08	There are no direct bike lanes leading to the station.	1	-
09	There is too much vehicular traffic.	1	3
10	Vehicular traffic is too fast.	2	2
11	I have to walk/bike through areas that don't have other pedestrians.	1	1
12	I have to wait too long at intersections.	1	0
13	It is difficult to find my way to the station.	1	4
14	There are no rest areas on the way to the station.	1	1
15	There is no convenient area for drop off/pick up.	1	0

User added barriers:

It is difficult for me to reach Capitol/Branham Station because...

		CAPITOL	BRANHAM
16	Bike lockers are unusable and/or unsafe, bike storage on trains is not easy enough.	1	2
17	Elevator/escalator and/or ticket machine are broken too often.	2	0
18	Seating in the bus shelter is wet.	1	0
19	Crosswalk at Narvaez is dangerous due to fast right turns.	1	0
20	Stations themselves feel unsafe (due to panhandling, homelessness, trash).	3	5
21	Pearl Ave road diet encourages bad driving due to vehicle users in bike lane.	0	0
22	The amount of homelessness around Branham Lane.	0	5
23	Hidden station entrance and nothing there.	2	0
24	Capitol/87 on/off ramp is dangerous for pedestrians, Hillsdale/Narvaez has a missing sidewalk.	0	0



Capitol Station

The top barriers to station access for Capitol Station are:

- The sidewalks are missing or too narrow.
- The route feels unsafe to me.
- There is little or no lighting at night.



Branham Station

The top barriers to access at Branham Station are:

- The route feels unsafe to me.
- Stations themselves feel unsafe (due to panhandling, homelessness, trash).
- The amount of homelessness around Branham Lane.

Possible Improvements

We asked participants to place stickers on the improvements that would make it easier to access the VTA stations. They were also able to write additional possible improvements on sticky notes and have others vote on their suggestions.

What improvements would make it easier to access the VTA stations?

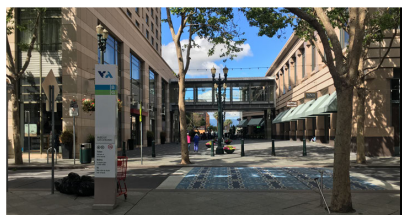
Crossings & Connections



High Visibility Crosswalks



Mid-Block Street Crossings



Pedestrian Paseos & Neighbourhood Cut-Throughs



Curb Extensions at Intersections

Signage & Wayfinding



Station Signage & Maps



Time-to-Station Wayfinding



Train Information (Arrival Times/Notifications)

Safety & Comfort



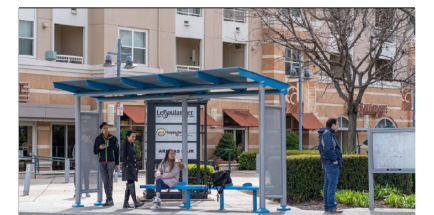
Rest Areas (Seating)



Landscaping & Shade



Lighting



Upgraded Bus Waiting Areas

CAPITOL **BRANHAM**

Allocation of Street Space



0 0

Reduced Lane Width



0 0

Dedicated Bus Lane



0 1

Signal Modifications
(Timing)



0 0

Sidewalk Widening



2 2

Protected Bike Lanes

■ CAPITOL ■ BRANHAM

Additional Transportation Components



0 1

Designated Pick-Up/
Drop-Off Areas



1 1

Neighbourhood Electric
Vehicles (NEVs)



3 1

Bike Share, Scooter
Share, & Mobility Hubs



1 1

Vanpool or Shuttles



0 0

Car Share

User added possible improvements:

Sense of community/gathering	0	0
Somewhere to buy coffee, store/restaurants	4	3
Restrooms	3	2
More local bus service	4	1
More security at Capitol at night & day, feels unsafe	0	0
Affordable & senior housing	1	0
Public art	0	0
Share path along west edge (slow down Narvaez)	2	1
Better and more reliable connections	0	1
Speed control/visibility at blind spots	0	0
Dog park	1	0
EV charging	2	2
More security on trains	0	0
Pedestrian crossing needed near technical school	0	0
If no parking in future TOD, need good drop-off/ pick-up, ideally at Branham and not Narvaez	0	1
Off-hour train frequency	1	0

Capitol Station

The top possible improvements for Capitol Station are:

- Train Information (Arrival Times/Notifications)
- Lighting
- Landscaping / Shade
- More local bus service

Branham Station

The top possible improvements for Branham Station are:

- Lighting
- Somewhere to buy coffee, stores/restaurants

Online Engagement



Online Engagement

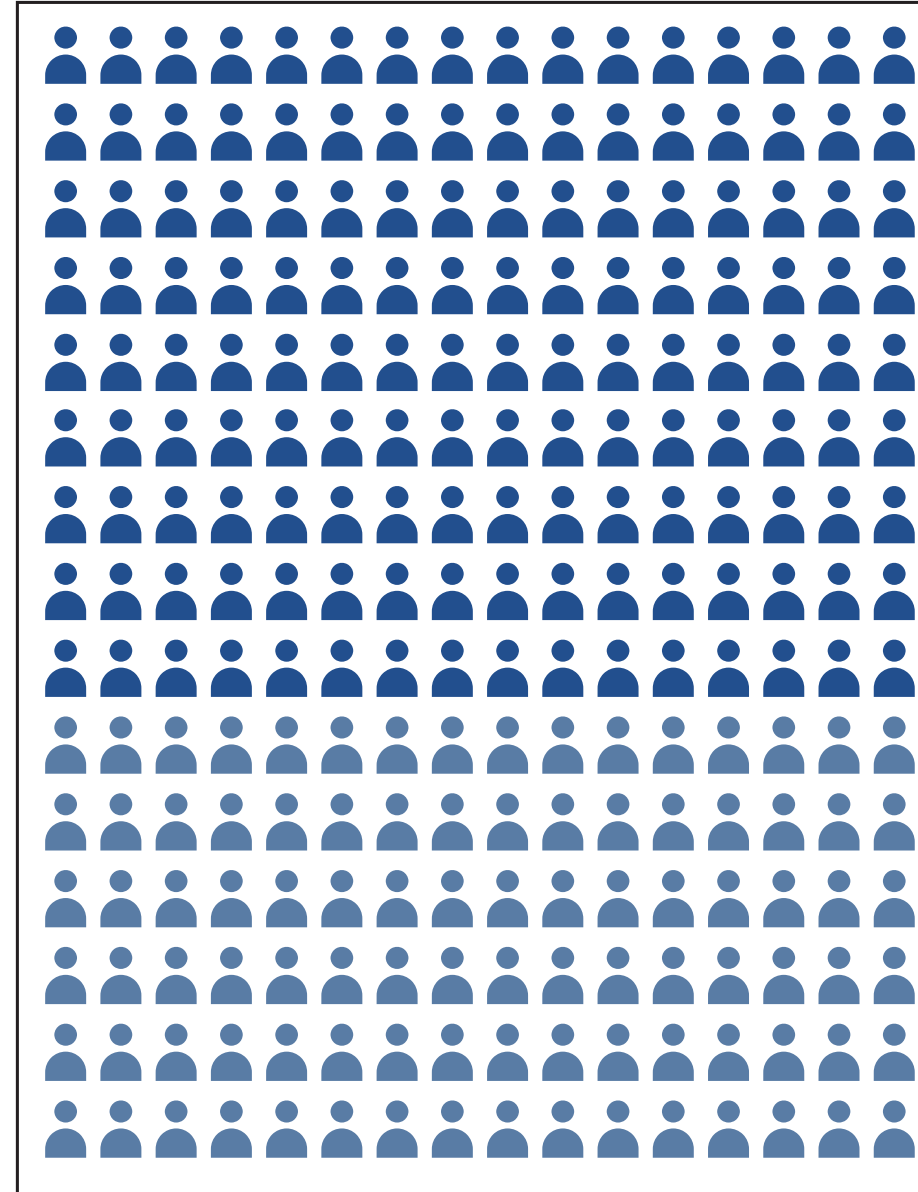
Arcadis IBI Group hosted an online survey available from January 17 to February 28, 2023. VTA staff circulated mailers as well as social media posts to advertise the survey.

We had 236 members of the public participate engage with our online survey, of which 105 respondents left at least one element of meaningful data. The online survey mirrored the dot-voting on a set of boards at the in-person public engagement, with a few additional questions. We optionally collected demographic information from the online engagement.

This engagement summary compiles all survey responses received.

Survey participants

236 total

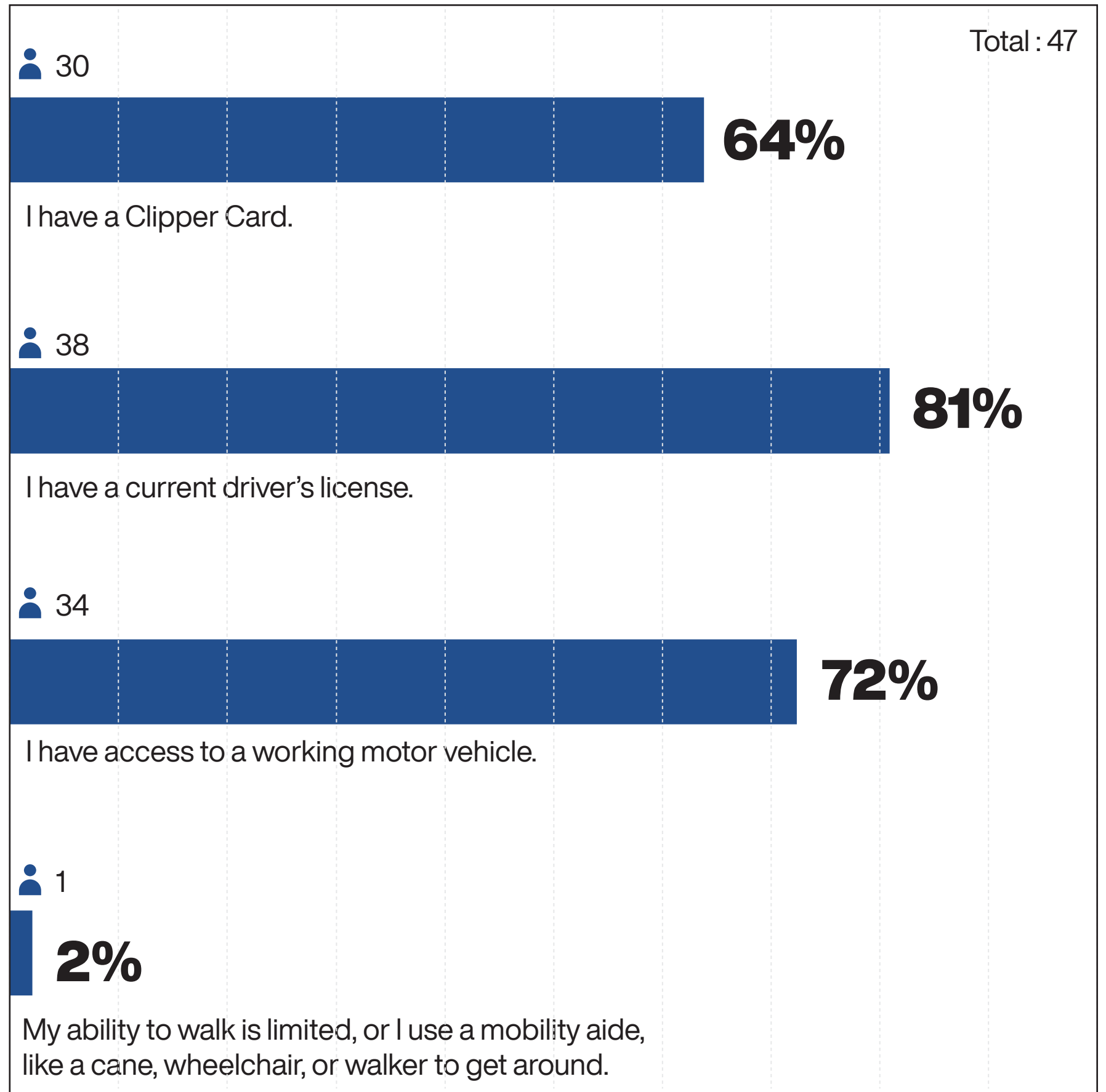


105 respondents

left at least one element
of meaningful data

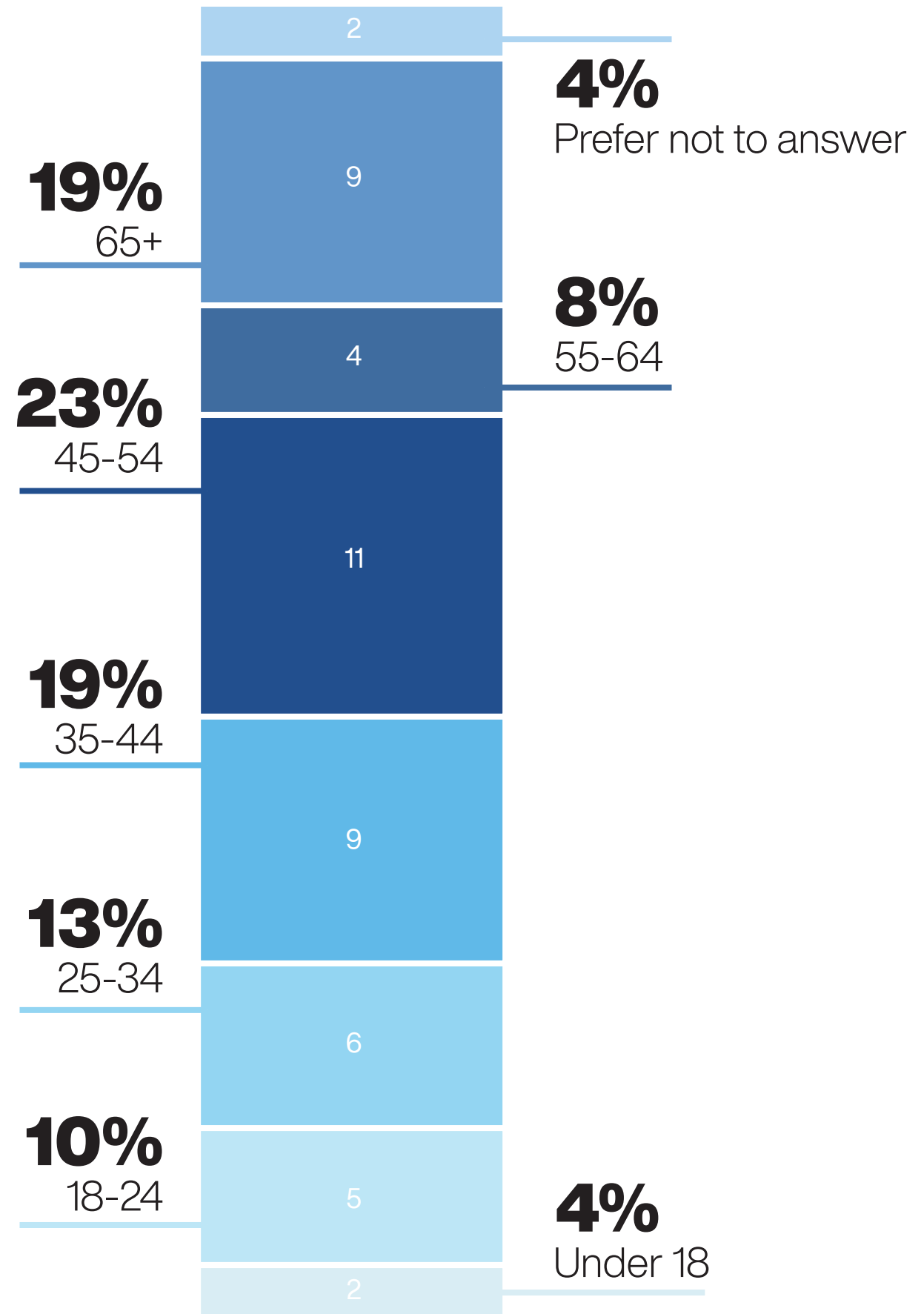
Demographics - Mobility

64% of the respondents owned a Clipper Card and 81% had a driver's license.

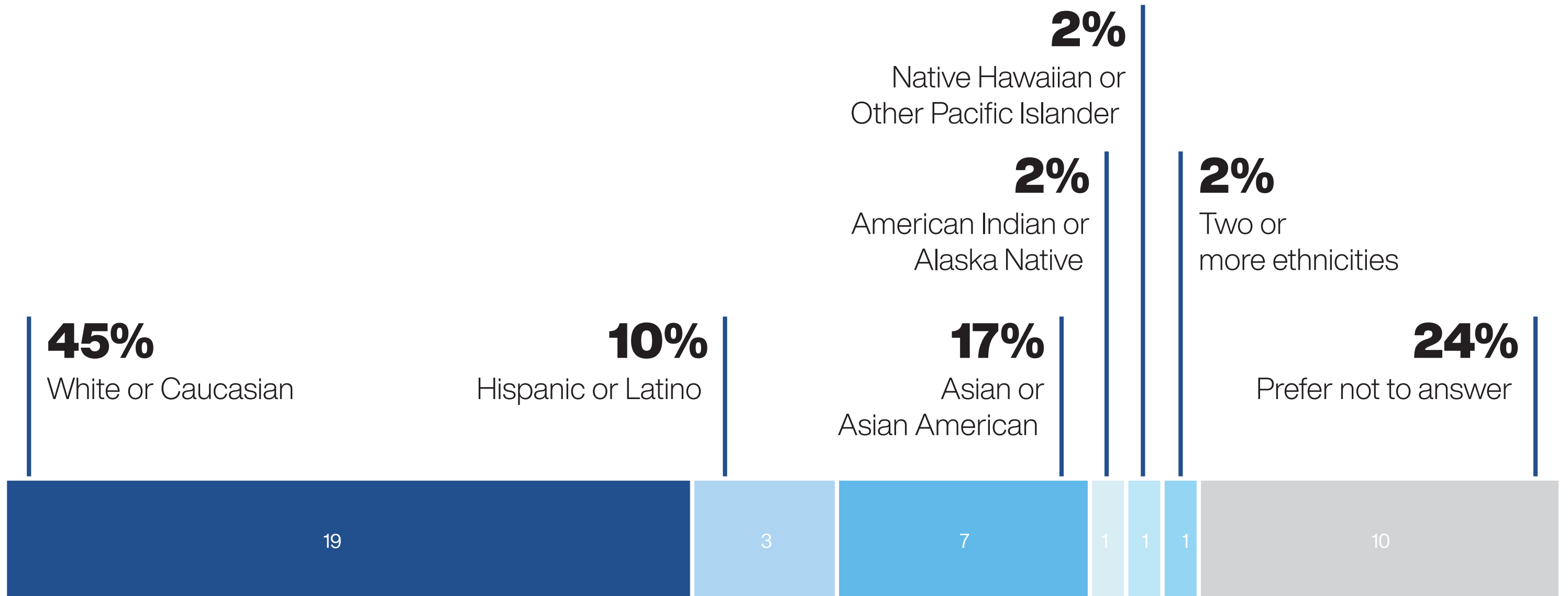


Demographics - Age

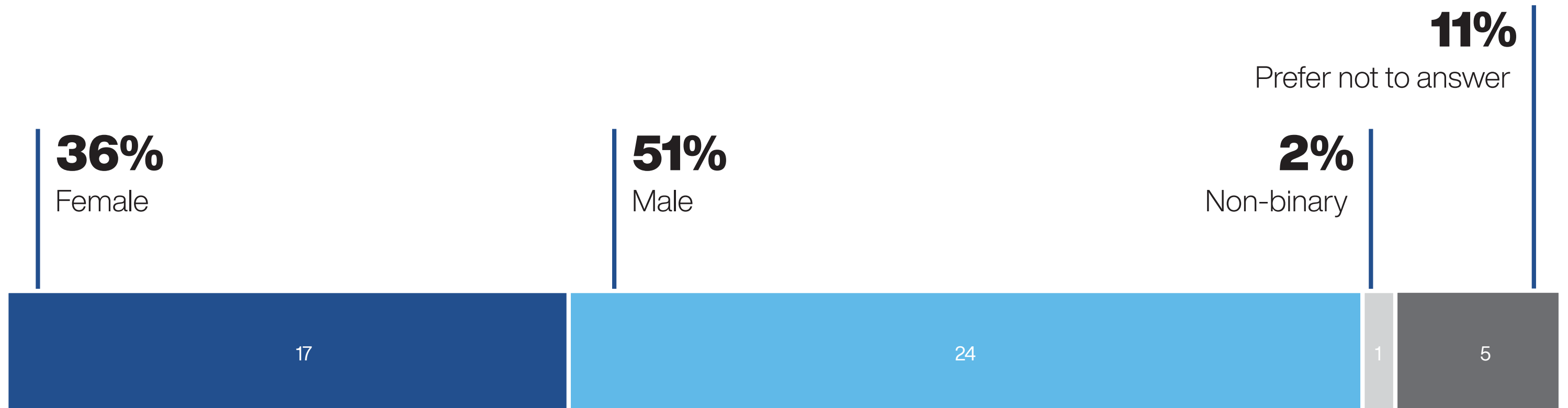
23% of respondents were age 45 - 54 and 19% were 35 to 44.



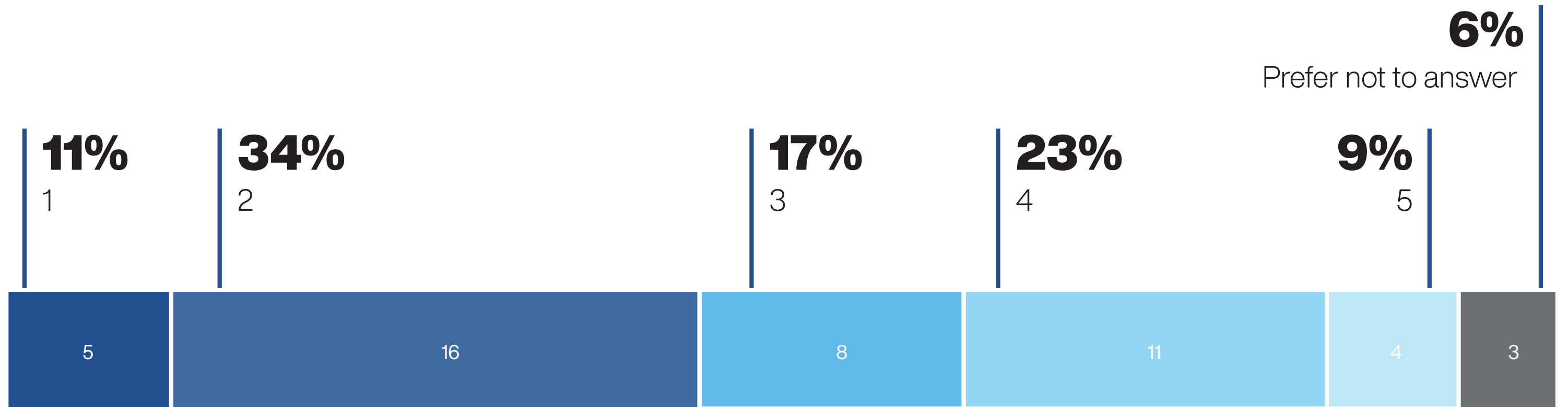
Demographics - Ethnicity



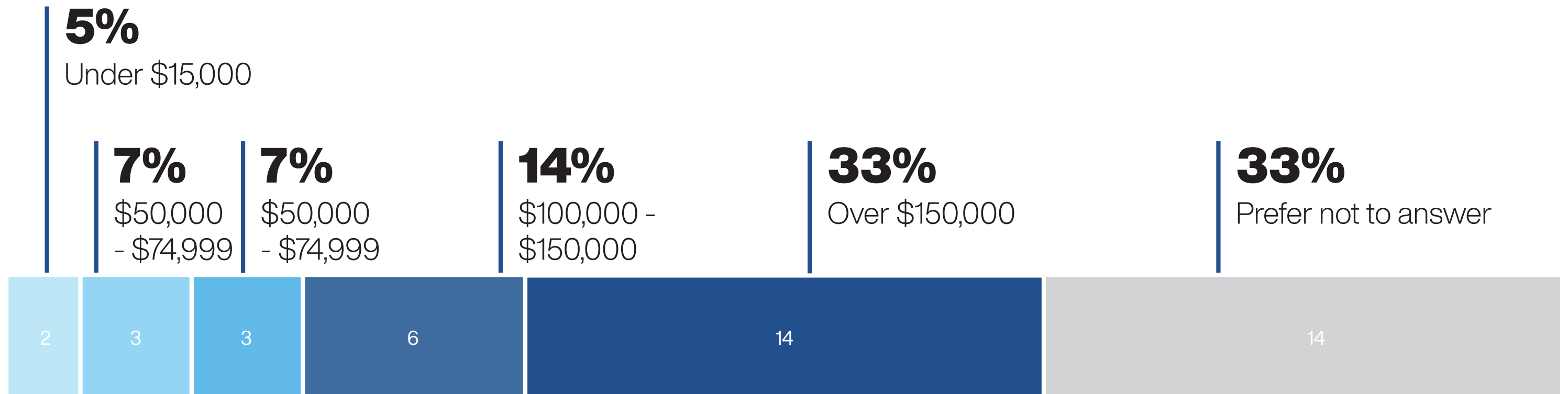
Demographics - Gender



Demographics - Size of Household

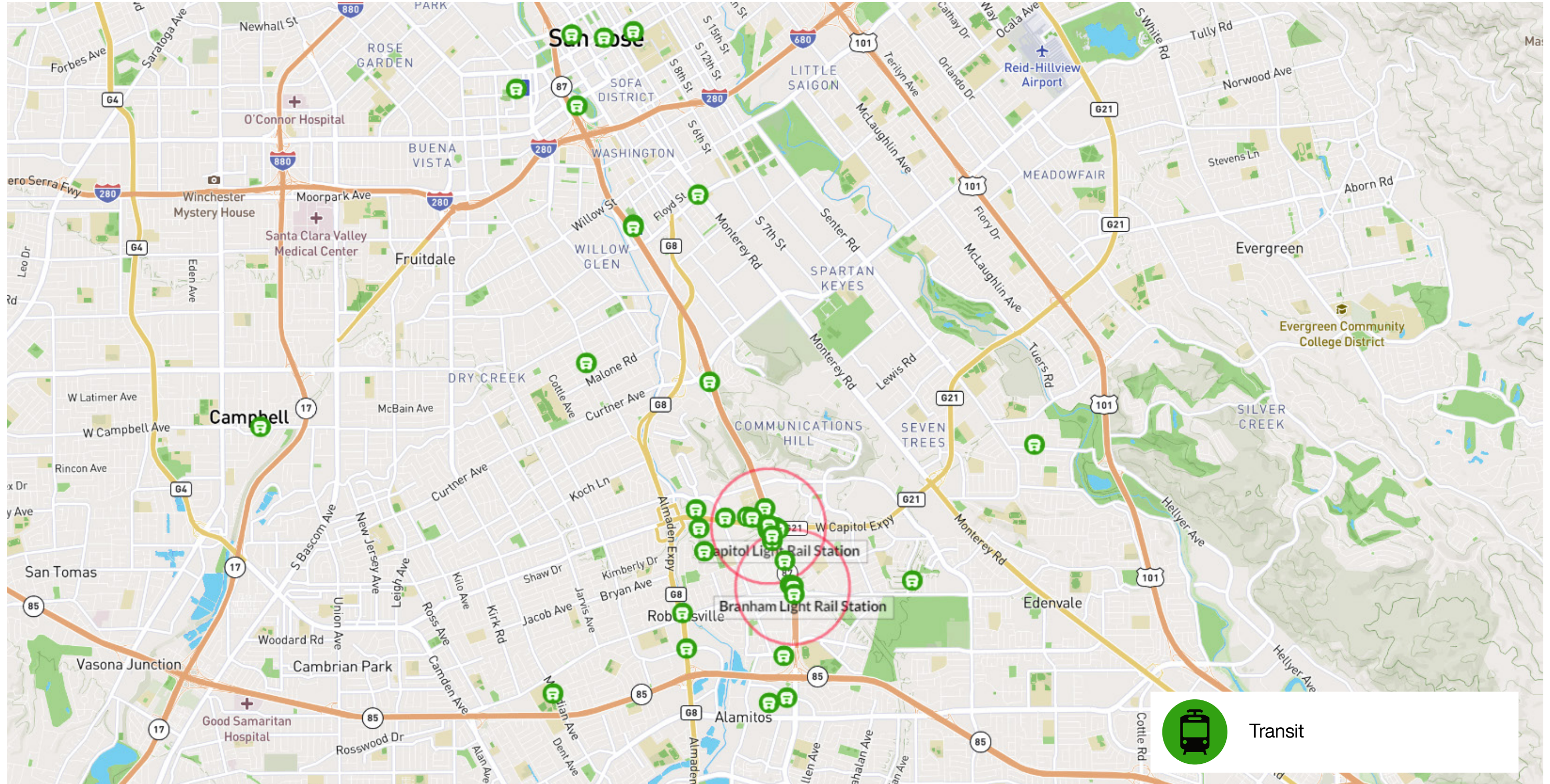


Demographics - Household Income



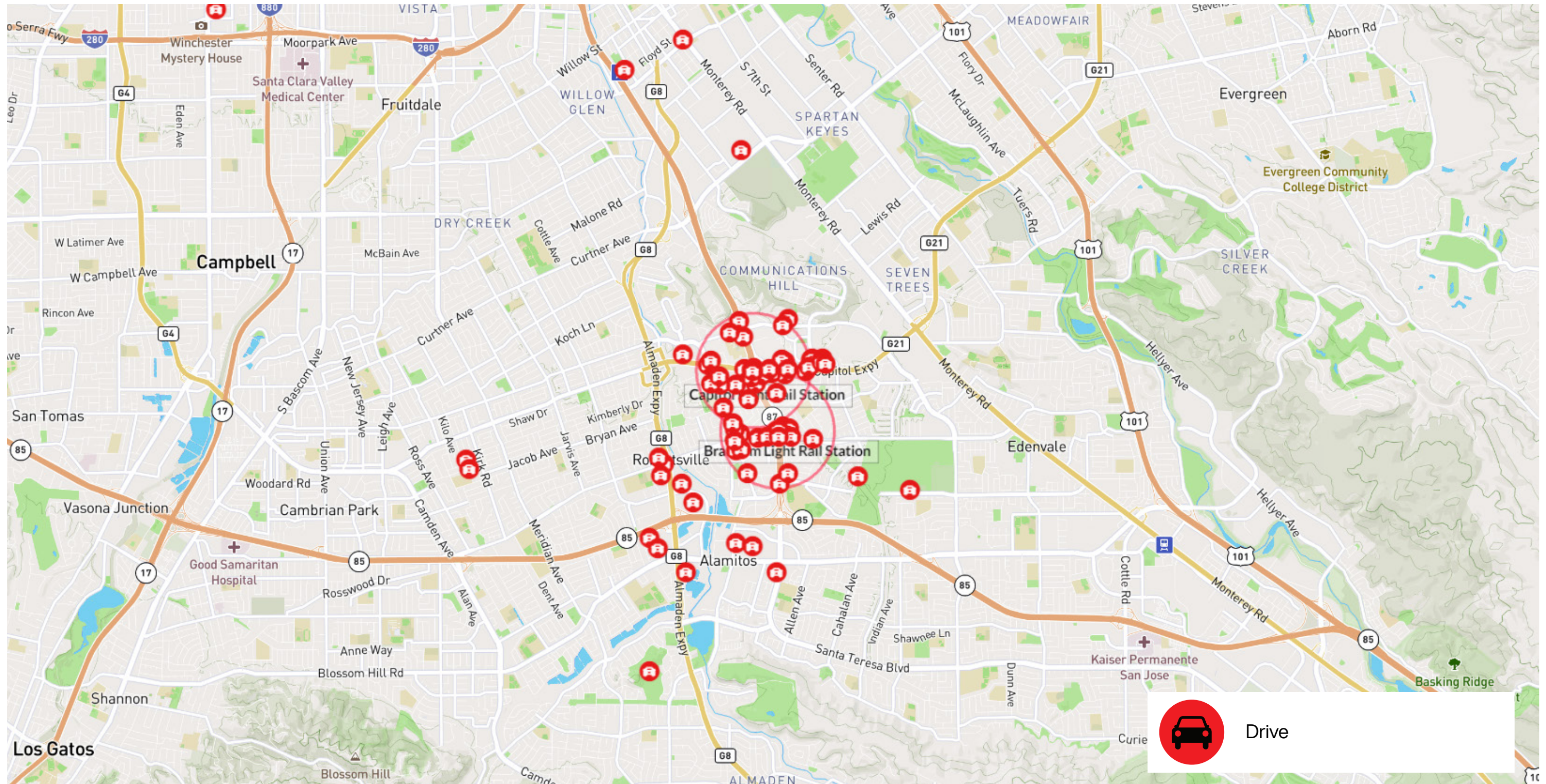
Station Access

We asked participants to place stickers on destinations they regularly travel to (for example: your home, school, and regular grocery store). Participants used green stickers if they usually took transit, red stickers if they usually drove, or yellow stickers if they usually walk, biked, or used another mode to get to their destination.



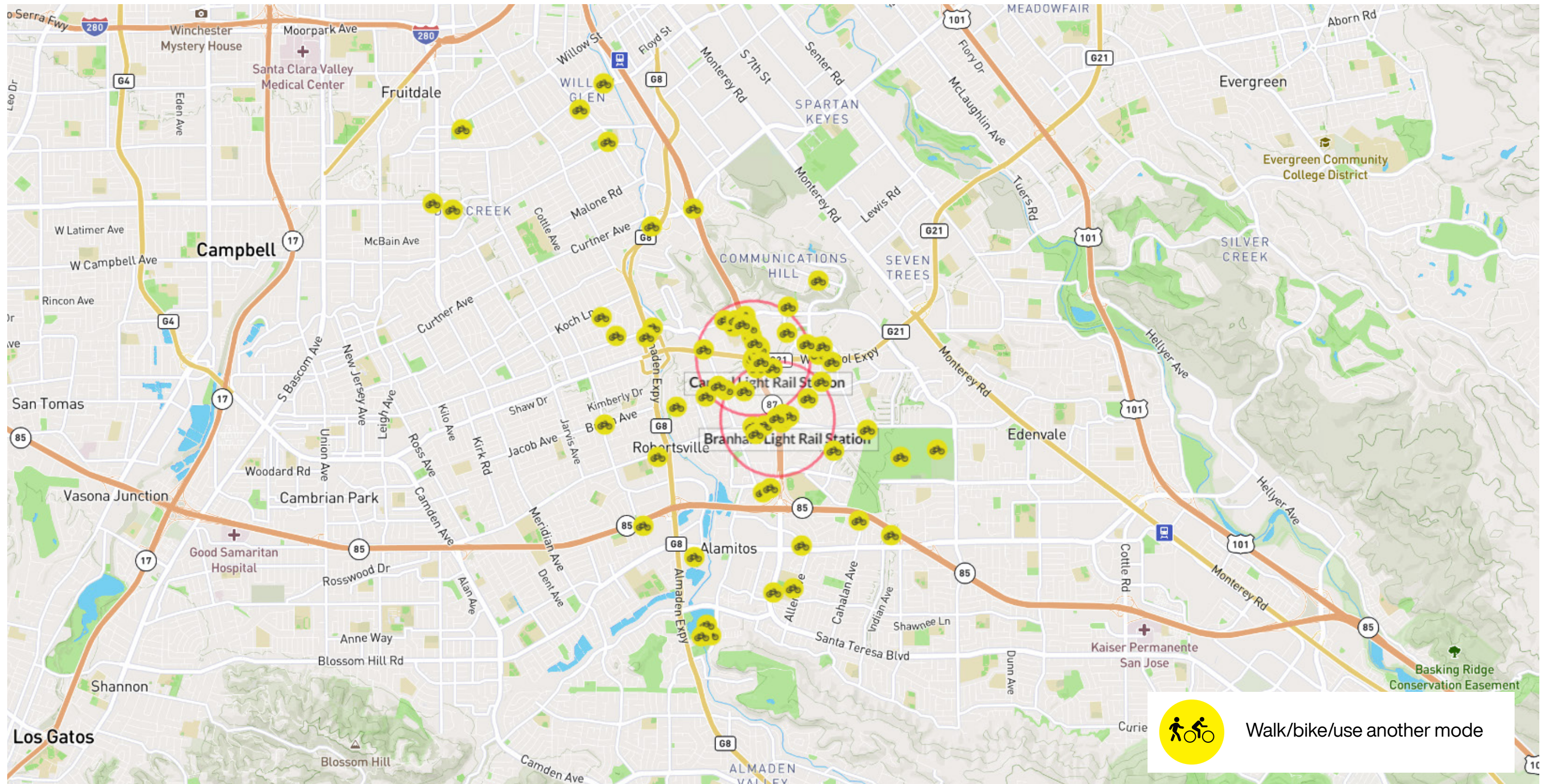
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Station Access

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Barriers to Station Access

We asked participants to place stickers on the barriers that prevented them from reaching the light rail stations. They were also able to write additional barriers on sticky notes and have others vote on their suggestions.

It is difficult for me to reach Capitol Station...

		No. of Respondents	% of Respondents
01	There is too little shade and weather protection.	19	36%
02	I have to cross busy, wide streets.	19	36%
03	There is no direct route to reach the station.	7	13%
04	The sidewalks are not maintained.	17	32%
05	The sidewalks are missing or too narrow.	12	23%
06	The route feels unsafe to me.	22	42%
07	There is little or no lighting at night.	19	36%
08	There are no direct bike lanes leading to the station.	6	11%
09	There is too much vehicular traffic.	17	32%
10	Vehicular traffic is too fast.	18	34%
11	I have to walk/bike through areas that don't have other pedestrians.	9	17%
12	I have to wait too long at intersections.	7	13%
13	It is difficult to find my way to the station.	2	4%
14	There are no rest areas on the way to the station.	3	6%
15	There is no convenient area for drop off/pick up.	3	6%

Total 55

We asked participants if they encounter a challenge at Capitol Station that is not listed. They answered:



Safety Concerns - Primarily Due to Homelessness

“Unsafe due to homeless activity and those on drugs”

“Security for parked cars”

“Dirty and unsafe. Lots of graffiti and overrun by homeless.”

“Homeless people begging for money”

“Homeless and violence”

“Fear of the homeless people and their encampments”

“Dirty, not well maintained, not enough lighting, homeless, dangerous”



Station is not Clean/Appealing/ Functional

“There is no bathroom. The parking lot is not well maintained.”

“The escalator is often not working from street level to platform”

“Elevator not working”

“ELEVATORS NOT WORKING!”



Multi-Modal Access Does Not Feel Safe

“There is no secure bike parking (BikeLink lockers), north side parking lot is not well maintained”

“There is a gap in the Hwy87 trail network, making connections very unsafe.”

“There are no sidewalks”

“No sidewalk on the south side of Capital Expressway towards Vistapark - and I constantly see people walking on this road with their backs to traffic. So dangerous!”

“I walk on the south side of Capitol where there are dangerous sidewalk gaps that force me to walk in the street. Capitol is an expressway! Plus, no one maintains those street trees which encroach on the sidewalk.”



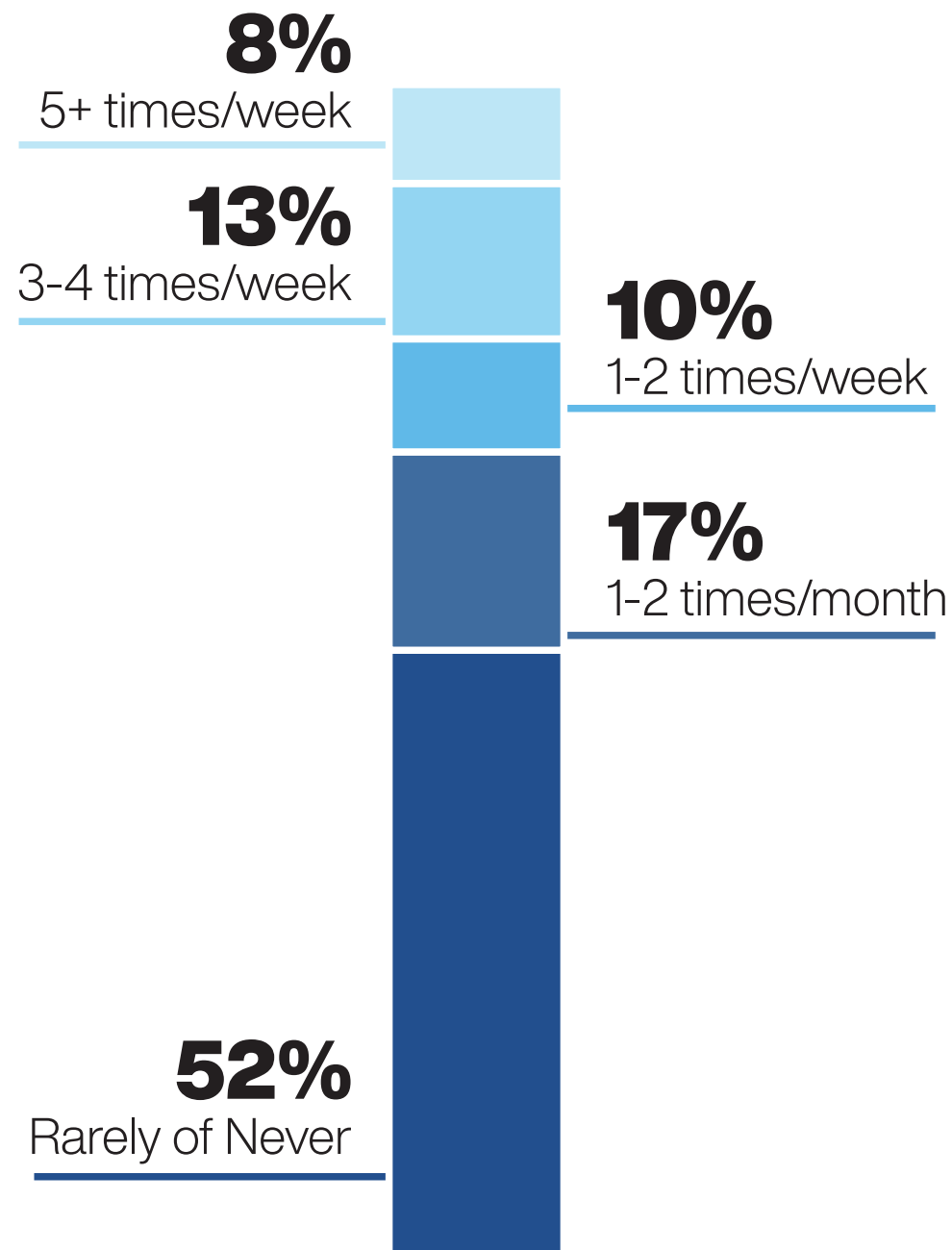
Transit Service is Too Infrequent / Not Enough Routes

“Very little bus access down Capitol itself, frequency of existing buses are laughable. Station is far below in bus capacity.”

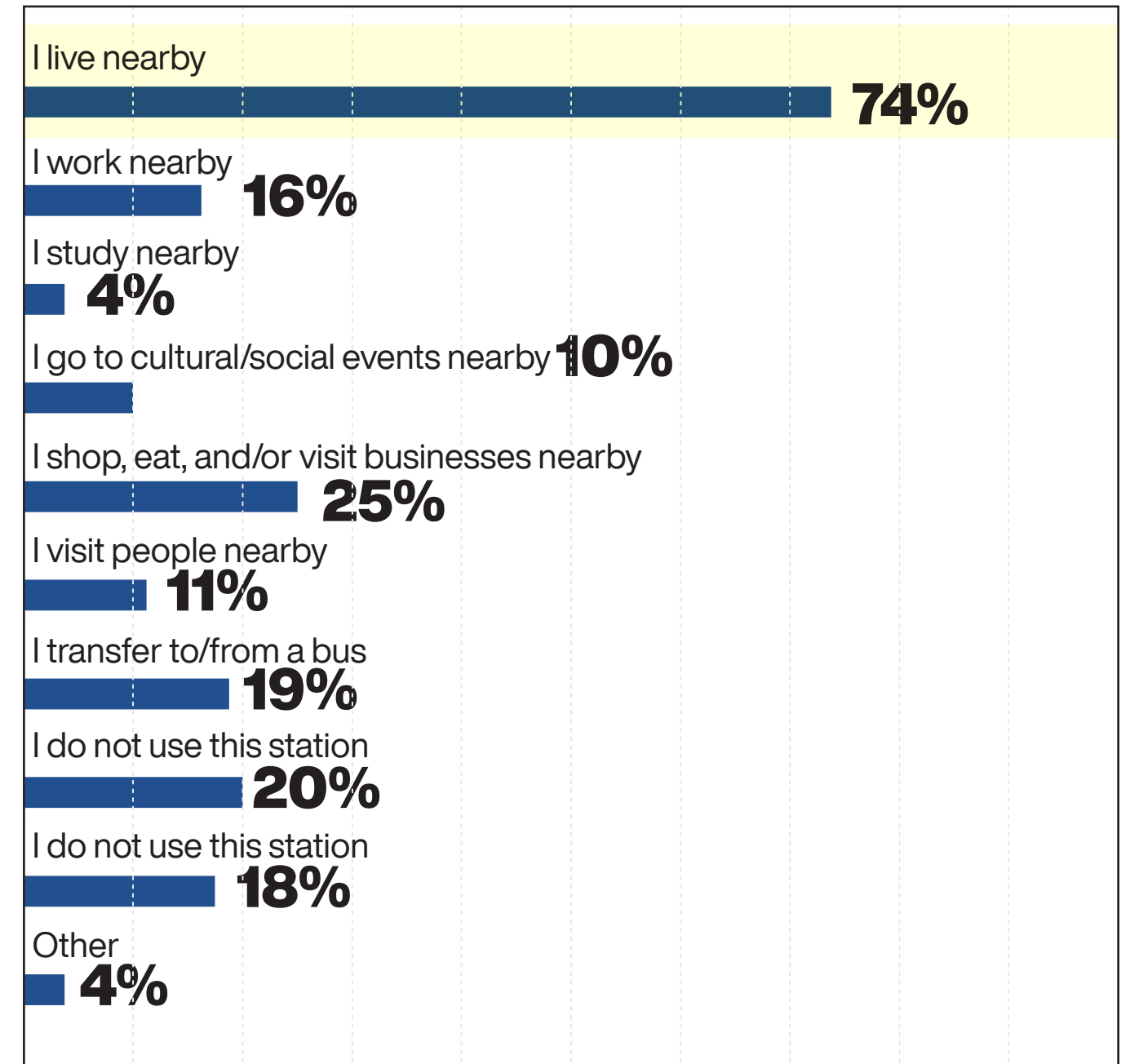
“Route 37 frequency needs to be improved so there are better light rail connection to Capitol, lighting and way-finding for capitol station needs improvement.”

Station Access - Capitol Light Rail Station

How often do you use the Capitol Light Rail Station?



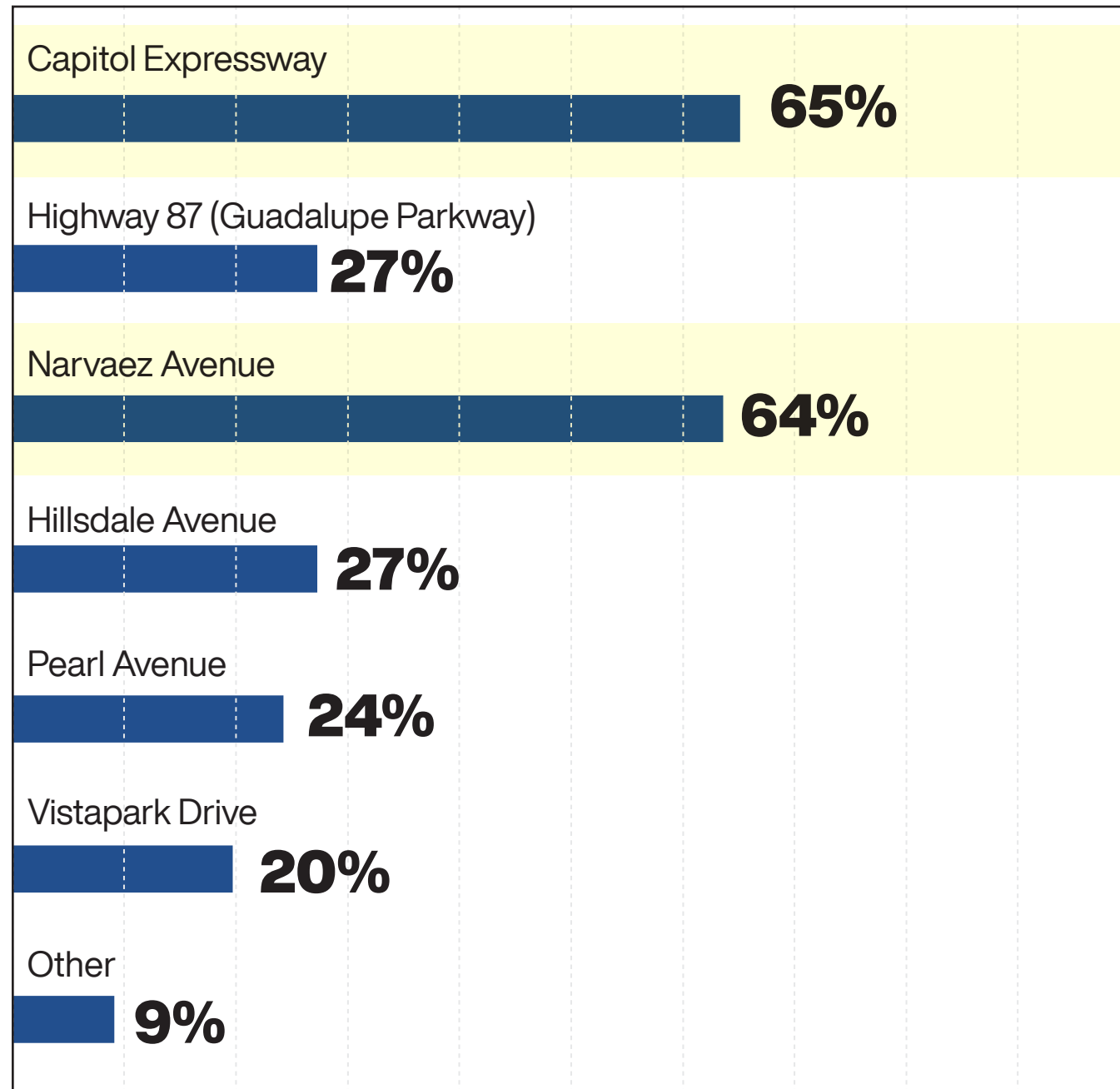
For the Capitol Light Rail Station area, which of the following apply to you (check all that apply):



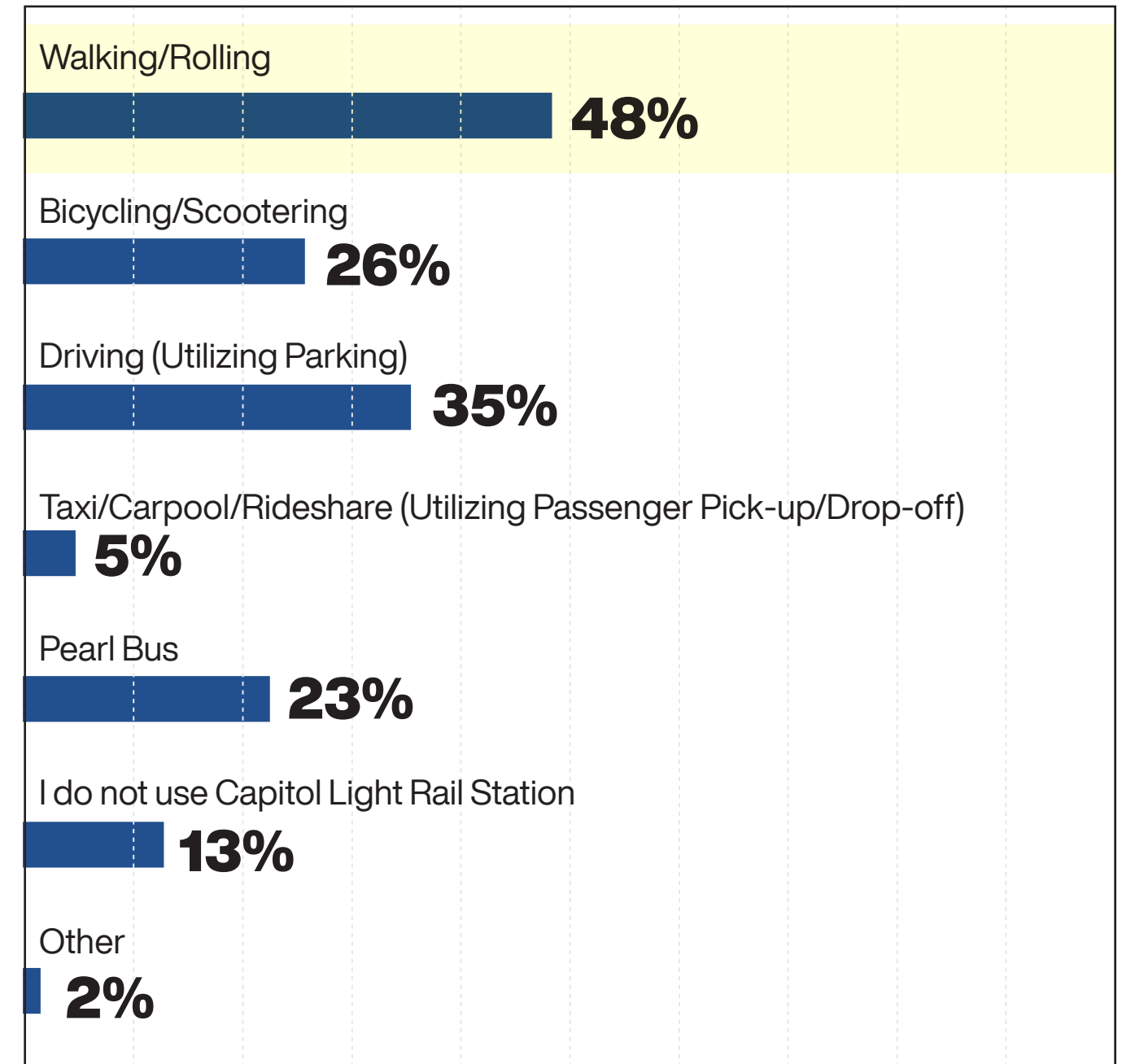
Station Access - Capitol Light Rail Station

Which three (3) streets are most important for you to access the Capitol Light Rail Station?

Respondents who selected Other mentioned Branham (2), Azores (1), and Lewiston (1) as important access streets



What modes of travel do you use to get to and from the Capitol Light Rail Station?



Barriers to Station Access

We asked participants to place stickers on the barriers that prevented them from reaching the light rail stations. They were also able to write additional barriers on sticky notes and have others vote on their suggestions.

It is difficult for me to reach Branham Station...		No. of Respondents	% of Respondents
01	There is too little shade and weather protection.	7	24%
02	I have to cross busy, wide streets.	9	31%
03	There is no direct route to reach the station.	4	14%
04	The sidewalks are not maintained.	11	38%
05	The sidewalks are missing or too narrow.	6	21%
06	The route feels unsafe to me.	13	45%
07	There is little or no lighting at night.	6	21%
08	There are no direct bike lanes leading to the station.	5	17%
09	There is too much vehicular traffic.	9	31%
10	Vehicular traffic is too fast.	11	38%
11	I have to walk/bike through areas that don't have other pedestrians.	6	21%
12	I have to wait too long at intersections.	1	3%
13	It is difficult to find my way to the station.	2	7%
14	There are no rest areas on the way to the station.	3	10%
15	There is no convenient area for drop off/pick up.	4	14%

Total 29

We asked participants if they encounter a challenge at Branham Station that is not listed. They answered:



Safety Concerns - Primarily Due to Homelessness

"I feel unsafe due to the homeless encampments on Branham. I would use light rail more often if the unhoused were relocated to housing."

"Homeless people and there's no enough light to light up the walk path walking down or up Branham"

"Homeless encampments surrounding it, we feel to unsafe to use the light rail"

"There are too many homeless living on the trail"



Station is not Clean/Appealing/ Functional

"Dirty, limited lighting, homeless, dangerous"

"Dirty and unsafe. Weeds overgrown. Lots of graffiti and overrun by homeless"

"ELEVATORS NOT WORKING!"

"Look at images of Branham station from the 2000s vs now, there are no trees and no vegetation. The station is outright unwelcoming."



Multi-Modal Access Does Not Feel Safe

"Speeding on Branham makes walking very uncomfortable. Bike lanes are not protected."



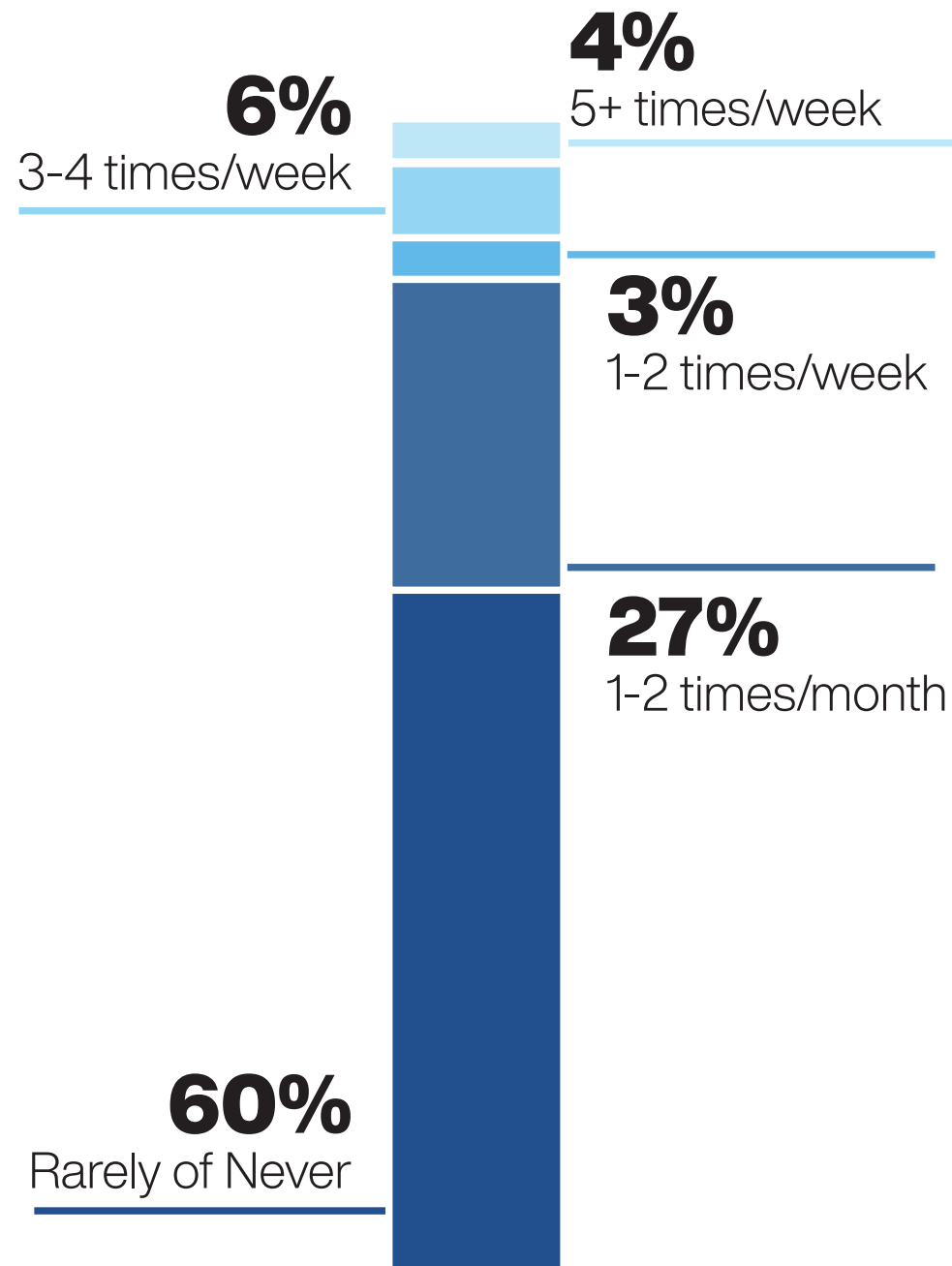
Transit Service is Too Infrequent / Not Enough Routes

"VTA routes are not frequent enough and waiting/transit time is a lot longer than driving or biking"

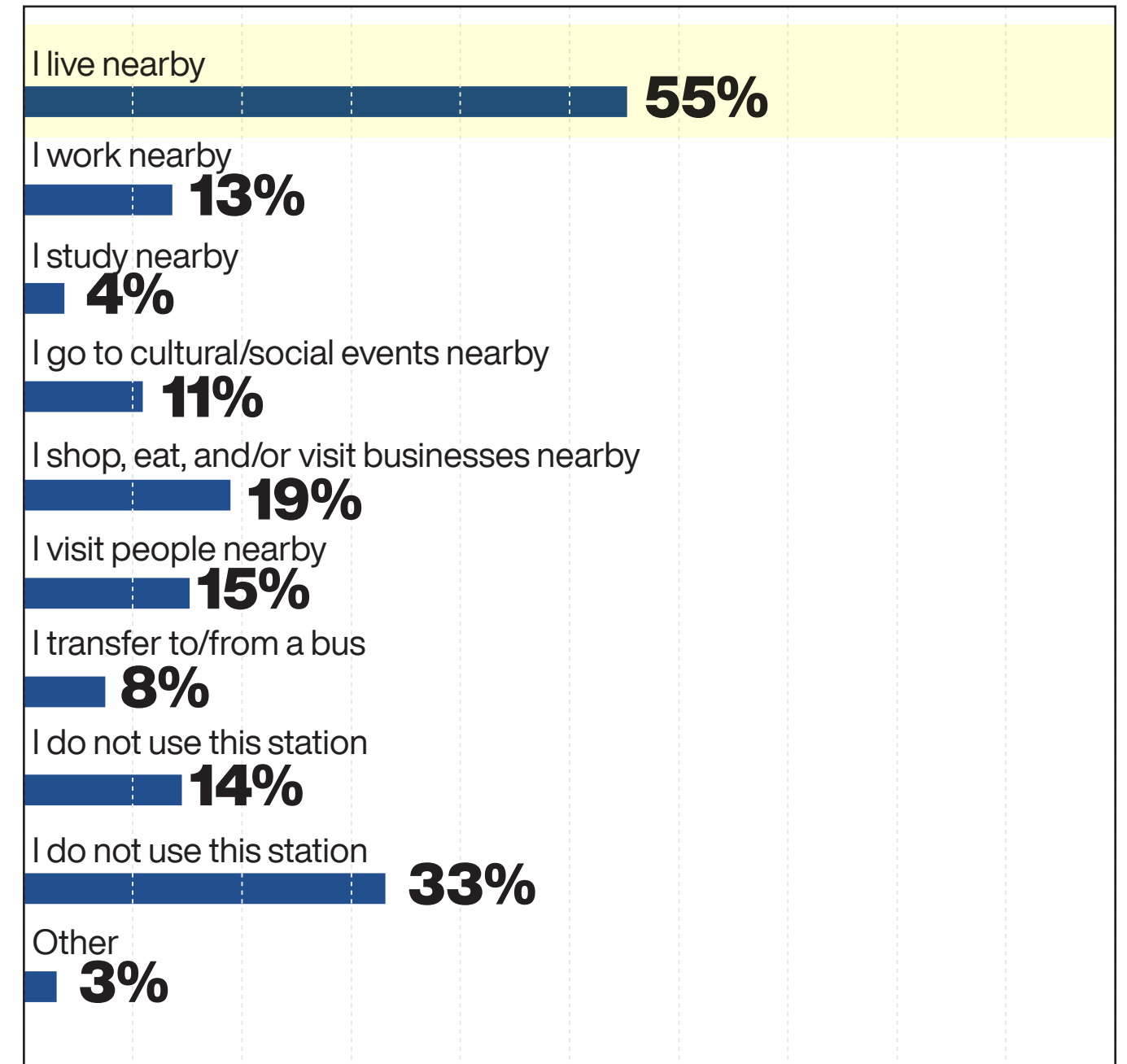
"There is no bus service to this station, restoring old Route 38 that ran on Branham Lane or implementing a new route would help with the accessibility"

Station Access - Branham Light Rail Station

How often do you use the Branham Light Rail Station?

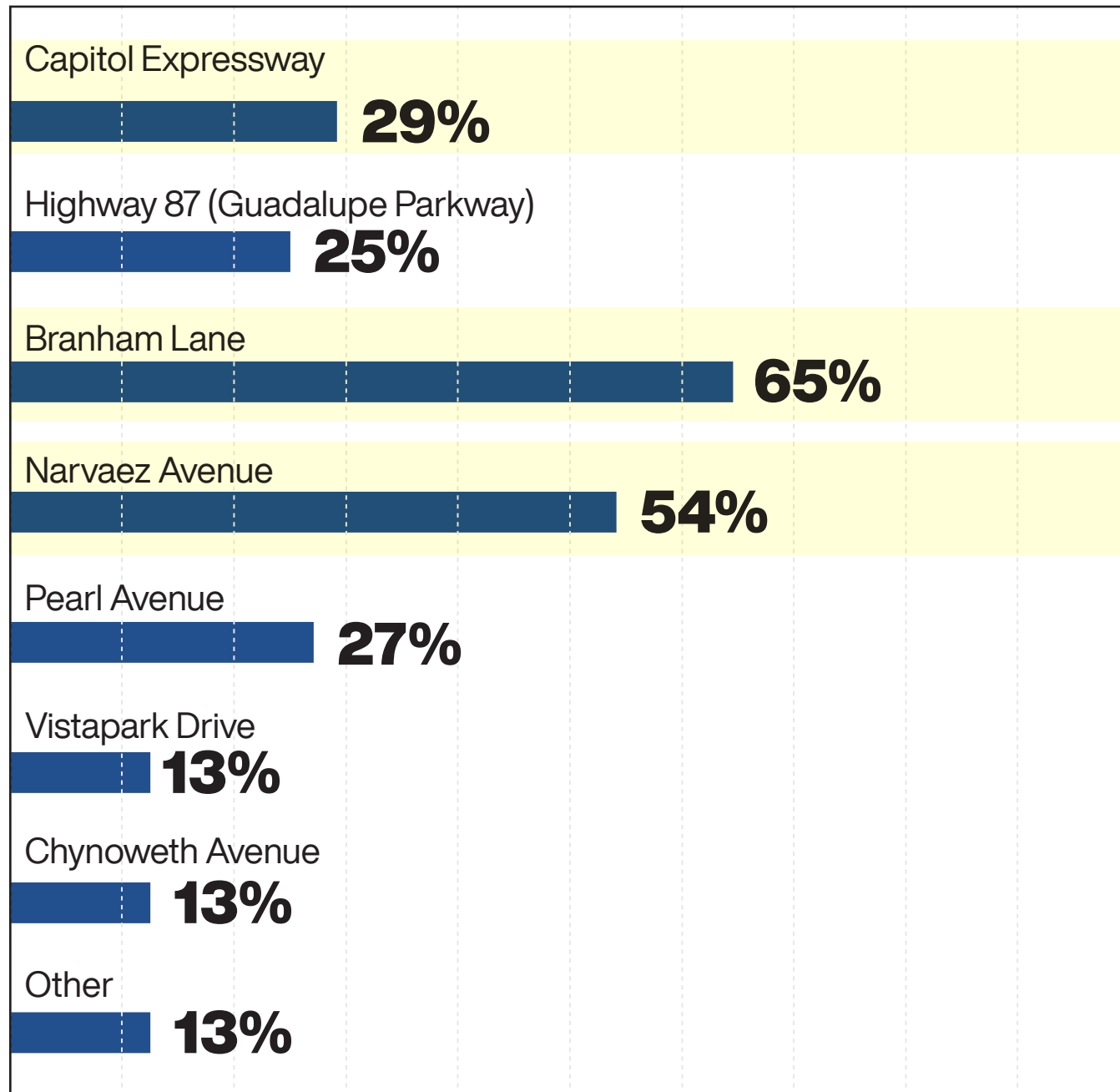


For the Branham Light Rail Station area, which of the following apply to you (check all that apply):

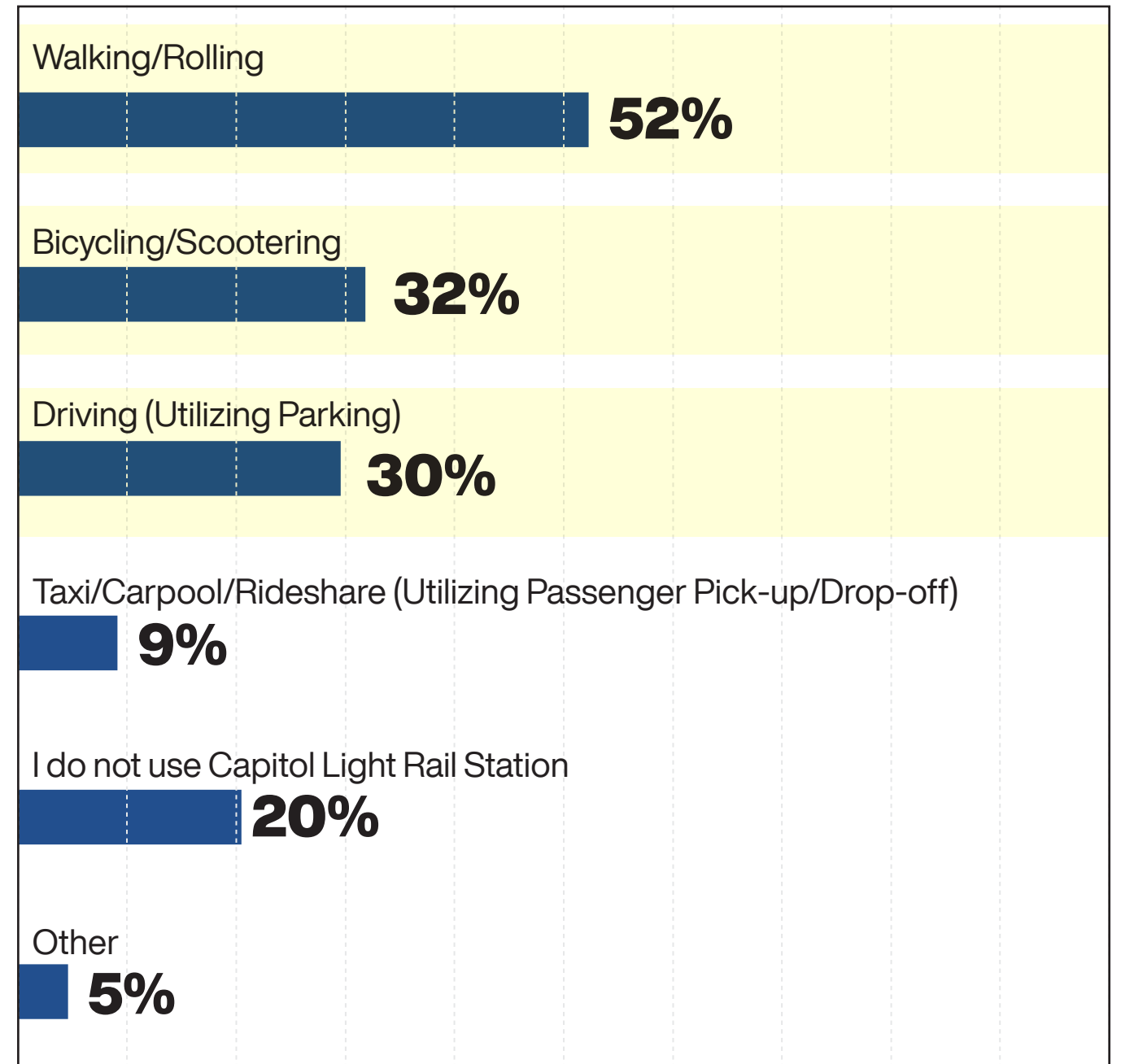


Station Access - Branham Light Rail Station

Which three (3) streets are most important for you to access the Branham Light Rail Station



What modes of travel do you use to get to and from the Branham Light Rail Station



Top Barriers to Station Access

Capitol Station

The top barriers to station access for Capitol Station are:

- The route feels unsafe to me.
- There is too little shade and weather protection.
- I have to cross busy, wide streets.
- There is little or no lighting at night.

Branham Station

The top barriers to station access for Branham Station are:

- The route feels unsafe to me.
- The sidewalks are not maintained.
- Vehicular traffic is too fast.

Possible Improvements

We asked participants to indicate on a map which improvements would make it easier to access both Capitol and Branham Light Rail Station and where they would like to see these improvements.

What improvements would make it easier to access the VTA stations?

Crossings & Connections

High Visibility Crosswalks

24

Mid-Block Street Crossings

17

Pedestrian Paseos & Neighbourhood Cut-Throughs

33

Curb Extensions at Intersections


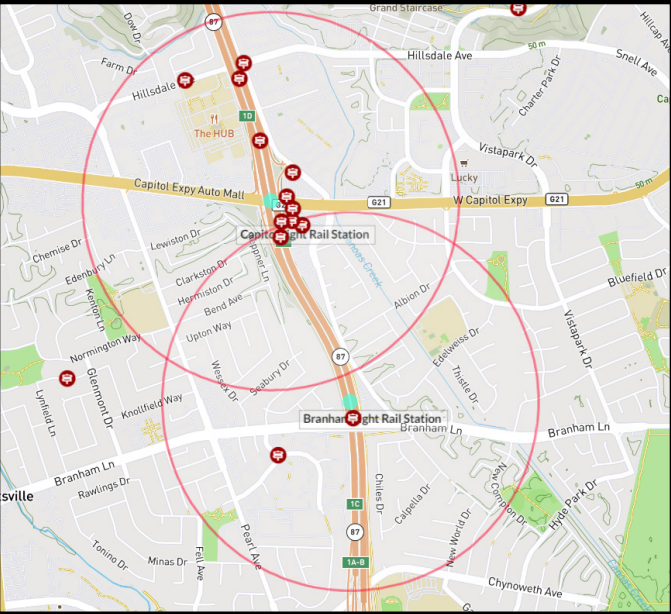
08

Possible Improvements

What improvements would make it easier to access the VTA stations?


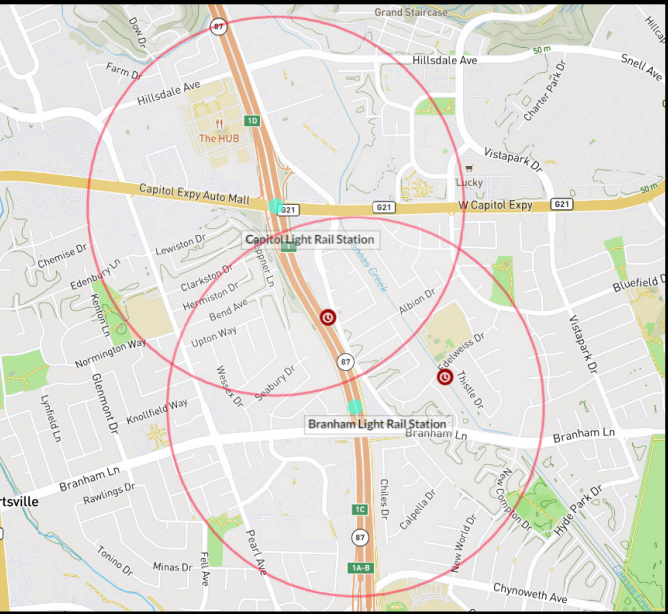
Signage & Wayfinding

Station Signage & Maps




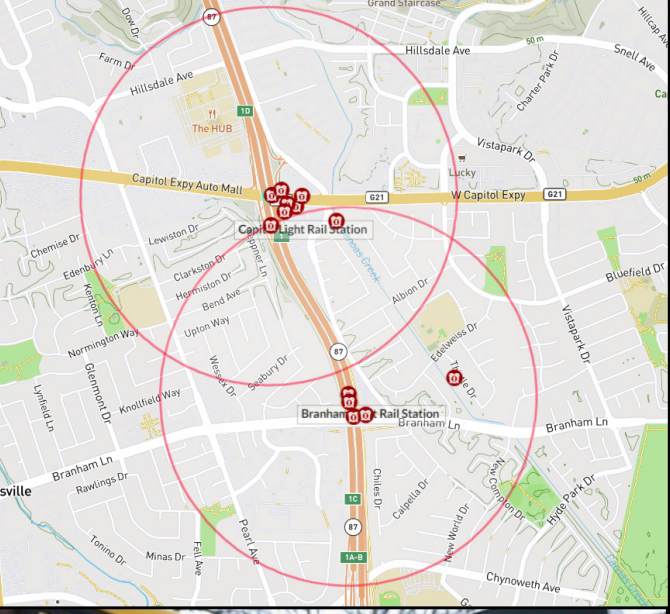
18

Time-to-Station Wayfinding



02

Train Information (Arrival Times/ Notifications)

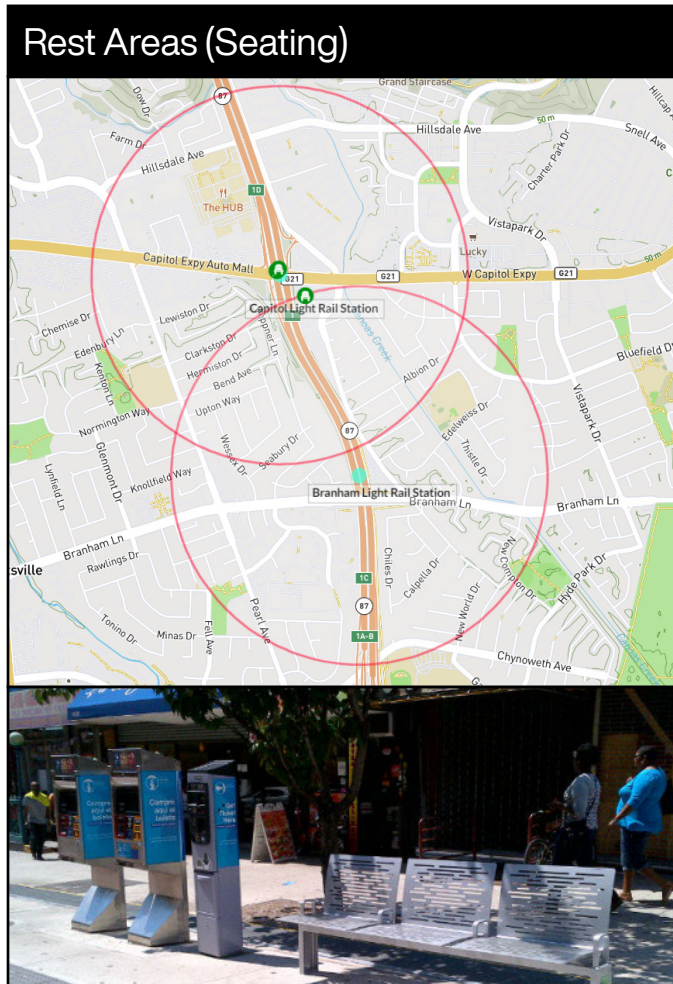


13

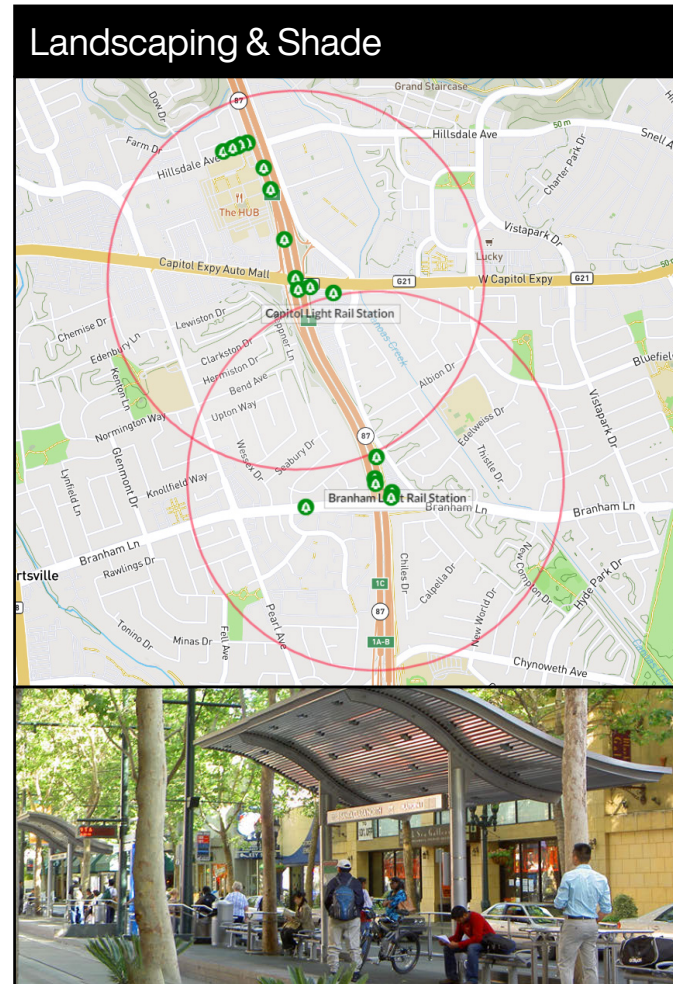
Possible Improvements

What improvements would make it easier to access the VTA stations?

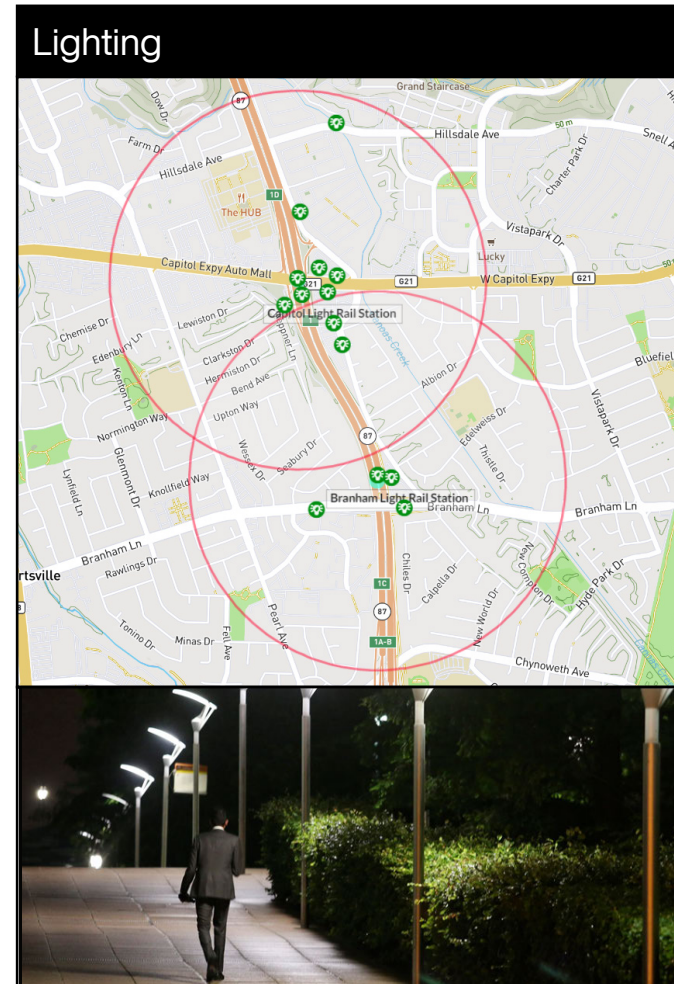
Safety & Comfort



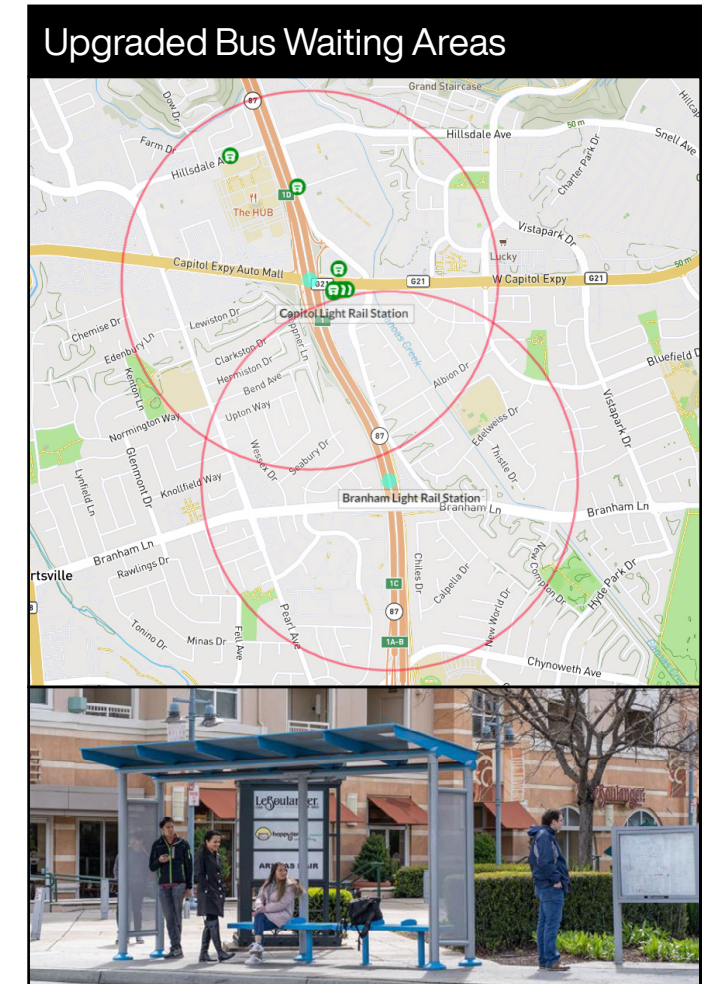
03



18



14



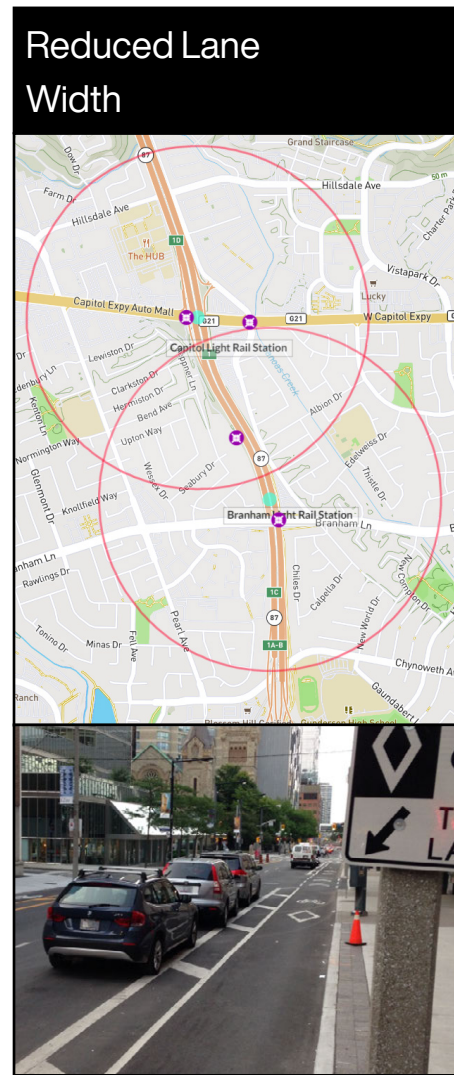
07

Possible Improvements

What improvements would make it easier to access the VTA stations?

Allocation of Street Space

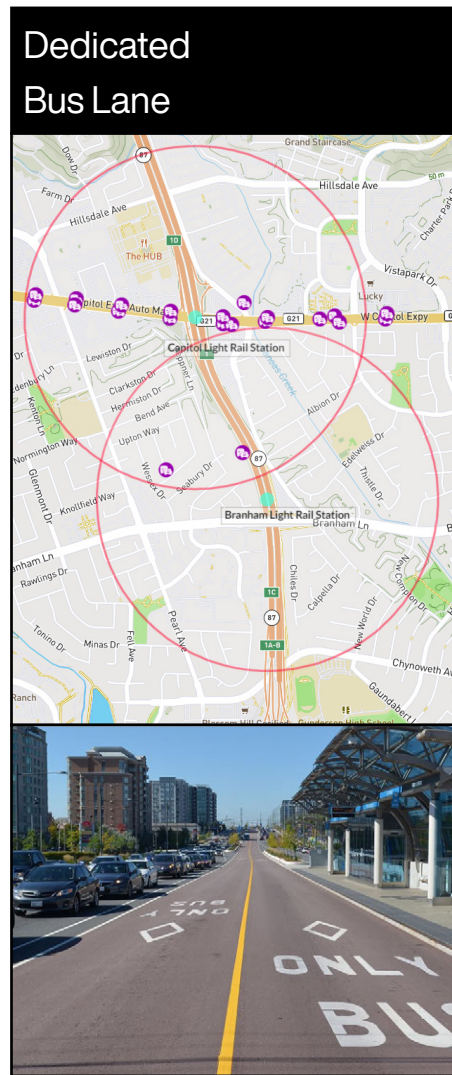
Reduced Lane Width



The map shows red circles around the Capitol and Branham Light Rail Stations, indicating the area of study. The street view below shows a narrow street with cars and a pedestrian crossing sign.

04

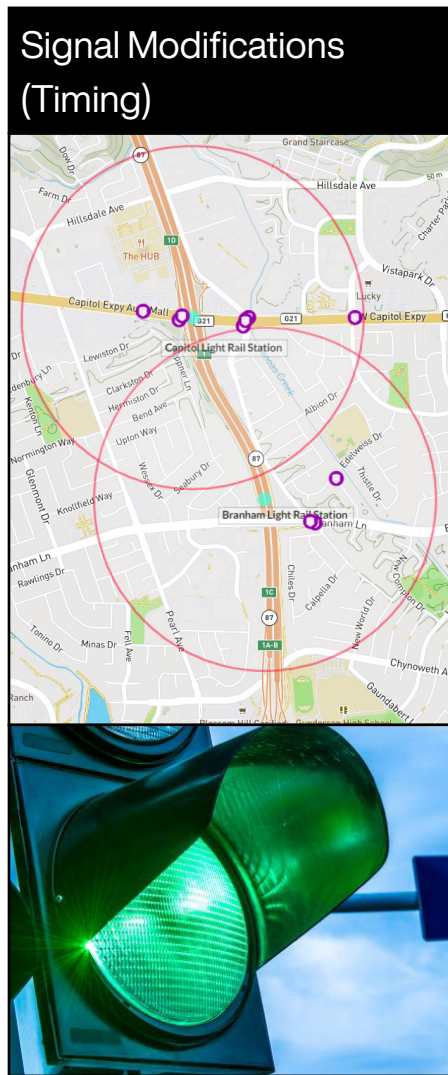
Dedicated Bus Lane



The map shows red circles around the Capitol and Branham Light Rail Stations. The street view below shows a dedicated bus lane with a yellow line and 'ONLY BUS' markings on the road.

26

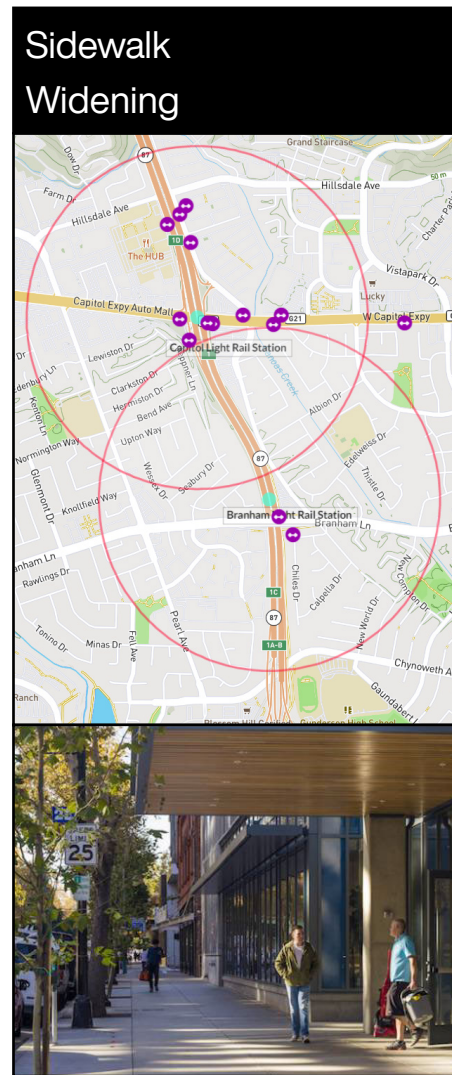
Signal Modifications (Timing)



The map shows red circles around the Capitol and Branham Light Rail Stations. The street view below shows a close-up of a green traffic light.

11

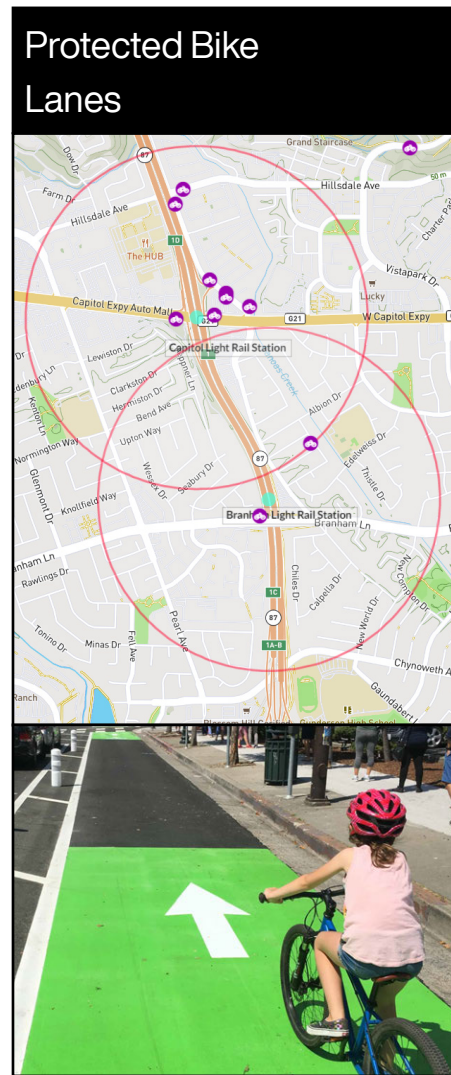
Sidewalk Widening



The map shows red circles around the Capitol and Branham Light Rail Stations. The street view below shows a wide sidewalk with people walking and a building in the background.

14

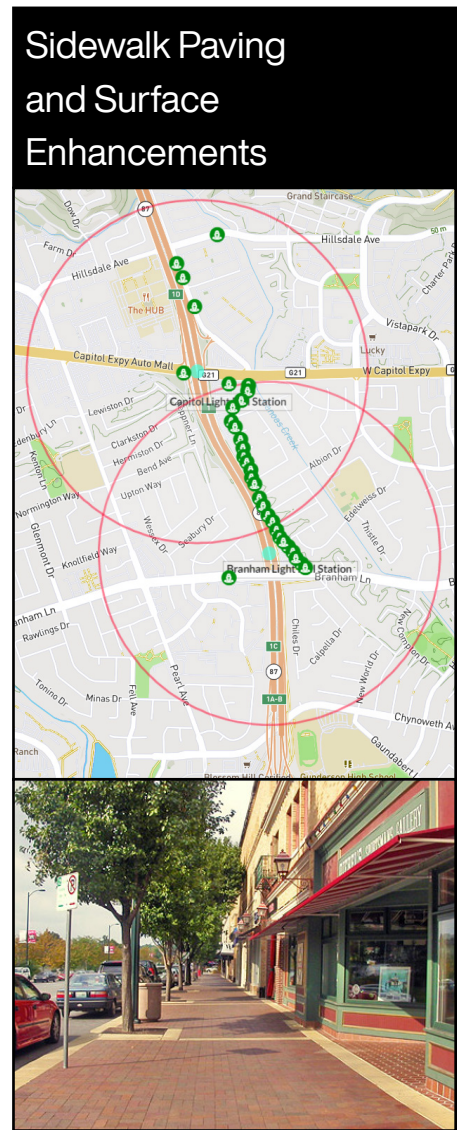
Protected Bike Lanes



The map shows red circles around the Capitol and Branham Light Rail Stations. The street view below shows a protected bike lane with a green surface and a white arrow pointing forward.

14

Sidewalk Paving and Surface Enhancements



The map shows red circles around the Capitol and Branham Light Rail Stations. The street view below shows a paved sidewalk with a brick pattern and a storefront.

32

Possible Improvements

What improvements would make it easier to access the VTA stations?

Additional Transportation Components


Designated Pick-Up/ Drop-Off Areas	Neighbourhood Electric Vehicles (NEVs)	Bike Share, Scooter Share, & Mobility Hubs	Vanpool or Shuttles	Car Share

Conclusions




Total Engagement

In Person

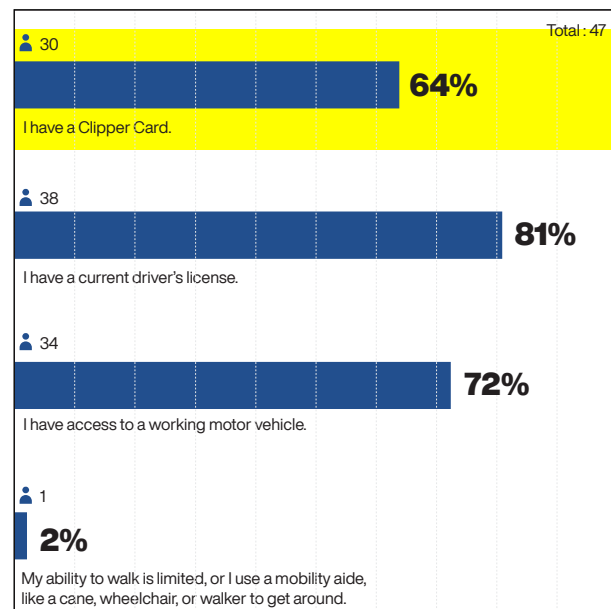
 112-142 attendees

Online

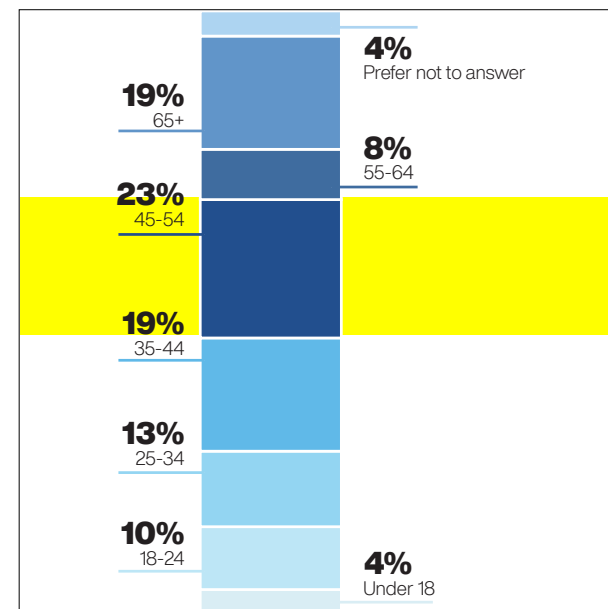
 200+ attendees
(100+ with meaningful data)

Demographic Highlights (Online only)

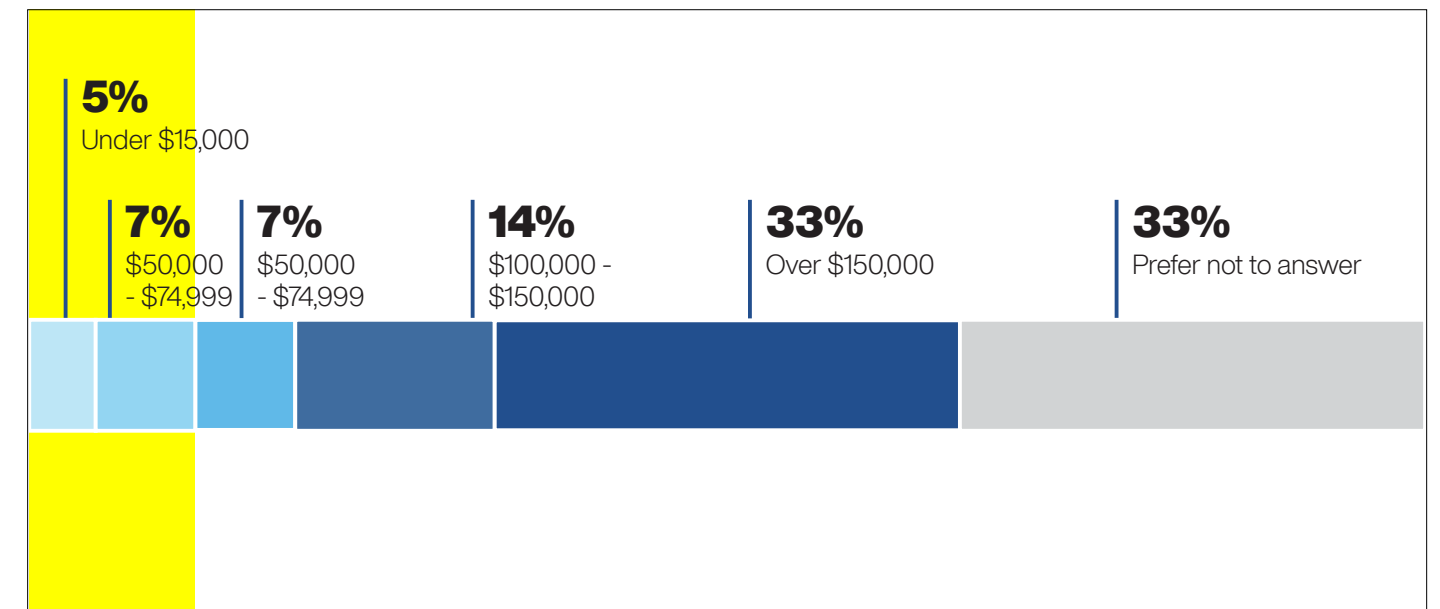
Most respondents have a Clipper Card.



42% of respondents are aged 35-54



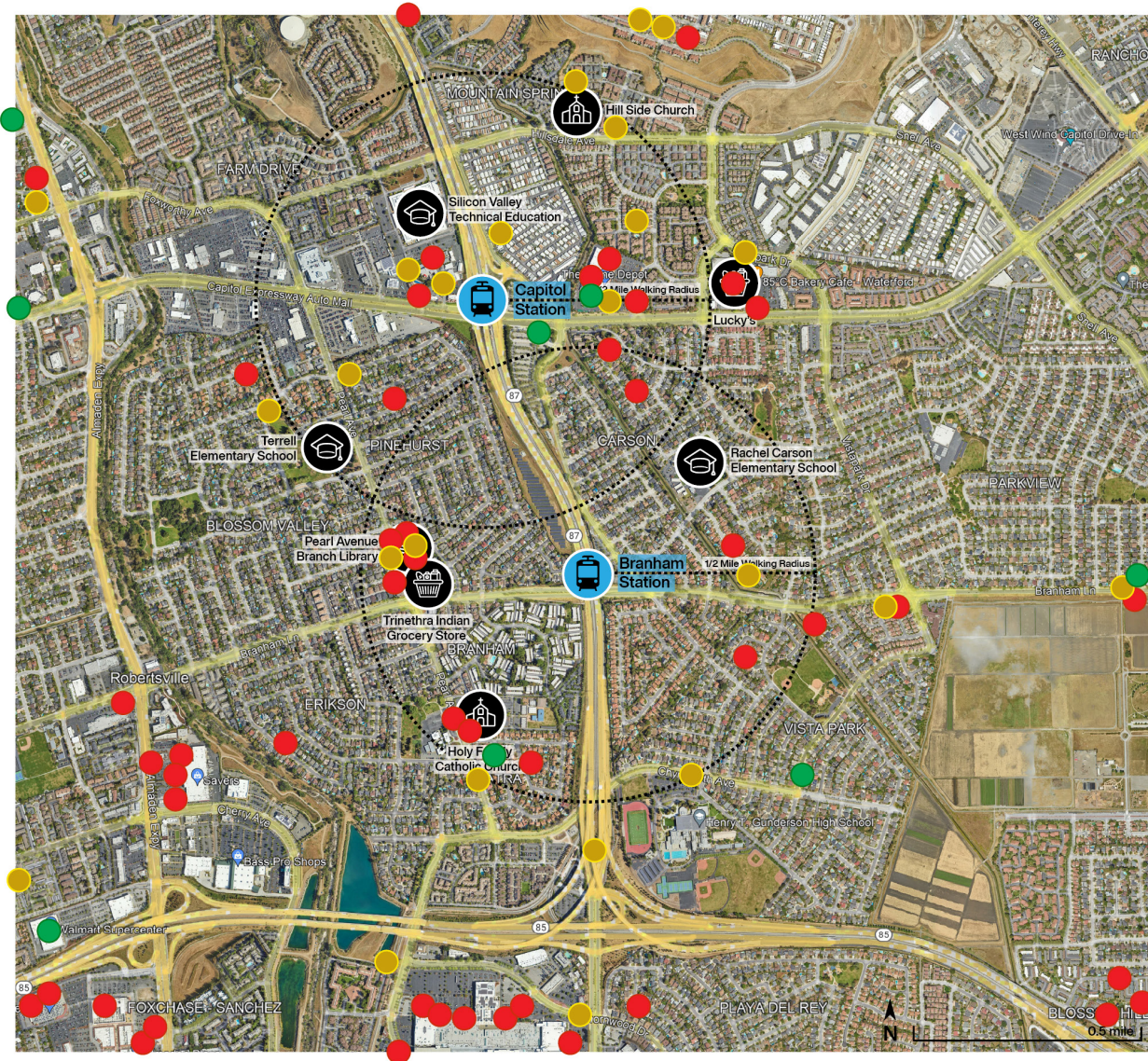
Low income respondents (<\$74,999) represent only 13% of the survey



Station Access

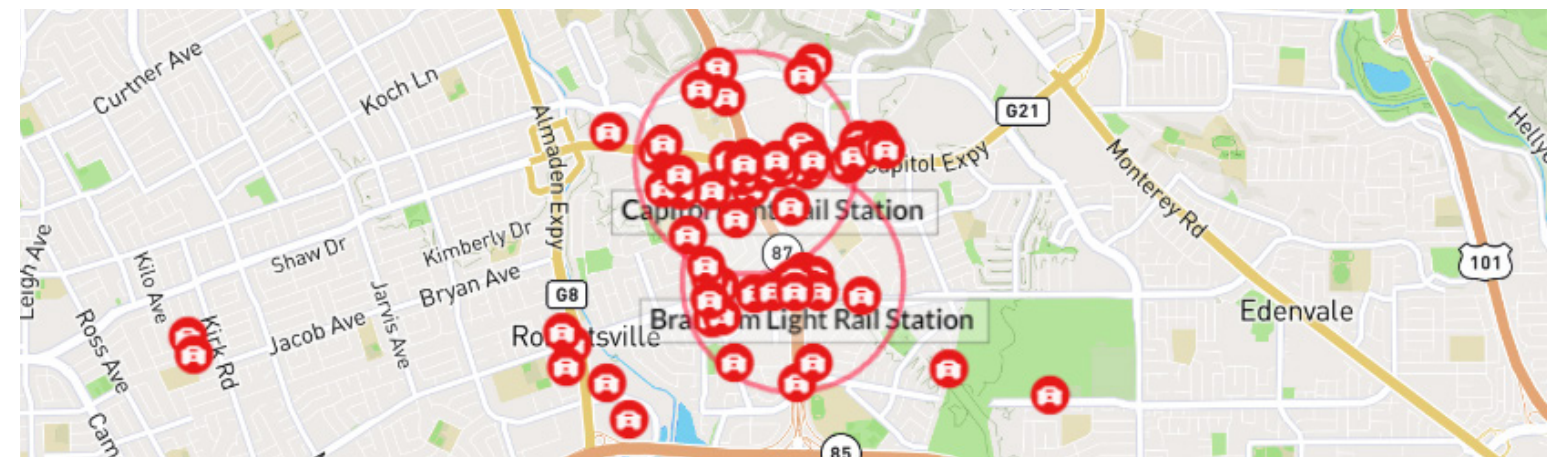
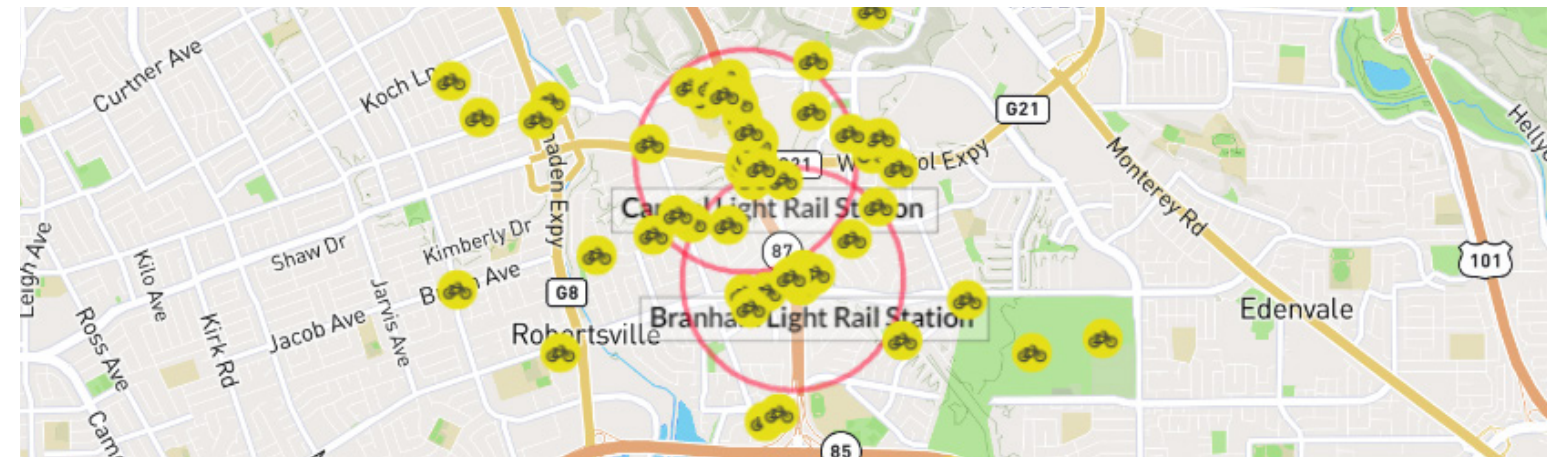
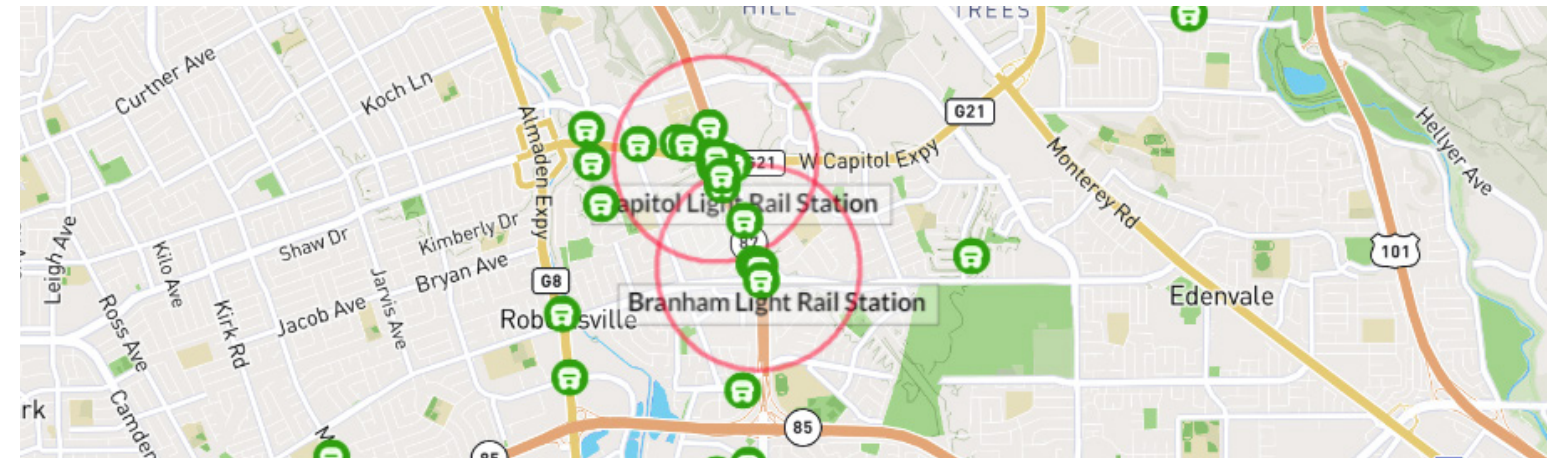
In Person

In the in-person survey, we see most trips are taking place by vehicle. Trips made by transit are often outside the walking radius of the stations, implying alternate transit modes (i.e. bus).



Online

We see even more indication of mode split in the online survey, though transit trips are still the minority. Most trips of all modes were placed in the walking radius of the stations.



Barriers to Station Access

CAPITOL

The top answers to “It is difficult for me to reach Capitol Station because...” were:



In person

- The sidewalks are missing or too narrow.



Both

- There is little or no lighting at night.
- The route feels unsafe to me.



Online

- There is too little shade and weather
- I have to cross busy, wide streets.

BRANHAM

The top answers to “It is difficult for me to reach Branham Station because...” were:



In person

- Stations themselves feel unsafe (due to panhandling, homelessness, trash).



Both

- The amount of homelessness around Branham Lane.
- The route feels unsafe to me.



Online

- The sidewalks are not maintained.
- Vehicular traffic is too fast.

COMMENTS

We provided the opportunity for participants to identify additional challenges that were not listed. The comments generally fell under four categories.



Safety Concerns - Primarily Due to Homelessness



Station is not Clean/Appealing Functional



Multi-Modal Access Does Not Feel Safe



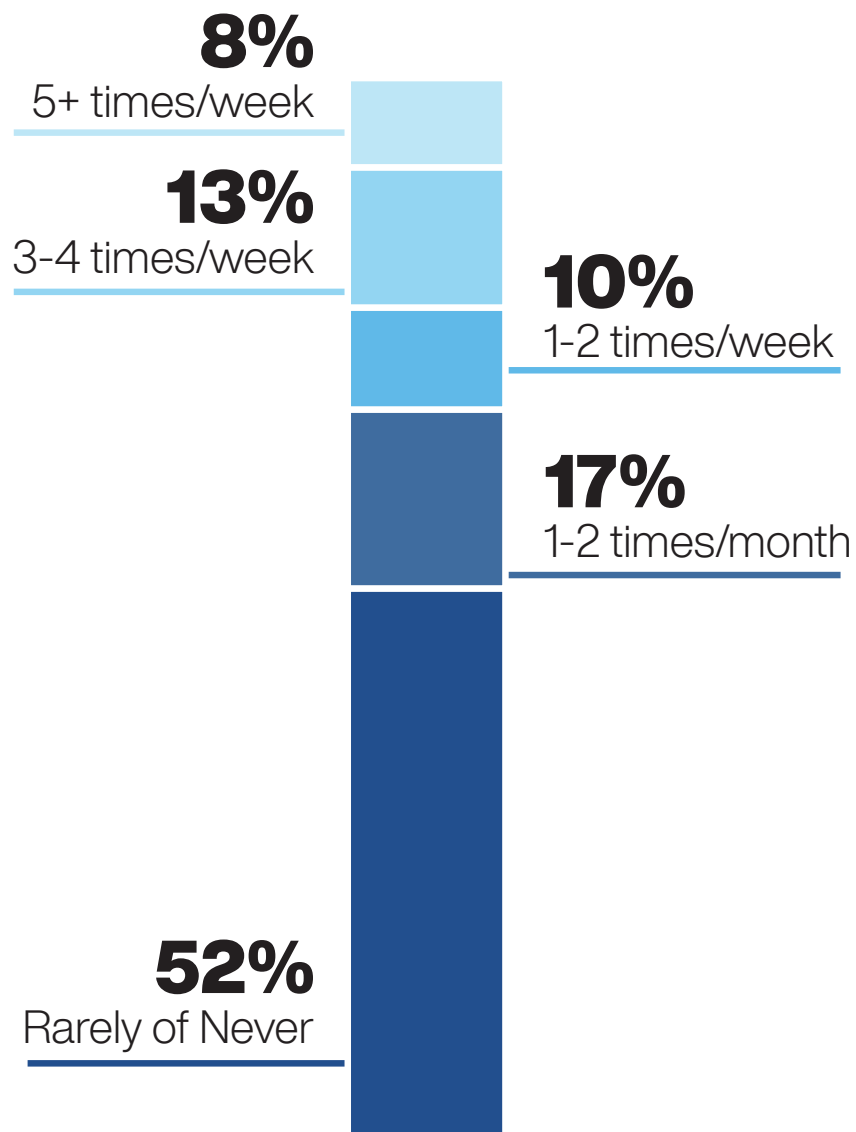
Transit Service is Too Infrequent / Not Enough Routes

Barriers to Station Access

We learned some additional data regarding how stations are accessed from the online survey.

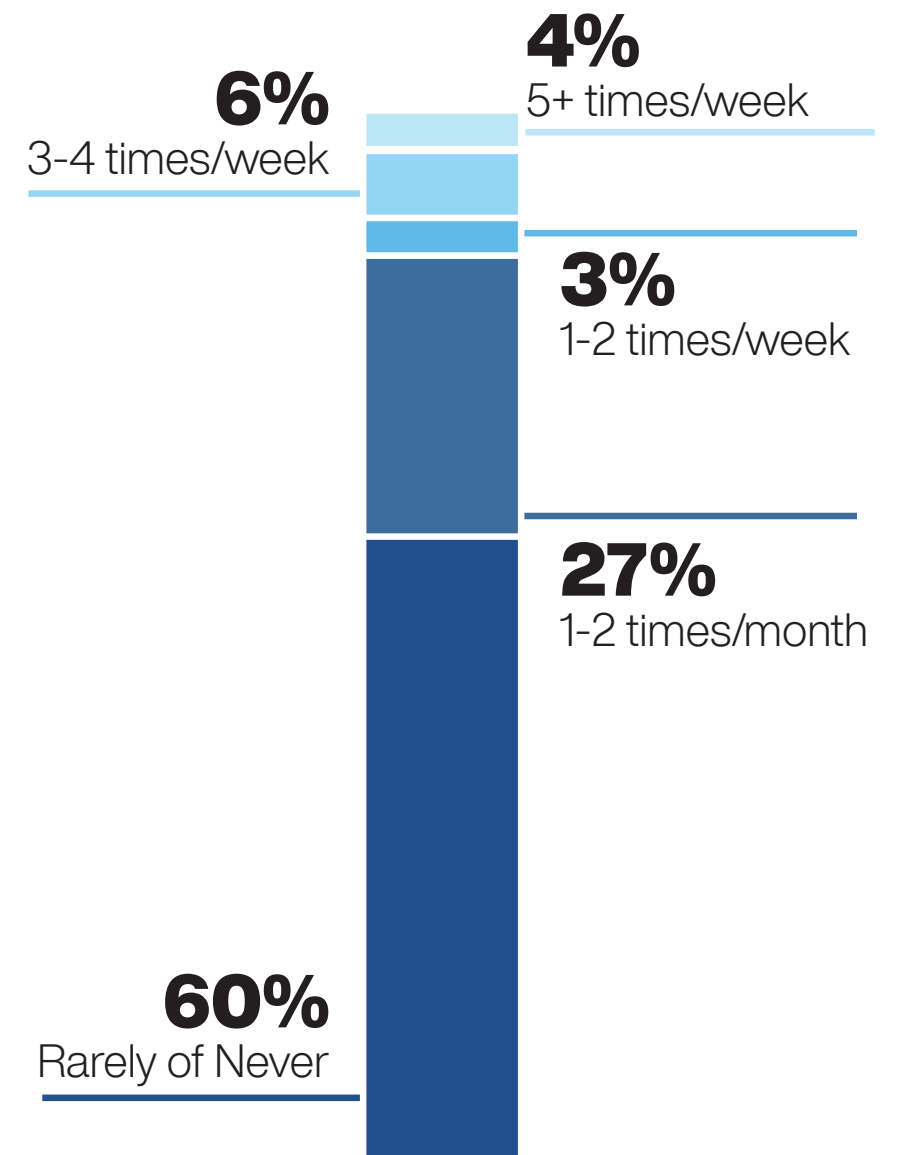
CAPITOL

- **74%** of respondents indicated they live nearby the Capitol Light Rail Station
- The most important streets to access the station are **Capitol Expressway and Narvaez Avenue**
- The mode of travel most used to access the station is **48% of respondents walking/rolling**, followed by 35% of respondents driving and utilizing parking
- **52% of respondents** indicated they rarely or **never access the station**, while 8% access it 5 or more times a week.



BRANHAM


- **55%** of respondents indicated they live nearby the Branham Light Rail Station
- The most important streets to access the station are **Branham Lane and Narvaez Avenue**
- The mode of travel most used to access the station is **52% of respondents walking/rolling**, followed by 32% of respondents bicycling/scootering
- **60% of respondents** indicated they rarely or **never access the station**, while 4% access it 5 or more times a week.




Possible Improvements

The top answers to “What improvements would make it easier to access the VTA stations?” (both Capitol and Branham) were, in order of popularity:


In Person

Train Information (Arrival Times/Notifications)  12



Landscaping & Shade  06




Lighting  11




More Local Bus Service  05




Somewhere to buy coffee, stores/restaurants  07

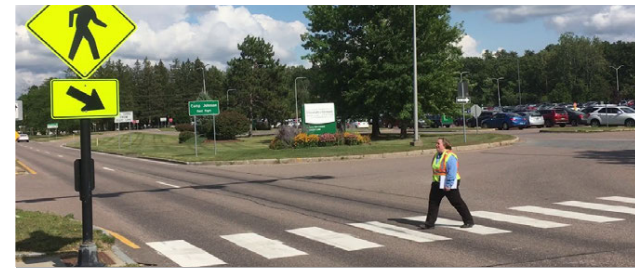



Online

Pedestrian Paseos & Neighbourhood Cut-Throughs  33




High-Visibility Crosswalks  24



Sidewalk Paving and Surface Enhancements  32



Dedicated Bus Lanes  26



VTA Capitol and Branham Station Access Study

Engagement Summary
Round 2

May 2023



Introduction

The Capitol and Branham Station Access Study is focused on identifying recommendations and projects to make it easier to walk, bike, and take connecting transit to the light rail stations. These recommendations could include improvements to bicycle and pedestrian access, lighting, bus waiting areas, and directional signs.

As a part of this study, Arcadis conducted both in-person and online public engagement throughout May 2023. This was the second round of engagement, which showed specific proposed access improvements for cyclists and pedestrians. We collected feedback on priorities and any missing improvements.



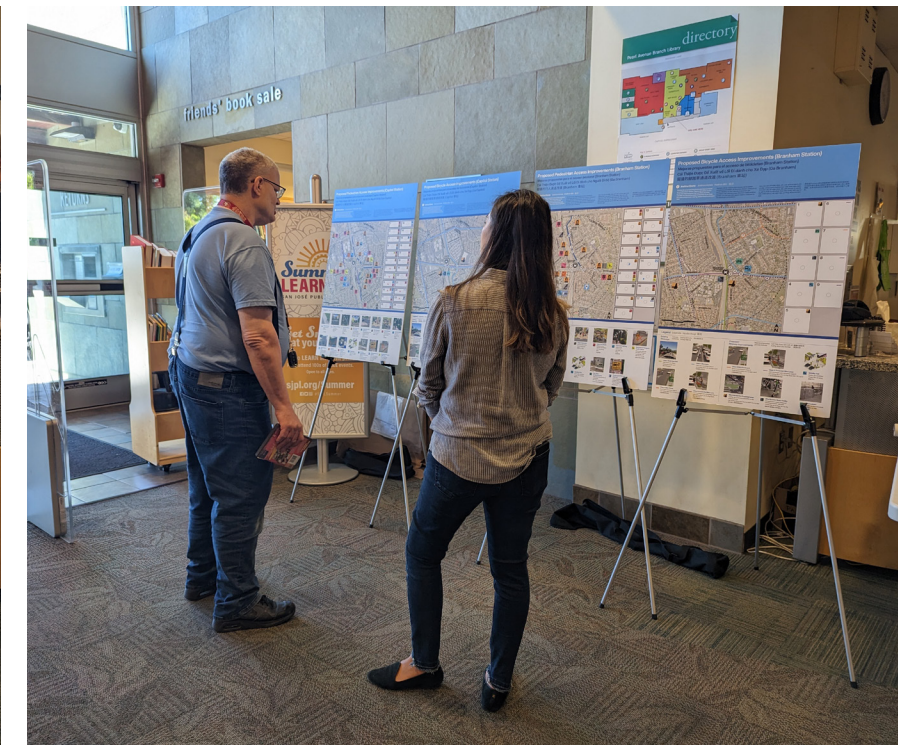
In-person Engagement



In-person Engagement

Arcadis IBI Group, with VTA staff, held 3 public engagement events at locations around Capitol and Branham station during the week of May 15, 2023. Our team engaged with over 130 members of the public through both conversations and the opportunity to use dot-voting on a set of boards that mirror the survey in our online public engagement. We did not collect demographic information from the in-person engagement.

This engagement summary compiles all 3 in-person events. Additionally, a series of conversational comments were collected informally and are presented as a part of the summary.



May 18 – Capitol Station – 7:30 am-10:30 am

May 17 – Capitol Station – 3:30 pm-6:30 pm

May 18 – Pearl Ave Library - 3:00 pm-6:00 pm

Comments Summary

Capitol Station, Morning

Attendees indicated relevant concerns regarding:

- Concerns about barriers to access – such as consistently broken escalators, damaged sidewalks, etc.
- A lack of safety due to garbage and homelessness
- A desire for better train schedules and real-time information
- Concerns about dangerous intersections to access the station

Pearl Ave Library

Attendees indicated relevant concerns regarding:

- A lack of safety due to garbage and homelessness
- A lack of first-last mile transportation options to get to the station

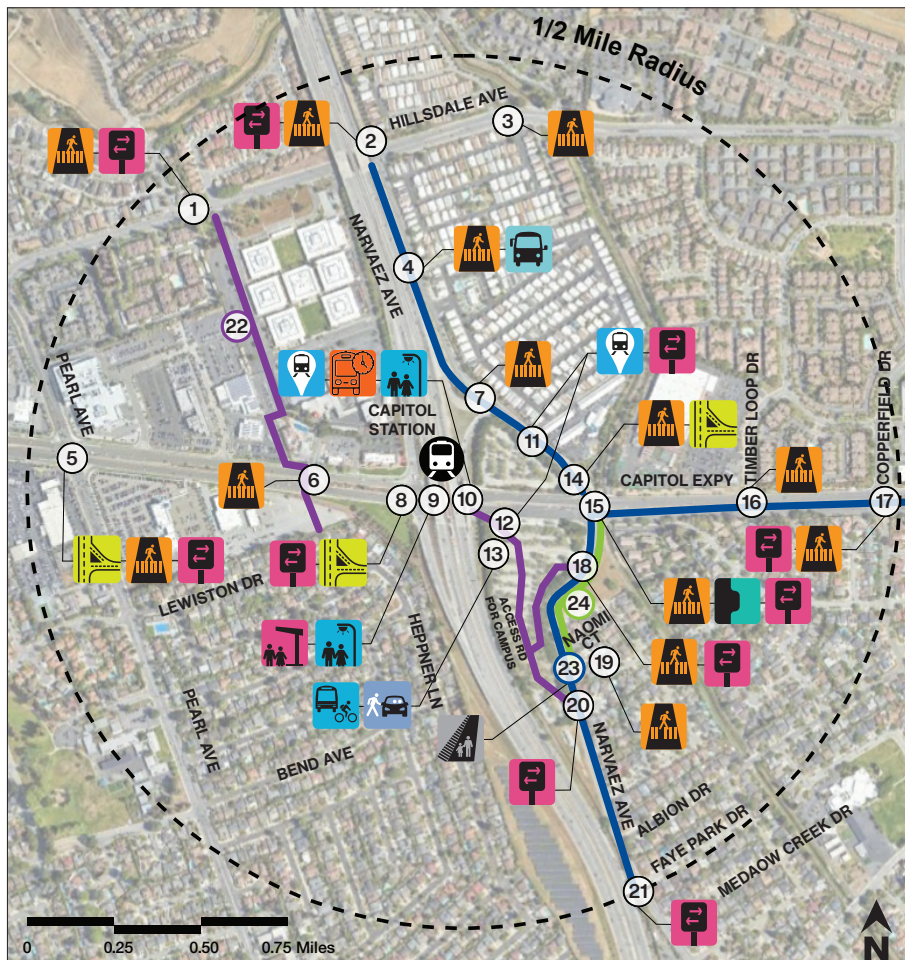
Capitol Station, Afternoon

Attendees indicated relevant concerns regarding:

- A desire for better train schedules and real-time information
- Concerns about dangerous intersections to access the station
- A desire for better lighting at night time
- A desire for more ease of access – from the north east, an improved drop off lot, etc.
- A desire for more amenities at the stations, such as bathroom and charging locations

Board 1 - Proposed Pedestrian Access Improvements (Capitol Station)

We asked participants to place stickers on the access improvement most important to them. The results below are color-coded, identifying the improvements with the most number of votes across all 3 engagements.

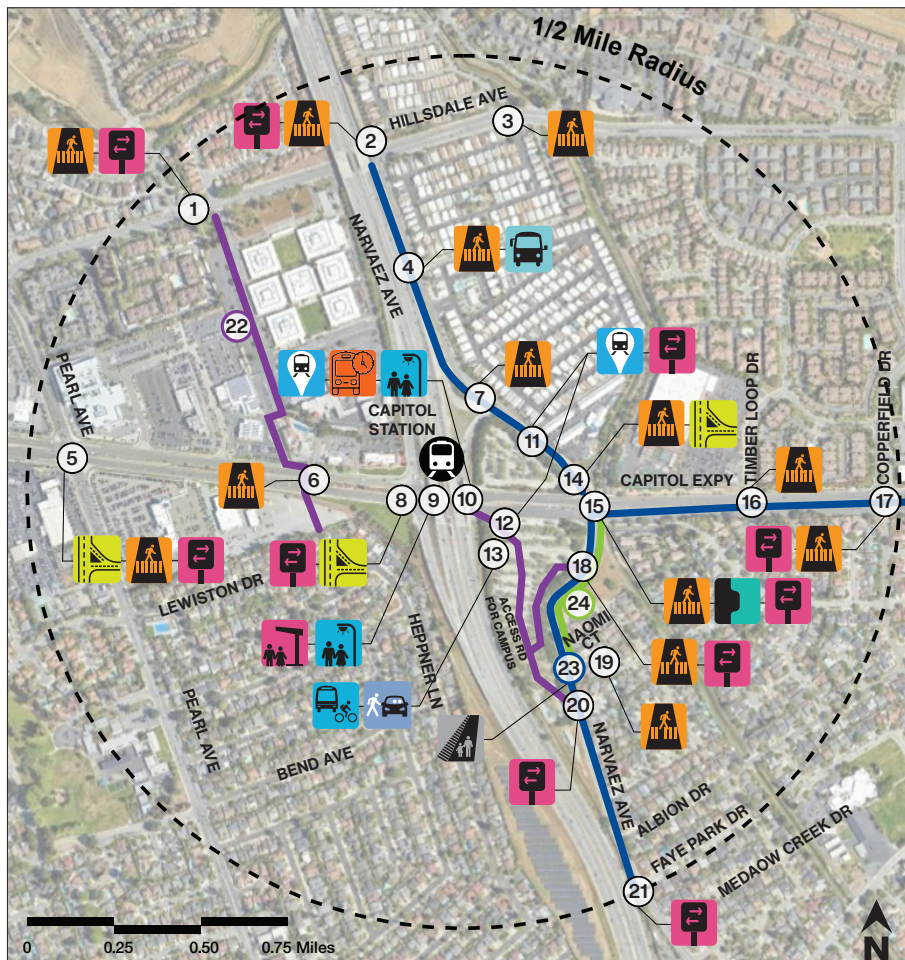


#	Improvement Location Name	Improvements	# Votes	% Votes
1	Hillsdale Avenue & Dow Drive	New or Improved Crosswalk, Wayfinding Signage	4	6%
2	Hillsdale Avenue & Narvaez Avenue	New or Improved Crosswalk, Wayfinding Signage	2	3%
3	Hillsdale Avenue & Mountain Springs Drive	New or Improved Crosswalk	2	3%
4	Narvaez Avenue & Shadow Creek Drive	New or Improved Crosswalk, Bus Stop Enhancement	4	6%
5	Capitol Expressway & Pearl Avenue	New or Improved Crosswalk, Wayfinding Signage, Removal of Triangular Traffic Island	1	1%
6	Midblock Capitol between Pearl Avenue & SR 87	New or Improved Crosswalk	0	0%
7	Narvaez Avenue & SR 87 On- and Off-Ramps	New or Improved Crosswalk	5	7%
8	Capitol Expressway & SR 87 On- and Off-Ramps	Removal of Triangular Traffic Island, Wayfinding Signage	3	4%
9	Capitol LRT Platform	Improved Lighting, Improved Shade	4	6%
10	Capitol LRT Station Entrance	Improved Lighting, Real-time Transit Information, Station Identification Signage	12	17%
11	Capitol LRT North Park and Ride Entrance	Station Identification Signage, Wayfinding Signage	2	3%
12	Capitol LRT South Park and Ride Bus Loop	Station Identification Signage, Wayfinding Signage	3	4%

■ Most Votes
 ■ Second Most Votes
 ■ Third Most Votes

Board 1 - Proposed Pedestrian Access Improvements (Capitol Station)

We asked participants to place stickers on the access improvement most important to them. The results below are color-coded, identifying the improvements with the most number of votes across all 3 engagements.



#	Improvement Location Name	Improvements	# Votes	% Votes
13	Capitol LRT South Park and Ride	Mobility Hub, Designated Pick-up / Drop Off	1	1%
14	North and South legs of Capitol Expressway & Narvaez Avenue	New or Improved Crosswalk, Removal of Triangular Traffic Island	2	3%
15	Capitol Expressway & Narvaez Avenue	New or Improved Crosswalk, Intersection Curb Extensions, Wayfinding Signage	5	7%
16	Capitol Expressway & Timberloop Drive	New or Improved Crosswalk	1	1%
17	Capitol Expressway & Copperfield Drive	New or Improved Crosswalk, Wayfinding Signage	1	1%
18	Capitol Expressway South Park and Ride Entrance	New or Improved Crosswalk, Wayfinding Signage	3	4%
19	Naomi Court & Narvaez Avenue	New or Improved Crosswalk	1	1%
20	Sarah Court & Narvaez Avenue	Wayfinding Signage	3	4%
21	Faye Park Drive & Narvaez Avenue	Wayfinding Signage	0	0%
22	Midblock - between Hillsdale Avenue, Capitol Expressway, Pearl Avenue and SR 87	Pedestrian Pathway	2	3%
23	Narvaez Avenue	Add sidewalks	5	7%
24	Narvaez Avenue	Improved Lighting	3	4%

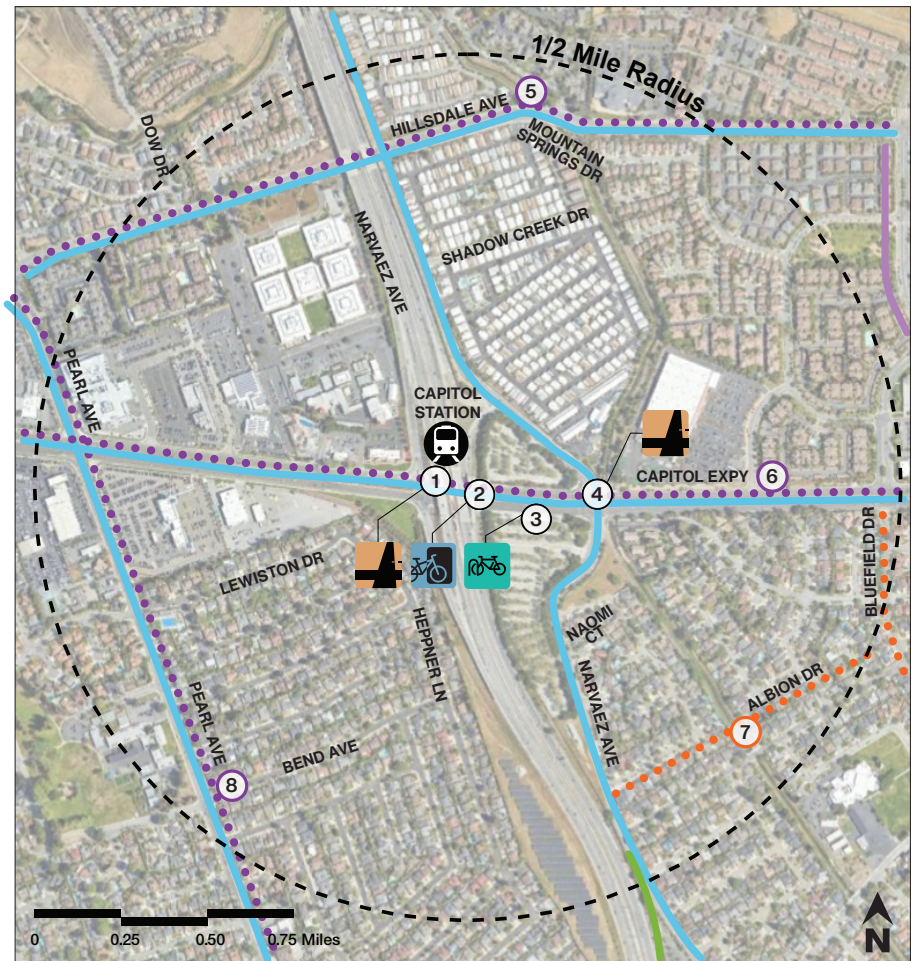
■ Most Votes
 ■ Second Most Votes
 ■ Third Most Votes

Board 2 - Proposed Bicycle Access Improvements (Capitol Station)

We asked participants to place stickers on the access improvement most important to them. The results below are color-coded, identifying the improvements with the most number of votes across all 3 engagements.

#	Improvement Location Name	Improvements	# Votes	% Votes
1	Capitol Expressway & SR 87 On- and Off- Ramps	Bike Intersection Crossing Lanes	8	15%
2	Capitol LRT Station Entrance	Bike Lockers	12	23%
3	Capitol LRT Bus Loop	Bike/Scooter Share Facility	6	12%
4	Capitol Expressway & Narvaez Avenue	Bike Intersection Crossing Lanes	5	10%
5	Hillsdale Avenue	Class IV Protected Bike Lane	3	6%
6	Capitol Expressway	Class IV Protected Bike Lane	10	19%
7	Albion Drive	Class III Bike Boulevard	3	6%
8	Pearl Avenue	Class IV Protected Bike Lane	5	10%

Most Votes Second Most Votes Third Most Votes

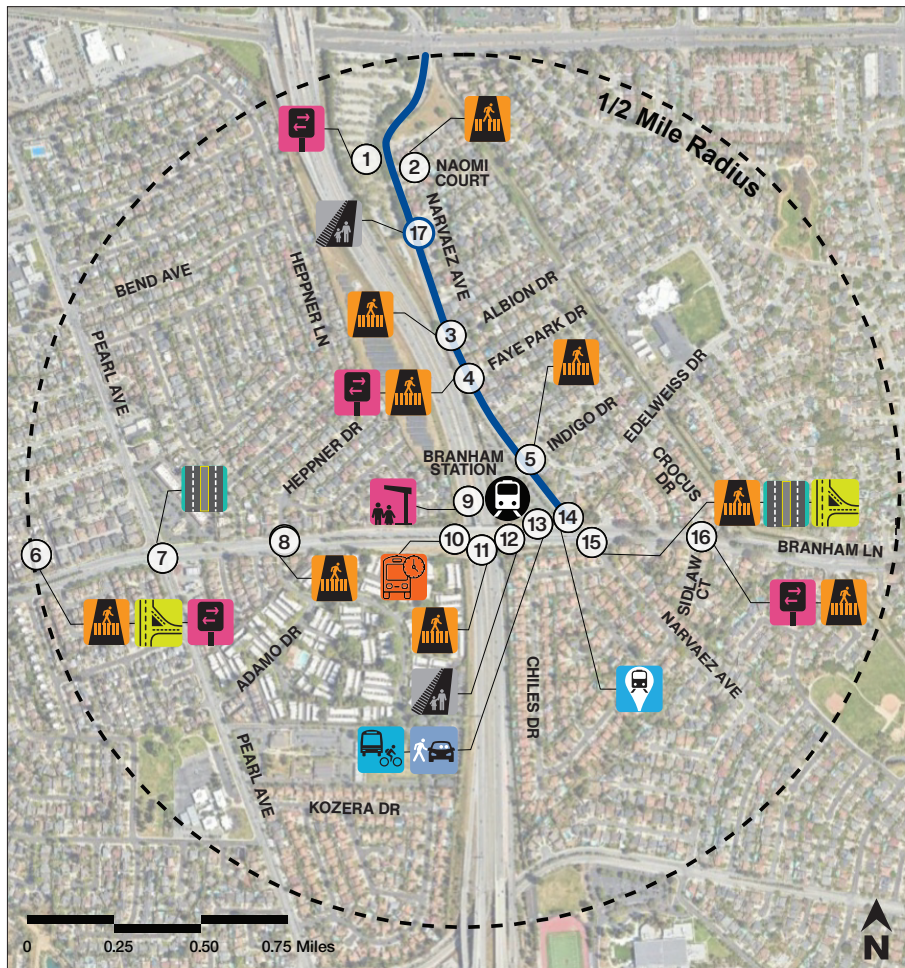


Board 3 – Proposed Pedestrian Access Improvements (Branham Station)

We asked participants to place stickers on the access improvement most important to them. The results below are color-coded, identifying the improvements with the most number of votes across all 3 engagements.

#	Improvement Location Name	Improvements	# Votes	% Votes
1	Narvaez Avenue West Side	Wayfinding Signage	0	0%
2	Naomi Court & Narvaez Avenue	New or Improved Crosswalk	5	20%
3	Albion Drive & Narvaez Avenue	New or Improved Crosswalk	2	8%
4	Faye Park Drive & Narvaez Avenue	New or Improved Crosswalk, Wayfinding Signage	2	8%
5	Indigo Drive & Narvaez Avenue	New or Improved Crosswalk	2	8%
6	Branham Lane & Pearl Avenue	New or Improved Crosswalk, Wayfinding Signage, Removal of Triangular Traffic Island	2	8%
7	Branham Lane at Pearl Avenue	Roadway Median	0	0%
8	Branham Lane at Heppner Drive	New or Improved Crosswalk	0	0%
9	Branham LRT Station Platform	Improved Shade	1	4%
10	Branham LRT Station Entrance	Real-time transit information	1	4%
11	Branham LRT Station Entrance	New or Improved Crosswalk	0	0%
12	South Side Branham Lane	Wider Sidewalks	2	8%

■ Most Votes
 ■ Second Most Votes
 ■ Third Most Votes

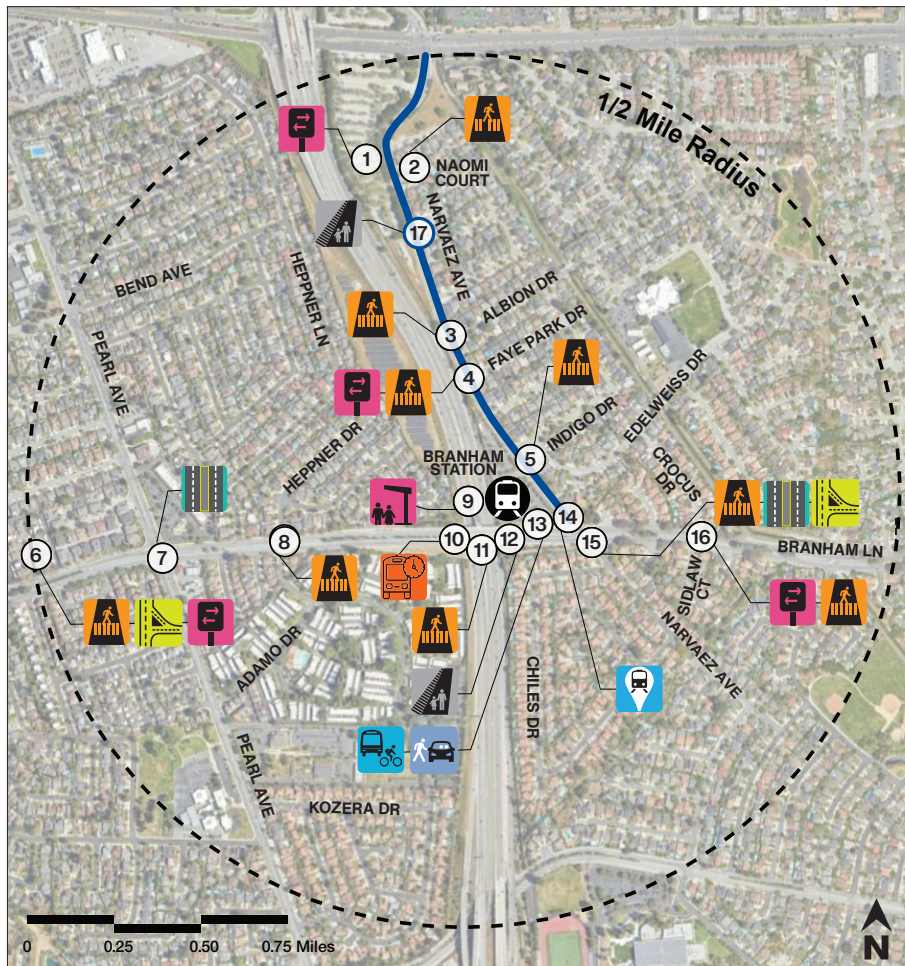


- Sidewalk paving and surface enhancements
- New or Improved Crosswalk
- Roadway median
- Improved lighting
- Improved shade
- Real-time transit information
- Mobility Hub
- Station identification signage
- Wayfinding signage
- Wider Sidewalks
- Designated Pick-Up/ Drop-Off
- Removal of Triangular Traffic Island
- Bus Stop Enhancement

Board 3 – Proposed Pedestrian Access Improvements (Branham Station)

We asked participants to place stickers on the access improvement most important to them. The results below are color-coded, identifying the improvements with the most number of votes across all 3 engagements.










#	Improvement Location Name	Improvements	# Votes	% Votes
13	Branham Station Park and Ride	Mobility Hub, Designated Pick-up / Drop Off	2	8%
14	Northwest corner of Branham Lane & Narvaez Avenue	Station Identification Signage, Removal of Triangular Traffic Island	1	4%
15	Branham Lane & Narvaez Avenue	New or Improved Crosswalk, Roadway Median, Removal of Triangular Traffic Island	1	4%
16	Branham Lane & Sidlaw Court	New or Improved Crosswalk, Wayfinding Signage	0	0%
17	Narvaez Avenue	Add sidewalks	4	16%






Most Votes Second Most Votes Third Most Votes

Board 4 – Proposed Bicycle Access Improvements (Branham Station)

We asked participants to place stickers on the access improvement most important to them. The results below are color-coded, identifying the improvements with the most number of votes across all 3 engagements.

#	Improvement Location Name	Improvements	# Votes	% Votes
1	Branham Lane & Pearl Avenue	 Bike Intersection Crossing Lanes	1	10%
2	Branham LRT Park and Ride Lot	 Bike/Scooter Share Facility	1	10%
3	Branham LRT Station Entrance	 Bike Lockers	0	0%
4	Branham LRT Park and Ride Lot	 Mobility Hub	1	10%
5	Branham Lane & Narvaez Avenue	 Bike Intersection Crossing Lanes	2	20%
6	Pearl Avenue	 Class IV Protected Bike Lane	0	0%
7	Albion Drive	 Class III Bike Boulevard	1	10%
8	Branham Lane West of Heppner Lane	 Class IV Protected Bike Lane	3	30%
9	Branham Lane East of Narvaez Avenue	 Class IV Protected Bike Lane	1	10%

 Most Votes  Second Most Votes  Third Most Votes



Top Improvements

Capitol Station

The improvements that received the highest number of votes for Capitol Station are:

- Capitol Expressway - Station Entrance
 - Bike lockers closer to station entrance
- Capitol Expressway - Station Entrance
 - Improved Lighting
 - Station Signage / Maps
 - Real-time Transit Information
- Capitol Expressway – Corridor Wide
 - Class IV Protected Bike Lanes

Branham Station

The improvements that received the highest number of votes for Branham Station are:

- Narvaez Ave – Naomi Court
 - New or Improved Crosswalks
- Narvaez Ave – W Capitol Expressway to Branham Lane
 - Sidewalk Paving
- Branham Lane – Meridian Avenue to Monterey Road
 - Class IV Protected Bike Lanes

Note: Improvements for Capitol Station received many more votes overall than improvements for Branham Station.

Online Engagement



Online Engagement

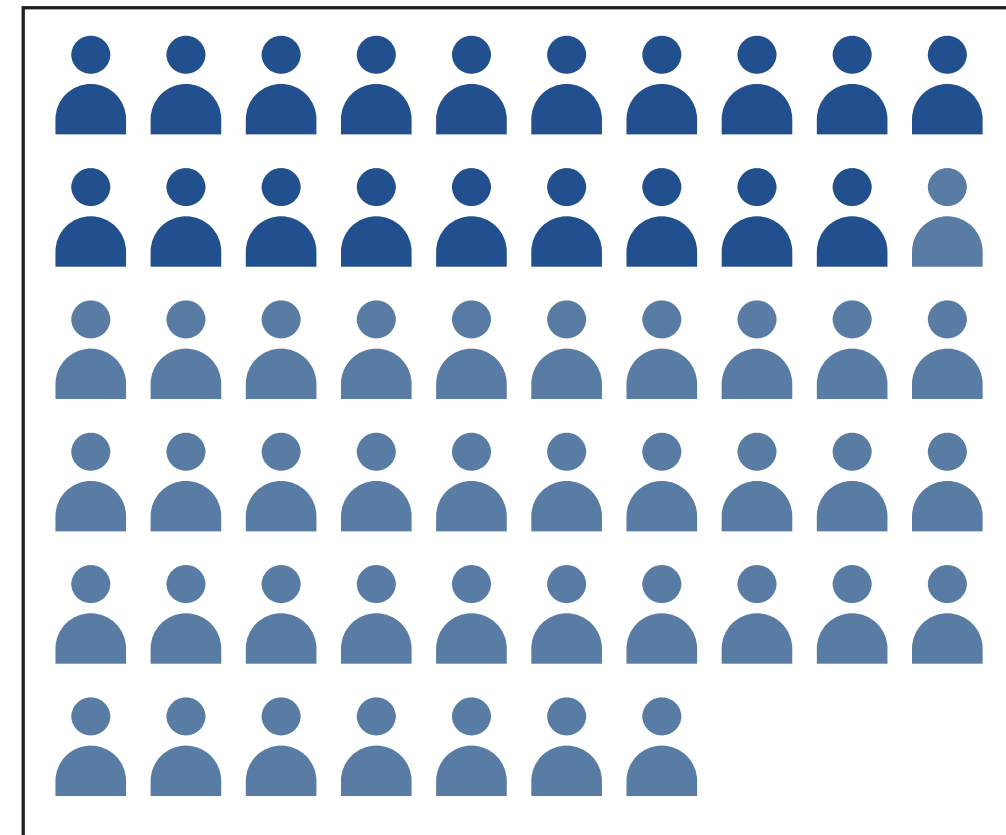
Arcadis IBI Group hosted an online survey available from May 5 to May 31, 2023. VTA staff circulated mailers as well as social media posts to advertise the survey.

We had 57 members of the public participate engage with our online survey, of which 38 respondents left at least one element of meaningful data. The online survey mirrored the dot-voting on a set of boards at the in-person public engagement, with a few additional questions. We optionally collected demographic information from the online engagement.

This engagement summary compiles all survey responses received.

Participants

57 total

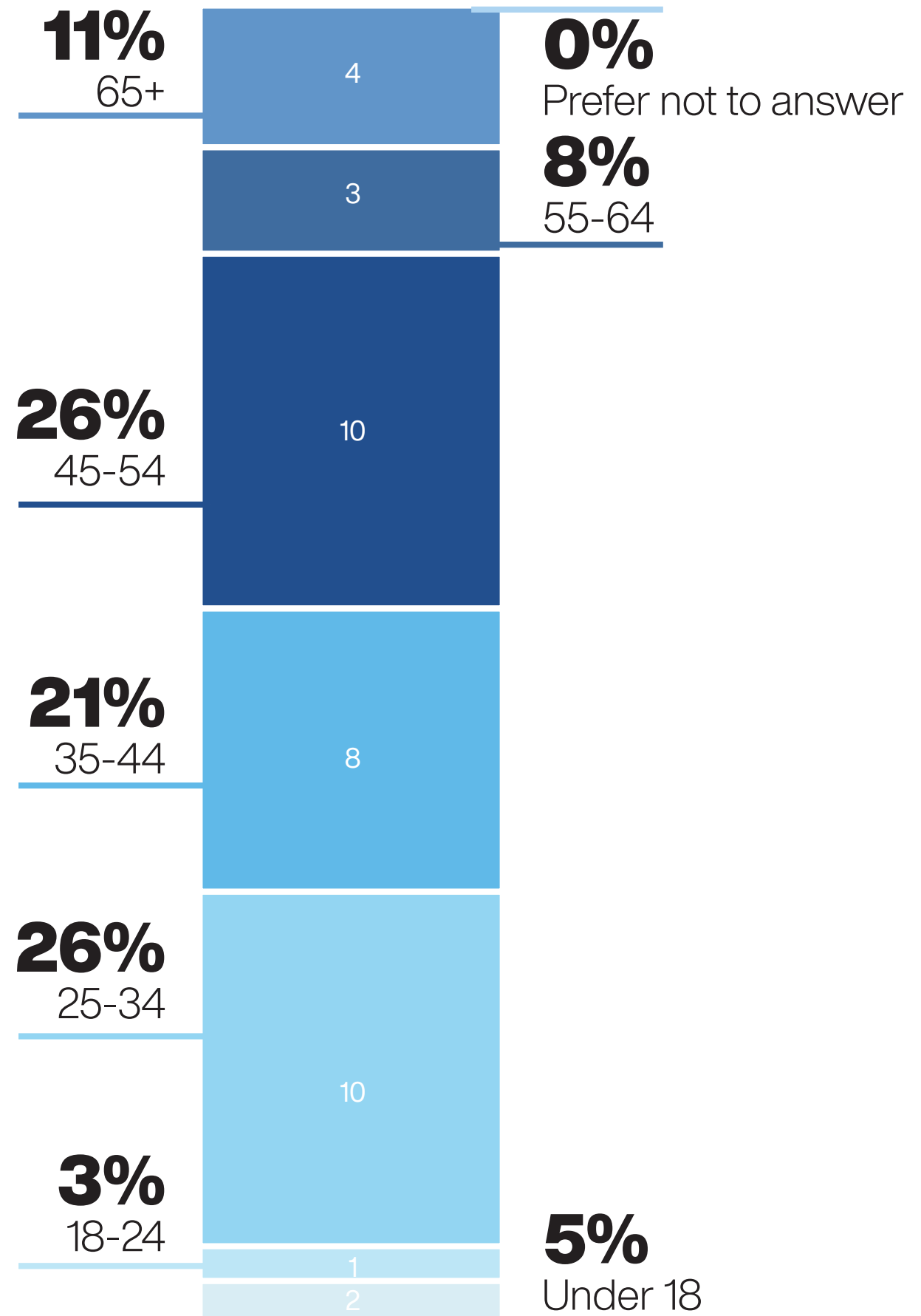


38 respondents

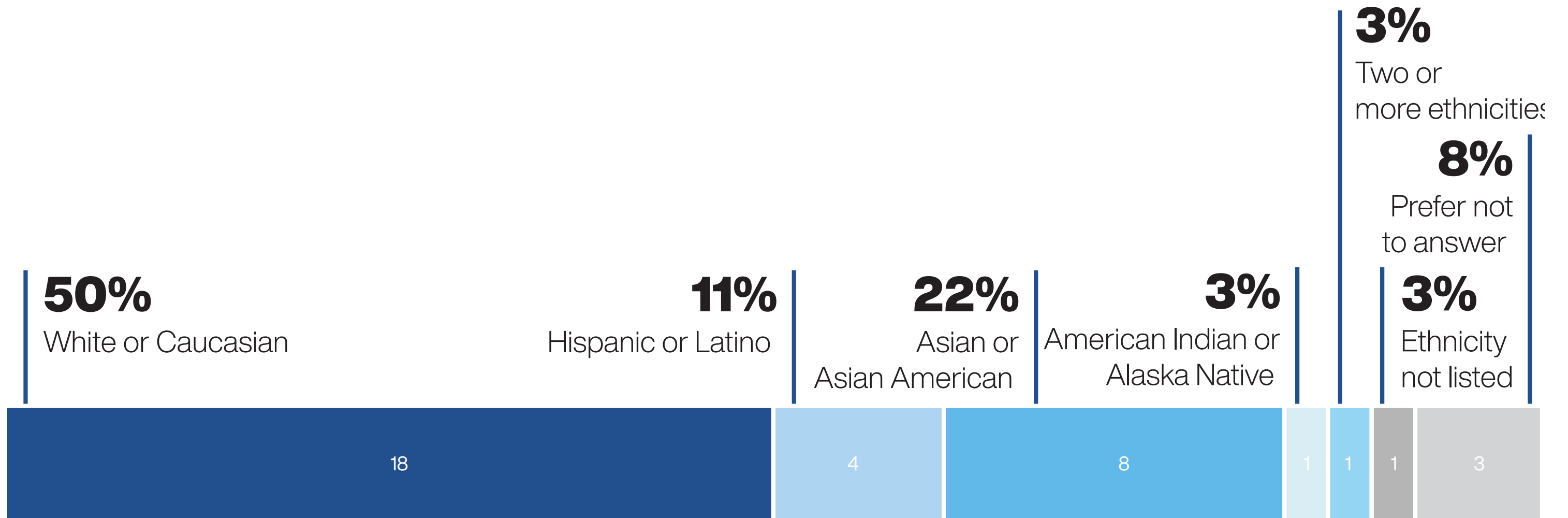
left at least one element
of meaningful data

Demographics - Age

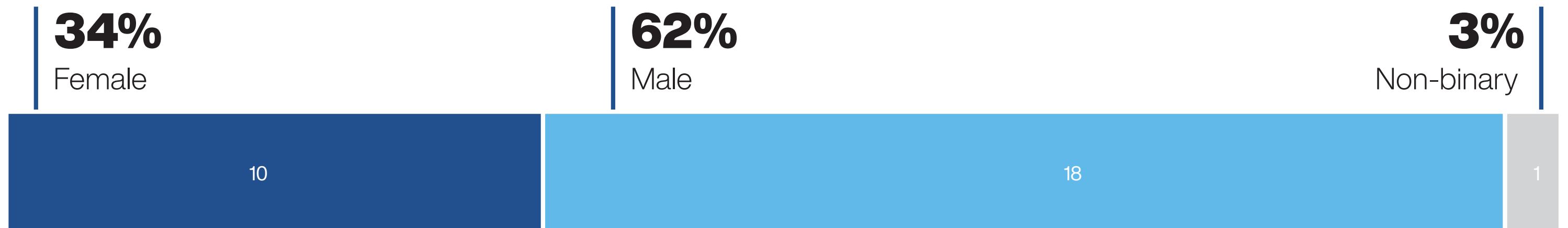
26% of respondents were age 45 - 54 and 21% were 35 to 44.



Demographics - Ethnicity

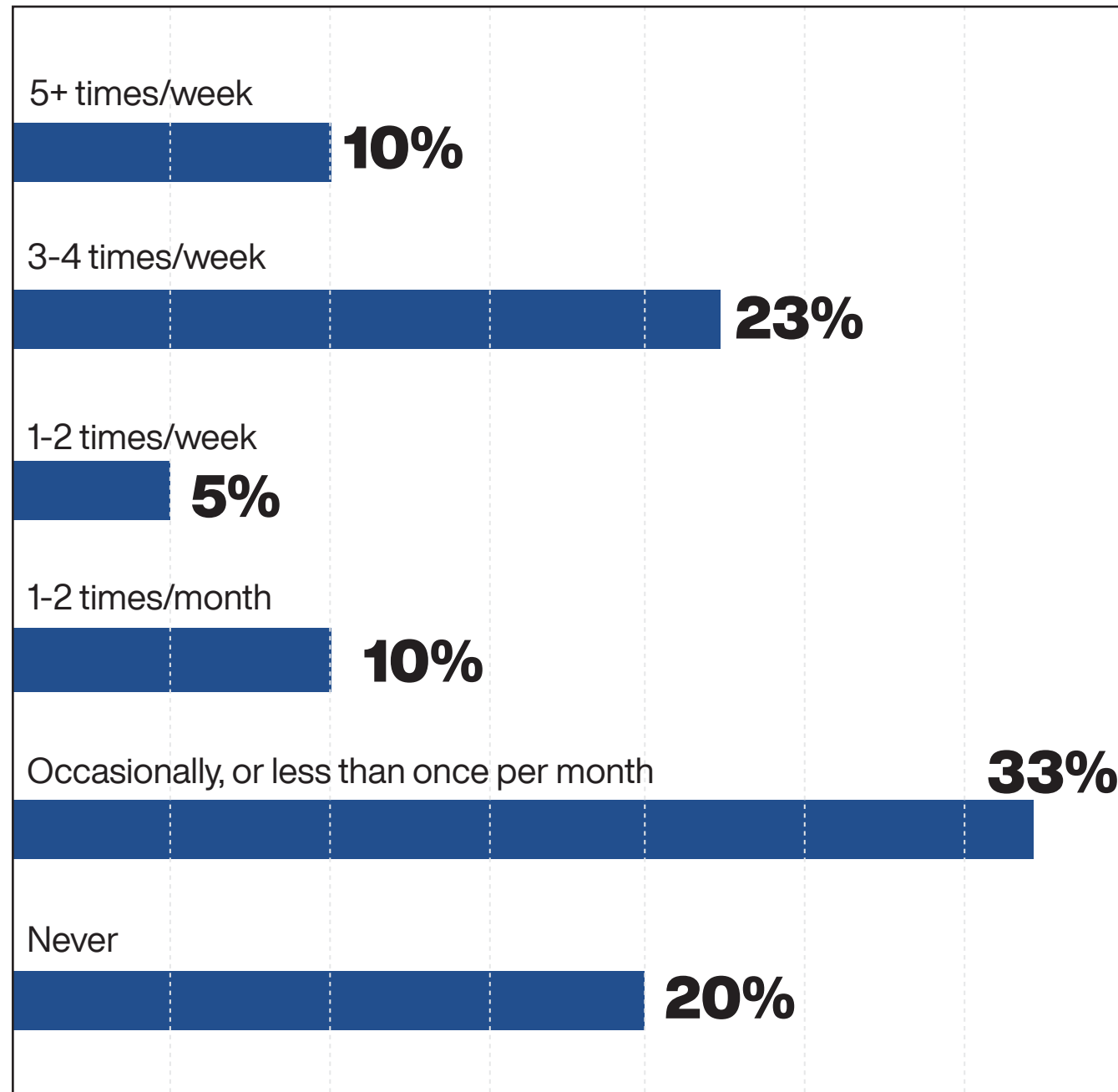


Demographics - Gender

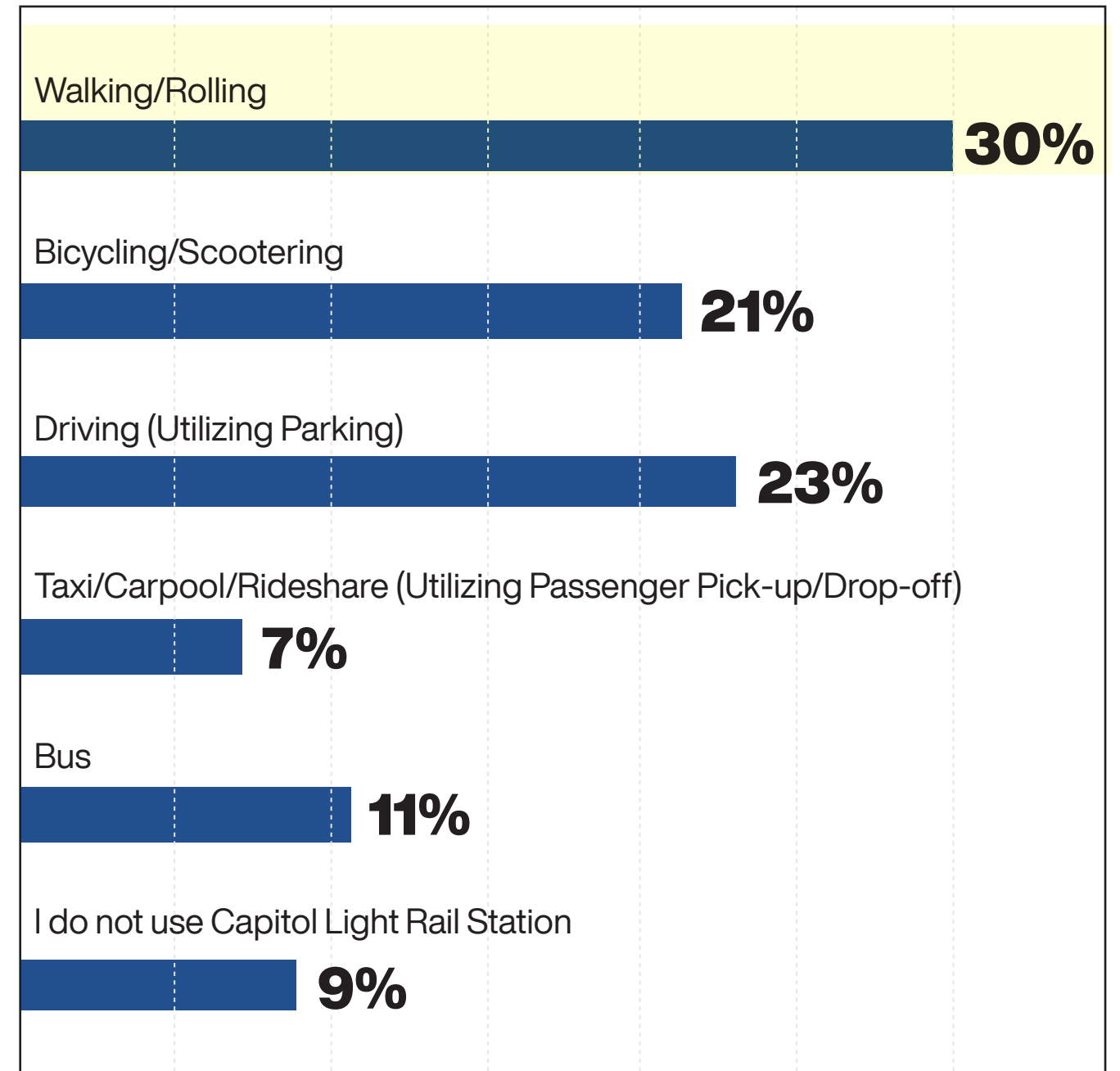


Station Access - Capitol Light Rail Station

How often do you use the Capitol Light Rail Station?

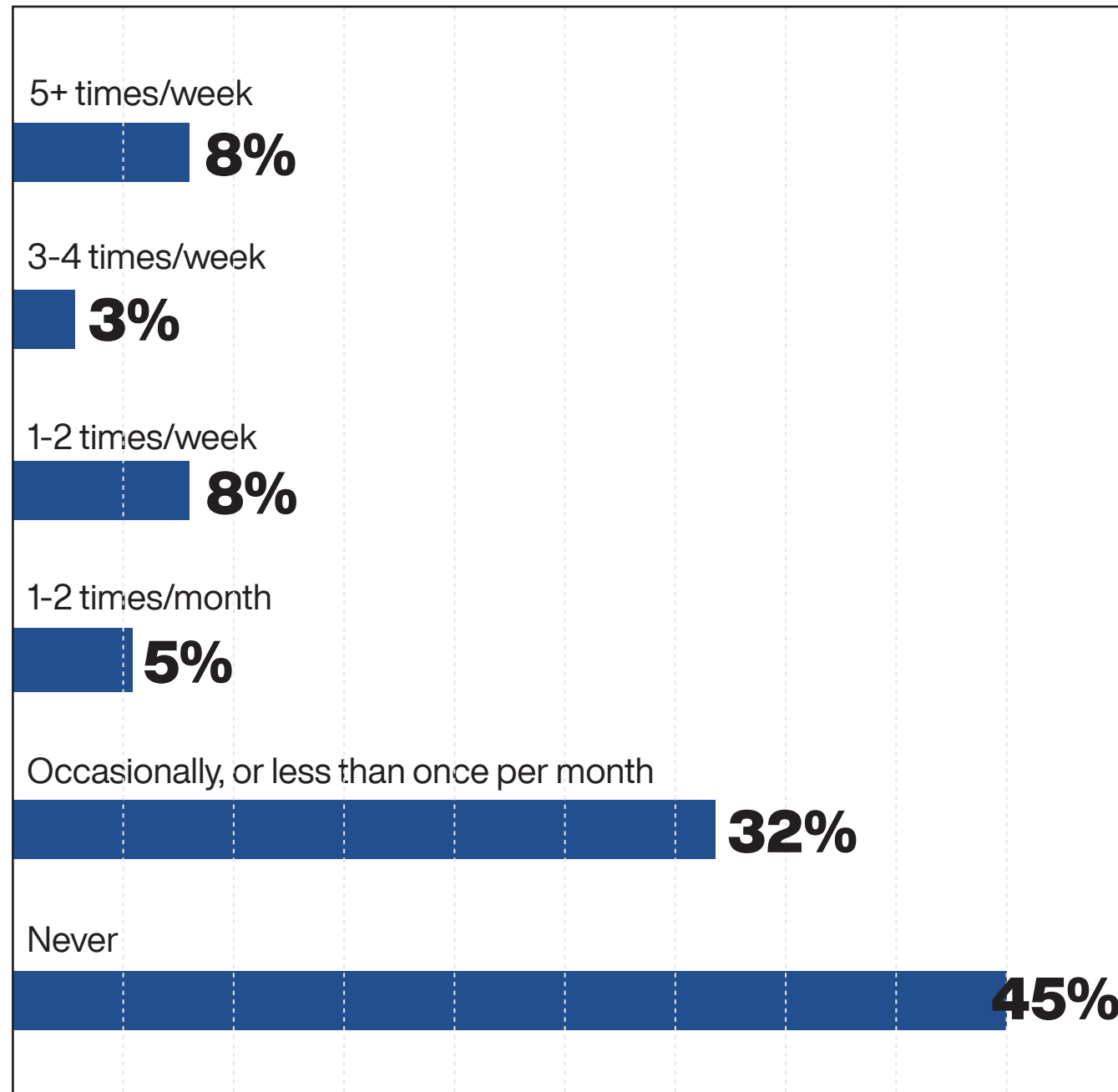


What modes of travel do you use to get to and from the Capitol Light Rail Station?

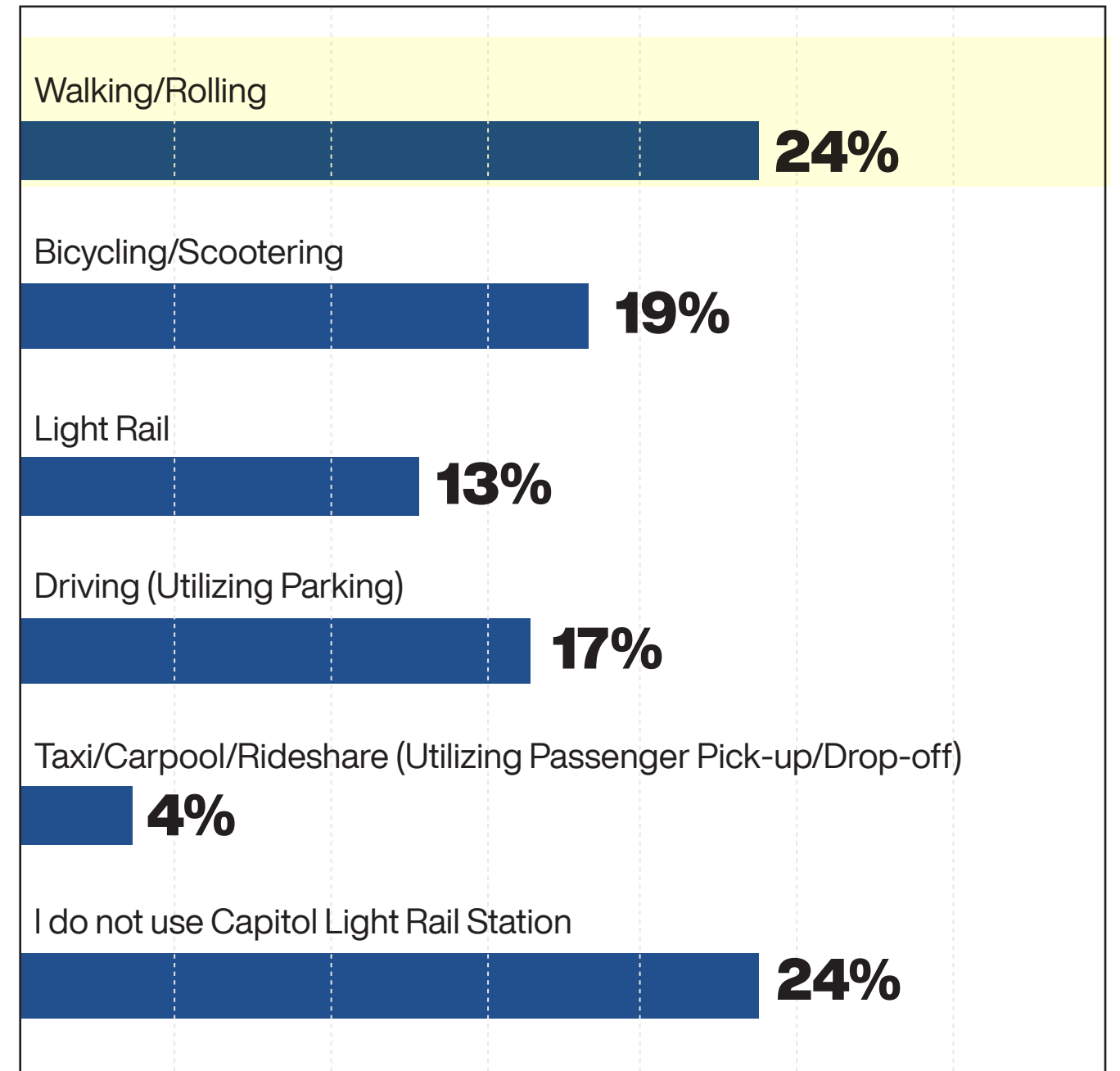


Station Access - Branham Light Rail Station

How often do you use the Branham Light Rail Station?



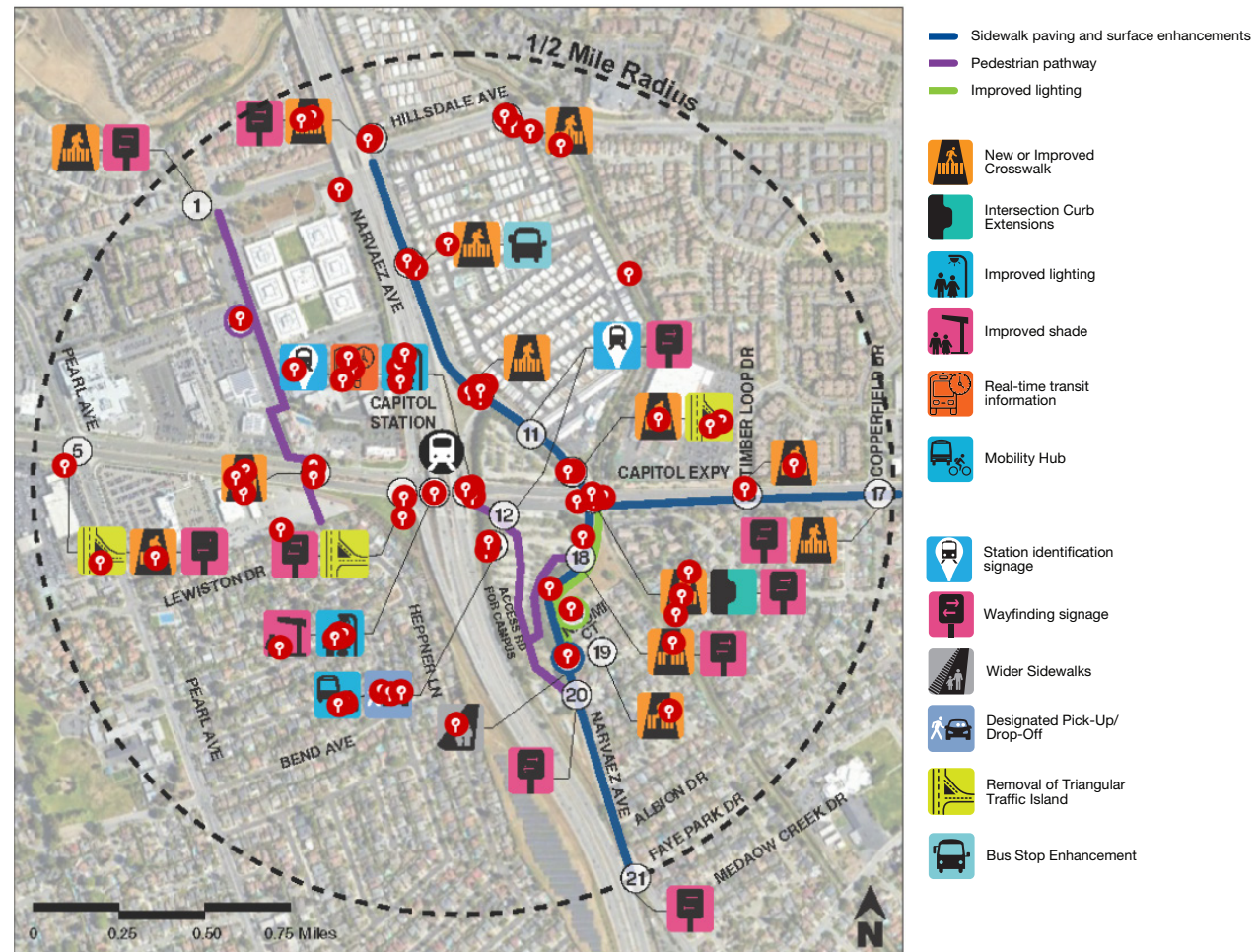
What modes of travel do you use to get to and from the Branham Light Rail Station?



Proposed Pedestrian Access Improvements (Capitol Station)

We asked participants to place stickers on the access improvements most important to them.

Additionally, a category was added for “Capitol (Bus Area) Improved Lighting” and 1 sticker was placed in this category.



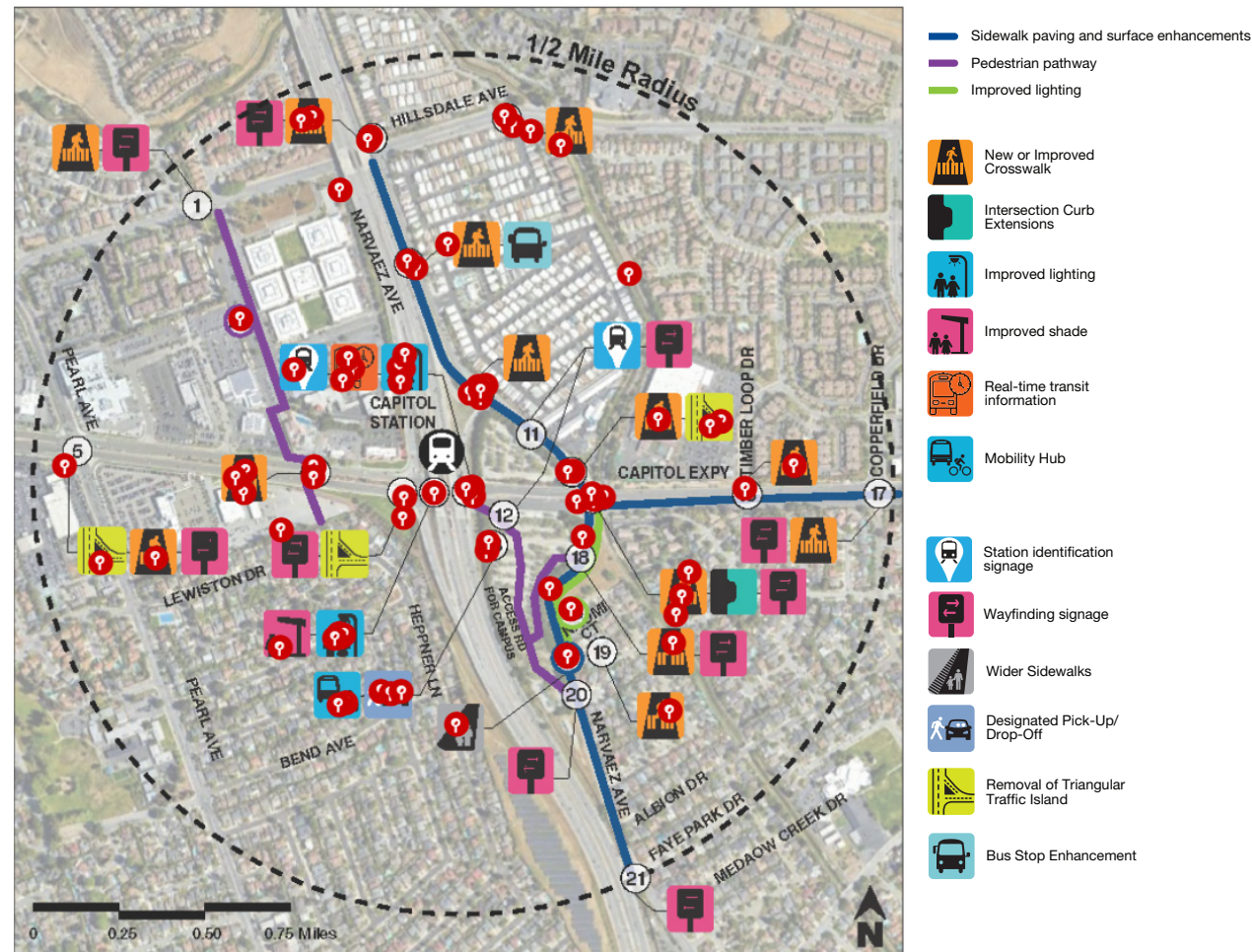
#	Improvement Location Name	Improvements	# Votes	% Votes
1	Hillsdale Avenue & Dow Drive	New or Improved Crosswalk, Wayfinding Signage	0	0
2	Hillsdale Avenue & Narvaez Avenue	New or Improved Crosswalk, Wayfinding Signage	4	6%
3	Hillsdale Avenue & Mountain Springs Drive	New or Improved Crosswalk	4	6%
4	Narvaez Avenue & Shadow Creek Drive	New or Improved Crosswalk, Bus Stop Enhancement	3	4%
5	Capitol Expressway & Pearl Avenue	New or Improved Crosswalk, Wayfinding Signage, Removal of Triangular Traffic Island	3	4%
6	Midblock Capitol between Pearl Avenue & SR 87	New or Improved Crosswalk	5	7%
7	Narvaez Avenue & SR 87 On- and Off-Ramps	New or Improved Crosswalk	5	7%
8	Capitol Expressway & SR 87 On- and Off-Ramps	Removal of Triangular Traffic Island, Wayfinding Signage	2	3%
9	Capitol LRT Platform	Improved Lighting, Improved Shade	6	8%
10	Capitol LRT Station Entrance	Improved Lighting, Real-time Transit Information, Station Identification Signage	12	17%
11	Capitol LRT North Park and Ride Entrance	Station Identification Signage, Wayfinding Signage	0	0%
12	Capitol LRT South Park and Ride Bus Loop	Station Identification Signage, Wayfinding Signage	0	0%

Most Votes
 Second Most Votes
 Third Most Votes

Proposed Pedestrian Access Improvements (Capitol Station)

We asked participants to place stickers on the access improvements most important to them.

Additionally, a category was added for “Capitol (Bus Area) Improved Lighting” and 1 sticker was placed in this category.











#	Improvement Location Name	Improvements	# Votes	% Votes
13	Capitol LRT South Park and Ride	Mobility Hub, Designated Pick-up / Drop Off	7	10%
14	North and South legs of Capitol Expressway & Narvaez Avenue	New or Improved Crosswalk, Removal of Triangular Traffic Island	5	7%
15	Capitol Expressway & Narvaez Avenue	New or Improved Crosswalk, Intersection Curb Extensions, Wayfinding Signage	7	10%
16	Capitol Expressway & Timberloop Drive	New or Improved Crosswalk	2	3%
17	Capitol Expressway & Copperfield Drive	New or Improved Crosswalk, Wayfinding Signage	0	0%
18	Capitol Expressway South Park and Ride Entrance	New or Improved Crosswalk, Wayfinding Signage	2	3%
19	Naomi Court & Narvaez Avenue	New or Improved Crosswalk	1	1%
20	Sarah Court & Narvaez Avenue	Wayfinding Signage	0	0%
21	Faye Park Drive & Narvaez Avenue	Wayfinding Signage	0	0%
22	Midblock - between Hillsdale Avenue, Capitol Expressway, Pearl Avenue and SR 87	Pedestrian Pathway	1	1%
23	Narvaez Avenue	Add sidewalks	0	0%
24	Narvaez Avenue	Improved Lighting	2	3%

■ Most Votes
 ■ Second Most Votes
 ■ Third Most Votes

Proposed Bicycle Access Improvements (Capitol Station)

We asked participants to place stickers on the access improvements most important to them.

#	Improvement Location Name	Improvements	# Votes	% Votes
1	Capitol Expressway & SR 87 On- and Off- Ramps	 Bike Intersection Crossing Lanes	7	15%
2	Capitol LRT Station Entrance	 Bike Lockers	10	21%
3	Capitol LRT Bus Loop	 Bike/Scooter Share Facility	6	13%
4	Capitol Expressway & Narvaez Avenue	 Bike Intersection Crossing Lanes	11	23%
5	Hillsdale Avenue	 Class IV Protected Bike Lane	3	6%
6	Capitol Expressway	 Class IV Protected Bike Lane	9	19%
7	Albion Drive	 Class III Bike Boulevard	1	2%
8	Pearl Avenue	 Class IV Protected Bike Lane	0	0%

 Most Votes  Second Most Votes  Third Most Votes

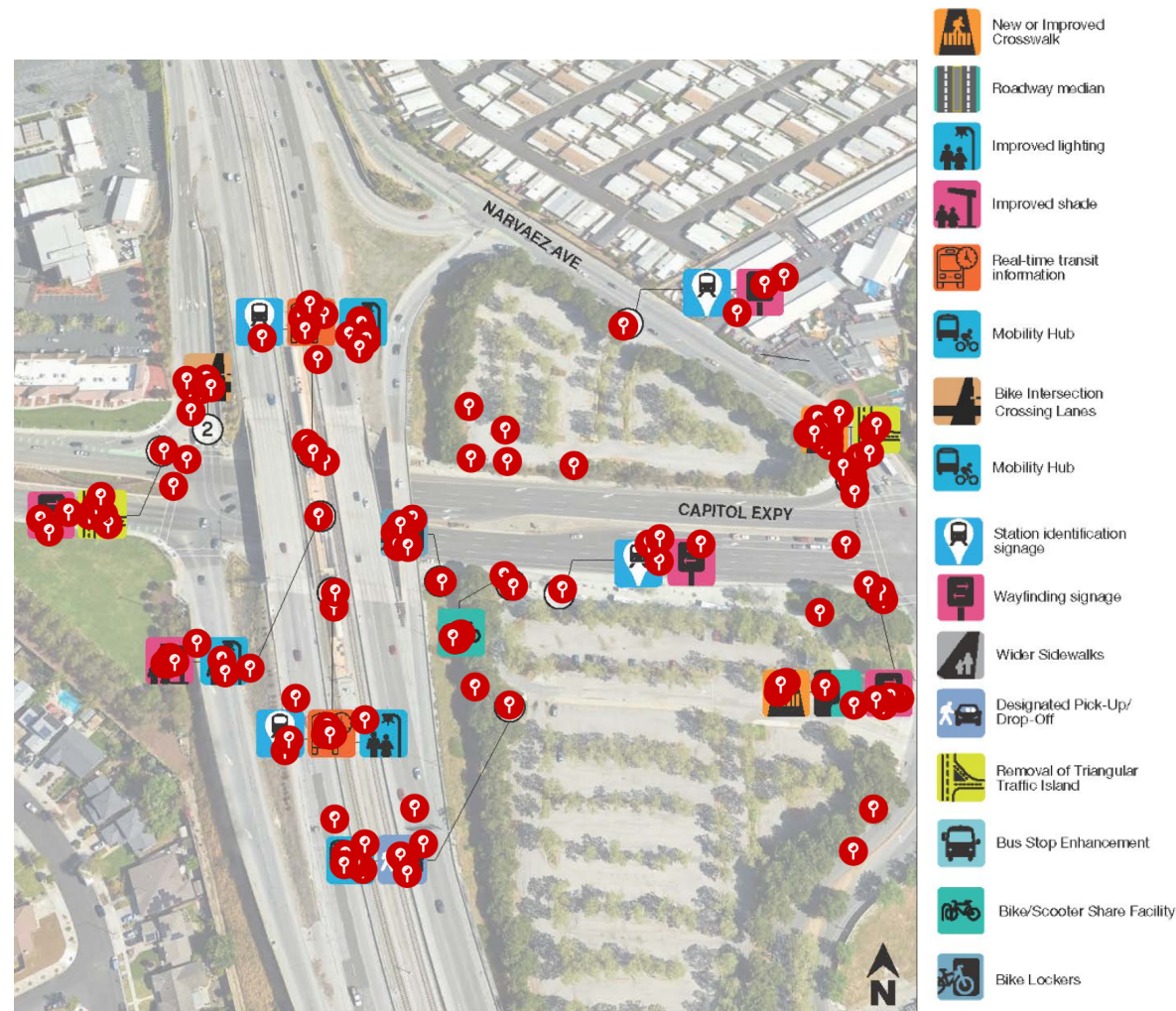


Proposed Bikeway Improvements

-  Class I Multi-Use Path
-  Class II Bike Lane
-  Class IV Protected Bike Lane
-  Class III Bike Boulevard
-  Class IV Protected Bike Lane
-  Bike Intersection Crossing Lanes
-  Bike/Scooter Share Facility
-  Bike Lockers

Site Improvements (Capitol Station)

On a more zoomed-in map for Capitol Station we asked participants to place stickers on the site improvements most important to them.



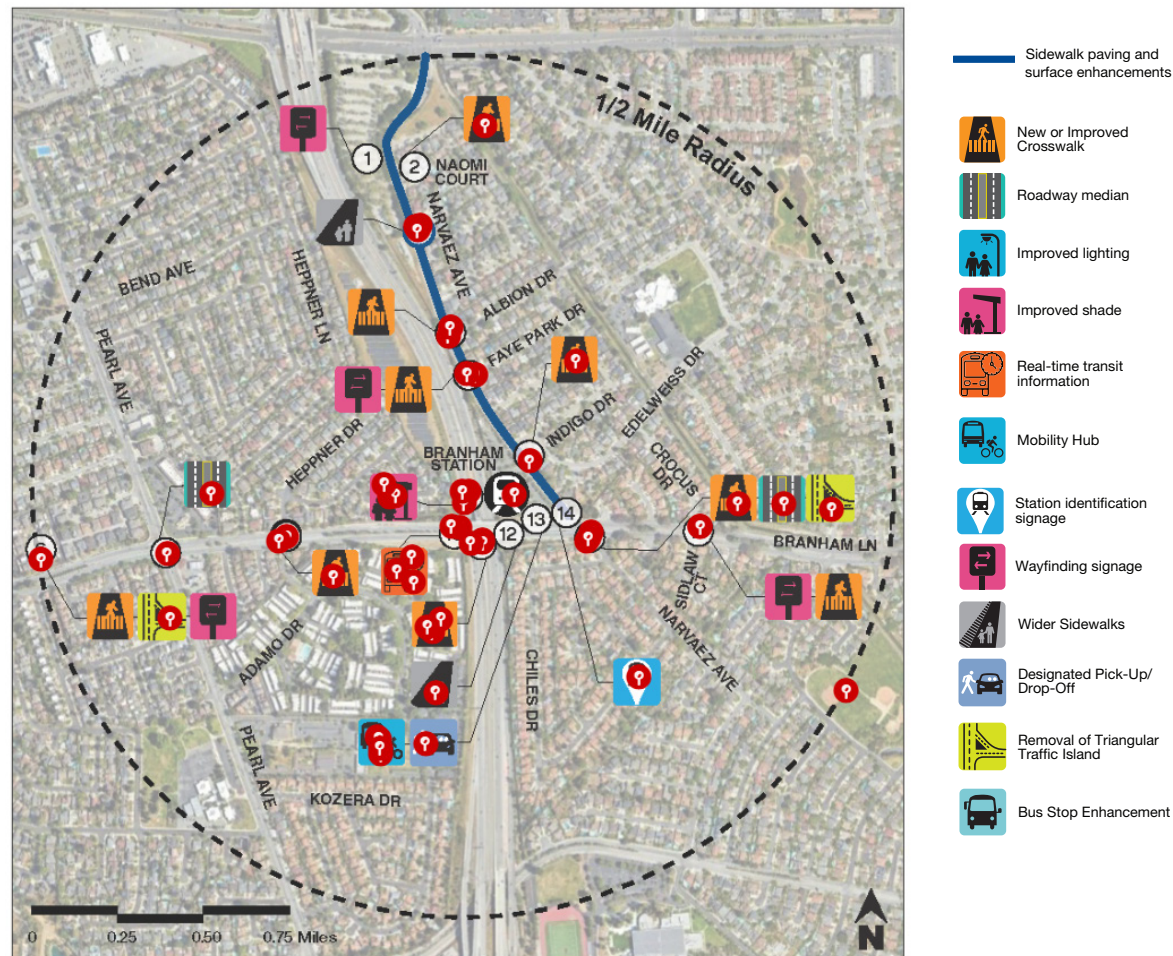
#	Improvement Location Name	Improvements	# Votes	% Votes
1	Capitol Expressway & SR 87 On- and Off- Ramps	Wayfinding Signage/ Removal of Traffic Island	13	10%
2	Capitol Expressway & SR 87 On- and Off- Ramps	Bike Intersection Crossing Lanes	7	5%
3	Capitol LRT Platform	Improved Lighting/Improved Shade	10	8%
4	North Capitol LRT Entrance	Improved Lighting/Station Identification Signage/Real Time Transit Information	18	14%
5	South Capitol LRT Entrance	Improved Lighting/Station Identification Signage/Real Time Transit Information	10	8%
6	Future Mobility Hub near entrance and bus drop off	Bike Lockers	10	8%
7	North Parking Lot	Station Identification Signage/ Wayfinding Signage	4	3%
8	Future Mobility Hub near entrance and bus drop off	Station Identification Signage/ Wayfinding Signage	5	4%
9	Future Mobility Hub near entrance and bus drop off	Mobility Hub/Designated Pick-up and Drop-off	13	10%
10	Future Mobility Hub near entrance and bus drop off	Bike/Scooter Share Facility	8	6%
11	North side Capitol Expressway and Narvaez Intersection	New and Improved Crosswalk/ Removal of Triangular Traffic Island	21	16%
12	South side Capitol Expressway and Narvaez Intersection	New and Improved Crosswalk/ Wayfinding Signage/ Intersection Curb Extension	14	11%

■ Most Votes
 ■ Second Most Votes
 ■ Third Most Votes

Proposed Pedestrian Access Improvements (Branham Station)

We asked participants to place stickers on the access improvements most important to them.

Additionally, a category was added for “Dog Park” and 2 stickers were placed in this category. A sticky note was also placed on the board that noted “Vista Park & Branham bad intersection – difficult to make right onto Branham lane”.



#	Improvement Location Name	Improvements	# Votes	% Votes
1	Narvaez Avenue West Side	Wayfinding Signage	0	0%
2	Naomi Court & Narvaez Avenue	New or Improved Crosswalk	1	2%
3	Albion Drive & Narvaez Avenue	New or Improved Crosswalk	3	6%
4	Faye Park Drive & Narvaez Avenue	New or Improved Crosswalk, Wayfinding Signage	2	4%
5	Indigo Drive & Narvaez Avenue	New or Improved Crosswalk	2	4%
6	Branham Lane & Pearl Avenue	New or Improved Crosswalk, Wayfinding Signage, Removal of Triangular Traffic Island	2	4%
7	Branham Lane at Pearl Avenue	Roadway Median	2	4%
8	Branham Lane at Heppner Drive	New or Improved Crosswalk	3	6%
9	Branham LRT Station Platform	Improved Shade	6	12%
10	Branham LRT Station Entrance	Real-time transit information	4	8%
11	Branham LRT Station Entrance	New or Improved Crosswalk	6	12%
12	South Side Branham Lane	Wider Sidewalks	1	2%

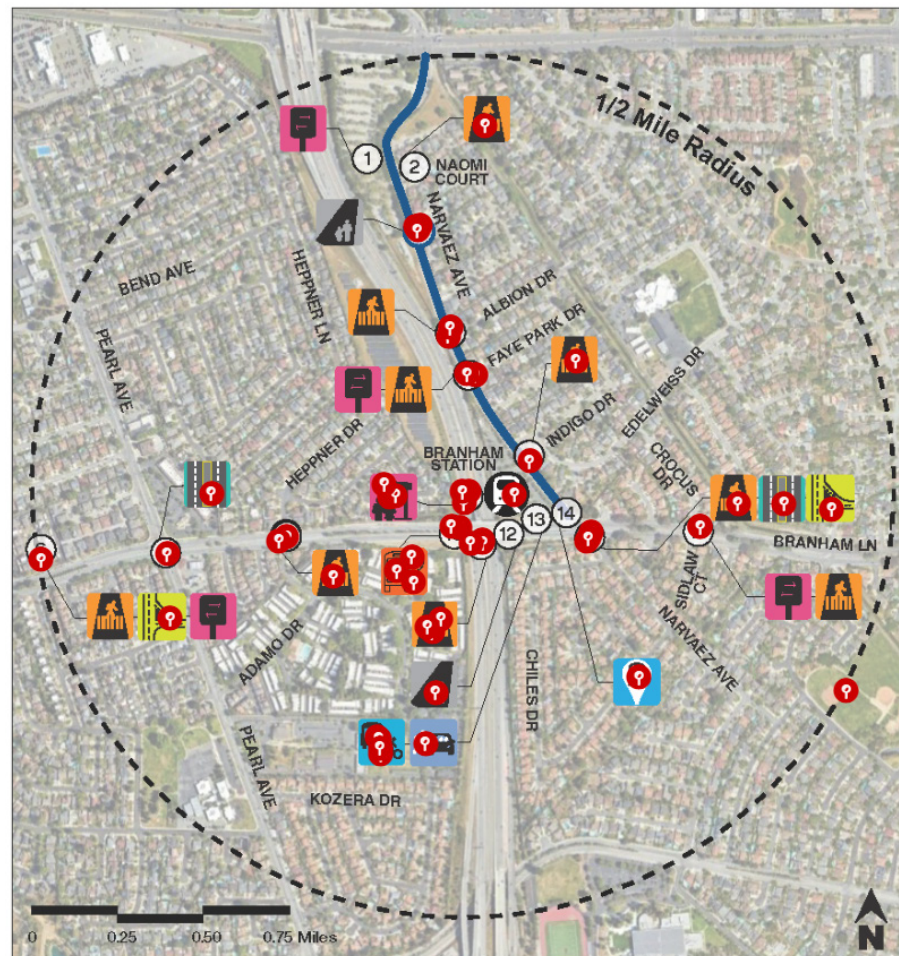
Most Votes
 Second Most Votes
 Third Most Votes

Proposed Pedestrian Access Improvements (Branham Station)

We asked participants to place stickers on the access improvements most important to them.

Additionally, a category was added for “Dog Park” and 2 stickers were placed in this category. A sticky note was also placed on the board that noted “Vista Park & Branham bad intersection – difficult to make right onto Branham lane”.

#	Improvement Location Name	Improvements	# Votes	% Votes
13	Branham Station Park and Ride	Mobility Hub, Designated Pick-up / Drop Off	5	10%
14	Northwest corner of Branham Lane & Narvaez Avenue	Station Identification Signage, Removal of Triangular Traffic Island	1	2%
15	Branham Lane & Narvaez Avenue	New or Improved Crosswalk, Roadway Median, Removal of Triangular Traffic Island	6	12%
16	Branham Lane & Sidlaw Court	New or Improved Crosswalk, Wayfinding Signage	2	4%
17	Narvaez Avenue	Add sidewalks	3	6%

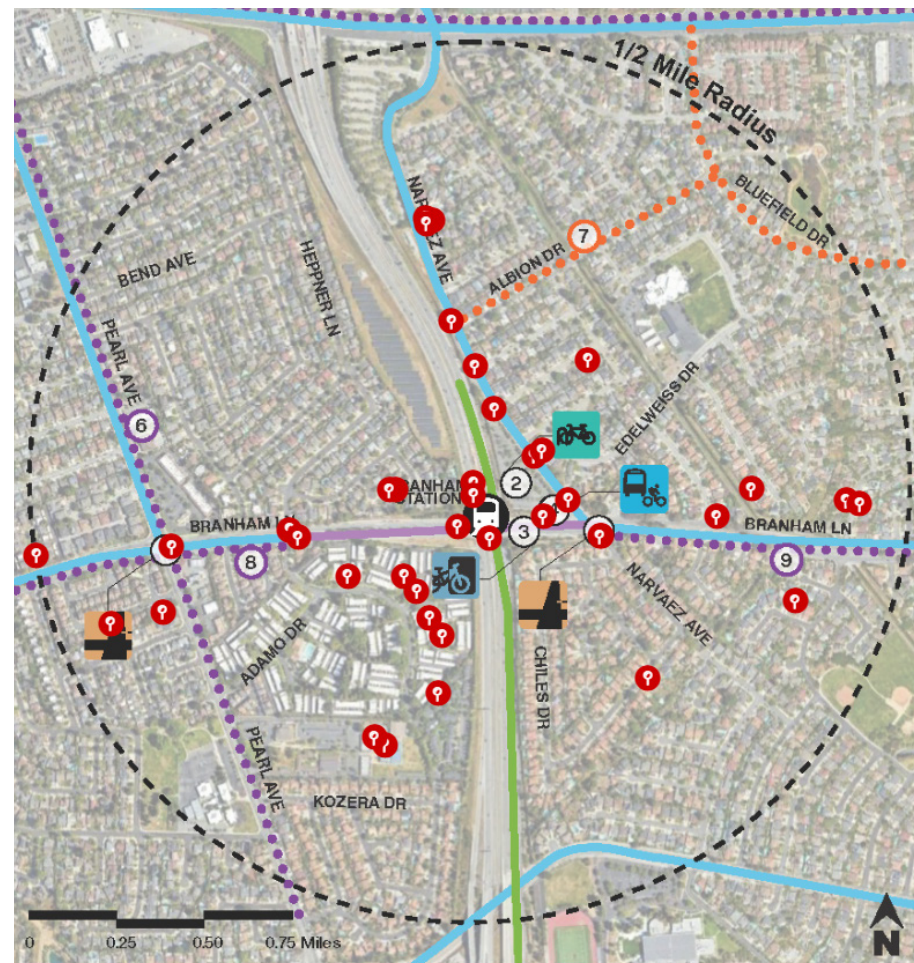


- Sidewalk paving and surface enhancements
- New or Improved Crosswalk
- Roadway median
- Improved lighting
- Improved shade
- Real-time transit information
- Mobility Hub
- Station identification signage
- Wayfinding signage
- Wider Sidewalks
- Designated Pick-Up/ Drop-Off
- Removal of Triangular Traffic Island
- Bus Stop Enhancement

Most Votes Second Most Votes Third Most Votes

Bicycle Access Improvements (Branham Station)

We asked participants to place stickers on the access improvements most important to them.



Existing Bikeways

- Class I Multi-Use Path
- Class II Bike Lane
- Class III Bike Route
- Class IV Protected Bike Lane

Proposed Bikeway Improvements

- Class III Bike Boulevard
- Class IV Protected Bike Lane

Icons:

- Bike Intersection Crossing Lanes
- Bike/Scooter Share Facility
- Mobility Hub
- Bike Lockers

#	Improvement Location Name	Improvements	# Votes	% Votes
1	Branham Lane & Pearl Avenue	Bike Intersection Crossing Lanes	3	27%
2	Branham LRT Park and Ride Lot	Bike/Scooter Share Facility	3	27%
3	Branham LRT Station Entrance	Bike Lockers	0	0%
4	Branham LRT Park and Ride Lot	Mobility Hub	0	0%
5	Branham Lane & Narvaez Avenue	Bike Intersection Crossing Lanes	2	18%
6	Pearl Avenue	Class IV Protected Bike Lane	0	0%
7	Albion Drive	Class III Bike Boulevard	1	9%
8	Branham Lane West of Heppner Lane	Class IV Protected Bike Lane	2	18%
9	Branham Lane East of Narvaez Avenue	Class IV Protected Bike Lane	0	0%

Most Votes Second Most Votes Third Most Votes

Site Improvements (Branham Station)

On a more zoomed-in map for Branham Station we asked participants to place stickers on the site improvements most important to them.



#	Improvements	# Votes	% Votes
1	Improved Shade	4	7%
2	New or Improved Crosswalk	10	17%
3	Bike/Scooter Share Facility	5	8%
4	Bike Lockers	6	10%
5	Station Identification Signage	1	2%
6	Mobility Hub/Designated Pick-up and Drop-off	10	17%
7	Mobility Hub/Designated Pick-up and Drop-off	5	8%
8	Wider Sidewalks	9	15%
9	Bike Intersection Crossing Lanes	6	10%
10	Roadway Median / New or Improved Crosswalk / Removal of Triangular Traffic Island	3	5%

■ Most Votes
 ■ Second Most Votes
 ■ Third Most Votes

Top Improvements

Capitol Station

The improvements that received the highest number of votes for Capitol Station are:

Top Pedestrian Access Improvements

- Improved lighting beneath SR 87 underpass
- Real-time transit information at entrances
- Wayfinding signages
- Station identification signage at entrances

Top Bicycle Access Improvements

- Bike lockers closer to station entrances

Top Site Improvements include new or improved crosswalk and better wayfinding and signages that provide realtime transit information.

Branham Station

The improvements that received the highest number of votes for Branham Station are:

Top Pedestrian Access Improvements

▪ Branham Lane at Navraez Avenue

- Station identification signage
- Roadway median
- Remove porkchop

Top Bicycle Access Improvements

▪ Branham Lane at Meridian Avenue to Monterey Road

- Protected bike lane

Top Site Improvements include new or improved crosswalk and inclusion of designated pick-up / drop Off and bike lockers.

Conclusions




Total Engagement

In Person

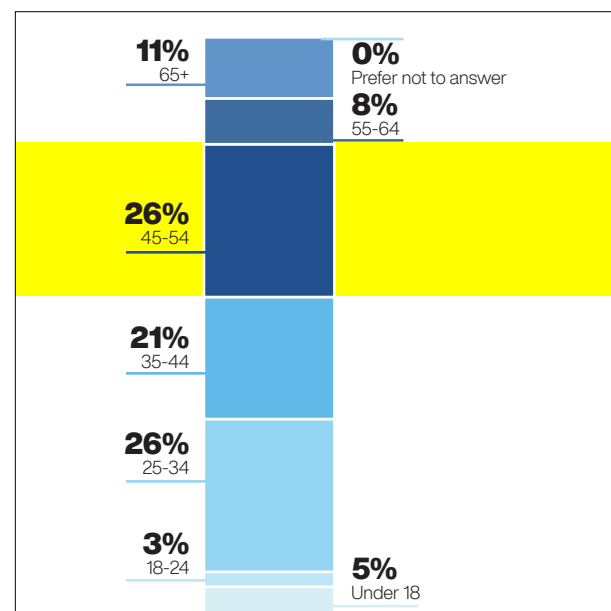
 130+ attendees

Online

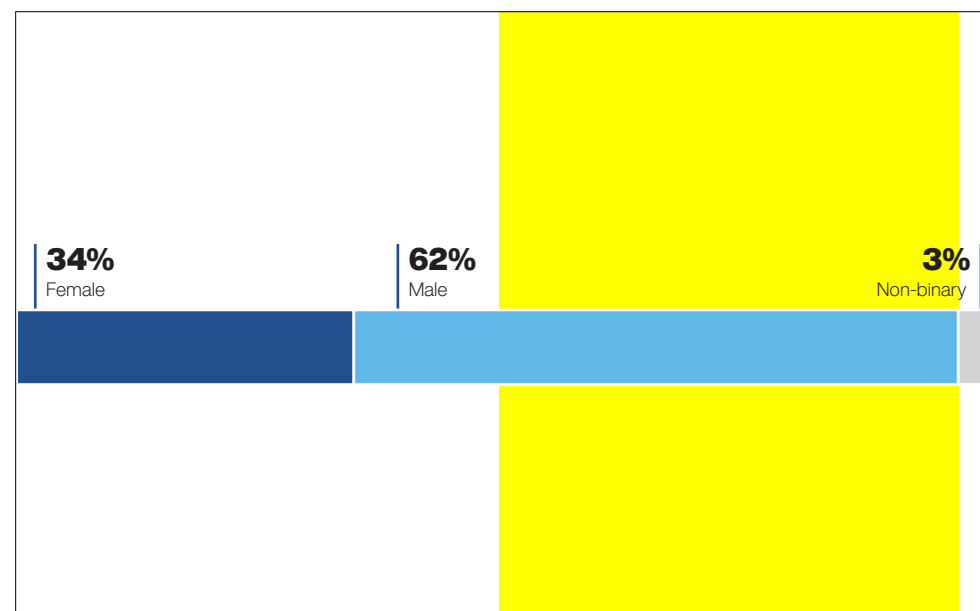
 57 attendees
(38 with meaningful data)

Demographic Highlights (Online only)

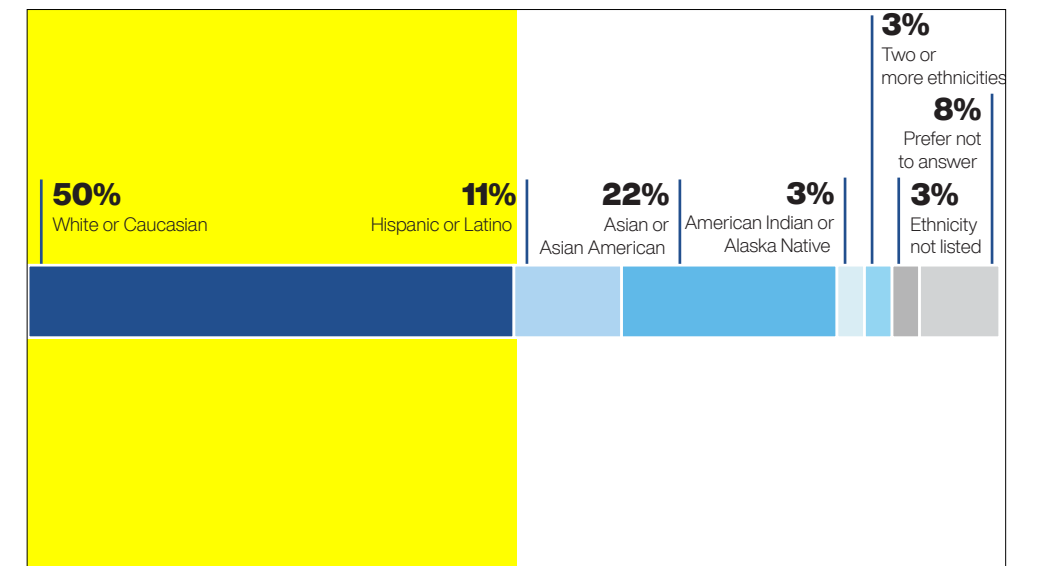
26% of respondents are aged 45-54



62% of the respondents were male.



50% of the respondents were white or caucasian.



Capitol Station Top Improvements

The improvements most supported are:

In Person

Train Information (Arrival Times/Notifications)

12



Wayfinding Signage

12



Improved Lighting

12



Bike Lockers

12



Class IV Protected Bike Lane

10



Online

New and Improved Crosswalk

21



Improved Lighting

12



Station Identification

12



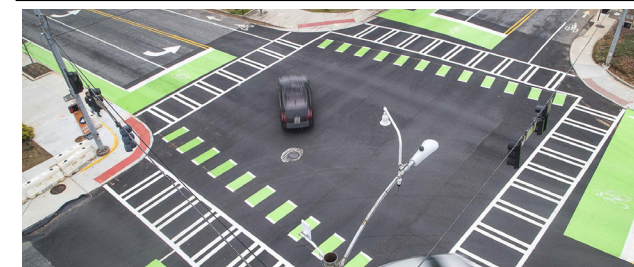
Train Information (Arrival Times/Notifications)

12



Bike Intersection Crossing Lanes

11



Bike Lockers

10




Branham Top Improvements

The improvements most supported are:

In Person

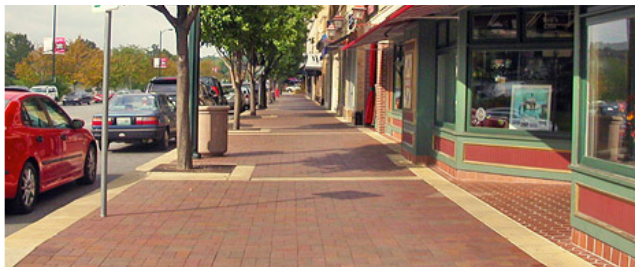
New and Improved Crosswalk  13




Wayfinding Signage  4




Add sidewalks  4



Class IV Protected Bike Lane  3




Online

New and Improved Crosswalk  22




Mobility Hub/Designated Pick-up and Drop-off  15



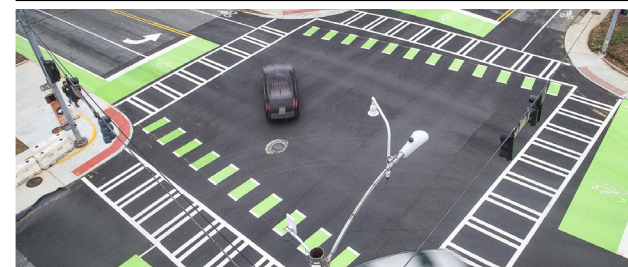
Wider sidewalks  9



Improved Shade  6



Bike Intersection Crossing Lanes  3



Bike/Scooter Share Facility  3



Appendix B: Cost Estimates

Source: Pedbikeinfo.org Countermeasure Cost Report Nov 2013

	Unit	2013	2020
Raised X Walk	EA	\$ 8,200	\$ 9,100
Raised Intersection	EA	\$ 51,000	\$ 56,600
Curb Extension	EA	\$ 13,000	\$ 14,400
Curb Extension Retrofit 4-Way Intersection	EA	\$ 100,000	\$ 111,000
Bike Locker	EA	\$ 2,000	\$ 2,200
Bike Rack	EA	\$ 700	\$ 800
Bus Rack	EA	\$ 1,000	\$ 1,100
Remove Bike Rack	EA	\$ 1,000	\$ 1,100
Relocate Bike Rack	EA	\$ 1,200	\$ 1,300
Bike Station	EA	\$ 250,000	\$ 277,500
Traffic Circle - basic	EA	\$ 50,000	\$ 55,500
Roundabout - basic	EA	\$ 250,000	\$ 277,500
Speed Hump	EA	\$ 2,700	\$ 3,000
Speed Bump	EA	\$ 1,600	\$ 1,800
Speed Table	EA	\$ 2,000	\$ 2,200
Bollard	EA	\$ 750	\$ 800
Gateway Sign	EA	\$ 350	\$ 400
Gateway Structure	EA	\$ 22,750	\$ 25,300
Gazebo	EA	\$ 53,000	\$ 58,800
Information Kiosk	EA	\$ 16,000	\$ 17,800
Shade Shelter	EA	\$ 30,000	\$ 33,300
Picnic Table	EA	\$ 1,700	\$ 1,900
Tree Grates	EA	\$ 1,400	\$ 1,600
Bench Removal	EA	\$ 900	\$ 1,000
Bus Shelter Removal	EA	\$ 3,700	\$ 4,100
Install RRFB	EA	\$ 22,300	\$ 24,800
Pedestrian Push Button	EA	\$ 350	\$ 400
Audible Ped Signal	EA	\$ 800	\$ 900
Ped Countdown Timer	EA	\$ 750	\$ 800
Ped Signal	EA	\$ 1,500	\$ 1,700
Curb Paint	LF	\$ 3	\$ 3.33
Stop Line - Thermoplastic	LF	\$ 15	\$ 16.65

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 2023 costs.

Source	Date	Escalation Factor	Notes
IBI Group Roadway Improvement Project Directory	2020	1.045	An increase of 4.5% was applied to reflect inflation between 2020 and 2023.
Countermeasure Cost Report (UNC-HSRC 2013)	2013	1.15	An increase of 15% was applied to reflect inflation between 2013 and 2023.
Story-Keys Corridor Complete Streets Study	2018	1.075	An increase of 7.5% was applied to reflect inflation between 2018 and 2023.
Willow-Keyes Complete Streets Improvements	2018	1.075	An increase of 7.5% was applied to reflect inflation between 2018 and 2023.
https://www.itskrs.its.dot.gov/its/benecost.nsf/ID/f72abdbb00d6ebb58525856d0060f6ea#:~:text=From%20this%20effort%2C%20LA%20Metro,of%20a%20bike%20sharing%20system.&text=A%20bike%20sharing%20system%20costs%20about%20%243000%20to%20%245000%20dollars%20per%20bike.	2011	1.18	An increase of 18% was applied to reflect inflation between 2018 and 2023.

COST SOURCES

ROADWAY

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Curb (6") & Gutter (24")	LF	\$ 50.00	\$ 53.75	Story-Keys Corridor Complete Streets Study
	Curb (6")	LF	\$ 20.00	\$ 20.90	IBI Group Roadway Improvement Project Directory
	Curb (6") - Divider	LF	\$ 30.00	\$ 31.35	IBI Group Roadway Improvement Project Directory
	Curb Ramp - Corner	EA	\$ 2,800.00	\$ 2,926.00	IBI Group Roadway Improvement Project Directory
	Curb Ramp - Mid Block	EA	\$ 2,500.00	\$ 2,612.50	IBI Group Roadway Improvement Project Directory
	Curb Extension w/ ADA Ramp	EA	\$ 13,000.00	\$ 14,950.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Detectable Warning Tiles	SF	\$ 62.00	\$ 66.65	Willow-Keys Complete Streets Improvements
	Traffic Circle	EA	\$ 50,000.00	\$ 57,500.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Roundabout	EA	\$ 250,000	\$ 287,500.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 100,000.00	\$ 115,000.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Traffic Diverter	EA	\$ 20,000.00	\$ 20,900.00	IBI Group Roadway Improvement Project Directory
	Median / Median Island	SF	\$ 15.00	\$ 16.13	Story-Keys Corridor Complete Streets Study
	Raised Crosswalk	EA	\$ 8,200.00	\$ 9,430.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Raised Intersection	EA	\$ 51,000.00	\$ 58,650.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Speed Hump	EA	\$ 2,700.00	\$ 3,105.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Speed Bump	EA	\$ 1,625.00	\$ 1,868.75	Countermeasure Cost Report (UNC-HSRC 2013)
	Speed Table	EA	\$ 2,000.00	\$ 2,300.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.00	\$ 3.14	IBI Group Roadway Improvement Project Directory
	Asphalt Filler Strip (2' wide)	LF	\$ 56.00	\$ 58.52	IBI Group Roadway Improvement Project Directory
	Asphalt Paving (Grind & Replace)	SF	\$ 15.00	\$ 15.68	IBI Group Roadway Improvement Project Directory
	Asphalt Paving (3.5")	SF	\$ 4.00	\$ 4.18	IBI Group Roadway Improvement Project Directory
	Asphalt Paving (5")	SF	\$ 5.00	\$ 5.23	IBI Group Roadway Improvement Project Directory
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.00	\$ 15.68	IBI Group Roadway Improvement Project Directory
	PCC - Filler Strip (6" wide)	LF	\$ 5.00	\$ 5.38	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 20.00	\$ 21.50	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 40.00	\$ 43.00	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 60.00	\$ 64.50	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 80.00	\$ 86.00	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 100.00	\$ 107.50	Story-Keys Corridor Complete Streets Study
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 150.00	\$ 161.25	Story-Keys Corridor Complete Streets Study
	PCC Driveway	SF	\$ 14.00	\$ 15.05	Story-Keys Corridor Complete Streets Study
	Stamped Concrete - 6" Depth	SF	\$ 20.00	\$ 20.90	IBI Group Roadway Improvement Project Directory
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.50	\$ 0.52	IBI Group Roadway Improvement Project Directory
	Cement Treated Base (12")	SF	\$ 4.00	\$ 4.18	IBI Group Roadway Improvement Project Directory
	Cement Treated Base (16")	SF	\$ 5.00	\$ 5.23	IBI Group Roadway Improvement Project Directory
	Slurry Seal + Crack Sealing	SF	\$ 0.75	\$ 0.78	IBI Group Roadway Improvement Project Directory
	Saw-cut of existing Concrete Pavement	LF	\$ 4.00	\$ 4.18	IBI Group Roadway Improvement Project Directory
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.00	\$ 3.14	IBI Group Roadway Improvement Project Directory
	Install Retaining Wall - 2'	LF	\$ 300.00	\$ 300.00	IBI Group Roadway Improvement Project Directory
	Install Safety Rail	LF	\$ 100.00	\$ 115.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Install Fence	EA	\$ 1,000.00	\$ 1,045.00	IBI Group Roadway Improvement Project Directory
	Reset Survey Markers	EA	\$ 2,000.00	\$ 2,090.00	IBI Group Roadway Improvement Project Directory
	Adjust Utility Boxes to Grade	EA	\$ 300.00	\$ 313.50	IBI Group Roadway Improvement Project Directory

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Roadway Excavation	CY	\$ 20.00	\$ 20.90	IBI Group Roadway Improvement Project Directory
	Remove existing asphalt pavement (driveway)	SF	\$ 4.00	\$ 4.18	IBI Group Roadway Improvement Project Directory
	Remove existing asphalt pavement (roadway)	SF	\$ 10.00	\$ 10.45	IBI Group Roadway Improvement Project Directory
	Remove existing concrete pavement (roadway)	SF	\$ 10.00	\$ 10.45	IBI Group Roadway Improvement Project Directory
	Remove existing Curb & Gutter	LF	\$ 20.00	\$ 20.90	IBI Group Roadway Improvement Project Directory
	Remove existing Fence	EA	\$ 12.00	\$ 12.54	IBI Group Roadway Improvement Project Directory
	Remove existing Tree	EA	\$ 1,000.00	\$ 1,045.00	IBI Group Roadway Improvement Project Directory
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.00	\$ 7.32	IBI Group Roadway Improvement Project Directory
	Remove Existing Asphalt Sidewalk	SF	\$ 2.50	\$ 2.61	IBI Group Roadway Improvement Project Directory
	Remove Existing PCC Sidewalk	SF	\$ 3.00	\$ 3.14	IBI Group Roadway Improvement Project Directory

SIGNING / STRIPING

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Install Limit Line	LF	\$ 8.50	\$ 8.88	IBI Group Roadway Improvement Project Directory
	Install Centerline w/ Reflectors	LF	\$ 3.00	\$ 3.14	IBI Group Roadway Improvement Project Directory
	Install 4" Striping - Paint	LF	\$ 0.50	\$ 0.52	IBI Group Roadway Improvement Project Directory
	Install 4" Striping - Thermoplastic	LF	\$ 5.00	\$ 5.23	IBI Group Roadway Improvement Project Directory
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.25	\$ 0.26	IBI Group Roadway Improvement Project Directory
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.50	\$ 2.61	IBI Group Roadway Improvement Project Directory
	Install 8" Striping - Thermoplastic	LF	\$ 10.00	\$ 10.45	IBI Group Roadway Improvement Project Directory
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.00	\$ 3.14	IBI Group Roadway Improvement Project Directory
	Install Parking Stripes (stall)	EA	\$ 10.00	\$ 10.45	IBI Group Roadway Improvement Project Directory
	Install Roadside Sign	EA	\$ 300.00	\$ 313.50	IBI Group Roadway Improvement Project Directory
	Install Crosswalk - Thermoplastic (12')	LF	\$ 40.00	\$ 41.80	IBI Group Roadway Improvement Project Directory
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 80.00	\$ 83.60	IBI Group Roadway Improvement Project Directory
	Install Turn Arrow - Thermoplastic	EA	\$ 500.00	\$ 522.50	IBI Group Roadway Improvement Project Directory
	Install Crosshatching - Thermoplastic	LF	\$ 12.00	\$ 12.54	IBI Group Roadway Improvement Project Directory
	Install Stop Line - Thermoplastic	LF	\$ 15.00	\$ 17.25	Countermeasure Cost Report (UNC-HSRC 2013)
	Install Text Pavement Marking - per word	EA	\$ 400.00	\$ 418.00	IBI Group Roadway Improvement Project Directory
	Bike Route Signing	MI	\$ 1,650.00	\$ 1,724.25	IBI Group Roadway Improvement Project Directory
	Bike Lane Marking - Paint	EA	\$ 100.00	\$ 104.50	IBI Group Roadway Improvement Project Directory
	Install Sharrow - Paint	EA	\$ 120.00	\$ 125.40	IBI Group Roadway Improvement Project Directory
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.00	\$ 6.27	IBI Group Roadway Improvement Project Directory
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.00	\$ 12.54	IBI Group Roadway Improvement Project Directory
	Install Curb Paint	LF	\$ 3.00	\$ 3.45	Countermeasure Cost Report (UNC-HSRC 2013)
	Install Cycle Track Paint	SF	\$ 6.00	\$ 6.27	IBI Group Roadway Improvement Project Directory
	Install Bike Lane Marking - Thermoplastic	EA	\$ 350.00	\$ 365.75	IBI Group Roadway Improvement Project Directory
	Install Sharrow - Thermoplastic	EA	\$ 500.00	\$ 522.50	IBI Group Roadway Improvement Project Directory
	Install Greenback Sharrow - Thermoplastic	EA	\$ 700.00	\$ 731.50	IBI Group Roadway Improvement Project Directory
	Install Green Thermoplastic	SF	\$ 10.00	\$ 10.45	IBI Group Roadway Improvement Project Directory
	Install Sign on Existing Post	EA	\$ 80.00	\$ 83.60	IBI Group Roadway Improvement Project Directory
	Install Sign on New Post	EA	\$ 360.00	\$ 376.20	IBI Group Roadway Improvement Project Directory
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.00	\$ 20.90	IBI Group Roadway Improvement Project Directory
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Remove Delineation	LF	\$ 1.00	\$ 1.05	IBI Group Roadway Improvement Project Directory
	Remove Turn Arrow	EA	\$ 75.00	\$ 78.38	IBI Group Roadway Improvement Project Directory
	Remove Crosswalk	LF	\$ 5.00	\$ 5.23	IBI Group Roadway Improvement Project Directory
	Relocate Sign and Pole	EA	\$ 400.00	\$ 418.00	IBI Group Roadway Improvement Project Directory
	Remove Sign and Pole	EA	\$ 175.00	\$ 182.88	IBI Group Roadway Improvement Project Directory
	Remove "Stop" Text	EA	\$ 100.00	\$ 104.50	IBI Group Roadway Improvement Project Directory
	Remove Sign	EA	\$ 150.00	\$ 156.75	IBI Group Roadway Improvement Project Directory

LANDSCAPING / IRRIGATION

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Proposed Landscaping / Irrigation	SF	\$ 16.00	\$ 17.20	Story-Keys Corridor Complete Streets Study
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Clearing and Grubbing	SF	\$ 1.50	\$ 1.57	IBI Group Roadway Improvement Project Directory
	Landscaping / Irrigation Removals	LS	\$ -	\$ -	IBI Group Roadway Improvement Project Directory

Source	Date	Escalation Factor	Note
IBI Group Roadway Improvement Project Directory	2020	1.045	An increase of 4.5% was applied to reflect inflation between 2020 and 2023.
Countermeasure Cost Report (UNC-HSRC 2013)	2013	1.15	An increase of 15% was applied to reflect inflation between 2013 and 2023.
Story-Keys Corridor Complete Streets Study	2018	1.075	An increase of 7.5% was applied to reflect inflation between 2018 and 2023.
Willow-Keys Complete Streets Improvements	2018	1.075	An increase of 7.5% was applied to reflect inflation between 2018 and 2023.
https://www.itskrs.its.dot.gov/its/benecost.nsf/ID/772abd00d6ebb58525856d0060f0ee#:text=From%20this%20effort%2C%20LA%20Metro,%20of%20a%20bike%20sharing%20system.&text=A%20bike%20sharing%20system%20costs%20about%20%243000%20to%20%245000%20dollars%20per%20bike.	2011	1.18	An increase of 18% was applied to reflect inflation between 2011 and 2023.

Traffic / Electrical

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Modify Controller	EA	\$ 7,500.00	\$ 7,837.50	IBI Group Roadway Improvement Project Directory
	Modify Intersection Traffic Signal System	LS	\$ 550,000.00	\$ 591,250.00	Willow-Keys Complete Streets Improvements
	Vehicle Heads	EA	\$ 1,200.00	\$ 1,254.00	IBI Group Roadway Improvement Project Directory
	Ped Heads	EA	\$ 1,530.00	\$ 1,759.50	Countermeasure Cost Report (UNC-HSRC 2013)
	Audible Ped Signal	EA	\$ 800.00	\$ 920.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Ped Countdown Timer	EA	\$ 725.00	\$ 833.75	Countermeasure Cost Report (UNC-HSRC 2013)
	Loops	EA	\$ 700.00	\$ 731.50	IBI Group Roadway Improvement Project Directory
	Ped Buttons	EA	\$ 360.00	\$ 414.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bike Button, Pole, and Sign	EA	\$ 1,100.00	\$ 1,149.50	IBI Group Roadway Improvement Project Directory
	EVP Sensor	EA	\$ 3,000.00	\$ 3,135.00	IBI Group Roadway Improvement Project Directory
	Parking Lot Light Fixture	EA	\$ 4,000.00	\$ 4,180.00	IBI Group Roadway Improvement Project Directory
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,000.00	\$ 18,810.00	IBI Group Roadway Improvement Project Directory
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,000.00	\$ 22,990.00	IBI Group Roadway Improvement Project Directory
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 24,000.00	\$ 25,080.00	IBI Group Roadway Improvement Project Directory
	Pedestrian Push Button Post	EA	\$ 1,100.00	\$ 1,149.50	IBI Group Roadway Improvement Project Directory
	Pullboxes	EA	\$ 750.00	\$ 783.75	IBI Group Roadway Improvement Project Directory
	2" Conduit	LF	\$ 40.00	\$ 41.80	IBI Group Roadway Improvement Project Directory
	3" Conduit	LF	\$ 50.00	\$ 52.25	IBI Group Roadway Improvement Project Directory
	Traffic Signal Wiring	LS	\$ 15,000.00	\$ 15,675.00	IBI Group Roadway Improvement Project Directory
	Bike Detector Loop	EA	\$ 800.00	\$ 836.00	IBI Group Roadway Improvement Project Directory
	Mast Arm Sign	EA	\$ 400.00	\$ 418.00	IBI Group Roadway Improvement Project Directory
	Street Light - Basic	EA	\$ 57.00	\$ 7,837.50	IBI Group Roadway Improvement Project Directory
	Street Light - Stone	EA	\$ 15,000.00	\$ 15,675.00	IBI Group Roadway Improvement Project Directory
	Pedestrian Scale Lighting	EA	\$ 6,400.00	\$ 6,450.00	Story-Keys Corridor Complete Streets Study
	Install Flashing Crosswalk (In-Road Lights + Solar)	LS	\$ 25,000.00	\$ 26,125.00	IBI Group Roadway Improvement Project Directory
	Ped Barricade and R49 Sign	EA	\$ 600.00	\$ 627.00	IBI Group Roadway Improvement Project Directory
	Install HAWK Ped Signal	EA	\$ 45,000.00	\$ 47,025.00	IBI Group Roadway Improvement Project Directory
	Install Rapid Flashing Ped Beacon	EA	\$ 22,350.00	\$ 23,702.50	Countermeasure Cost Report (UNC-HSRC 2013)
	Street Name Signs	EA	\$ 1,500.00	\$ 1,567.50	IBI Group Roadway Improvement Project Directory
	Install APS (including sign and button)	EA	\$ 1,000.00	\$ 1,045.00	IBI Group Roadway Improvement Project Directory
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
					Source?

Site Furnishings

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Trash Receptacle	EA	\$ 1,000.00	\$ 1,045.00	IBI Group Roadway Improvement Project Directory
	Recycle Receptacle	EA	\$ 1,000.00	\$ 1,045.00	IBI Group Roadway Improvement Project Directory
	Pre-Fabricated Kiosk	EA	\$ 2,600.00	\$ 2,717.00	IBI Group Roadway Improvement Project Directory
	Benches - 6' length	EA	\$ 1,200.00	\$ 1,254.00	IBI Group Roadway Improvement Project Directory
	Bike Locker	EA	\$ 2,000.00	\$ 2,300.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bike Rack	EA	\$ 725.00	\$ 833.75	Countermeasure Cost Report (UNC-HSRC 2013)
	Bus Rack	EA	\$ 1,000.00	\$ 1,150.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bike Station (per bike)	EA	\$ 5,000	\$ 5,900.00	https://www.itskrs.its.dot.gov/its/benecost.nsf/ID/772abd00d6ebb58525856d0060f0ee#:text=From%20this%20effort%2C%20LA%20Metro,%20of%20a%20bike%20sharing%20system.&text=A%20bike%20sharing%20system%20costs%20about%20%243000%20to%20%245000%20dollars%20per%20bike.
	Bollard (Decorative Stone)	EA	\$ 725.00	\$ 833.75	Countermeasure Cost Report (UNC-HSRC 2013)
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00	\$ 412.00	Market research.
	Gateway Sign	EA	\$ 360.00	\$ 414.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Gateway Structure	EA	\$ 22,800.00	\$ 26,220.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Real Time Public Info Display	EA	\$ 2,000.00	\$ 2,090.00	IBI Group Roadway Improvement Project Directory
	Information Kiosk	EA	\$ 160,000.00	\$ 184,000.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Shade Shelter	EA	\$ 30,000.00	\$ 34,500.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Bike Access Ramp	LF	\$ 50.00	\$ 52.25	IBI Group Roadway Improvement Project Directory
	Tree Grates	EA	\$ 1,450.00	\$ 1,667.50	Countermeasure Cost Report (UNC-HSRC 2013)
	Street Tree (includes irrigation)	EA	\$ 2,000.00	\$ 2,150.00	Story-Keys Corridor Complete Streets Study
	Bus Shelter	EA	\$ 20,000.00	\$ 21,500.00	Story-Keys Corridor Complete Streets Study
	Street Furnishing (includes wayfinding)	EA	\$ 35.00	\$ 37.63	Story-Keys Corridor Complete Streets Study
	Flexible Delineator	EA	\$ 40.00	\$ 41.80	IBI Group Roadway Improvement Project Directory
	Stair Railing	LF	\$ 35.00	\$ 35.00	https://porch.com/project-cost/cost-to-install-a-stairway-handrail
	Stair Construction	LS	\$ 17,000.00	\$ 17,000.00	https://www.homeyse.com/services/cost-to-install-a-stairway.html
	Concrete ADA Ramp (5ft. wide)	LF	\$ 70.00	\$ 75.25	Story-Keys Corridor Complete Streets Study
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	2023 ESCALATED PRICE	SOURCE
	Remove Bike Rack	EA	\$ 1,000.00	\$ 1,150.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Relocate Bike Rack	EA	\$ 1,200.00	\$ 1,380.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Remove Bench	EA	\$ 900.00	\$ 1,035.00	Countermeasure Cost Report (UNC-HSRC 2013)
	Remove Bus Shelter	EA	\$ 3,700.00	\$ 4,255.00	Countermeasure Cost Report (UNC-HSRC 2013)

CAPITOL STATION - CAPITOL EXPRESSWAY

Item	Amount
Civil	\$ 818,753.00
Signing / Striping	\$ 396,990.80
Traffic / Electrical	\$ 31,350.00
Traffic / Electrical Labor (25% of T/E)	\$ 7,837.50
Furnishing	\$ -
Landscaping / Irrigation	\$ -

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

Materials and Permits Subtotal \$ 1,254,931

Mobilization (10% of Mat./Perm. Subtotal) \$ 125,493

Construction Subtotal \$ 1,380,424

Contingency (% of Constr. Subtotal)
Contingency Amount \$ -

Total Construction Cost \$ 1,380,424

Eng./Design (10% of Constr. Total) \$ 138,042

Administration (5% of Constr. Total) \$ 69,021

Constr. Mgmt (7% of Constr. Total) \$ 96,630

Total Project Cost \$ 1,684,117

Assumptions

Station Entrance
Improved lighting beneath SR 87 underpass (every 150 ft.)
Real-time transit information at both entrances
Station identification signage at both entrances (5)
Bike lockers closer to station entrances (5)
Bike access ramp on northern entrance staircase
Narvaez Avenue
High visibility crosswalks on east and west legs of the intersection (2)
Curb extension (1, see remove porkchop item in Narvaez tab)
Wayfinding signage to direct pedestrians to station (5)
Bike intersection crossing lanes (180 ft.)
SR 87 off-ramp
Remove porkchop (2000 sqft.)
Wayfinding signage to direct pedestrians to station (2)
Bike intersection crossing lanes (170 ft.)
Corridor-wide
Protected bike lane (5500 ft. each way // 11000 ft. corridor wide)
Timber Loop Drive
High visibility crosswalks (75 ft.)
Copperfield Drive
High Visibility Crosswalks (380 ft.)
Wayfinding signage (4)
At Traffic Light between Pearl & SR 87 Ramps
New high visibility crosswalk to connect to new proposed access road to campus (290 ft.)
Pearl Avenue
Remove porkchop (3000 sqft.)
High Visibility Crosswalks (490 ft.)
Wayfinding Signage (4)
Narvaez Avenue to Vistapark Drive
Sidewalk paving and surface enhancements (2900 ft.)
NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

CIVIL					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 53.75		\$ -
	Curb (6")	LF	\$ 20.90		\$ -
	Curb (6") - Divider	LF	\$ 31.35		\$ -
	Curb Ramp - Corner	EA	\$ 2,926.00	3	\$ 8,778.00
	Curb Ramp - Mid Block	EA	\$ 2,612.50		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,950.00		\$ -
	Detectable Warning Tiles	SF	\$ 66.65		\$ -
	Traffic Circle	EA	\$ 57,500.00		\$ -
	Roundabout	EA	\$ 287,500.00		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 115,000.00		\$ -
	Traffic Diverter	EA	\$ 20,900.00		\$ -
	Median / Median Island	SF	\$ 16.13		\$ -
	Raised Crosswalk	EA	\$ 9,430.00		\$ -
	Raised Intersection	EA	\$ 58,650.00		\$ -
	Speed Hump	EA	\$ 3,105.00		\$ -
	Speed Bump	EA	\$ 1,868.75		\$ -
	Speed Table	EA	\$ 2,300.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.14		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 58.52		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.68		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.18	5000	\$ 20,900.00
	Asphalt Paving (5")	SF	\$ 5.23		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.68		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.38		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 21.50		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 43.00		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 64.50		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 86.00		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 107.50	5800	\$ 623,500.00
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 161.25	800	\$ 129,000.00
	PCC Driveway	SF	\$ 15.05		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.90		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.52		\$ -
	Cement Treated Base (12")	SF	\$ 4.18		\$ -
	Cement Treated Base (16")	SF	\$ 5.23		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.78		\$ -
	Saw-cut of existing Concrete Pavement	LF	\$ 4.18		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.14		\$ -
	Install Fence	LF	\$ 52.25		\$ -
	Install Gate	EA	\$ 1,045.00		\$ -
	Reset Survey Markers	EA	\$ 2,090.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 313.50		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.90		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.18		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.90		\$ -
	Remove existing Fence	LF	\$ 12.54		\$ -
	Remove existing Tree	EA	\$ 1,045.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.32	5000	\$ 36,575.00
	Remove Existing Asphalt Sidewalk	SF	\$ 2.61		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.14		\$ -
ROADWAY SUBTOTAL					\$ 818,753.00

SIGNING / STRIPING					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.88		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.14		\$ -
	Install 4" Striping - Paint	LF	\$ 0.52		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.23		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.26		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.61	5530	\$ 14,447.13
	Install 8" Striping - Thermoplastic	LF	\$ 10.45		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.14	5,520	\$ 17,305.20
	Install Parking Stripes (stall)	EA	\$ 10.45		\$ -
	Install Roadside Sign	EA	\$ 313.50		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 41.80		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 83.60	1520	\$ 127,072.00
	Install Turn Arrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.54		\$ -
	Install Stop Line - Thermoplastic	LF	\$ 17.25		\$ -
	Install Text Pavement Marking - per word	EA	\$ 418.00		\$ -
	Bike Route Signage	MI	\$ 1,724.25		\$ -
	Bike Lane Marking - Paint	EA	\$ 104.50		\$ -
	Install Sharrow - Paint	EA	\$ 125.40		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.27		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.54	11040	\$ 138,441.60
	Install Curb Paint	LF	\$ 3.45		\$ -
	Install Cycle Track Paint	SF	\$ 6.27		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 365.75	55	\$ 20,127.22
	Install Sharrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 731.50		\$ -
	Install Green Thermoplastic	SF	\$ 10.45		\$ -
	Install Sign on Existing Post	EA	\$ 83.60		\$ -
	Install Sign on New Post	EA	\$ 376.20	20	\$ 7,524.00
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.90	2760	\$ 57,684.00
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.05	5,520	\$ 5,768.40
	Remove Turn Arrow	EA	\$ 78.38	42	\$ 3,291.75
	Remove Crosswalk	LF	\$ 5.23	1020	\$ 5,329.50
	Relocate Sign and Pole	EA	\$ 418.00		\$ -
	Remove Sign and Pole	EA	\$ 182.88		\$ -
	Remove "Stop" Text	EA	\$ 104.50		\$ -
	Remove Sign	EA	\$ 156.75		\$ -
SIGNING / STRIPING SUBTOTAL					\$ 396,990.80

LANDSCAPING / IRRIGATION					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 17.20		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.57		\$ -
	Landscaping / Irrigation Removals	LS	\$ -		\$ -
LANDSCAPING SUBTOTAL					\$ -

Traffic / Electrical					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,837.50		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 591,250.00		\$ -
	Vehicle Heads	EA	\$ 1,254.00		\$ -
	Ped Heads	EA	\$ 1,759.50		\$ -
	Audible Ped Signal	EA	\$ 920.00		\$ -
	Ped Countdown Timer	EA	\$ 833.75		\$ -
	Loops	EA	\$ 731.50		\$ -
	Ped Buttons	EA	\$ 414.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,149.50		\$ -
	EVP Sensor	EA	\$ 3,135.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,180.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,810.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,990.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 25,080.00		\$ -
	Pedestrian Push Botton Post	EA	\$ 1,149.50		\$ -
	Pullboxes	EA	\$ 783.75		\$ -
	2" Conduit	LF	\$ 41.80		\$ -
	3" Conduit	LF	\$ 52.25		\$ -
	Traffic Signal Wiring	LS	\$ 15,675.00		\$ -
	Bike Detector Loop	EA	\$ 836.00		\$ -
	Mast Arm Sign	EA	\$ 418.00		\$ -
	Street Light - Basic	EA	\$ 7,837.50	4	\$ 31,350.00
	Street Light - Stone	EA	\$ 15,675.00		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,450.00		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 26,125.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 627.00		\$ -
	Install HAWK Ped Signal	EA	\$ 47,025.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 25,702.50		\$ -
	Street Name Signs	EA	\$ 1,567.50		\$ -
	Install APS (including sign and button)	EA	\$ 1,045.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
					\$ -
TRAFFIC / ELECTRICAL SUBTOTAL					\$ 31,350.00

Site Furnishings					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,045.00		\$ -
	Recycle Receptacle	EA	\$ 1,045.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,717.00		\$ -
	Benches - 6' length	EA	\$ 1,254.00		\$ -
	Bike Locker	EA	\$ 2,300.00	5	\$ 11,500.00
	Bike Rack	EA	\$ 833.75		\$ -
	Bus Rack	EA	\$ 1,150.00		\$ -
	Bike Station (per bike)	EA	\$ 5,900.00		\$ -
	Bollard (Decorative Stone)	EA	\$ 833.75		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 414.00		\$ -
	Gateway Structure	EA	\$ 26,220.00		\$ -
	Real Time Public Info Display	EA	\$ 2,090.00	2	\$ 4,180.00
	Information Kiosk	EA	\$ 184,000.00		\$ -
	Shade Shelter	EA	\$ 34,500.00		\$ -
	Bike Access Ramp	LF	\$ 52.25	75	\$ 3,918.75
	Tree Grates	EA	\$ 1,667.50		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,150.00		\$ -
	Bus Shelter	EA	\$ 21,500.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 37.63		\$ -
	Flexible Delineator	EA	\$ 41.80		\$ -
	Stair Railing	LF	\$ 35.00		\$ -
	Stair Construction	LS	\$ 17,000.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,150.00		\$ -
	Relocate Bike Rack	EA	\$ 1,380.00		\$ -
	Remove Bench	EA	\$ 1,035.00		\$ -
	Remove Bus Shelter	EA	\$ 4,255.00		\$ -
SITE FURNISHINGS SUBTOTAL					\$ 19,598.75

CAPITOL STATION - NARVAEZ AVENUE

Item	Amount
Civil	\$ 281,587.50
Signing / Striping	\$ 56,973.40
Traffic / Electrical	\$ 148,319.75
Traffic / Electrical Labor (25% of T/E)	\$ 37,079.94
Furnishing	\$ 18,392.00
Landscaping / Irrigation	\$ -
Traffic Control	\$ -
Water Pollution Control	\$ -
Maintain WPCP / Perform Fillings	\$ -
Project Construction Survey	\$ -

Materials and Permits Subtotal \$ 542,353

Mobilization (10% of Mat./Perm. Subtotal) \$ 54,235

Construction Subtotal \$ 596,588

Contingency (% of Constr. Subtotal) \$ -
Contingency Amount \$ -

Total Construction Cost \$ 596,588

Eng./Design (10% of Constr. Total) \$ 59,659

Administration (5% of Constr. Total) \$ 29,829

Constr. Mgmt (7% of Constr. Total) \$ 41,761

Total Project Cost \$ 727,837

Assumptions	
Capitol Expressway	
High visibility crosswalks on north and south legs of intersection (220 ft.)	
Remove porkchop (600 sqft., replace with 15ft wide sidewalk)	
North station parking lot driveway	
Station identification signage (1)	
Wayfinding signage (4)	
South station parking lot - northernmost driveway	
Wayfinding signage (4)	
New high visibility crosswalk (70 ft.)	
Between Capitol and Naomi Court	
Improved Lighting (every 150 ft.)	
Hillsdale Ave to Faye Park Drive	
Sidewalk paving and surface enhancements (2200 ft.)	
Protected bike lane (2200 ft. each way)	
Naomi Court	
New high visibility crosswalk (170 ft.)	
Sarah Court	
Wayfinding Signage (2)	
SR 87 on and off ramps	
High visibility crosswalk (200 ft.)	
Shadow Creek Drive	
Midblock street crossing (100 ft.)	
NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED	

CIVIL

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 53.75		\$ -
	Curb (6")	LF	\$ 20.90		\$ -
	Curb (6") - Divider	LF	\$ 31.35		\$ -
	Curb Ramp - Corner	EA	\$ 2,926.00	3	\$ 8,778.00
	Curb Ramp - Mid Block	EA	\$ 2,612.50	2	\$ 5,225.00
	Curb Extension w/ ADA Ramp	EA	\$ 14,950.00		\$ -
	Detectable Warning Tiles	SF	\$ 66.65		\$ -
	Traffic Circle	EA	\$ 57,500.00		\$ -
	Roundabout	EA	\$ 287,500.00		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 115,000.00		\$ -
	Traffic Diverter	EA	\$ 20,900.00		\$ -
	Median / Median Island	SF	\$ 16.13		\$ -
	Raised Crosswalk	EA	\$ 9,430.00		\$ -
	Raised Intersection	EA	\$ 58,650.00		\$ -
	Speed Hump	EA	\$ 3,105.00		\$ -
	Speed Bump	EA	\$ 1,868.75		\$ -
	Speed Table	EA	\$ 2,300.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.14		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 58.52		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.68		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.18	600	\$ 2,508.00
	Asphalt Paving (5")	SF	\$ 5.23		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.68		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.38		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 21.50		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 43.00		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 64.50		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 86.00		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 107.50	2200	\$ 236,500.00
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 161.25	150	\$ 24,187.50
	PCC Driveway	SF	\$ 15.05		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.90		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.52		\$ -
	Cement Treated Base (12")	SF	\$ 4.18		\$ -
	Cement Treated Base (16")	SF	\$ 5.23		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.78		\$ -
	Saw-cut of existing Concrete Pavement	LF	\$ 4.18		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.14		\$ -
	Install Fence	LF	\$ 52.25		\$ -
	Install Gate	EA	\$ 1,045.00		\$ -
	Reset Survey Markers	EA	\$ 2,090.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 313.50		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.90		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.18		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.90		\$ -
	Remove existing Fence	LF	\$ 12.54		\$ -
	Remove existing Tree	EA	\$ 1,045.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.32	600	\$ 4,389.00
	Remove Existing Asphalt Sidewalk	SF	\$ 2.61		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.14		\$ -
ROADWAY SUBTOTAL					\$ 281,587.50

SIGNING / STRIPING

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.88		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.14		\$ -
	Install 4" Striping - Paint	LF	\$ 0.52		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.23		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.26		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.61		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.45		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.14		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.45		\$ -
	Install Roadside Sign	EA	\$ 313.50		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 41.80		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 83.60	650	\$ 54,340.00
	Install Turn Arrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.54		\$ -
	Install Stop Line - Thermoplastic	LF	\$ 17.25		\$ -
	Install Text Pavement Marking - per word	EA	\$ 418.00		\$ -
	Bike Route Signage	MI	\$ 1,724.25		\$ -
	Bike Lane Marking - Paint	EA	\$ 104.50		\$ -
	Install Sharrow - Paint	EA	\$ 125.40		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.27		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.54		\$ -
	Install Curb Paint	LF	\$ 3.45		\$ -
	Install Cycle Track Paint	SF	\$ 6.27		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 365.75		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 731.50		\$ -
	Install Green Thermoplastic	SF	\$ 10.45		\$ -
	Install Sign on Existing Post	EA	\$ 83.60		\$ -
	Install Sign on New Post	EA	\$ 376.20	7	\$ 2,633.40
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.90		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.05		\$ -
	Remove Turn Arrow	EA	\$ 78.38		\$ -
	Remove Crosswalk	LF	\$ 5.23		\$ -
	Relocate Sign and Pole	EA	\$ 418.00		\$ -
	Remove Sign and Pole	EA	\$ 182.88		\$ -
	Remove "Stop" Text	EA	\$ 104.50		\$ -
	Remove Sign	EA	\$ 156.75		\$ -
SIGNING / STRIPING SUBTOTAL					\$ 56,973.40

LANDSCAPING / IRRIGATION

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 17.20		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.57		\$ -
	Landscaping / Irrigation Removals	LS	\$ -		\$ -
LANDSCAPING SUBTOTAL					\$ -

Traffic / Electrical

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,837.50		\$ -
	Modify Intersection traffic Signal System	LS	\$ 591,250.00		\$ -
	Vehicle Heads	EA	\$ 1,254.00		\$ -
	Ped Heads	EA	\$ 1,759.50		\$ -
	Audible Ped Signal	EA	\$ 920.00		\$ -
	Ped Countdown Timer	EA	\$ 833.75		\$ -
	Loops	EA	\$ 731.50		\$ -
	Ped Buttons	EA	\$ 414.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,149.50		\$ -
	EVP Sensor	EA	\$ 3,135.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,180.00		\$ -
	Type 17 Poles, Luminaires, and Foundation	EA	\$ 18,810.00		\$ -
	Type 26-3 Pole, Luminaires, and Foundation	EA	\$ 22,990.00		\$ -
	Type 61-5 Pole, Luminaires, and Foundation	EA	\$ 25,080.00		\$ -
	Pedestrian Push Button Post	EA	\$ 1,149.50		\$ -
	Pullboxes	EA	\$ 783.75		\$ -
	2" Conduit	LF	\$ 41.80		\$ -
	3" Conduit	LF	\$ 52.25		\$ -
	Traffic Signal Wiring	LS	\$ 15,675.00		\$ -
	Bike Detector Loop	EA	\$ 836.00		\$ -
	Mast Arm Sign	EA	\$ 418.00		\$ -
	Street Light - Basic	EA	\$ 7,837.50	6	\$ 45,509.75
	Street Light - Stone	EA	\$ 15,675.00		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,450.00		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 26,125.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 627.00		\$ -
	Install HAWK Ped Signal	EA	\$ 47,025.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 25,702.50	4	\$ 102,810.00
	Street Name Signs	EA	\$ 1,567.50		\$ -
	Install APS (including sign and button)	EA	\$ 1,045.00		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
TRAFFIC / ELECTRICAL SUBTOTAL					\$ 148,319.75

Site Furnishings

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,045.00		\$ -
	Recycle Receptacle	EA	\$ 1,045.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,717.00		\$ -
	Benches - 6' length	EA	\$ 1,254.00		\$ -
	Bike Locker	EA	\$ 2,300.00		\$ -
	Bike Rack	EA	\$ 833.75		\$ -
	Bus Rack	EA	\$ 1,150.00		\$ -
	Bike Station (per bike)	EA	\$ 5,900.00		\$ -
	Bollard (Decorative Stone)	EA	\$ 833.75		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 414.00		\$ -
	Gateway Structure	EA	\$ 26,220.00		\$ -
	Real Time Public Info Display	EA	\$ 2,090.00		\$ -
	Information Kiosk	EA	\$ 184,000.00		\$ -
	Shade Shelter	EA	\$ 34,500.00		\$ -
	Bike Access Ramp	LF	\$ 52.25		\$ -
	Tree Grates	EA	\$ 1,667.50		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,150.00		\$ -
	Bus Shelter	EA	\$ 21,500.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 37.63		\$ -
	Flexible Delineator	EA	\$ 41.80	440	\$ 18,392.00

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,150.00		\$ -
	Relocate Bike Rack	EA	\$ 1,380.00		\$ -
	Remove Bench	EA	\$ 1,035.00		\$ -
	Remove Bus Shelter	EA	\$ 4,255.00		\$ -
SITE FURNISHINGS SUBTOTAL					\$ 18,392.00

CAPITOL STATION - HILLSDALE AVE

Item	Amount
Civil	\$ 8,978.64
Signing / Striping	\$ 224,883.62
Traffic / Electrical	\$ 51,405.00
Traffic / Electrical Labor (25% of T/E)	\$ 12,851.25
Furnishing	\$ -
Landscaping / Irrigation	\$ -

Materials and Permits Subtotal \$ 298,119

Mobilization (10% of Mat./Perm. Subtotal) \$ 29,812

Construction Subtotal \$ 327,930

Contingency (5% of Constr. Subtotal)

Contingency Amount \$ -

Total Construction Cost \$ 327,930

Eng./Design (10% of Constr. Total) \$ 32,793

Administration (5% of Constr. Total) \$ 16,397

Constr. Mgmt (7% of Constr. Total) \$ 22,955

Total Project Cost \$ 400,075

Assumptions
Pearl Avenue to Capitol Expressway
Protected bike lane (5100 ft.)
Dow Drive
High visibility crosswalks (200 ft.)
Wayfinding signage (3)
Narvaez Avenue
High visibility crosswalks (200 ft.)
Wayfinding signage (4)
Mountain Springs Drive
Mid-block street crossing (90 ft.)
NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

CIVIL					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 53.75		\$ -
	Curb (6")	LF	\$ 20.90		\$ -
	Curb (6") - Divider	LF	\$ 31.35		\$ -
	Curb Ramp - Corner	EA	\$ 2,926.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,612.50	3	\$ 7,837.50
	Curb Extension w/ ADA Ramp	EA	\$ 14,950.00		\$ -
	Detectable Warning Tiles	SF	\$ 66.65		\$ -
	Traffic Circle	EA	\$ 57,500.00		\$ -
	Roundabout	EA	\$ 287,500.00		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 115,000.00		\$ -
	Traffic Diverter	EA	\$ 20,900.00		\$ -
	Median / Median Island	SF	\$ 16.13		\$ -
	Raised Crosswalk	EA	\$ 9,430.00		\$ -
	Raised Intersection	EA	\$ 58,650.00		\$ -
	Speed Hump	EA	\$ 3,105.00		\$ -
	Speed Bump	EA	\$ 1,868.75		\$ -
	Speed Table	EA	\$ 2,300.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.14		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 58.52		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.68		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.18		\$ -
	Asphalt Paving (5")	SF	\$ 5.23		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.68		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.38		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 21.50		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 43.00		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 64.50		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 86.00		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 107.50		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 161.25		\$ -
	PCC Driveway	SF	\$ 15.05		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.90		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.52		\$ -
	Cement Treated Base (12")	SF	\$ 4.18		\$ -
	Cement Treated Base (16")	SF	\$ 5.23		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.78		\$ -
	Saw-cut of existing Concrete Pavement	LF	\$ 4.18		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.14		\$ -
	Install Fence	LF	\$ 52.25		\$ -
	Install Gate	EA	\$ 1,045.00		\$ -
	Reset Survey Markers	EA	\$ 2,090.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 313.50		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.90		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.18		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.90		\$ -
	Remove existing Fence	LF	\$ 12.54		\$ -
	Remove existing Tree	EA	\$ 1,045.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.32	156	\$ 1,141.14
	Remove Existing Asphalt Sidewalk	SF	\$ 2.61		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.14		\$ -
ROADWAY SUBTOTAL					\$ 8,978.64

SIGNING / STRIPING					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.88		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.14		\$ -
	Install 4" Striping - Paint	LF	\$ 0.52		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.23		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.26	5100	\$ 1,332.38
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.61		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.45		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.14		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.45		\$ -
	Install Roadside Sign	EA	\$ 313.50		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 41.80		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 83.60	500	\$ 41,800.00
	Install Turn Arrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.54		\$ -
	Install Stop Line - Thermoplastic	LF	\$ 17.25		\$ -
	Install Text Pavement Marking - per word	EA	\$ 418.00		\$ -
	Bike Route Signing	MI	\$ 1,724.25		\$ -
	Bike Lane Marking - Paint	EA	\$ 104.50		\$ -
	Install Sharrow - Paint	EA	\$ 125.40		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.27		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.54	10200	\$ 127,908.00
	Install Curb Paint	LF	\$ 3.45		\$ -
	Install Cycle Track Paint	SF	\$ 6.27		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 365.75	51	\$ 18,616.38
	Install Sharrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 731.50		\$ -
	Install Green Thermoplastic	SF	\$ 10.45		\$ -
	Install Sign on Existing Post	EA	\$ 83.60		\$ -
	Install Sign on New Post	EA	\$ 376.20	7	\$ 2,633.40
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.90	1200	\$ 25,080.00
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.05	5,090	\$ 5,318.97
	Remove Turn Arrow	EA	\$ 78.38	28	\$ 2,194.50
	Remove Crosswalk	LF	\$ 5.23		\$ -
	Relocate Sign and Pole	EA	\$ 418.00		\$ -
	Remove Sign and Pole	EA	\$ 182.88		\$ -
	Remove "Stop" Text	EA	\$ 104.50		\$ -
	Remove Sign	EA	\$ 156.75		\$ -
SIGNING / STRIPING SUBTOTAL					\$ 224,883.62

LANDSCAPING / IRRIGATION					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 17.20		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.57		\$ -
	Landscaping / Irrigation Removals	LS	\$ -		\$ -
LANDSCAPING SUBTOTAL					\$ -

Traffic / Electrical					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,837.50		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 591,250.00		\$ -
	Vehicle Heads	EA	\$ 1,254.00		\$ -
	Ped Heads	EA	\$ 1,759.50		\$ -
	Audible Ped Signal	EA	\$ 920.00		\$ -
	Ped Countdown Timer	EA	\$ 833.75		\$ -
	Loops	EA	\$ 731.50		\$ -
	Ped Buttons	EA	\$ 414.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,149.50		\$ -
	EVP Sensor	EA	\$ 3,135.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,180.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,810.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,990.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 25,080.00		\$ -
	Pedestrian Push Botton Post	EA	\$ 1,149.50		\$ -
	Pullboxes	EA	\$ 783.75		\$ -
	2" Conduit	LF	\$ 41.80		\$ -
	3" Conduit	LF	\$ 52.25		\$ -
	Traffic Signal Wiring	LS	\$ 15,675.00		\$ -
	Bike Detector Loop	EA	\$ 836.00		\$ -
	Mast Arm Sign	EA	\$ 418.00		\$ -
	Street Light - Basic	EA	\$ 7,837.50		\$ -
	Street Light - Stone	EA	\$ 15,675.00		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,450.00		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 26,125.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 627.00		\$ -
	Install HAWK Ped Signal	EA	\$ 47,025.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 25,702.50	2	\$ 51,405.00
	Street Name Signs	EA	\$ 1,567.50		\$ -
	Install APS (including sign and button)	EA	\$ 1,045.00		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
					\$ -
TRAFFIC / ELECTRICAL SUBTOTAL					\$ 51,405.00

Site Furnishings					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,045.00		\$ -
	Recycle Receptacle	EA	\$ 1,045.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,717.00		\$ -
	Benches - 6' length	EA	\$ 1,254.00		\$ -
	Bike Locker	EA	\$ 2,300.00		\$ -
	Bike Rack	EA	\$ 833.75		\$ -
	Bus Rack	EA	\$ 1,150.00		\$ -
	Bike Station	EA	\$ 5,900.00		\$ -
	Bollard (Decorative Stone)	EA	\$ 833.75		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 414.00		\$ -
	Gateway Structure	EA	\$ 26,220.00		\$ -
	Real Time Public Info Display	EA	\$ 2,090.00		\$ -
	Information Kiosk	EA	\$ 184,000.00		\$ -
	Shade Shelter	EA	\$ 34,500.00		\$ -
	Bike Access Ramp	LF	\$ 52.25		\$ -
	Tree Grates	EA	\$ 1,667.50		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,150.00		\$ -
	Bus Shelter	EA	\$ 21,500.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 37.63		\$ -
	Flexible Delineator	EA	\$ 41.80		\$ -
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,150.00		\$ -
	Relocate Bike Rack	EA	\$ 1,380.00		\$ -
	Remove Bench	EA	\$ 1,035.00		\$ -
	Remove Bus Shelter	EA	\$ 4,255.00		\$ -
SITE FURNISHINGS SUBTOTAL					\$ -

CAPITOL STATION

Item	Amount
Civil	\$ -
Signing / Striping	\$ 376.20
Traffic / Electrical	\$ 15,675.00
Traffic / Electrical Labor (25% of T/E)	\$ 3,918.75
Furnishing	\$ 93,500.00
Landscaping / Irrigation	\$ -

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

Materials and Permits Subtotal \$ 113,470

Mobilization (10% of Mat./Perm. Subtotal) \$ 11,347

Construction Subtotal \$ 124,817

Contingency (% of Constr. Subtotal)
Contingency Amount \$ -

Total Construction Cost \$ 124,817

Eng./Design (10% of Constr. Total) \$ 12,482

Administration (5% of Constr. Total) \$ 6,241

Constr. Mgmt (7% of Constr. Total) \$ 8,737

Total Project Cost \$ 152,277

Assumptions

Station Platform
Improved lighting (every 150 ft // 560ft.)
Improved shade (1)
Capitol Station
Bike/scooter share

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

CIVIL

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 53.75		\$ -
	Curb (6")	LF	\$ 20.90		\$ -
	Curb (6") - Divider	LF	\$ 31.35		\$ -
	Curb Ramp - Corner	EA	\$ 2,926.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,612.50		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,950.00		\$ -
	Detectable Warning Tiles	SF	\$ 66.65		\$ -
	Traffic Circle	EA	\$ 57,500.00		\$ -
	Roundabout	EA	\$ 287,500.00		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 115,000.00		\$ -
	Traffic Diverter	EA	\$ 20,900.00		\$ -
	Median / Median Island	SF	\$ 16.13		\$ -
	Raised Crosswalk	EA	\$ 9,430.00		\$ -
	Raised Intersection	EA	\$ 58,650.00		\$ -
	Speed Hump	EA	\$ 3,105.00		\$ -
	Speed Bump	EA	\$ 1,868.75		\$ -
	Speed Table	EA	\$ 2,300.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.14		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 58.52		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.68		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.18		\$ -
	Asphalt Paving (5")	SF	\$ 5.23		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.68		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.38		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 21.50		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 43.00		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 64.50		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 86.00		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 107.50		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 161.25		\$ -
	PCC Driveway	SF	\$ 15.05		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.90		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.52		\$ -
	Cement Treated Base (12")	SF	\$ 4.18		\$ -
	Cement Treated Base (16")	SF	\$ 5.23		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.78		\$ -
	Saw-cut of existing Concrete Pavement	LF	\$ 4.18		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.14		\$ -
	Install Fence	LF	\$ 52.25		\$ -
	Install Gate	EA	\$ 1,045.00		\$ -
	Reset Survey Markers	EA	\$ 2,090.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 313.50		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.90		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.18		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.90		\$ -
	Remove existing Fence	LF	\$ 12.54		\$ -
	Remove existing Tree	EA	\$ 1,045.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.32		\$ -
	Remove Existing Asphalt Sidewalk	SF	\$ 2.61		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.14		\$ -

ROADWAY SUBTOTAL \$ -

SIGNING / STRIPING

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.88		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.14		\$ -
	Install 4" Striping - Paint	LF	\$ 0.52		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.23		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.26		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.61		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.45		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.14		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.45		\$ -
	Install Roadside Sign	EA	\$ 313.50		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 41.80		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 83.60		\$ -
	Install Turn Arrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.54		\$ -
	Install Stop Line - Thermoplastic	LF	\$ 17.25		\$ -
	Install Text Pavement Marking - per word	EA	\$ 418.00		\$ -
	Bike Route Signing	MI	\$ 1,724.25		\$ -
	Bike Lane Marking - Paint	EA	\$ 104.50		\$ -
	Install Sharrow - Paint	EA	\$ 125.40		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.27		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.54		\$ -
	Install Curb Paint	LF	\$ 3.45		\$ -
	Install Cycle Track Paint	SF	\$ 6.27		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 365.75		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 731.50		\$ -
	Install Green Thermoplastic	SF	\$ 10.45		\$ -
	Install Sign on Existing Post	EA	\$ 83.60		\$ -
	Install Sign on New Post	EA	\$ 376.20	1	\$ 376.20
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.90		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.05		\$ -
	Remove Turn Arrow	EA	\$ 78.38		\$ -
	Remove Crosswalk	LF	\$ 5.23		\$ -
	Relocate Sign and Pole	EA	\$ 418.00		\$ -
	Remove Sign and Pole	EA	\$ 182.88		\$ -
	Remove "Stop" Text	EA	\$ 104.50		\$ -
	Remove Sign	EA	\$ 156.75		\$ -

SIGNING / STRIPING SUBTOTAL \$ 376.20

LANDSCAPING / IRRIGATION

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 17.20		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.57		\$ -
	Landscaping / Irrigation Removals	LS	\$ -	1	\$ -

LANDSCAPING SUBTOTAL \$ -

Traffic / Electrical

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,837.50		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 591,250.00		\$ -
	Vehicle Heads	EA	\$ 1,254.00		\$ -
	Ped Heads	EA	\$ 1,759.50		\$ -
	Audible Ped Signal	EA	\$ 920.00		\$ -
	Ped Countdown Timer	EA	\$ 833.75		\$ -
	Loops	EA	\$ 731.50		\$ -
	Ped Buttons	EA	\$ 414.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,149.50		\$ -
	EVP Sensor	EA	\$ 3,135.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,180.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,810.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,990.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 25,080.00		\$ -
	Pedestrian Push Botton Post	EA	\$ 1,149.50		\$ -
	Pullboxes	EA	\$ 783.75		\$ -
	2" Conduit	LF	\$ 41.80		\$ -
	3" Conduit	LF	\$ 52.25		\$ -
	Traffic Signal Wiring	LS	\$ 15,675.00		\$ -
	Bike Detector Loop	EA	\$ 836.00		\$ -
	Mast Arm Sign	EA	\$ 418.00		\$ -
	Street Light - Basic	EA	\$ 7,837.50	2	\$ 15,675.00
	Street Light - Stone	EA	\$ 15,675.00		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,450.00		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 26,125.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 627.00		\$ -
	Install HAWK Ped Signal	EA	\$ 47,025.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 25,702.50		\$ -
	Street Name Signs	EA	\$ 1,567.50		\$ -
	Install APS (including sign and button)	EA	\$ 1,045.00		\$ -

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

TRAFFIC / ELECTRICAL SUBTOTAL \$ 15,675.00

Site Furnishings

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,045.00		\$ -
	Recycle Receptacle	EA	\$ 1,045.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,717.00		\$ -
	Benches - 6' length	EA	\$ 1,254.00		\$ -
	Bike Locker	EA	\$ 2,300.00		\$ -
	Bike Rack	EA	\$ 833.75		\$ -
	Bus Rack	EA	\$ 1,150.00		\$ -
	Bike Station	EA	\$ 5,900.00	10	\$ 59,000.00
	Bollard (Decorative Stone)	EA	\$ 833.75		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 414.00		\$ -
	Gateway Structure	EA	\$ 26,220.00		\$ -
	Real Time Public Info Display	EA	\$ 2,090.00		\$ -
	Information Kiosk	EA	\$ 184,000.00		\$ -
	Shade Shelter	EA	\$ 34,500.00	1	\$ 34,500.00
	Bike Access Ramp	LF	\$ 52.25		\$ -
	Tree Grates	EA	\$ 1,667.50		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,150.00		\$ -
	Bus Shelter	EA	\$ 21,500.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 37.63		\$ -
	Flexible Delineator	EA	\$ 41.80		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,150.00		\$ -
	Relocate Bike Rack	EA	\$ 1,380.00		\$ -
	Remove Bench	EA	\$ 1,035.00		\$ -
	Remove Bus Shelter	EA	\$ 4,255.00		\$ -

SITE FURNISHINGS SUBTOTAL \$ 93,500.00

BRANHAM STATION - BRANHAM LANE

Item	Amount
Civil	\$ 277,132.00
Signing / Striping	\$ 220,578.60
Traffic / Electrical	\$ 51,405.00
Traffic / Electrical Labor (25% of T/E)	\$ 12,851.25
Furnishing	\$ 254,420.00
Landscaping / Irrigation	\$ -

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

Materials and Permits Subtotal \$ 816,387

Mobilization (10% of Mat./Perm. Subtotal) \$ 81,639

Construction Subtotal \$ 898,026

Contingency (% of Constr. Subtotal)
Contingency Amount \$ -

Total Construction Cost \$ 898,026

Eng./Design (10% of Constr. Total) \$ 89,803

Administration (5% of Constr. Total) \$ 44,901

Constr. Mgmt (7% of Constr. Total) \$ 62,862

Total Project Cost \$ 1,095,592

Assumptions

Narvaez Avenue
Station Identification signage (1)
Roadway Median
Remove Porkchop (750 sqft.)
Bike intersection crossing lanes (150 ft.)
Station Entrance
Real-time transit information
SR-87 overpass
Wider Sidewalks (2 ft. wider)

Designated pick-up/drop-off area in front of station entrance. On westbound side of the road, this will require shifting the protected bike lane to be adjacent to the sidewalk and separated from travel lanes by permanent raised buffers. Shift travel lanes closer to roadway median and designate a pick-up/drop-off area between the travel lanes and raised buffers.

East of Station Entrance next to existing stairsfrom TOD site

Bike lockers (5)
Bike/e-scooter share facility
Meridian Ave to Monterey Rd
Protected Bike lane (21800 ft. each way)
Pearl Ave
Bike intersection crossing lanes (160 ft.)
Hepner Lane
Midblock street crossing with rectangular rapid flashing beacon (RRFB) (130 ft.)
Sidlaw Court
Wayfinding signage (2)

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

CIVIL

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 53.75	2400	\$ 129,000.00
	Curb (6")	LF	\$ 20.90		\$ -
	Curb (6") - Divider	LF	\$ 31.35		\$ -
	Curb Ramp - Corner	EA	\$ 2,926.00	1	\$ 2,926.00
	Curb Ramp - Mid Block	EA	\$ 2,612.50	2	\$ 5,225.00
	Curb Extension w/ ADA Ramp	EA	\$ 14,950.00		\$ -
	Detectable Warning Tiles	SF	\$ 66.65		\$ -
	Traffic Circle	EA	\$ 57,500.00		\$ -
	Roundabout	EA	\$ 287,500.00		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 115,000.00		\$ -
	Traffic Diverter	EA	\$ 20,900.00		\$ -
	Median / Median Island	SF	\$ 16.13		\$ -
	Raised Crosswalk	EA	\$ 9,430.00		\$ -
	Raised Intersection	EA	\$ 58,650.00		\$ -
	Speed Hump	EA	\$ 3,105.00		\$ -
	Speed Bump	EA	\$ 1,868.75		\$ -
	Speed Table	EA	\$ 2,300.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.14		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 58.52		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.68		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.18	800	\$ 3,344.00
	Asphalt Paving (5")	SF	\$ 5.23		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.68		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.38		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 21.50	2400	\$ 51,600.00
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 43.00		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 64.50		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 86.00		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 107.50		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 161.25	180	\$ 29,025.00
	PCC Driveway	SF	\$ 15.05		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.90		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.52		\$ -
	Cement Treated Base (12")	SF	\$ 4.18		\$ -
	Cement Treated Base (16")	SF	\$ 5.23		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.78		\$ -
	Saw-cut of existing Concrete Pavement	LF	\$ 4.18		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.14		\$ -
	Install Fence	LF	\$ 52.25		\$ -
	Install Gate	EA	\$ 1,045.00		\$ -
	Reset Survey Markers	EA	\$ 2,090.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 313.50		\$ -

Removals

#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.90		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.18		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.90	2400	\$ 50,160.00
	Remove existing Fence	LF	\$ 12.54		\$ -
	Remove existing Tree	EA	\$ 1,045.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.32	800	\$ 5,852.00
	Remove Existing Asphalt Sidewalk	SF	\$ 2.61		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.14		\$ -

ROADWAY SUBTOTAL \$ 277,132.00

SIGNING / STRIPING

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.88		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.14		\$ -
	Install 4" Striping - Paint	LF	\$ 0.52		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.23	10000	\$ 52,250.00
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.26		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.61		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.45		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.14		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.45		\$ -
	Install Roadside Sign	EA	\$ 313.50		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 41.80		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 83.60	130	\$ 10,868.00
	Install Turn Arrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.54		\$ -
	Install Stop Line - Thermoplastic	LF	\$ 17.25		\$ -
	Install Text Pavement Marking - per word	EA	\$ 418.00		\$ -
	Bike Route Signing	MI	\$ 1,724.25		\$ -
	Bike Lane Marking - Paint	EA	\$ 104.50	50	\$ 5,225.00
	Install Sharrow - Paint	EA	\$ 125.40		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.27		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.54	10000	\$ 125,400.00
	Install Curb Paint	LF	\$ 3.45		\$ -
	Install Cycle Track Paint	SF	\$ 6.27		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 365.75		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 731.50		\$ -
	Install Green Thermoplastic	SF	\$ 10.45		\$ -
	Install Sign on Existing Post	EA	\$ 83.60		\$ -
	Install Sign on New Post	EA	\$ 376.20	3	\$ 1,128.60
	Install Green Bike Lane Conflict Marking - Thermoplastic	LF	\$ 20.90	480	\$ 10,032.00

Removals

#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.05	15,000	\$ 15,675.00
	Remove Turn Arrow	EA	\$ 78.38		\$ -
	Remove Crosswalk	LF	\$ 5.23		\$ -
	Relocate Sign and Pole	EA	\$ 418.00		\$ -
	Remove Sign and Pole	EA	\$ 182.88		\$ -
	Remove "Stop" Text	EA	\$ 104.50		\$ -
	Remove Sign	EA	\$ 156.75		\$ -

SIGNING / STRIPING SUBTOTAL \$ 220,578.60

LANDSCAPING / IRRIGATION

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 17.20		\$ -

Removals

#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.57		\$ -
	Landscaping / Irrigation Removals	LS	\$ -		\$ -

LANDSCAPING SUBTOTAL \$ -

Traffic / Electrical

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,837.50		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 591,250.00		\$ -
	Vehicle Heads	EA	\$ 1,254.00		\$ -
	Ped Heads	EA	\$ 1,759.50		\$ -
	Audible Ped Signal	EA	\$ 920.00		\$ -
	Ped Countdown Timer	EA	\$ 833.75		\$ -
	Loops	EA	\$ 731.50		\$ -
	Ped Buttons	EA	\$ 414.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,149.50		\$ -
	EVP Sensor	EA	\$ 3,135.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,180.00		\$ -
	Type 17 Poles, Luminaires, and Foundation	EA	\$ 18,810.00		\$ -
	Type 26-3 Pole, Luminaires, and Foundation	EA	\$ 22,990.00		\$ -
	Type 61-5 Pole, Luminaires, and Foundation	EA	\$ 25,080.00		\$ -
	Pedestrian Push Botton Post	EA	\$ 1,149.50		\$ -
	Pullboxes	EA	\$ 783.75		\$ -
	2" Conduit	LF	\$ 41.80		\$ -
	3" Conduit	LF	\$ 52.25		\$ -
	Traffic Signal Wiring	LS	\$ 15,675.00		\$ -
	Bike Detector Loop	EA	\$ 836.00		\$ -
	Mast Arm Sign	EA	\$ 418.00		\$ -
	Street Light - Basic	EA	\$ 7,837.50		\$ -
	Street Light - Stone	EA	\$ 15,675.00		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,450.00		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 26,125.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 627.00		\$ -
	Install HAWK Ped Signal	EA	\$ 47,025.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 25,702.50	2	\$ 51,405.00
	Street Name Signs	EA	\$ 1,567.50		\$ -
	Install APS (including sign and button)	EA	\$ 1,045.00		\$ -

Removals

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

TRAFFIC / ELECTRICAL SUBTOTAL \$ 51,405.00

Site Furnishings

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,045.00		\$ -
	Recycle Receptacle	EA	\$ 1,045.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,717.00		\$ -
	Benches - 6' length	EA	\$ 1,254.00		\$ -
	Bike Locker	EA	\$ 2,300.00	5	\$ 11,500.00
	Bike Rack	EA	\$ 833.75		\$ -
	Bus Rack	EA	\$ 1,150.00		\$ -
	Bike Station	EA	\$ 5,900.00	10	\$ 59,000.00
	Bollard (Decorative Stone)	EA	\$ 833.75		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 414.00		\$ -
	Gateway Structure	EA	\$ 26,220.00		\$ -
	Real Time Public Info Display	EA	\$ 2,090.00		\$ -
	Information Kiosk	EA	\$ 184,000.00		\$ -
	Shade Shelter	EA	\$ 34,500.00		\$ -
	Bike Access Ramp	LF	\$ 52.25		\$ -
	Tree Grates	EA	\$ 1,667.50		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,150.00		\$ -
	Bus Shelter	EA	\$ 21,500.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 37.63		\$ -
	Flexible Delineator	EA	\$ 41.80	4400	\$ 183,920.00

Removals

#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,150.00		\$ -
	Relocate Bike Rack	EA	\$ 1,380.00		\$ -
	Remove Bench	EA	\$ 1,035.00		\$ -
	Remove Bus Shelter	EA	\$ 4,255.00		\$ -

SITE FURNISHINGS SUBTOTAL \$ 254,420.00

BRANHAM STATION - NARVAEZ AVENUE

Item	Amount
Civil	\$ 1,794,485.00
Signing / Striping	\$ 14,504.60
Traffic / Electrical	\$ 154,215.00
Traffic / Electrical Labor (25% of T/E)	\$ 38,553.75
Furnishing	\$ -
Landscaping / Irrigation	\$ -

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

Materials and Permits Subtotal \$ 2,001,758

Mobilization (10% of Mat./Perm. Subtotal) \$ 200,176

Construction Subtotal \$ 2,201,934

Contingency (% of Constr. Subtotal)
Contingency Amount \$ -

Total Construction Cost \$ 2,201,934

Eng./Design (10% of Constr. Total) \$ 220,193

Administration (5% of Constr. Total) \$ 110,097

Constr. Mgmt (7% of Constr. Total) \$ 154,135

Total Project Cost \$ 2,686,359

Assumptions

Faye Park Drive
High visibility crosswalk (60 ft.)
Wayfinding signage (3)
Naomi Court
Midblock Street Crossing (170 ft.)
Albino Drive
Midblock Street Crossing (40 ft.)
W Capitol Expressway to Branham Lane
New sidewalk paving and surface enclosures (3300 ft. of new sidewalk, Retaining Wall, & Safety Rail with 19800 sqft. of roadway demo within existing roadway)
Indigo Dr
Midblock Street Crossing (60 ft.)

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

CIVIL					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 53.75	\$ -	-
	Curb (6")	LF	\$ 20.90	\$ -	-
	Curb (6") - Divider	LF	\$ 31.35	\$ -	-
	Curb Ramp - Corner	EA	\$ 2,926.00	\$ -	-
	Curb Ramp - Mid Block	EA	\$ 2,612.50	2	5,225.00
	Curb Extension w/ ADA Ramp	EA	\$ 14,950.00	\$ -	-
	Detectable Warning Tiles	SF	\$ 66.65	\$ -	-
	Traffic Circle	EA	\$ 57,500.00	\$ -	-
	Roundabout	EA	\$ 287,500.00	\$ -	-
	Retroftit 4-way Intersection w/ Curb Extensions	LS	\$ 115,000.00	\$ -	-
	Traffic Diverter	EA	\$ 20,900.00	\$ -	-
	Median / Median Island	SF	\$ 16.13	\$ -	-
	Raised Crosswalk	EA	\$ 9,430.00	\$ -	-
	Raised Intersection	EA	\$ 58,650.00	\$ -	-
	Speed Hump	EA	\$ 3,105.00	\$ -	-
	Speed Bump	EA	\$ 1,868.75	\$ -	-
	Speed Table	EA	\$ 2,300.00	\$ -	-
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.14	\$ -	-
	Asphalt Filler Strip (2' wide)	LF	\$ 58.52	\$ -	-
	Asphalt Paving (Grind & Replace)	SF	\$ 15.68	\$ -	-
	Asphalt Paving (3.5")	SF	\$ 4.18	\$ -	-
	Asphalt Paving (5")	SF	\$ 5.23	\$ -	-
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.68	\$ -	-
	PCC - Filler Strip (6" wide)	LF	\$ 5.38	\$ -	-
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 21.50	\$ -	-
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 43.00	\$ -	-
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 64.50	3300	212,850.00
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 86.00	\$ -	-
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 107.50	\$ -	-
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 161.25	\$ -	-
	PCC Driveway	SF	\$ 15.05	\$ -	-
	Stamped Concrete - 6" Depth	SF	\$ 20.90	\$ -	-
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.52	\$ -	-
	Cement Treated Base (12")	SF	\$ 4.18	\$ -	-
	Cement Treated Base (16")	SF	\$ 5.23	\$ -	-
	Slurry Seal + Crack Sealing	SF	\$ 0.78	\$ -	-
	Saw-cut of existing Concrete Pavement	LF	\$ 4.18	\$ -	-
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.14	\$ -	-
	Install Retaining Wall - 2' High	LF	\$ 300.00	3300	990,000.00
	Install Safety Rail	LF	\$ 115.00	3300	379,500.00
	Install Fence	LF	\$ 52.25	\$ -	-
	Install Gate	EA	\$ 1,045.00	\$ -	-
	Reset Survey Markers	EA	\$ 2,090.00	\$ -	-
	Adjust Utility Boxes to Grade	EA	\$ 313.50	\$ -	-
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.90	\$ -	-
	Remove existing asphalt pavement (driveway)	SF	\$ 4.18	\$ -	-
	Remove existing asphalt pavement (roadway)	SF	\$ 10.45	19800	206,910.00
	Remove existing concrete pavement (roadway)	SF	\$ 10.45	\$ -	-
	Remove existing Curb & Gutter	LF	\$ 20.90	\$ -	-
	Remove existing Fence	LF	\$ 12.54	\$ -	-
	Remove existing Tree	EA	\$ 1,045.00	\$ -	-
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.32	\$ -	-
	Remove Existing Asphalt Sidewalk	SF	\$ 2.61	\$ -	-
	Remove Existing PCC Sidewalk	SF	\$ 3.14	\$ -	-
ROADWAY SUBTOTAL					\$ 1,794,485.00

SIGNING / STRIPING					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.88	\$ -	-
	Install Centerline w/ Reflectors	LF	\$ 3.14	\$ -	-
	Install 4" Striping - Paint	LF	\$ 0.52	\$ -	-
	Install 4" Striping - Thermoplastic	LF	\$ 5.23	\$ -	-
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.26	\$ -	-
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.61	\$ -	-
	Install 8" Striping - Thermoplastic	LF	\$ 10.45	\$ -	-
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.14	\$ -	-
	Install Parking Stripes (stall)	EA	\$ 10.45	\$ -	-
	Install Roadside Sign	EA	\$ 313.50	\$ -	-
	Install Crosswalk - Thermoplastic (12')	LF	\$ 41.80	\$ -	-
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 83.60	160	13,376.00
	Install Turn Arrow - Thermoplastic	EA	\$ 522.50	\$ -	-
	Install Crosshatching - Thermoplastic	LF	\$ 12.54	\$ -	-
	Install Stop Line - Thermoplastic	LF	\$ 17.25	\$ -	-
	Install Text Pavement Marking - per word	EA	\$ 418.00	\$ -	-
	Bike Route Signing	MI	\$ 1,724.25	\$ -	-
	Bike Lane Marking - Paint	EA	\$ 104.50	\$ -	-
	Install Sharrow - Paint	EA	\$ 125.40	\$ -	-
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.27	\$ -	-
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.54	\$ -	-
	Install Curb Paint	LF	\$ 3.45	\$ -	-
	Install Cycle Track Paint	SF	\$ 6.27	\$ -	-
	Install Bike Lane Marking - Thermoplastic	EA	\$ 365.75	\$ -	-
	Install Sharrow - Thermoplastic	EA	\$ 522.50	\$ -	-
	Install Greenback Sharrow - Thermoplastic	EA	\$ 731.50	\$ -	-
	Install Green Thermoplastic	SF	\$ 10.45	\$ -	-
	Install Sign on Existing Post	EA	\$ 83.60	\$ -	-
	Install Sign on New Post	EA	\$ 376.20	3	1,128.60
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.90	\$ -	-
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.05	\$ -	-
	Remove Turn Arrow	EA	\$ 78.38	\$ -	-
	Remove Crosswalk	LF	\$ 5.23	\$ -	-
	Relocate Sign and Pole	EA	\$ 418.00	\$ -	-
	Remove Sign and Pole	EA	\$ 182.88	\$ -	-
	Remove "Stop" Text	EA	\$ 104.50	\$ -	-
	Remove Sign	EA	\$ 156.75	\$ -	-
SIGNING / STRIPING SUBTOTAL					\$ 14,504.60

LANDSCAPING / IRRIGATION					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 17.20	\$ -	-
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.57	\$ -	-
	Landscaping / Irrigation Removals	LS	\$ -	\$ -	-
LANDSCAPING SUBTOTAL					\$ -

Traffic / Electrical					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,837.50	\$ -	-
	Modify Intersection Traffic Signal System	LS	\$ 591,250.00	\$ -	-
	Vehicle Heads	EA	\$ 1,254.00	\$ -	-
	Ped Heads	EA	\$ 1,759.50	\$ -	-
	Audible Ped Signal	EA	\$ 920.00	\$ -	-
	Ped Countdown Timer	EA	\$ 833.75	\$ -	-
	Loops	EA	\$ 731.50	\$ -	-
	Ped Buttons	EA	\$ 414.00	\$ -	-
	Bike Button, Pole, and Sign	EA	\$ 1,149.50	\$ -	-
	EVP Sensor	EA	\$ 3,135.00	\$ -	-
	Parking Lot Light Fixture	EA	\$ 4,180.00	\$ -	-
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,810.00	\$ -	-
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,990.00	\$ -	-
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 25,080.00	\$ -	-
	Pedestrian Push Botton Post	EA	\$ 1,149.50	\$ -	-
	Pullboxes	EA	\$ 783.75	\$ -	-
	2" Conduit	LF	\$ 41.80	\$ -	-
	3" Conduit	LF	\$ 52.25	\$ -	-
	Traffic Signal Wiring	LS	\$ 15,675.00	\$ -	-
	Bike Detector Loop	EA	\$ 836.00	\$ -	-
	Mast Arm Sign	EA	\$ 418.00	\$ -	-
	Street Light - Basic	EA	\$ 7,837.50	\$ -	-
	Street Light - Stone	EA	\$ 15,675.00	\$ -	-
	Pedestrian Scale Lighting	EA	\$ 6,450.00	\$ -	-
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 26,125.00	\$ -	-
	Ped Barricade and R49 Sign	EA	\$ 627.00	\$ -	-
	Install HAWK Ped Signal	EA	\$ 47,025.00	\$ -	-
	Install Rapid Flashing Ped Beacon	EA	\$ 25,702.50	6	154,215.00
	Street Name Signs	EA	\$ 1,567.50	\$ -	-
	Install APS (including sign and button)	EA	\$ 1,045.00	\$ -	-
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
					\$ -
					\$ -
					\$ -
TRAFFIC / ELECTRICAL SUBTOTAL					\$ 154,215.00

Site Furnishings					
Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,045.00	\$ -	-
	Recycle Receptacle	EA	\$ 1,045.00	\$ -	-
	Pre-Fabricated Kiosk	EA	\$ 2,717.00	\$ -	-
	Benches - 6' length	EA	\$ 1,254.00	\$ -	-
	Bike Locker	EA	\$ 2,300.00	\$ -	-
	Bike Rack	EA	\$ 833.75	\$ -	-
	Bus Rack	EA	\$ 1,150.00	\$ -	-
	Bike Station	EA	\$ 5,900.00	\$ -	-
	Bollard (Decorative Stone)	EA	\$ 833.75	\$ -	-
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00	\$ -	-
	Gateway Sign	EA	\$ 414.00	\$ -	-
	Gateway Structure	EA	\$ 26,220.00	\$ -	-
	Real Time Public Info Display	EA	\$ 2,090.00	\$ -	-
	Information Kiosk	EA	\$ 184,000.00	\$ -	-
	Shade Shelter	EA	\$ 34,500.00	\$ -	-
	Bike Access Ramp	LF	\$ 52.25	\$ -	-
	Tree Grates	EA	\$ 1,667.50	\$ -	-
	Street Tree (includes irrigation)	EA	\$ 2,150.00	\$ -	-
	Bus Shelter	EA	\$ 21,500.00	\$ -	-
	Street Furnishing (includes wayfinding)	LF	\$ 37.63	\$ -	-
	Flexible Delineator	EA	\$ 41.80	\$ -	-
Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,150.00	\$ -	-
	Relocate Bike Rack	EA	\$ 1,380.00	\$ -	-
	Remove Bench	EA	\$ 1,035.00	\$ -	-
	Remove Bus Shelter	EA	\$ 4,255.00	\$ -	-
SITE FURNISHINGS SUBTOTAL					\$ -

BRANHAM STATION

Item	Amount
Civil	\$ 92,000.00
Signing / Striping	\$ -
Traffic / Electrical	\$ -
Traffic / Electrical Labor (25% of T/E)	\$ -
Furnishing	\$ 64,600.00
Landscaping / Irrigation	\$ -

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

Materials and Permits Subtotal \$ 156,600

Mobilization (10% of Mat./Perm. Subtotal) \$ 15,660

Construction Subtotal \$ 172,260

Contingency (% of Constr. Subtotal)

Contingency Amount \$ -

Total Construction Cost \$ 172,260

Eng./Design (10% of Constr. Total) \$ 17,226

Administration (5% of Constr. Total) \$ 8,613

Constr. Mgmt (7% of Constr. Total) \$ 12,058

Total Project Cost \$ 210,157

Assumptions

Station Platform

Improved shade

Branham Station Lot

ADA Accessibility ramp next to stairs (400 ft. of ADA Ramp & 800 ft. of Safety Rail)

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

CIVIL

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Curb (6") & Gutter (24")	LF	\$ 53.75		\$ -
	Curb (6")	LF	\$ 20.90		\$ -
	Curb (6") - Divider	LF	\$ 31.35		\$ -
	Curb Ramp - Corner	EA	\$ 2,926.00		\$ -
	Curb Ramp - Mid Block	EA	\$ 2,612.50		\$ -
	Curb Extension w/ ADA Ramp	EA	\$ 14,950.00		\$ -
	Detectable Warning Tiles	SF	\$ 66.65		\$ -
	Traffic Circle	EA	\$ 57,500.00		\$ -
	Roundabout	EA	\$ 287,500.00		\$ -
	Retrofit 4-way Intersection w/ Curb Extensions	LS	\$ 115,000.00		\$ -
	Traffic Diverter	EA	\$ 20,900.00		\$ -
	Median / Median Island	SF	\$ 16.13		\$ -
	Raised Crosswalk	EA	\$ 9,430.00		\$ -
	Raised Intersection	EA	\$ 58,650.00		\$ -
	Speed Hump	EA	\$ 3,105.00		\$ -
	Speed Bump	EA	\$ 1,868.75		\$ -
	Speed Table	EA	\$ 2,300.00		\$ -
	Asphalt Driveway - Grind, Regrade and Overlay	SF	\$ 3.14		\$ -
	Asphalt Filler Strip (2' wide)	LF	\$ 58.52		\$ -
	Asphalt Paving (Grind & Replace)	SF	\$ 15.68		\$ -
	Asphalt Paving (3.5")	SF	\$ 4.18		\$ -
	Asphalt Paving (5")	SF	\$ 5.23		\$ -
	PCC - Concrete Roadway - 9" Depth	SF	\$ 15.68		\$ -
	PCC - Filler Strip (6" wide)	LF	\$ 5.38		\$ -
	PCC Sidewalk - 4" Depth / 2' Wide	LF	\$ 21.50		\$ -
	PCC Sidewalk - 4" Depth / 4' Wide	LF	\$ 43.00		\$ -
	PCC Sidewalk - 4" Depth / 6' Wide	LF	\$ 64.50		\$ -
	PCC Sidewalk - 4" Depth / 8' Wide	LF	\$ 86.00		\$ -
	PCC Sidewalk - 4" Depth / 10' Wide	LF	\$ 107.50		\$ -
	PCC Sidewalk - 4" Depth / 15' Wide	LF	\$ 161.25		\$ -
	PCC Driveway	SF	\$ 15.05		\$ -
	Stamped Concrete - 6" Depth	SF	\$ 20.90		\$ -
	Class II Aggregate Base (2", Sand Base)	CY	\$ 0.52		\$ -
	Cement Treated Base (12")	SF	\$ 4.18		\$ -
	Cement Treated Base (16")	SF	\$ 5.23		\$ -
	Slurry Seal + Crack Sealing	SF	\$ 0.78		\$ -
	Saw-cut of existing Concrete Pavement	LF	\$ 4.18		\$ -
	Saw-cut of existing Asphalt Pavement	LF	\$ 3.14		\$ -
	Install Safety Rail	LF	\$ 115.00	800	\$ 92,000.00
	Install Gate	EA	\$ 1,045.00		\$ -
	Reset Survey Markers	EA	\$ 2,090.00		\$ -
	Adjust Utility Boxes to Grade	EA	\$ 313.50		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Roadway Excavation	CY	\$ 20.90		\$ -
	Remove existing asphalt pavement (driveway)	SF	\$ 4.18		\$ -
	Remove existing asphalt pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing concrete pavement (roadway)	SF	\$ 10.45		\$ -
	Remove existing Curb & Gutter	LF	\$ 20.90		\$ -
	Remove existing Fence	LF	\$ 12.54		\$ -
	Remove existing Tree	EA	\$ 1,045.00		\$ -
	Remove existing sidewalk, curb ramps & driveways	SF	\$ 7.32		\$ -
	Remove Existing Asphalt Sidewalk	SF	\$ 2.61		\$ -
	Remove Existing PCC Sidewalk	SF	\$ 3.14		\$ -

ROADWAY SUBTOTAL \$ 92,000.00

SIGNING / STRIPING

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Install Limit Line	LF	\$ 8.88		\$ -
	Install Centerline w/ Reflectors	LF	\$ 3.14		\$ -
	Install 4" Striping - Paint	LF	\$ 0.52		\$ -
	Install 4" Striping - Thermoplastic	LF	\$ 5.23		\$ -
	Install 4" Striping (Dashed) - Paint	LF	\$ 0.26		\$ -
	Install 4" Striping (Dashed) - Thermoplastic	LF	\$ 2.61		\$ -
	Install 8" Striping - Thermoplastic	LF	\$ 10.45		\$ -
	Install Double Yellow Line (4") - Thermoplastic	LF	\$ 3.14		\$ -
	Install Parking Stripes (stall)	EA	\$ 10.45		\$ -
	Install Roadside Sign	EA	\$ 313.50		\$ -
	Install Crosswalk - Thermoplastic (12')	LF	\$ 41.80		\$ -
	Install Continental Crosswalk - Thermoplastic (12')	LF	\$ 83.60		\$ -
	Install Turn Arrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Crosshatching - Thermoplastic	LF	\$ 12.54		\$ -
	Install Stop Line - Thermoplastic	LF	\$ 17.25		\$ -
	Install Text Pavement Marking - per word	EA	\$ 418.00		\$ -
	Bike Route Signing	MI	\$ 1,724.25		\$ -
	Bike Lane Marking - Paint	EA	\$ 104.50		\$ -
	Install Sharrow - Paint	EA	\$ 125.40		\$ -
	Install Bike Buffer (2' wide) - Thermoplastic	LF	\$ 6.27		\$ -
	Install Bike Buffer (4' wide) - Thermoplastic	LF	\$ 12.54		\$ -
	Install Curb Paint	LF	\$ 3.45		\$ -
	Install Cycle Track Paint	SF	\$ 6.27		\$ -
	Install Bike Lane Marking - Thermoplastic	EA	\$ 365.75		\$ -
	Install Sharrow - Thermoplastic	EA	\$ 522.50		\$ -
	Install Greenback Sharrow - Thermoplastic	EA	\$ 731.50		\$ -
	Install Green Thermoplastic	SF	\$ 10.45		\$ -
	Install Sign on Existing Post	EA	\$ 83.60		\$ -
	Install Sign on New Post	EA	\$ 376.20		\$ -
	Install Green Bike Lane Conflict Marking - Thermop.	LF	\$ 20.90		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Delineation	LF	\$ 1.05		\$ -
	Remove Turn Arrow	EA	\$ 78.38		\$ -
	Remove Crosswalk	LF	\$ 5.23		\$ -
	Relocate Sign and Pole	EA	\$ 418.00		\$ -
	Remove Sign and Pole	EA	\$ 182.88		\$ -
	Remove "Stop" Text	EA	\$ 104.50		\$ -
	Remove Sign	EA	\$ 156.75		\$ -

SIGNING / STRIPING SUBTOTAL \$ -

LANDSCAPING / IRRIGATION

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Proposed Landscaping / Irrigation	SF	\$ 17.20		\$ -

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Clearing and Grubbing	SF	\$ 1.57		\$ -
	Landscaping / Irrigation Removals	LS	\$ -	1	\$ -

LANDSCAPING SUBTOTAL \$ -

Traffic / Electrical

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Modify Controller	EA	\$ 7,837.50		\$ -
	Modify Intersection Traffic Signal System	LS	\$ 591,250.00		\$ -
	Vehicle Heads	EA	\$ 1,254.00		\$ -
	Ped Heads	EA	\$ 1,759.50		\$ -
	Audible Ped Signal	EA	\$ 920.00		\$ -
	Ped Countdown Timer	EA	\$ 833.75		\$ -
	Loops	EA	\$ 731.50		\$ -
	Ped Buttons	EA	\$ 414.00		\$ -
	Bike Button, Pole, and Sign	EA	\$ 1,149.50		\$ -
	EVP Sensor	EA	\$ 3,135.00		\$ -
	Parking Lot Light Fixture	EA	\$ 4,180.00		\$ -
	Type 17 Poles, Luminares, and Foundation	EA	\$ 18,810.00		\$ -
	Type 26-3 Pole, Luminares, and Foundation	EA	\$ 22,990.00		\$ -
	Type 61-5 Pole, Luminares, and Foundation	EA	\$ 25,080.00		\$ -
	Pedestrian Push Botton Post	EA	\$ 1,149.50		\$ -
	Pullboxes	EA	\$ 783.75		\$ -
	2" Conduit	LF	\$ 41.80		\$ -
	3" Conduit	LF	\$ 52.25		\$ -
	Traffic Signal Wiring	LS	\$ 15,675.00		\$ -
	Bike Detector Loop	EA	\$ 836.00		\$ -
	Mast Arm Sign	EA	\$ 418.00		\$ -
	Street Light - Basic	EA	\$ 7,837.50		\$ -
	Street Light - Stone	EA	\$ 15,675.00		\$ -
	Pedestrian Scale Lighting	EA	\$ 6,450.00		\$ -
	Install Flashing Crosswalk (In-Road Lights + Solar Panel)	LS	\$ 26,125.00		\$ -
	Ped Barricade and R49 Sign	EA	\$ 627.00		\$ -
	Install HAWK Ped Signal	EA	\$ 47,025.00		\$ -
	Install Rapid Flashing Ped Beacon	EA	\$ 25,702.50		\$ -
	Street Name Signs	EA	\$ 1,567.50		\$ -
	Install APS (including sign and button)	EA	\$ 1,045.00		\$ -

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

TRAFFIC / ELECTRICAL SUBTOTAL \$ -

Site Furnishings

Proposed					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Trash Receptacle	EA	\$ 1,045.00		\$ -
	Recycle Receptacle	EA	\$ 1,045.00		\$ -
	Pre-Fabricated Kiosk	EA	\$ 2,717.00		\$ -
	Benches - 6' length	EA	\$ 1,254.00		\$ -
	Bike Locker	EA	\$ 2,300.00		\$ -
	Bike Rack	EA	\$ 833.75		\$ -
	Bus Rack	EA	\$ 1,150.00		\$ -
	Bike Station	EA	\$ 5,900.00		\$ -
	Bollard (Decorative Stone)	EA	\$ 833.75		\$ -
	Bollard (Steel with Plastic Sleeve)	EA	\$ 412.00		\$ -
	Gateway Sign	EA	\$ 414.00		\$ -
	Gateway Structure	EA	\$ 26,220.00		\$ -
	Real Time Public Info Display	EA	\$ 2,090.00		\$ -
	Information Kiosk	EA	\$ 184,000.00		\$ -
	Shade Shelter	EA	\$ 34,500.00	1	\$ 34,500.00
	Bike Access Ramp	LF	\$ 52.25		\$ -
	Tree Grates	EA	\$ 1,667.50		\$ -
	Street Tree (includes irrigation)	EA	\$ 2,150.00		\$ -
	Bus Shelter	EA	\$ 21,500.00		\$ -
	Street Furnishing (includes wayfinding)	LF	\$ 37.63		\$ -
	Concrete ADA Ramp (5 ft. wide)	LF	\$ 75.25	400	\$ 30,100.00

Removals					
#	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	TOTAL
	Remove Bike Rack	EA	\$ 1,150.00		\$ -
	Relocate Bike Rack	EA	\$ 1,380.00		\$ -
	Remove Bench	EA	\$ 1,035.00		\$ -
	Remove Bus Shelter	EA	\$ 4,255.00		\$ -

SITE FURNISHINGS SUBTOTAL \$ 64,600.00

CAPITOL STATION High-Priority Projects

ID	Project	Location	Amount
CP13a/CB3	Mobility hub at the proposed loop on the west side of the existing lot close to the southern entrance to facilitate pedestrian and bicyclist access to the station. Includes bus bays and the provision of a bike/e-scooter share facility.	Capitol Station South Parking Lot	\$ 59,000.00
CP13b	Designated pick-up/drop-off at the mobility hub to facilitate pedestrian access that utilizes a designated access point for non-resident vehicles entering from Narvaez Avenue	Capitol Station South Parking Lot	\$ 376.20
CP18a	New high visibility crosswalk to provide safe crossing for pedestrians at the proposed residential vehicle access point for the TOD	Narvaez Avenue & Capitol Station South Parking Lot Northernmost Driveway	\$ 5,860.00
CP24	New sidewalk to close the existing gap on the south side of Capitol Expressway	Capitol Expressway Between Narvaez Avenue and Copperfield Drive	\$ 166,625.00
CP25	New sidewalk to close the existing sidewalk gap on the west side of Narvaez Avenue	Narvaez Avenue Between Hillsdale Avenue and Faye Park Drive	\$ 260,687.50
CB6	Class IV Protected bike lane to improve bicyclist safety along a major corridor in the station area	Capitol Expressway (Corridor-wide)	\$ 262,394.80
CB2	Bike lockers (5) closer to the station entrance	Station Entrance at Capitol Expressway	\$ 11,500.00
CB5	Class IV Protected bike lane to improve safety for bicyclists in the station area	Hillsdale Avenue Between Pearl Avenue and Capitol Expressway	\$ 180,450.22
CB8	Class IV Protected bike lane to improve safety for bicyclists in the station area	Pearl Avenue Between Hillsdale Avenue and Chynoweth Avenue	\$ 263,858.85
CP1a	New high visibility crosswalk to address an area with previous pedestrian collisions	Hillsdale Avenue & Dow Drive	\$ 16,720.00
CP2a	New high visibility crosswalk to address an area with previous pedestrian collisions	Hillsdale Avenue & Narvaez Avenue	\$ 16,720.00

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

Materials and Permits Subtotal	\$ 1,244,193
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Mobilization (10% of Mat./Perm. Subtotal)	\$ 124,419
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Construction Subtotal	\$ 1,368,612
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Contingency (% of Constr. Subtotal)	
Contingency Amount	\$ -

Total Construction Cost	\$ 1,368,612
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Eng./Design (10% of Constr. Total)	\$ 136,861
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Administration (5% of Constr. Total)	\$ 68,431
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Constr. Mgmt (7% of Constr. Total)	\$ 95,803
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Total Project Cost	\$ 1,669,707
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NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

BRANHAM STATION High-Priority Projects

ID	Project	Location	Amount
BP1	New sidewalk to close the existing sidewalk gap on the west side of Narvaez Avenue	Narvaez Avenue beteen Capitol Expressway and Branham Lane	\$ 1,789,260.00
BP7	Midblock street crossing to facilitate pedestrian access closer to the station	Branham Lane and Heppner Lane	\$ 16,093.00
BP5	Midblock street crossing to facilitate pedestrian access into the TOD project from the neighborhood	Narvaez Avenue and Indigo Drive	\$ 10,241.00
BP10	New ADA access ramp next to the existing staircase	Branham Station Lot	\$ 122,100.00
BP16	Formalized pedestrian pathway from the informal SR 87 access point to connect to the existing sidewalk leading to the staircase and proposed ADA access ramp. This should include: 1) formalizing the access point with an official entryway, such as a gate, and be clearly marked, visible, and publicly accessible on both sides; and 2) providing a ramp up to the access point from SR 87 with lighting and signage leading to the gate.	Branham Station Lot	\$ 236,500.00
BP12	Designated pick-up/drop-off in front of the station entrance. Potential options for configuration are presented in Appendix C.	SR 87 Overpass on Branham Lane	\$ 279,013.00
BB2a/BB2b	Bike/e-scooter share facility and bike lockers (5) as a part of a "transit plaza" leveled on Branham Lane to be used by transit riders and closer to the station entrance than existing bike lockers at Branham Lane & Navaez Avenue	Branham Lane next to existing staircase from the station lot	\$ 70,500.00
BB6/BB7	Class IV Protected bike lane made permanent with hardscape materials to improve safety for bicyclists on a Vision Zero corridor	Branham Lane Between Meridian Avenue to Monterey Road	\$ 208,582.00
BB4	Class IV Protected bike lane to improve safety for bicyclists in the station area	Pearl Avenue Between Hillsdale Avenue and Chynoweth Avenue	\$ 187,866.45
BP4A	New high visibility crosswalk to connect the SR 87 entrance to the existing sidewalk on the east side of Narvaez Avenue	Narvaez Avenue and Faye Park Drive	\$ 16,720.00

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

Materials and Permits Subtotal	\$ 2,936,875
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Mobilization (10% of Mat./Perm. Subtotal)	\$ 293,688
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Construction Subtotal	\$ 3,230,563
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Contingency (% of Constr. Subtotal)	
Contingency Amount	\$ -

Total Construction Cost	\$ 3,230,563
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Eng./Design (10% of Constr. Total)	\$ 323,056
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Administration (5% of Constr. Total)	\$ 161,528
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Constr. Mgmt (7% of Constr. Total)	\$ 226,139
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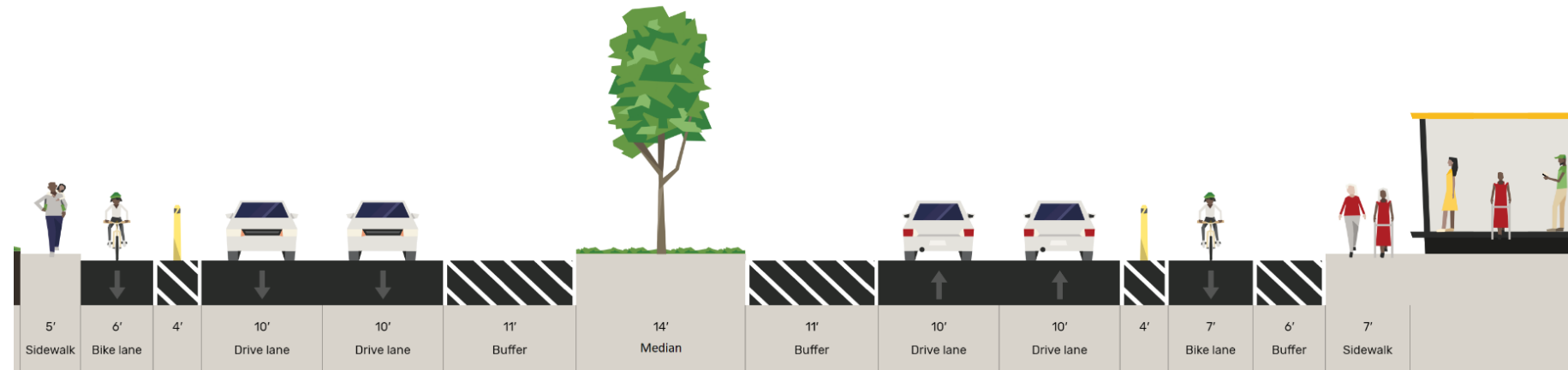
Total Project Cost	\$ 3,941,286
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NOTE: DOES NOT INCLUDE CONSTRUCTION INSPECTION, ENGINEERING, RIGHT-OF-WAY, OR UTILITY COSTS EXCEPT AS NOTED

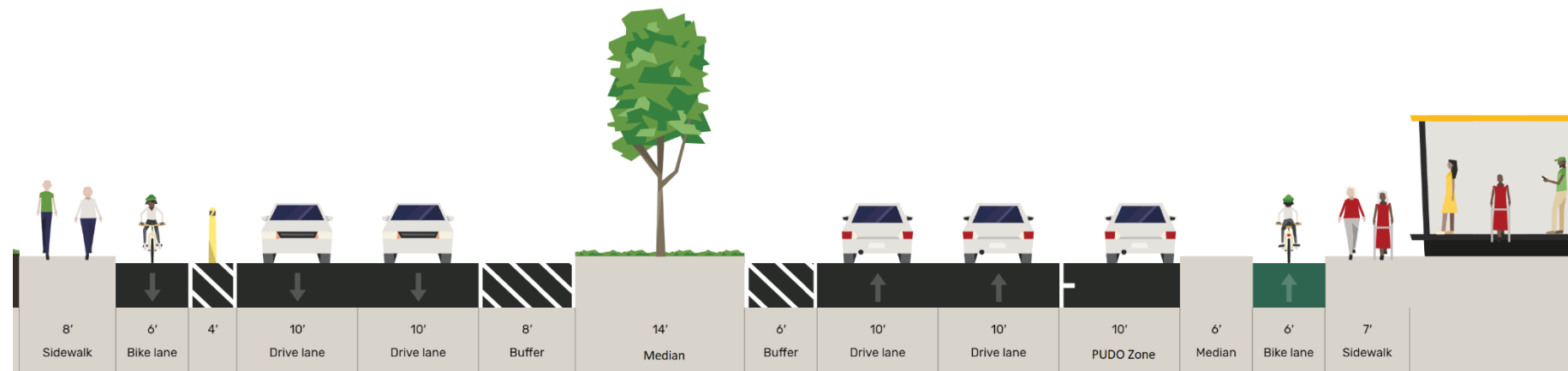
Branham Lane Cross Sections

Cross sections for Branham Lane (looking west) are provided to illustrate the existing roadway configuration and two options for a designated pick-up/drop-off zone in front of the station.

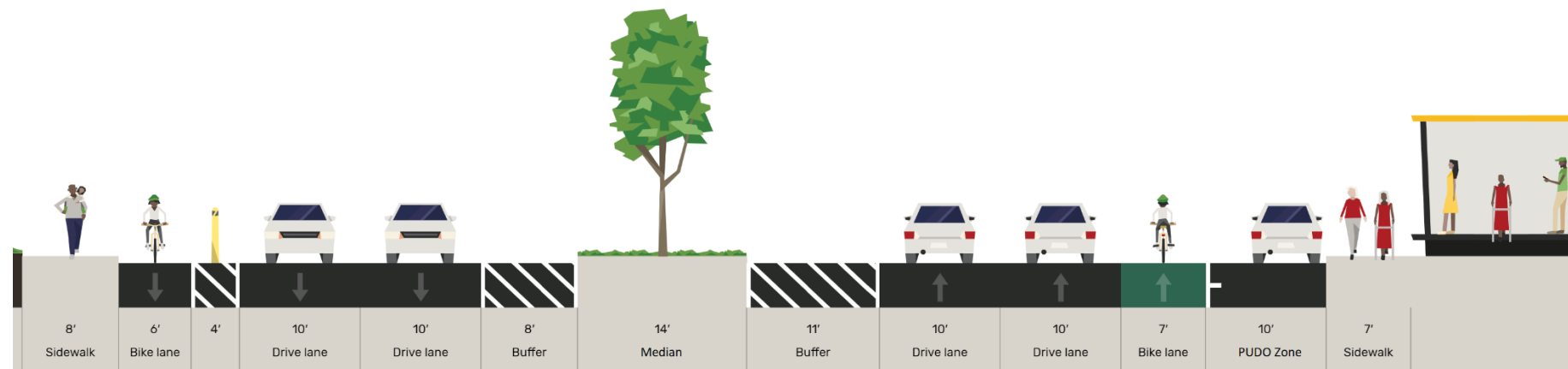
- Option A involves shifting the protected bikeway westbound to be adjacent to the sidewalk, shifting vehicle travel lanes closer to the median, and adding a designated pick-up/drop-off zone between the protected bikeway barrier and vehicle travel lanes.
- Option B involves transitioning the protected bikeway to a Class II bikeway and shifting the bikeway to be adjacent to travel lanes in front of the station. The designated pick-up/drop-off zone would be adjacent to the curb for this transition area.
- Both options include painting the bikeway green for additional visibility of bicyclists and adding a curb cut into the sidewalk in front of the station entrance for pedestrian accessibility.
- Both options include a widening of the sidewalk on the southern side of the corridor directly over SR-87, where it currently narrows, and reducing the buffer next to the median to accommodate.



Branham Lane @ Branham Light Rail Station – Existing



Branham Lane @ Branham Light Rail Station – Option A



Branham Lane @ Branham Light Rail Station – Option B

Appendix C: Project Prioritization Scoring

Capitol Station Area Projects

ID	Project	Location	Evaluation Criteria				Total Score
			Improves Connectivity To Transit	Improves Accessibility	Improves Safety	Coordination with Planned Projects	
CB1	Bike intersection crossing lanes	Capitol Expressway & SR 87 off-ramp	0.3	0	0.6	0	0.9
CB2	Bike lockers closer to station entrances (5)	Station Entrance at Capitol Expressway	1	0	0.6	1	2.6
CB3	Bike/e-scooter share facility	South Lot at Capitol Station	1	0	0.6	1	2.6
CB4	Bike intersection crossing lanes	Capitol Expressway & Narvaez Avenue	0.3	0	0.6	0	0.9
CB5	Class IV Protected bike lane	Hillsdale Avenue Between Pearl Avenue and Capitol Expressway	0.6	0	1	1	2.6
CB6	Class IV Protected bike lane	Corridor-wide on Capitol Expressway	1	0	1	1	3
CB7	Class III Bike boulevard	Albion Drive Between Narvaez Avenue & Bluefield Drive, Bluefield Drive Between Capitol Expressway and Vistapark Drive	1	0	0.3	0	1.3
CB8	Class IV Protected bike lane	Pearl Avenue between Hillsdale Avenue and Chynoweth Avenue	0.6	0	1	1	2.6
CB9	Bike access ramp on northern entrance staircase	Northern Station Entrance at Capitol Expressway	0.6	1	0.3	0	1.9
CB10	Class IV Protected bike lane	Narvaez Avenue Between Helzer Avenue and Branham Lane	0.3	0	0.3	1	1.6
CP1a	High visibility crosswalk	Hillsdale Avenue & Dow Drive	0.6	1	1	0	2.6
CP1b	Wayfinding signage	Hillsdale Avenue & Dow Drive	0.3	0	0.3	0	0.6
CP2a	High visibility crosswalk	Hillsdale Avenue & Narvaez Avenue	0.6	1	1	0	2.6
CP2b	Wayfinding signage	Hillsdale Avenue & Narvaez Avenue	0.3	0	0.3	0	0.6
CP3	High visibility crosswalk	Hillsdale Avenue & Mountain Springs Drive	0.6	1	0.6	0	2.2

CP4a	Midblock street crossing with RRFB	Narvaez Avenue & Shadow Creek Drive	0.6	1	0.6	0	2.2
CP4b	Bus stop enhancement	Narvaez Avenue & Shadow Creek Drive	0.3	1	0.6	0	1.9
CP5a	Remove porkchop	Capitol Expressway & Pearl Avenue	0.3	0	1	1	2.3
CP5b	High visibility crosswalk	Capitol Expressway & Pearl Avenue	0.3	0	1	1	2.3
CP5c	Wayfinding signage	Capitol Expressway & Pearl Avenue	0.3	0	0.3	0	0.6
CP6a	High visibility crosswalk	At traffic light between Pearl Avenue & SR 87 on/off-ramps	0.6	0	0.6	0	1.2
CP6b	Wayfinding signage	At traffic light between Pearl Avenue & SR 87 on/off-ramps	0.3	0	0.3	0	0.6
CP7	High visibility crosswalk	Narvaez Avenue & SR 87 on- and off-ramps	0.3	1	0.6	0	1.9
CP8a	Wayfinding signage	Capitol Expressway & SR 87 off-ramp	0.3	0	0.3	0	0.6
CP8b	Remove porkchop	Capitol Expressway & SR 87 off-ramp	0.3	0	0.6	1	1.9
CP9a	Improved shade	Station Platform at Capitol Station	0.3	0	0.3	0	0.6
CP9b	Improved lighting	Station Platform at Capitol Station	0.3	0	0.3	0	0.6
CP10a	Station identification signage at both entrances	Station Entrance on Capitol Expressway	1	0	0.3	1	2.3
CP10b	Real-time transit information at both entrances	Station Entrance on Capitol Expressway	0.6	0	0.3	0	0.9
CP10c	Improved lighting beneath SR 87 underpass	Station Entrance on Capitol Expressway	0.6	0	0.6	1	2.2
CP11a	Station identification signage	North Station Parking Lot Driveway on Narvaez Avenue	1	0	0.3	1	2.3
CP11b	Wayfinding signage	North Station Parking Lot Driveway on Narvaez Avenue	1	0	0.3	1	2.3
CP12a	Station identification Signage	Capitol Station South Parking Lot	1	0	0.3	1	2.3
CP12b	Wayfinding signage	Capitol Station South Parking Lot	1	0	0.3	1	2.3
CP13a	Mobility hub	Capitol Station South Parking Lot	1	1	0.6	1	3.6
CP13b	Designated pick-up/drop-off	Capitol Station South Parking Lot	1	1	0.6	1	3.6

CP14a	High visibility crosswalks on north and south legs of intersection	Capitol Expressway & Narvaez Avenue	0.3	0	0.6	1	1.9
CP14b	Remove porkchop	Capitol Expressway & Narvaez Avenue	0.3	0	0.6	1	1.9
CP15a	High visibility crosswalks on east and west legs of the intersection	Capitol Expressway & Narvaez Avenue	0.3	0	0.6	1	1.9
CP15b	Curb extensions	Capitol Expressway & Narvaez Avenue	0.6	0	0.6	0	1.2
CP15c	Wayfinding signage	Capitol Expressway & Narvaez Avenue	1	0	0.3	0	1.3
CP16	High visibility crosswalk	Capitol Expressway & Timber Loop Drive	0.6	0	0.6	0	1.2
CP17a	High visibility crosswalk	Capitol Expressway & Copperfield Drive	0.6	0	0.6	1	2.2
CP17b	Wayfinding signage	Capitol Expressway & Copperfield Drive	0.3	0	0.3	0	0.6
CP18a	New high visibility crosswalk	Narvaez Avenue & Capitol Station South Parking Lot Northernmost Driveway	1	1	0.6	1	3.6
CP18b	Wayfinding signage	Narvaez Avenue & Capitol Station South Parking Lot Northernmost Driveway	0.3	0	0.3	1	1.6
CP19	New high visibility crosswalk	Narvaez Avenue & Naomi Court	0.6	1	0.6	0	2.2
CP20	Wayfinding signage	Narvaez Avenue & Sarah Court	0.3	0	0.3	0	0.6
CP21	Wayfinding signage	Narvaez Avenue & Faye Park Drive	0.3	0	0.3	0	0.6
CP22	Pedestrian pathway	Access Road for Campus Between Lewiston Drive and Hillsdale Ave	0.6	0	0.6	0	1.2
CP23	Improved lighting	Narvaez Avenue Between Capitol Expressway and Naomi Court	0.3	0	0.6	1	1.9
CP24	New sidewalk	Capitol Expressway Between Narvaez Avenue and Copperfield Drive	1	1	0.6	1	3.6
CP25	New sidewalk	Narvaez Avenue Between Hillsdale Avenue and Faye Park Drive	1	1	0.6	1	3.6

Branham Station Area Projects

ID	Project	Location	Evaluation Criteria				Total Score
			Improves Connectivity To Transit	Improves Accessibility	Improves Safety	Coordination with Planned Projects	
BB1	Bike intersection crossing lanes	Branham Lane & Pearl Avenue	0.3	0	1	0	1.3
BB2a	Bike/e-scooter share facility	On Branham Lane East of the Station Entrance Next to Existing Stairs from TOD Site	1	0	0.6	1	2.6
BB2b	Bike lockers (5)	On Branham Lane East of the Station Entrance Next to Existing Stairs from TOD Site	1	0	0.6	1	2.6
BB3	Bike intersection crossing lanes	Branham Lane & Narvaez Avenue	0.3	0	0.3	0	0.6
BB4	Class IV Protected bike lane	Pearl Avenue Between Hillsdale Avenue and Chynoweth Avenue	0.6	0	1	1	2.6
BB5	Class III Bike boulevard	Albion Drive Between Narvaez Avenue & Bluefield Drive, Bluefield Drive Between Capitol Expressway and Vistapark Drive	1	0	0.3	0	1.3
BB6	Class IV Protected bike lane	Branham Lane Between Meridian Avenue to Monterey Road	0.6	0	1	1	2.6
BB7	Class IV Protected bike lane	Branham Lane Between Meridian Avenue to Monterey Road	0.6	0	1	1	2.6
BB8	Class IV Protected bike lane	Narvaez Avenue Between Helzer Drive and Branham Lane	0.3	0	0.3	1	1.6
BP1	New sidewalk	Narvaez Avenue Between W Capitol Expressway and Branham Lane	1	1	0.6	2	4.6
BP2	Midblock street crossing	Narvaez Avenue & Naomi Court	0.6	0	0.6	0	1.2
BP3	Midblock street crossing	Narvaez Avenue & Albion Drive	0.6	0	0.3	0	0.9
BP4a	New high visibility crosswalk	Narvaez Avenue & Faye Park Drive	1	1	0.6	0	2.6

BP4b	Wayfinding signage	Narvaez Avenue & Faye Park Drive	0.3	0	0.3	0	0.6
BP5	Midblock street crossing	Narvaez Avenue & Indigo Drive	1	1	0.6	1	3.6
BP6a	Remove porkchop	Branham Lane & Pearl Avenue	0.3	0	1	0	1.3
BP6b	Wayfinding signage	Branham Lane & Heppner Drive	0.3	0	0.3	0	0.6
BP7	Midblock street crossing with RRFB	Branham Lane & Heppner Lane	1	1	1	1	4
BP8	Improved shade	Branham Station Platform	0.3	0	0.3	0	0.6
BP9	Real-Time Transit Information	Station Entrance on Branham Lane	0.3	0	0.3	0	0.6
BP10	ADA access ramp next to stairs	Branham Station Lot	1	1	0.6	1	3.6
BP11	Widen sidewalk on south side	SR 87 Overpass on Branham Lane	0.3	1	0.3	1	2.6
BP12	Designated pick-up/drop-off	SR 87 Overpass on Branham Lane	1	1	0.6	1	3.6
BP13	Station identification signage	Branham Lane & Narvaez Avenue	0.6	0	0.3	1	1.9
BP14a	Roadway median	Branham Lane & Narvaez Avenue	0.3	0	0.6	1	1.9
BP14b	Remove porkchop	Branham Lane & Narvaez Avenue	0.3	0	0.6	1	1.9
BP15	Wayfinding signage	Branham Lane & Sidlaw Court	0.3	0	0.3	1	1.6
BP16	Pedestrian pathway	Branham Station Lot	1	1	0.6	1	3.6

