Pedestrian Access to Transit Plan
Existing Conditions Report

DRAFT

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1 Introduction
This existing conditions report serves as an important first look at walking conditions in Santa Clara County and sets the background for the Pedestrian Access to Transit Plan. This report includes:

- A description of walkable communities and the benefits of walking
- A summary of relevant pedestrian-related plans and policies
- A summary of built environment factors that affect walking in Santa Clara County
- Information about how much, and why people walk
- A summary of historic pedestrian collision data

The report concludes by evaluating a set of socio-economic, planning, transit, and other factors to identify areas that will be the focus of field work during the next stage of plan development. A draft map of focus areas is presented.

This existing conditions report casts a wide net—looking at the entire county. It is intended to serve as a reference for not only the Pedestrian Access to Transit Plan, but also future countywide pedestrian planning efforts that may come out of the development of the Pedestrian Access to Transit Plan.

For the remainder of the planning effort, VTA will focus on pedestrian access to transit. As the transit agency for the county, VTA has a vested interest in focusing on transit access improvements. The quality of the transit trip doesn’t start and stop at the vehicle door. The majority of our customers walk to or from their stop or station. People feel comfortable walking to transit facilities when the access between major uses and these facilities is continuous.1 By working with the cities and county to improve the quality, safety, and convenience of the walking environment near our transit stops, we improve the entire transit experience, benefit the surrounding community, and encourage more people to walk or ride transit.

2 Benefits of Walking and Walkable Environments

Walking is the most basic way of traveling from place to place, and is a mode of travel open to all—regardless of age, ability, or income. Walkable communities—those where one can safely, comfortably, and conveniently walk to meet most daily needs—are livable, sustainable, and dynamic places, with vibrant street life and cohesive communities. Walkable communities and transit support and complement each other. Sidewalks, trails, and other pedestrian infrastructure are many times less costly to build and maintain than infrastructure for other types of transportation. The benefits of walkable communities are wide-ranging and much research has been conducted to understand and quantify them. Key benefits include:

Health: The health benefits of walking are not just limited to weight management, but include prevention of a variety of diseases, including cardiovascular disease, high blood pressure, diabetes, depression, osteoporosis, and some cancers. According to a Health Economic Assessment Tool developed by the World Health Organization, if all adults in Santa Clara County between ages 18 and 65 were to get 30 minutes of walking a day, mortality would be reduced by 23 percent, resulting in 347 fewer deaths annually. 

Economic and environmental benefits: In walkable communities, people are more likely to leave the car at home and walk or bike to get somewhere. Driving fewer miles results in immediate fuel and maintenance cost savings. The American Automobile Association (AAA) estimates it costs $61 for every 100 miles of commuting, and an average of 78.3 cents per mile to operate a car. Motor vehicles are the major source of air pollution in the Bay Area, contributing 36% of the greenhouse gas emissions and up to 28% of fine particulate matter (PM 2.5). By reducing vehicle miles traveled, walkable communities contribute to reductions in air pollutants.

Safety benefits: Transportation infrastructure in walkable communities tends to promote safe and respectful driving behavior. Drivers are primed by environmental queues—sidewalks, narrow streets, crosswalks, street trees, pedestrian-scale streetscapes—to drive slower and expect pedestrians, and as a result, are more likely yield for pedestrians.

Property values: People are more willing to pay for more for property in walkable communities. Two studies looking at Walk Score and property values found that commercial and residential

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2 In this report, “walking” and “pedestrian” are inclusive terms that include people who use mobility assistive devices, including, but not limited to motorized scooters and wheelchairs.


6 Bay Area Air Quality Management District, Source Inventory of Bay Area Greenhouse Gas Emissions (San Francisco: Bay Area Air Quality Management District, 2010).

7 Center on Urban Environmental Law, Air Pollution and Environmental Inequity in the San Francisco Bay Area (San Francisco: Golden Gate University School of Law, 2011).

8 Walk Score (www.walkscore.com) is an online tool that calculates the walkability of a neighborhood based on how close amenities such as restaurants, coffee shops, stores, parks, libraries are to an address. It is often advertised in real estate listings. Walk Scores range from 0 to 100, with higher Walk Scores more walkable. Walk Scores over 70 indicate locations where it is possible to meet daily needs without a car.
properties both increased in value with an increase in Walk Score.

Accessibility and equity benefits: Walking, both by itself and in conjunction with transit, provides a means to access important goods, services, and activities. This accessibility is particularly important for those who may have limited transportation options: youth, the elderly, people with disabilities, and people with low incomes.

Social Capital: In walkable communities, public space becomes a stage for informal interactions between neighbors, workers, visitors. These interactions support relationships, networks, and involvement in the community—social capital.

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3 Relationship to Other Plans and Policies

3.1 Pedestrian Planning in Santa Clara County
The VTA Pedestrian Access to Transit Plan is the first countywide plan to emphasize improving pedestrian access to transit on a regional scale. It complements local pedestrian planning documents, which cover specific geographic areas based on the communities’ needs.

This section provides a summary description of pedestrian-related plans on the local level, their area of influence, and their proposed outcomes. The reviewed documents have been adopted by local governments in the last 10 to 15 years. Not all local planning documents are included in this chapter: Documents were selected based on their proposed pedestrian facility improvements around transit facilities. The plans are from 15 cities in Santa Clara County, County of Santa Clara, and VTA.

3.2 State and Regional Pedestrian-Related Plans
The primary outcome of this plan is to identify locations in Santa Clara County which are in close proximity of transit facilities and would benefit from pedestrian improvements. This outcome is supported by and consistent with state, regional, and local planning documents.

At the state and regional level, the pedestrian-related plans are mainly policy documents and design guidelines and manuals. For instance, the California Strategic Highway Safety Plan, adopted by California Department of Transportation (Caltrans), provides strategies for improving pedestrian safety. Caltrans’ Complete Streets Policy (Deputy Directive 64-R1) is that agency’s policy to facilitate multi-modal transportation planning efforts including accommodating pedestrians and transit in all roadway projects. Americans with Disabilities Act Accessibility Guidelines and the Public Rights-of-Way Accessibility Guidelines are Federal documents that provide specific design guidelines for buildings, facilities, and public rights of way—including sidewalks—under the American with Disabilities Act (ADA) requirements.

At the regional level, the Metropolitan Transportation Commission (MTC) provides policies, plans, and funding programs for pedestrian projects. MTC’s One Bay Area Plan is a long-range regional plan with a vision for the year 2040. The transportation element of One Bay Area Plan provides strategies to reduce Greenhouse Gas Emissions by developing and strengthening multi-modal transportation options, including options for walking and transit.

3.3 VTA’s Pedestrian-Related Plans
There are two planning documents prepared by VTA in 2003 that relate to pedestrian planning. VTA’s Community Design and Transportation Manual and the Pedestrian Technical Guidelines are complementary documents which provide best practice examples and design details for pedestrian facilities and street design. VTA’s Transit Passenger Waiting Environment Plan is currently in the progress.

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13 California Department of Transportation, California Strategic Highway Safety Plan, version 2 (Sacramento: California DOT, 2006).


16 Metropolitan Transportation Commission, One Bay Area (Oakland: MTC, 2013).
It provides guidelines for bus stop amenities based on ridership levels. All three documents will be referred to in the next phase of the Pedestrian Access to Transit Plan, when VTA will conduct field review of focus areas.

3.4 Local Pedestrian-Related Plans

At the local level, city governments prepare and adopt pedestrian plans to meet the needs in their community. To different extents, the 15 cities in Santa Clara County, VTA, and County of Santa Clara all address pedestrian improvements in their adopted planning documents. More than seventy local plans were reviewed to understand local planning efforts related to pedestrian access to transit, and identify the projects for inclusion in the Pedestrian Access to Transit Plan. These documents identify more than 240 projects near transit that could potentially be included in the Pedestrian Access to Transit Plan.

Broad categories of the planning documents reviewed are described below:

3.4.1 Capital Improvement Programs

Local governments update Capital Improvement Programs (CIP) annually, bi-annually, or for a longer term of 4-5 years. Capital improvement programs include projects that the city expects to fund over the timeframe of CIP. For pedestrian facility improvements, CIPs suggest detailed road geometry improvements, signal modifications, and pedestrian facility installation, etc... Reviewing CIPs helps to identify the projects that will be implemented in the short-term. Projects listed in CIPs will generally not be included in this plan because these projects are more likely to have secure implementation funds and to be implemented in the near future.

3.4.2 Transit Center and Station Area Plans

Transit center and station area plans are master development plans for areas around major transit facilities. They are long-range plans which propose street improvement and land development to support an existing or future major transit facility and the surrounding activities. These planning documents commonly cover land use and circulation planning in the area. The study area is typically selected by walkable (0.5 mile) or bikeable (2 miles) access to the transit facility. *Santa Clara Station Area Plan, Milpitas Transit Area Specific Plan, Diridon Master Plan, Eastridge Transit Center Development and Access Plan, and Lawrence Station Area Plan* are examples of transit center and station area plans in Santa Clara County. These planning documents commonly propose details about circulation patterns, pedestrian connections, the passenger waiting area, etc... Locations that are proposed by these planning documents for pedestrian improvements are candidates for inclusion in the VTA Pedestrian Access to Transit Plan project list.

3.4.3 Corridor Plans

Corridor Plans are long-range, local planning documents to guide the transportation, land use, and economic activities along an urban street. The corridor plans in Santa Clara County support future or existing transportation networks, preserve historic characteristics, create pedestrian-friendly environments, and enhance commercial activities. Locations that are proposed by these planning documents for pedestrian improvements are candidates for inclusion in the VTA Pedestrian Access to Transit Plan project list.

Examples of reviewed corridor plans include *Saratoga Village Pedestrian Enhancement Plan, Winchester Boulevard Master Plan, and The Alameda Plan for The Beautiful Way.*
Another example are the El Camino Real precise plans which have been adopted or are in progress by the cities along the El Camino Real corridor. Cities of Santa Clara and Mountain View are in the process of developing precise plans for the corridor. The City of Sunnyvale adopted an El Camino Real Precise Plan in 2007. The El Camino Real precise plans will support future transit projects along the corridor by providing design guidelines and development strategies for mixed-used development and a multi-modal transportation system.

3.4.4 Trail and Road Overpass/Underpass Improvement Projects

This group of planning documents includes improvements to enhance pedestrian and bicycle connectivity. Surrounding land uses and activities are not generally addressed in the plans. Examples of these planning documents are the Adobe Creek-Highway 101 Pedestrian and Bike Overpass-Underpass Feasibility Study in Palo Alto and the Stevens Creek Trail Feasibility Study in Los Altos.

Locations that are proposed by these planning documents are candidates for inclusion in the VTA Pedestrian Access to Transit Plan project list, but only the locations which provide access to transit facilities.

3.4.5 Community-Based Transportation Plans

Community-based transportation plans provide improvement strategies for all modes of transportation in a community. These strategies are made based on extensive community outreach and neighborhood meetings. VTA has developed Community-Based Transportation Plans for Gilroy, East San Jose, Milpitas, and Alviso. VTA’s community-based transportation plans focus on MTC’s Lifeline Transportation Report’s selected areas and Communities of Concern in Santa Clara County. The community-based plans propose improvements to transit accessibility and services, pedestrian and bicycle infrastructure and other improvements.

Locations that are proposed by these planning documents for pedestrian improvements are candidates for inclusion in VTA’s Pedestrian Access to Transit Plan project list.

3.4.6 Citywide Pedestrian Plans

Citywide Pedestrian Plans are long-range plans for pedestrian improvements in the entire city based on the neighborhood and land use characteristics of the area. Local pedestrian plans are typically consistent with countywide long-range plans such as VTA’s Valley Transportation Plan. Table 3.1 lists the citywide pedestrian plans in Santa Clara County.

Citywide pedestrian plans identify priority locations for enhancing pedestrian facilities. These locations could be downtown, areas adjacent to transit, schools, trails, major commercial corridors, and historic areas. Citywide pedestrian plans typically propose design guidelines for each of these area types.

Locations that are proposed by these planning documents for pedestrian improvements are candidates for inclusion in the VTA’s Pedestrian Access to Transit Plan project list if they provide access to transit facilities.
Table 3.1: Citywide Pedestrian Plans in Santa Clara County

<table>
<thead>
<tr>
<th>City</th>
<th>Document Name</th>
<th>Year Adopted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palo Alto</td>
<td>City of Palo Alto Bicycle and Pedestrian Transportation Plan</td>
<td>2012</td>
</tr>
<tr>
<td>Mountain View</td>
<td>Pedestrian Master Plan</td>
<td>2013</td>
</tr>
<tr>
<td>Cupertino</td>
<td>Cupertino Pedestrian Transportation Plan</td>
<td>2002</td>
</tr>
<tr>
<td>Los Altos</td>
<td>Los Altos Pedestrian Master Plan</td>
<td>In Process (as of June 2014)</td>
</tr>
<tr>
<td>San Jose</td>
<td>San Jose Pedestrian Master Plan (policy document)</td>
<td>2008 (Administrative Draft)</td>
</tr>
</tbody>
</table>

3.4.7 General Plans and Area Specific Plans

City’s General and Master Plans are policy documents for long-term developments and include different subjects such as land use, transportation, safety, natural environment, and historic preservation. Pedestrian planning items are typically included in the circulation or transportation element of the General Plans.

In 2010, California Office of Planning and Research (OPR) updated the General Plan Guidelines to modify the circulation element guidelines to support multi-modal transportation system planning. The update was adopted to fulfill the requirement for AB 1358, the California Complete Streets Act. Starting in January 2011, all cities and counties are required to include a multi-modal transportation element in their General Plan update. VTA has worked closely with the Member Agencies within the County to review their General Plans and ensure that they meet the requirements of AB1358. To date, the majority of member agencies have met the requirements, and those that have not yet are in the process of doing so.
4 Santa Clara County’s Walkability

Most people know a good walking environment when they experience it and can easily identify streets and intersections that are uncomfortable or inconvenient. A successful walkable place typically is combination of several positive components that happen in a location such as land use density and diversity, environment safety, street design, access to transit and other urban amenities, and willingness of real estate developers and city governments to invest in that location. The necessary ingredients for a high quality walking environment have been summarized by many, and include characteristics such as “density, diversity, and design,” or tenets such as “a walk must be interesting, safe and useful.” VTA’s Community, Design and Transportation Manual presents four land use and street design principles that should be addressed to create walkable communities:

**Place Making** – planning and designing buildings and spaces in such a way that people want to be there through human-scale design

**Access by Proximity** – clustering complementary land uses together with careful consideration of access by foot, bicycle, transit, and automobile

**Interconnection** – designing land uses so that they connect to adjacent uses, and do not preclude future connections

Choice – broadening the range of choices for residents, including well-designed denser residences coupled with quality public spaces and local amenities

These four principles roughly correlate to the “D’s” often cited by urban planners: density, diversity, design, destination accessibility, and distance to transit. Academic research has shown these “D’s” to have a modest to moderate and cumulative effect on how much people walk. In 2010, researchers Reid Ewing and Robert Cervero conducted a meta-analysis of academic literature that explored the relationship between the built environment and travel. They found that walking is most strongly related to measures of land use diversity, intersection density (a measure of street network design), and the number of destinations within walking distance.

Given the importance of the built environment on walkability, how then can one describe the walkability of Santa Clara County as a region? Qualities that affect walkability are easier to discern at a smaller scale— that of a neighborhood or street than at a regional level. However, there are several characteristics that can be shown at a regional level to give a general picture of walkability in Santa Clara County. These are discussed below.

4.1 Street Networks

For most people, the main deciding factor in whether to walk or not is distance. The average distance of a walking trip in the Bay Area is just under three-quarters of a mile—about 12 minutes.

The design of a street network directly affects how far one must walk to reach a destination. Grid-like street networks, with short}

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19 Valley Transportation Authority, *Community Design and Transportation Manuals* (San Jose, California: VTA, 2003).
block lengths and few dead-ends—like those found in historic downtowns throughout the County—are ideal for walking trips. A highly connected street network translates to shorter distances between destinations. High connectivity also means there is a greater variety of routes to choose, so a pedestrian may be able to choose a route that avoids a high-traffic street or difficult intersection.

In contrast, curvilinear streets with looping roads, cul-de-sacs are much less connected. Street networks with low connectivity have large blocks, dead-ends, and few connections. These include many of the business parks and industrial centers located along the US 101 and Hwy280 corridors, and residential neighborhoods on the outer edges of the urbanized portion of Santa Clara County.

At a regional level, street connectivity can be approximated by looking at intersection density.21 22 23 The more intersections per mile, the more connected the network. Several research studies have shown that higher intersection densities are correlated with higher rates of walking to work and walking for other purposes and with more miles walked per person. Based on the research, “intersection density and street connectivity has higher impact on walking rate than land use mix and density.” Walking in an urban environment with smaller blocks and more intersections is more comfortable than walking along a big block.24 Ewing and Cervero’s meta-analysis estimates that a doubling of intersection density increases walking trips by 39%, increases transit use by 23% and decreases vehicle miles traveled by 12%.25

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Figure 4.1 illustrates street network connectivity in three different neighborhoods at the same scale, illustrating how intersection density is affected by connectivity.

Figure 4.2 maps intersection density per mile in Santa Clara County. Areas with higher intersection density have higher connectivity and are potentially more walkable than areas with lower intersection density. Connectivity can potentially be improved by creating new connections for pedestrians such as pedestrian-only bridges or undercrossings, pedestrian cut-throughs at the end of cul-de-sacs, and new trails and trailheads to existing trails.
Figure 4.2: Intersection Density in Santa Clara County
4.2 Land Use Mix/Diversity

Locating many different uses within one neighborhood reduces how much people drive. By mixing uses, destinations are closer together, reducing the distance and time traveled and enticing people to walk, bike, or take transit in lieu of driving. This is particularly true for neighborhoods where there are similar numbers of jobs and workers and where residential areas are located close to stores.

Based on Ewing and Cervero's meta-analysis, doubling land use diversity (measured by land use heterogeneity) may:

- Increase walking trips by 15%
- Increase transit use by 12%
- Decrease vehicle miles traveled by 9%

A doubling of the jobs-worker balance may:

- Increase walking trips by 19%
- Decrease vehicle miles traveled by 2%

Figure 4.3 shows the land use diversity of Santa Clara County, based on parcel data provided by the County Assessor’s Office. The map categorizes parcels into five land use types: single-family residential, multi-family residential, commercial, job center, school, and park-recreation-agriculture. As shown in the map, most land uses are segregated from each other. Most the county land area is dedicated to residential uses, with commercial uses located along major roadways, and job centers located in the north along Highways 101, 880, and 237 and to a lesser extent, along Highway 280. The areas with the highest mix of land uses include downtowns and small areas along major corridors.

Land use mix can also be measured by jobs-worker balance. Figure 4.4 shows the jobs-worker balance in Santa Clara County, by Census tract. Job-worker balance is calculated by dividing the total number of jobs in a Census tract by the total number of workers who live in that tract. When a Census Tract has similar numbers of jobs and resident workers, it is balanced, and people may drive less. In areas where jobs and resident workers are imbalanced, people drive more. If there are more jobs than resident workers, it is jobs-rich, and workers will generally commute in to that tract. If there are more resident workers than jobs, it is housing rich, and people will have to commute out of that tract to work.

Areas with a jobs-worker balance between 0.8 and 1.2 are considered balanced. As can be seen in Figure 4.4, though the jobs-worker ratio may be balanced at the city or county level, at a smaller geographic scale—a walkable scale—one finds that jobs and housing are not distributed equally within cities. Job-rich census tracts are located in north county and along the 101, 237, 87 and 17 highway corridors. Most of the rest of the county is housing-rich. As a result, even within cities with good jobs-housing balance, people may not be able to walk to work, since the land uses are segregated. These findings illustrate that scale matters when making decisions to support walking.

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Figure 4.3: Land Use Diversity in Santa Clara County
Figure 4.4: Job-Worker Balance in Santa Clara County
4.3 Density
People are more likely to walk in denser neighborhoods, but the effect of density on walking rates is not as strong as street network design or land use mix. By locating residential, commercial, and jobs close together, higher density communities encourage people to walk, bike, or take transit.

Ewing & Cervero’s meta-analysis estimates that doubling household/population density may reduce vehicle miles traveled by 4%, increase walking rates by 7%, and increase transit use by 7%. Doubling job density has lower effects, and may increase walking rates by 4%, and increase transit use by 1%.

Figure 4.5 shows residential density and Figure 4.6 shows job density, using American Community Survey data. As expected given the land use mix and jobs-worker maps discussed above, the residential density and job density maps are negative images of each other. Jobs are concentrated in the north and along the area bounded by Highway 237, US 101 and Highway 880. Residential density is low throughout Santa Clara County—most census tracts are 5 to 6 dwelling units per acre and are not supportive of walking as a transportation mode.

4.4 Urban Design
Urban design is important for creating an interesting, comfortable walking environment. SPUR’s 2013 report, Getting to Great Places, defines urban design as addressing:

- The placement, orientation, and form of buildings
- Site planning, or the physical arrangement of buildings and uses within development projects
- Multiple scales, from the human body to the neighborhood or district
- Circulation and access for all travel modes
- Human experience, activity, social interaction, and travel behavior
- The arrangement and design of streets and open spaces
- The connection of buildings to the public realm and to one another
- Above all: the integration of these things

There are numerous urban design qualities that affect the perception of walkability. VTA’s Community Design, and Transportation Manual provides excellent overall guidance and best practices on urban design to support walking. Additionally, SPUR’s Getting to Great Places report identifies seven components for creating walkable urban areas:

- Fine-grained pedestrian circulation
- Buildings that oriented to streets and open spaces
- Land uses that support public activity
- Locating parking behind or below buildings
- Addressing human scale components in building designs
- Clear, continues pedestrian access
- Complete streets

As important as urban design is in creating a comfortable, interesting walking environment, it is not possible to evaluate at a

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countywide level. Additionally, these components are the responsibility of many different entities, ranging from landowners, private developers, city and county staff, to Caltrans and VTA, and cannot all be addressed by the Pedestrian Access to Transit Plan. However, urban design components and their integration will be considered when VTA evaluates focus areas for pedestrian-related improvements. Recommendations for improvement—appropriate to the scope and scale of the Pedestrian Access to Transit Plan—will be identified.
Figure 4.5: Residential Density in Santa Clara County
Figure 4.6: Employment Density in Santa Clara County
4.5 Perception of Safety and Comfort

Elements of the built environment can affect a person’s sense of safety and comfort when walking. In recent years, transportation planners and traffic engineers have developed a variety of tools to measure the quality of a pedestrian environment. These tools are called Quality of Service measures, and use specific measureable characteristics of a street, sidewalk, or intersection to come up with a score that generally measures the pedestrian comfort of a street segment or intersection. The calculations underlying Quality of Service measurements are typically backed up by research that supports how important each characteristic is to providing a comfortable walking environment. Many Quality of Service tools measure similar characteristics, some of which are listed below.

In general, pedestrians feel safer from traffic and more comfortable walking along a street if there are:

- Sidewalks, paths or other dedicated pedestrian facilities
- Wider sidewalks
- Continuous buffer from adjacent travel lanes (e.g. landscaping strip, fence, parked cars)
- Low speed traffic
- Low traffic volumes, particularly low truck volumes

Pedestrians feel safer crossing a street if there are:

- Short crossing distances
- Fewer travel lanes to cross
- Marked crosswalks
- Lower traffic speeds

It is not possible to evaluate these factors at a countywide level. There is no countywide map or inventory of pedestrian infrastructure—including basic infrastructure such as sidewalks. Several local jurisdictions have mapped sidewalks, but it is not a universal practice.

Sidewalk gaps and the presence or lack of components that create a high-quality pedestrian environment will be noted when VTA evaluates Focus Areas for pedestrian-related improvements.

4.6 Implications for Santa Clara County

The Pedestrian Access to Transit Plan is working within the existing parameters of the built environment. SPUR’s “Getting to Great Places” report notes that:

“Silicon Valley, the most dynamic and innovative economic engine in the world, is not creating great urban places. Having grown around the automobile, the valley consists largely of low-slung office parks, surface parking, and suburban tract homes. But tastes and values are rapidly moving away from strictly suburban lifestyles. Today’s firms and top talent are increasingly demanding engaging places, diverse experiences, and convenient amenities. Simply put, they are demanding urbanism.”

Generally, land uses in Santa Clara County are dispersed and separated. Most housing is not within walking distance of retail, jobs, and services, making it difficult to attend to daily life without a car. Low residential densities and separated land uses make it difficult to serve some areas with transit. However, there are

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29 This section discusses perception of safety, Section 6 discusses pedestrian-related collisions in Santa Clara County.
locations within the county that do support walking and transit, including historic downtowns, and areas along major corridors like El Camino Real, Alum Rock, and Stevens Creek. Many cities are looking to improve the pedestrian environment, and support good pedestrian access, improved transit service, or higher density, mixed use development.

Improving walkability and increasing walking rates in Santa Clara County requires a multi-jurisdictional, multi-disciplinary approach to address land use, transportation infrastructure, and urban design elements. Stakeholders include public agencies, private developers, elected officials, community members, landowners, transit agencies, and county, regional and state agencies. To date, the cities, County, and VTA have conducted numerous planning and policy efforts that support walkable communities. However, the challenge of implementing these plans, working with different stakeholders, with differing and sometimes competing priorities, remains.

Targeted improvements at the local level can make a big difference in shifting short trips to walking. It takes an able-bodied adult 15 minutes to walk a mile. Yet, in the Bay Area, more than half of all trips a mile or less are made by car. By filling in gaps in the pedestrian network, making new connections, and improving the urban design of a neighborhood, people can be enticed to walk that 15 minutes. By improving access to transit, the reach of the pedestrian increases dramatically, removing that many more cars from the road.

The Pedestrian Access to Transit Plan takes a targeted approach to identifying improvements, with a focus on improvements that will improve the convenience, safety, and comfort of the walking environment, and in particular transit access.
5 Walking Behavior

The summary given so far describes elements of the built environment in Santa Clara County that affect walking. This section summarizes results of counts and surveys to describe actual walking behavior in the County.

Understanding walking rates, locations, and purposes is important for several reasons, including, but not limited to:

- Allows agencies to direct limited resources to locations that have the highest level of pedestrian use
- Allows agencies and organizations to tailor programs and infrastructure to pedestrian needs
- Allows one to calculate vehicle exposure rate, thus identifying the riskiest locations for pedestrian collisions
- Informing before-after studies to determine the success of a project intended to increase walking

5.1 Pedestrian Counts

Field counts are necessary to understand actual pedestrian volumes at specific locations. Pedestrian counts are often collected by local agencies as part of infrastructure projects or regular traffic count programs. Local data are not currently collated at the countywide level.

In 2012, VTA collected pedestrian counts at 252 intersections along the Congestion Management Program’s (CMP) roadway network. In accordance with state statute, VTA monitors the CMP roadway network regularly to ensure that it conforms to the CMP traffic level of service standard (LOS). LOS is currently defined as a maximum level of traffic congestion.

The intersections included in the counts tend to be large, high-volume and as a result, pedestrian counts at these locations may not represent the true pedestrian activity in any given area. Figure 5.1 shows pedestrian counts collected at CMP intersections in 2012. Counts are highest in downtown San Jose, downtown Mountain View, and along the high-ridership transit corridors of El Camino Real, and Santa Clara/Alum Rock.

Transit ridership can be used as a rough proxy for pedestrian counts, given that the majority of transit trips either end or begin with a walking trip, and over a quarter of all walking trips are to access or egress transit. VTA collects transit boardings and alightings by stop/station on an ongoing basis.

Figure 5.1: PM Peak Hour Pedestrian Counts at CMP Intersections (September 2012)
Since 2002, VTA has collected pedestrian counts at ten additional locations. Data from the last five counts are summarized in Table 5.1 and Figure 5.2. Counts are collected approximately every two years, and include counts of pedestrians by approach to the intersection (e.g., northbound) and side of street (e.g., east side) during the morning (7 – 9 AM), midday (11 AM – 1 PM) and evening (4 – 6 PM) peak periods. The counts have been tabulated for the maximum peak-hour within each two-hour count period. VTA is revisiting this count program and will likely develop an alternative program in 2014-15 calendar year.

Table 5.1: Peak Hour Pedestrian Counts at Selected Intersections (2008-2012)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunnyvale &amp; Washington</td>
<td>45</td>
<td>82</td>
<td>68</td>
<td>76</td>
<td>142</td>
<td>126</td>
<td>63</td>
<td>371</td>
<td>238</td>
<td>195</td>
<td>476</td>
<td>276</td>
</tr>
<tr>
<td>San Antonio &amp; El Camino Real</td>
<td>68</td>
<td>135</td>
<td>104</td>
<td>85</td>
<td>146</td>
<td>171</td>
<td>105</td>
<td>227</td>
<td>172</td>
<td>157</td>
<td>221</td>
<td>208</td>
</tr>
<tr>
<td>Castro &amp; Villa</td>
<td>200</td>
<td>970</td>
<td>512</td>
<td>296</td>
<td>1,454</td>
<td>1005</td>
<td>249</td>
<td>1,166</td>
<td>773</td>
<td>254</td>
<td>1,212</td>
<td>844</td>
</tr>
<tr>
<td>Borregas &amp; Moffet Park</td>
<td>2</td>
<td>27</td>
<td>4</td>
<td>7</td>
<td>13</td>
<td>6</td>
<td>11</td>
<td>15</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>N. First &amp; Tasman</td>
<td>128</td>
<td>163</td>
<td>207</td>
<td>221</td>
<td>420</td>
<td>206</td>
<td>63</td>
<td>139</td>
<td>102</td>
<td>96</td>
<td>228</td>
<td>187</td>
</tr>
<tr>
<td>Winchester &amp; Stevens Creek</td>
<td>20</td>
<td>54</td>
<td>86</td>
<td>48</td>
<td>95</td>
<td>121</td>
<td>45</td>
<td>99</td>
<td>123</td>
<td>47</td>
<td>104</td>
<td>150</td>
</tr>
<tr>
<td>Main &amp; Tasman</td>
<td>32</td>
<td>22</td>
<td>21</td>
<td>93</td>
<td>34</td>
<td>11</td>
<td>90</td>
<td>24</td>
<td>43</td>
<td>119</td>
<td>28</td>
<td>45</td>
</tr>
<tr>
<td>Monterey &amp; Tully</td>
<td>41</td>
<td>59</td>
<td>71</td>
<td>85</td>
<td>87</td>
<td>131</td>
<td>77</td>
<td>129</td>
<td>78</td>
<td>77</td>
<td>142</td>
<td>180</td>
</tr>
<tr>
<td>24th &amp; Santa Clara</td>
<td>107</td>
<td>67</td>
<td>117</td>
<td>151</td>
<td>127</td>
<td>305</td>
<td>160</td>
<td>223</td>
<td>272</td>
<td>220</td>
<td>196</td>
<td>187</td>
</tr>
<tr>
<td>Los Gatos &amp; Blossom Hill</td>
<td>27</td>
<td>25</td>
<td>34</td>
<td>65</td>
<td>46</td>
<td>28</td>
<td>65</td>
<td>39</td>
<td>77</td>
<td>63</td>
<td>72</td>
<td>50</td>
</tr>
<tr>
<td>TOTALS</td>
<td>670</td>
<td>1604</td>
<td>1224</td>
<td>1127</td>
<td>2564</td>
<td>2110</td>
<td>928</td>
<td>2432</td>
<td>1883</td>
<td>1229</td>
<td>2683</td>
<td>2127</td>
</tr>
</tbody>
</table>
5.2 How much are People Walking?

There are a variety of surveys that provide useful information on how frequently people walk, how far they walk, and the purpose of their walking trip. This section highlights relevant data drawn from several of these major travel surveys.

According to the 2009 National Household Travel Survey and the 2010-2012 California Household Travel Survey:

- Approximately 12.5% of all trips in California are made on foot.
- Including walking to/from transit, it is estimated that there are 1.3 billion walking trips in the Bay Area annually.\(^\text{31}\)
- The average length of a walk in Bay Area is 0.71 miles.
- The hypothetical average California resident (age 5 and up) takes a walk every other day.
- In California, the majority of people walk at least once a week, with nearly 70% reporting walking 4 or more times in the past week.

There is significant opportunity for more walking trips to be made. It takes an able-bodied adult approximately 15 minutes to walk a mile. However, in the Bay Area, nearly 55% of all trips of a mile or less are made by car. Only 38% of these are made on foot. These trips—short trips that originate and end at the same destination—are candidates for shifting modes.\(^\text{32}\)

5.2.1 Walking Rates and Land Use

Walking rates vary by land use. This is particularly true for the walking behavior of children. In California, children ages 5 to 15 living in urban areas walk 35% more than children living in suburban areas. Figure 5.3 compares the average annual walking trips made by children and adults in urban, suburban and “other” areas. “Other” areas include rural areas.

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\(^{31}\) Nancy Mc.Gurkin, Walking and Bicycling in California: Analysis of CA NHTS (Davis, California: University of California, Institute of Transportation Studies, 2012).

\(^{32}\) Ibid.
5.3 When are people walking?
The majority of walking trips occur during the day. This is especially true for children. As shown in Figure 5.4, over three-quarters of adults’ walking trips occur between 6 am and 6 pm, while 86% of children’s walking trips occur between these hours.

![Figure 5.4: Percentage of Walk Trips by Time of Day for Children and Adults in California](image)

5.4 Commuting to Work
People who usually walk to work are very loyal to their travel mode. On any given day, 80% of Bay Area commuters who usually walk to work will walk, 9.6% will drive alone, 4.3% will carpool, 5.3% will take transit, and 2.4% will use some other way. The only other travel mode that has that high loyalty is drive alone, where on any given day, 92.5% of commuters who usually drive will drive. For commuters who typically take transit, 68.4% will take transit on any given day.33

In Santa Clara County, the percentage of people who walk to work has not changed over the last decade. In 2000, 1.8% of workers walked to work, whereas from 2010 to 2012, between 1.7% and 2.1% walked to work.34 As shown in Figure 5.5, Santa Clara County has one of the lowest walk commute rates in the Bay Area, with the exception of Contra Costa County. In comparison, San Mateo County’s walking rate for the same time period is between 2.2% and 3% and Alameda County’s is between 3.5% and 3.9%.

Figure 5.5 shows where concentrations of people who walk to work live. Darker census tracts have higher percentages of walk commuters. Areas with higher percentages include downtown Palo Alto and Stanford, pockets in Santa Clara just east of Lawrence Expressway and near Santa Clara University, the Rose Garden neighborhood in San Jose, downtown San Jose—particularly near San Jose State University, agricultural areas north of Morgan Hill and downtown Morgan Hill.
Figure 5.6: Percent of Residents Who Walk to Work (ACS 2008-2012, Journey to Work)
5.5 Why do people walk?

As can be seen in Table 5.2, people walk for a variety of reasons. Walking purpose varies by the age of the pedestrian. The most common reason why children walk is to get to or from school. The most common reason why adults walk is for exercise, followed by shopping/errands. Note that only 10.7% of adult walking trips are work-related. However, since commute trips contribute significantly to congestion, it is important to find ways to permit more people to walk to work.

Table 5.2 Walking Trip Purpose for Children and Adults

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Age 5 to 15</th>
<th>Age 16 and up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go to school</td>
<td>34.5%</td>
<td>n/a</td>
</tr>
<tr>
<td>Shop/errands</td>
<td>12.1%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Other Social/Rec</td>
<td>20.2%</td>
<td>12.2%</td>
</tr>
<tr>
<td>Exercise</td>
<td>14.9%</td>
<td>23.8%</td>
</tr>
<tr>
<td>Work and Work Related</td>
<td>n/a</td>
<td>10.7%</td>
</tr>
<tr>
<td>Pet Care/Walk the Dog</td>
<td>n/a</td>
<td>7.2%</td>
</tr>
<tr>
<td>All other reasons</td>
<td>16.1%</td>
<td>24.7%</td>
</tr>
<tr>
<td>Total % of Walk Trips</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: National Household Travel Survey California Add-On 2009.

The data above do not include walking trips to transit. Walking trips to and from transit are estimated to add 33% on to the total number of walking trips taken in the Bay Area. In the Bay Area, 78.6% of transit riders walk to their transit stop, 5.7% transfer, 8.8% drive alone, and 2.8% bike.35 In comparison, 71% of VTA customers walk to their transit stop, 19% transfer, 4% drive alone, and 3% bike.36 Access mode to transit is further discussed in Section 7.4.

5.6 Socio-Demographic Characteristics of Frequent Walkers

There are socio-demographic differences between people who walk and people who report not walking at all. These are shown in Table 5.3. People who walk tend to be younger and have higher incomes than those who do not walk at all. People who walk a lot tend to be more highly educated than those who do not walk at all. Asians and Hispanics of any race are less likely to walk than African-Americans, Whites, and people of other races. New immigrants are the most likely to walk, with nearly 40% reporting walking seven or more times in the prior week.

35 Ibid.

36 Valley Transportation Authority, VTA On-Board Customer Survey, 2006 (San Jose, California: VTA, 2006).
### Table 5.3: Socio-Demographic Characteristics of California Walkers, by Frequency of Reported Walking

<table>
<thead>
<tr>
<th>Person Characteristic</th>
<th>None (zero last week)</th>
<th>Some (1-6 walks last week)</th>
<th>Frequent (7+ walks last week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age</td>
<td>45.5</td>
<td>43.1</td>
<td>44.5</td>
</tr>
<tr>
<td>Mean Income</td>
<td>$59,483</td>
<td>$63,912</td>
<td>$62,657</td>
</tr>
<tr>
<td>Percent Working</td>
<td>61.6</td>
<td>63.9</td>
<td>60.3</td>
</tr>
<tr>
<td>Percent by Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or Less</td>
<td>47.9</td>
<td>39.8</td>
<td>38.4</td>
</tr>
<tr>
<td>Some College or BA</td>
<td>43.6</td>
<td>46.5</td>
<td>45.7</td>
</tr>
<tr>
<td>Grad Degree or Higher</td>
<td>8.5</td>
<td>13.7</td>
<td>16.0</td>
</tr>
<tr>
<td>Percent by Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>32.7</td>
<td>46.3</td>
<td>21.0</td>
</tr>
<tr>
<td>Asian</td>
<td>37.6</td>
<td>46.6</td>
<td>15.9</td>
</tr>
<tr>
<td>Hispanic (of any race)</td>
<td>37.2</td>
<td>46.7</td>
<td>16.1</td>
</tr>
<tr>
<td>Other</td>
<td>30.3</td>
<td>45.8</td>
<td>23.9</td>
</tr>
<tr>
<td>White</td>
<td>31.7</td>
<td>45.4</td>
<td>22.9</td>
</tr>
<tr>
<td>New Immigrants (2 years or less)</td>
<td>24.2</td>
<td>39.1</td>
<td>36.8</td>
</tr>
<tr>
<td>Percent for full sample 16+</td>
<td>34.0</td>
<td>46.0</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Source: Adapted from Table 13, Nancy McGuckin, Walking and Biking in California: An Analysis of California National Household Travel Survey 2009. Institute of Transportation Studies, U.C. Davis. August 2012.
5.7 Barriers to Walking More

The NHTS California Add-On asked respondents to choose from a list reasons why they didn't walk more. People could choose more than one response. Figure 5.7 summarizes the responses.

Many of the responses can be categorized into three topics that relate to the built environment: Density and Destination, Safety and Perception, and Facilities.

The top reason, with 56% of respondents citing it, was “too busy.” This response can be interpreted in at least two ways: a) people’s schedules are so tight that they don’t make time for walking, even for exercise b) people can’t walk because places are too far, or the street network is too circuitous, so it takes too long to walk there.

Distance to destinations could also be a factor in the fact that 27% of people choose “no shops or other interesting places to go” as a barrier.

Concerns for personal safety also rank highly. Nearly a third of respondents chose “not enough light at night” as a barrier, and 21% chose “fear of street crime.”

The Pedestrian Access to Transit Plan will seek to address these barriers by identifying locations for new pedestrian connections in the existing network, making recommendations for improved pedestrian infrastructure, and addressing safety.

Figure 5.7: Barriers to Walking More
5.8 Special Groups to Consider in Pedestrian Planning

The pedestrian experience is not the same for all people—it varies by a person’s age, ability, and even race. Any analysis of the pedestrian environment and recommended improvements to that environment should understand and address this variation in experience. This is also true of education, encouragement, and enforcement efforts that seek to change people’s behavior.

5.8.1 Age

Youth and seniors are more likely to walk than people of other ages, and have the highest per capita rates of pedestrian-motor vehicle collisions of all age groups. Of these two age groups, the risk of an older pedestrian dying in a motor vehicle collision is much higher.37

The act of crossing a street requires learned motor skills, decision-making, and cognitive skills. Children must learn and practice these skills in order to safely cross the street. Young children’s skills are developing, and they cannot be expected to predictably follow “rules of the road.” A combination of youth safety education/training and infrastructure improvements that reduce the risk and severity of pedestrian-vehicle collisions can benefit child pedestrians.

As people age, physical and sensory abilities can change. In comparison to younger pedestrians, older pedestrians may have reduced flexibility, agility and strength and reduced visual acuity, contrast sensitivity, and visual field. As a result, older pedestrians may have difficulty scanning for traffic and avoiding potential collisions with motor vehicles. Infrastructure improvements that allow increased time for crossing the street, increase the contrast of crosswalks, and increase driver yielding can benefit older pedestrians.

5.8.2 Ability

In Santa Clara County, there are approximately 70,750 people with an ambulatory disability living in the County.

People who have a travel disability make a variety of adjustments to accommodate their disability. Figure 5.8 shows the types of accommodations used by people with travel disabilities for all of California.

![Figure 5.8: Accommodations of People who Report a Travel Disability (California)](chart)

Source: National Household Travel Survey California Add-On 2009

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5.8.3 Race
Racial and ethnic minorities are disproportionately represented in traffic-related pedestrian fatalities. Nationally, pedestrian fatality rates for Black and Hispanic men are twice the rate for White men, according to the Center for Disease Control: 3.93 and 3.73 per 100,000 population vs. 1.78. Minority pedestrians are more likely to be killed in a motor vehicle crash, even after controlling for increased traffic in urban areas, socioeconomic status, and alcohol use. There is research that suggests these disparate outcomes are due to drivers’ subtle racial attitudes and biases. A Portland, Oregon study found that drivers were two times likely to yield to black pedestrians than to white pedestrians, all other things being equal.38

Prioritizing minority communities for pedestrian safety improvements and educational campaigns for drivers may benefit minority pedestrians.

5.9 Implications for Santa Clara County
Walking rates in Santa Clara County are lower than walking rates in comparable counties in the Bay Area, and the percentage of people walking to work has not changed since 2001. At the same time, there is opportunity for increasing how much people walk, given that more than half of trips a mile or less are driven. If key barriers are addressed, and the unique needs of different demographic groups are supported, it may be possible to significantly shift people out of their cars.

38 Kimberly Barsamian Kahn et al., Racial Bias in Driver Yielding Behavior at Crosswalks (Portland: Oregon Transportation Research and Education Consortium, 2014).
Collisions

Motor vehicle collisions are the leading cause of unintentional death in the United States. 39 Nationally, in 2012, 4,743 pedestrians died as the result of a pedestrian-vehicle collision (14% of all motor vehicle fatalities).

Despite this high number, the Centers for Disease Control and Prevention (CDC) notes that injuries resulting from motor vehicle accidents are a “winnable battle” because of the great impact these collisions have on health but the relative ease at which this impact can be reduced through behavior modification and roadway design. 40 Since all transit riders are pedestrians for some part of their journey to the bus stop or train station, they will benefit from safe pedestrian conditions while accessing transit.

6.1 Geographic Distribution of Collisions in Santa Clara County

Pedestrian collisions are not evenly distributed across Santa Clara County. Figure 6.2 shows a pedestrian-vehicle collision map for 2003-2012, weighted by the severity of the collision, with fatal and severe collisions in the darkest shade and non-injury collisions in the lightest shade.

4,300 pedestrian-vehicle collisions occurred between 2003 and 2012, which represents 7% of all motor vehicle collisions in Santa Clara County. Of the 4,300 pedestrian-vehicle collisions, 237 (6%) were fatal and 521 (12%) resulted in severe injury. Although data shows that San Jose, Palo Alto, Santa Clara, Sunnyvale, and Milpitas experience higher numbers of motor vehicle collisions than other cities in the county, the most severe injuries occur primarily along major corridors in Mountain View, Sunnyvale, and San Jose.

It is important to note that the distribution of collisions across the county does not necessarily equate to risk of collision because the distribution does not account for pedestrian volumes. Areas with higher volumes of pedestrians may see greater numbers of collisions simply because there are more pedestrians, not because the locations are risker. Additional data and field observations will be needed to assess risk factors at individual locations.

6.2 Demographics of Victims

Despite a decline in motor vehicle traffic collisions between 2003 and 2012, in 2012 motor vehicle collisions were still one of the leading causes of injury among all age groups in Santa Clara County, ranking first among ages 5-14 and 25-34, and second among all other age cohorts. 41 Despite this decline, pedestrian-involved collisions remained stable at approximately 430 collisions per year during the same time frame (Figure 6.1).

---

Children and adolescents are more at risk of being involved in a pedestrian-vehicle collision because of their inability to fully process a situation and make decisions in the same way as an adult. Nationwide, approximately 20% of children between the ages of 5 and 9 who died from a vehicle collision were pedestrians at the time of the collision.\(^{42}\)

6.2.2 Seniors
Seniors, like children, are more at risk of being in a pedestrian-involved collision and much more likely to be killed as the result of a pedestrian-vehicle collision than other age cohorts. In Santa Clara County, between 2002 and 2011, 22% of collision victims over 65 years of age were within a half mile of a senior center and 46% were within one mile.\(^{43}\)

6.3 Type of Collisions

6.3.1 Unsafe Speed
The number one contributing factor to vehicle collisions, and especially dangerous to pedestrians, is unsafe speed. In Santa Clara County between 2003 and 2012, 35% of all types of collisions involved unsafe travel speed. Of that 35%, 7% were pedestrian-involved collisions.

6.3.2 Distracted Driving
Distracted driving is any activity performed by the driver that diverts the driver's attention from the road. This includes eating, texting, talking on a cell phone, operating a radio, and other activities. Between 2009 and 2011, 12% of all collisions listed distracted driving as an associated factor in the motor vehicle traffic collisions report.\(^{44}\)

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\(^{44}\) Santa Clara County Public Health Department, Traffic Safety and Active Transportation in Santa Clara County (San Jose, California: County of Santa Clara, May 2014).
Figure 6.2: Pedestrian Involved Collisions in Santa Clara County – Weighted by Severity of Collision
6.3.3 Alcohol and Drug Use
Alcohol and drugs are major causes of injuries and deaths in motor vehicle collisions. The rate of alcohol-involved vehicle collisions between 2003 and 2012 has remained steady at more than 10%. In 2012 the California Office of Traffic Safety found that statewide, 14% of drivers tested positive for drugs and 7% tested positive for alcohol.\(^45\) In Santa Clara County, between 2003 and 2012, 6% of motor vehicle collisions were due to intoxication and accounted for 1% of all pedestrian-vehicle collisions.

6.3.4 Pedestrian Behavior
According to the Federal Highway Administrations report: Pedestrian Safety Guide for Transit Agencies:

“Pedestrians traveling to transit stops are frequently preoccupied with reaching the stop before the bus or train arrives. As a result, pedestrians who are running late may take more risks than they typically would under normal circumstances. Pedestrians traveling to the bus or train may exhibit some of the following behaviors.

- Running to catch transit
- Jaywalking, or crossing at locations that do not have pedestrian crossing facilities or safety enhancements
- Walking between stopped or parked vehicles, including buses
- Stepping into street to get around people waiting at a stop”

Between 2002 and 2012, pedestrian behavior violations accounted for 19% of the pedestrian-involved vehicle collisions in Santa Clara County. Of those pedestrian violations, 77% were due to a pedestrian not crossing at a crosswalk and 16% were due to jaywalking. The other 7% came from pedestrians in the roadway, pedestrians not yielding to cars at bridges or tunnels, or pedestrians walking in the bike lane.\(^46\)

Although pedestrian behavior is the reason for 19% of pedestrian-vehicle collisions, 81% of pedestrian-vehicle collisions are still due to driver behavior/other factors. Table 6.1 summarizes the primary types of collisions discussed in this section.

<table>
<thead>
<tr>
<th>Factor</th>
<th>All Vehicle Collisions</th>
<th>Pedestrian-Vehicle Collisions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Driver at fault:</strong> 81% of all pedestrian collisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsafe Speed</td>
<td>35%</td>
<td>7%</td>
</tr>
<tr>
<td>Distracted Driving</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>Intoxication</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td>Other Factors</td>
<td>47%</td>
<td>92%</td>
</tr>
<tr>
<td><strong>Pedestrian at fault:</strong> 19% of all pedestrian collisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not crossing at crosswalk</td>
<td>n/a</td>
<td>77%</td>
</tr>
<tr>
<td>Jaywalking</td>
<td>n/a</td>
<td>16%</td>
</tr>
<tr>
<td>Other pedestrian fault</td>
<td>n/a</td>
<td>7%</td>
</tr>
</tbody>
</table>

6.4 Countermeasures
In pedestrian-vehicle collisions, pedestrians and drivers attempt to use the same space at the same time. Consequently, the

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responsibility for many pedestrian-vehicle collisions is shared by pedestrians and drivers. As such, no single countermeasure will have a significant impact on collisions. A combination of engineering, education, and enforcement is required to reduce pedestrian-vehicle collisions and severity.

The application of countermeasures to pedestrian involved collisions should be context specific rather than a one-size-fits-all cure. For example, reducing travel speed requires both the perception of increased law enforcement as well as a redesign of the roadway geometry. In the case of distracted driving and alcohol and drug abuse, strict law enforcement and administrative license revocation have proven to reduce the number of incidents. Students near public schools and seniors near senior centers may benefit from better signage, ADA compliance, multi-lingual education. Education and awareness are key factors to change pedestrian behavior and to reduce the number and severity of collisions caused by pedestrian decisions; however, roadway redesign, greater connectivity, and good facilities are important methods to stop pedestrians from not crossing at crosswalks and from jaywalking.

The Pedestrian Safety Guide and Countermeasure Selection System identifies 67 countermeasures that can be divided into three categories: engineering, education, and enforcement. More information on these context-specific countermeasures can be found at http://www.pedbikesafe.org/PEDSAFE/countermeasures.cfm.

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7 Transit Services

Transit and walking are complementary. A comfortable pedestrian environment is the foundation for good access to transit, critical to attracting new riders, increasing ridership, and improving the overall travel experiences. A good transit system increases the distance a pedestrian can travel, and makes it possible to live everyday life without a car. Seventy-one percent of VTA customers walk from their origin to their station and 73% walk to their final destination, further emphasizing the importance of an attractive and safe walking environment for transit riders.51

7.1 Transit Service in Santa Clara County

Santa Clara County is served by several different bus and rail operators. Table 7.1 summarizes the variety of public transit service in the county. Not included in this table are the numerous private services such as employer shuttle buses.

<table>
<thead>
<tr>
<th>Operator</th>
<th>Type</th>
<th>Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTA</td>
<td>Light Rail, Bus</td>
<td>All Cities</td>
</tr>
<tr>
<td>VTA</td>
<td>Paratransit</td>
<td>All Cities</td>
</tr>
<tr>
<td>Caltrain</td>
<td>Rail</td>
<td>Palo Alto to Gilroy</td>
</tr>
<tr>
<td>Amtrak</td>
<td>Rail</td>
<td>Santa Clara, San Jose</td>
</tr>
<tr>
<td>ACE</td>
<td>Rail</td>
<td>Santa Clara</td>
</tr>
<tr>
<td>BART (future)</td>
<td>Rail</td>
<td>Milpitas, San Jose, Santa Clara</td>
</tr>
<tr>
<td>Marguerite</td>
<td>Bus</td>
<td>Palo Alto</td>
</tr>
</tbody>
</table>

7.2 Transit Ridership

VTA has 3,805 bus stops, 62 light rail stations, and 23 transit centers over a total service area of 346 square miles (Figure 7.1). The average daily ridership in 2013 for light rail was 34,242 and 106,161 for bus. Despite the large coverage area, approximately 25% of the average daily ridership occurs on five bus lines. Figure 7.2 maps average daily transit ridership at VTA's top 100 bus locations.

Transit is a vital service for people with disabilities, who rely on transit to meet their daily needs such as doctor appointments or accessing government services. Paratransit service covers parts of the county not served by bus or light rail, providing transit to people with disabilities. VTA's facilities, bus and light rail vehicles are ADA accessible as required by law. In 2013, the wheelchair lift was deployed an average of 415 times per day. The geographic distribution of lift usage can be seen in Figure 7.3.

7.3 Rider Demographics

VTA serves a diverse customer base. According to VTA's 2005 On-Board Survey, VTA passengers are younger than the County population as a whole, with the majority of VTA passengers (59%) being under the age of 35. The largest percentage (37%) of passengers is Hispanic/Latino, followed by White (28%), Asian (20%), and African American (10%).

Fifty-six percent of VTA customers have an annual household income of less than $25,000 per year, with 33% earning less than $10,000 per year. In addition, 19% of respondents reported that they would not have made the trip if transit did not exist. This indicates those people are dependent on transit service and further necessitates the need for a safe and comfortable walk to the transit stop.

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51 Valley Transportation Authority. VTA On-Board Customer Survey, 2006. (San Jose, California: VTA, 2006.)
These demographic factors will play an important role when considering pedestrian projects for inclusion in this plan.

### 7.4 Access to Transit

The majority of VTA customers access transit by foot. The results of the 2006 VTA On-Board Customer Survey found that VTA customers use the following modes to access transit:

- 71% of riders access their first stop/station on foot
- 19% transferred from VTA bus, light rail, or Caltrain
- 4% drove
- 3% biked
- 3% were dropped off or picked up
- 0.5% used a mobility device

According to the 2005 On Board Survey, 78% of passengers took less than 10 minutes to walk to their first transit stop while 85% of passengers, using mobility devices, took less than 10 minutes to access their first stop. At the end of their trip, 80% of passengers spent less than 10 minutes walking to their final destination, while only 62% of passengers using mobility devices anticipated spending less than 10 minutes to access their final destination.
Figure 7.1: VTA Bus Stops, Light Rail Stations, and Transit Centers
Figure 7.2: Transit Ridership at the Top 100 VTA Bus Stop Locations
Figure 7.3: ADA Wheel Chair Lift Deployment in Santa Clara County
8 Defining the Focus Areas

The cities, County, and VTA have made pedestrian access improvements for many transit locations throughout the county, and efforts are continuing. There are many projects that have been planned or studied and are waiting capital funding to proceed. There are also locations that have a need for improvements, but have not yet been studied.

In developing the Pedestrian Access to Transit Plan, VTA seeks to identify planned projects that are a high priority for transit access, and conduct focused field work at locations that are important to study, but have not yet been addressed in prior planning efforts. The outcomes will include a list of pedestrian projects for which VTA, the Cities, and the County can seek funding.

This section describes the process used to identify locations in which VTA will conduct focused field work to evaluate pedestrian access to transit and identify new pedestrian projects.

8.1 Evaluation Methodology

As previously mentioned, VTA’s service area covers 346 square miles and has nearly 4,000 transit stops or stations, many of which would benefit from improved pedestrian access. The sheer size of the system renders it difficult for VTA to evaluate pedestrian access to all stops. As such, a geographic analysis was used to identify locations where the most impact will be realized for the most number of pedestrians.

The focus areas were chosen using Multi-Criteria Decision Analysis (MCDA), a commonly used tool applied to complex decisions, such as site location. MCDA assists in the consideration of complex trade-offs among varying alternatives, such as our focus area analysis that involves many different factors that vary in importance among stakeholder groups. The process facilitates thinking, testing, adjusting, more testing, questioning, and finally decision making.

8.2 Evaluation Factors

VTA, in conjunction with stakeholder groups, chose six key factors to evaluate overall transit supportiveness and highlight areas for comprehensive evaluation of pedestrian projects. In that there are immediate pedestrian needs to address, the factors reflect existing conditions in the county, rather than future planned conditions. The six factors are described below and summarized in Table 8.1.

1. Ridership

Ridership is an important factor for VTA because this plan aims to improve pedestrian access to transit and because improvements implemented near stops with high ridership will benefit the most customers.

2. Barriers

Barriers to safely accessing transit emerged as an important in discussions with stakeholders. Barriers include physical features such as sidewalk presence and condition, curb cuts, freeways, train tracks, rivers, and intersections.

Due to lack of available county-wide sidewalk and other barrier data, Across Barrier Connections (ABCs) from the 2008 Countywide Bike Plan were included as a factor. The Countywide Bike Plan evaluated existing bicycle/pedestrian crossings of all major barriers in the county, and identified locations with substandard crossings. The plan also evaluated the distance between existing crossings and identified potential locations for pedestrian bridges or tunnels to keep distances between crossings to a mile or less. These two groups of projects comprise the ABCs.
Collision data was included as a proxy for overall safety. Pedestrian-vehicle collisions are an important factor in choosing project locations. Targeting improvements to areas with higher incidence of collisions has a greater impact on safety.

3. Socioeconomic Factors
For the purpose of this study, two pre-defined geographic areas of disadvantaged communities were included in the focus area evaluation. These are Communities of Concern (COC) and Community Air Risk Evaluation (CARE). These are mapped in.

COC are areas that meet low income and minority thresholds as defined by the MTC and/or at least 4 of 8 other factors considered to render people in a census tract as disadvantaged. CARE communities are areas with high concentrations of Toxic Air Contaminants (TAC) where sensitive populations (youth under 18, seniors over 64, and people with respiratory illness) meet a certain threshold and where the census block group had income below 185% of the federal poverty level.

A secondary benefit of using COC and CARE in the evaluation is that these areas are often included in the scoring criteria for grant funding.

4. Major Destinations
Major destinations are important to consider when choosing focus areas because they are, or can be, major ridership generators. Destinations were selected that may be critically important to transit riders: government services, major employers, colleges, senior centers, schools, and health care facilities.

5. Residential Density
Residential density based on the 2010 Census was included as an evaluation factor.

6. Journey to Work
Census journey to work data is used to identify locations with high numbers of residents whose primary method of commuting to work is bus or rail. These tracts are more likely to have higher percentages of people who walk to their transit stop.

8.2.1 Factors Discussed but Not Included
Several factors were considered for inclusion in the analysis, but for a variety of reasons were not included.

Bus Stop Amenities
Bus stop amenities were not included in the evaluation criteria because while they influence the comfort and safety of a pedestrian at a bus stop, they do not affect the walking trip to the bus stop. As of 2006, approximately 20% of VTA’s bus stops contained a shelter and 49% contained a bench. VTA’s Transit Passenger Environment Plan outlines the types of amenities that should be included at bus stops.

Future Development
Not included as a weighted evaluation factor is future growth and development in Santa Clara County. The Priority Development Areas (PDA) are designated for future housing and employment growth within the county. The areas are locally identified and ready to accept more housing, employment, and amenities in the form of infill or redevelopment. Local agencies have established policies and guidelines to provide and/improve pedestrian facilities as part of development. It is anticipated that pedestrian access will be
addressed in the local agencies’ land use approval process. The *Pedestrian Access to Transit Plan* is intended to focus on existing pedestrian access deficiencies, as it is generally more difficult to have the resources available to address these deficiencies.

**Employment Density**

Though major employers are included as one of the six factors, employment density is not. After looking at available employment density data, it was determined that the data would not accurately reflect employment density in the county for the purposes of this evaluation, and so it was not included in the analysis.

**8.3 Alternatives Analysis Approach**

Available data were categorized into one of the six evaluation factors, which were weighted based on the goals of the plan and the stakeholder preferences (Table 8.1). These weighted layers were combined to identify “hot spots” for potential focus areas.

Based on feedback from the second Task Force meeting, staff performed multiple variations of the ranking and weighting process, which included such scenarios as excluding transit ridership completely, weighting barriers the highest, and including outreach and senior clipper card usage by line.

The type of data available for the outreach card and senior clipper card usage were not helpful for refining the focus areas and ultimately excluded from the final analysis. The data were included qualitatively during staff evaluation of the results of the analysis.

The resulting hotspot maps had little variation. This is most likely due to the fact that land use within Santa Clara County follows a distinct pattern of development and activity along major corridors.

As a result, the results are not highly sensitive to change in the weighting of the evaluation factors.

**8.4 Evaluation Results and Recommended Focus Areas**

Figure 8.1 shows the results of the MCDA analysis and the 11 focus areas recommended for detailed ground work to enhance pedestrian access to transit stops and stations.

Locations along the El Camino Real corridor, parts of Stevens Creek Corridor, downtown San Jose, and East San Jose show the highest concentration of evaluation factors discussed previously. The random, small but dark locations are explained by the heavy weighting of proposed across barrier connections from the 2008 Countywide Bicycle Plan. While these are vital connections for pedestrians, not all are located within a reasonable distance of transit or they fall within areas with current pedestrian planning work.

Staff reviewed the results of the analysis in comparison with areas of the county that already have existing pedestrian plans or planning work (Figure 8.2). To make the most of limited resources available for this plan, staff recommended focus areas based on the analysis, known pedestrian needs, relationship to PDA’s and CCSA’s, and limited existing pedestrian plan or planning work.

Lists of the recommended focus areas, and areas covered by existing are shown in the matrices in Table 8.2 and Table 8.3, respectively. The tables note the evaluation factors pertinent to each location, the jurisdiction of the location, the plan that contains pedestrian/transit accessibility planning, and the type of location.
Table 8.1: Ranked and Weighted Evaluation Factors

<table>
<thead>
<tr>
<th>Importance</th>
<th>Evaluation Factor</th>
<th>Data</th>
<th>Description</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit Ridership</td>
<td>Top 100 Bus Locations by Ridership</td>
<td>Top 100 bus locations (may include intersections with multiple bus stops) based on average daily boardings.</td>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>ADA Lift Deployment</td>
<td>ADA Lift Deployment</td>
<td>Annual ADA lift deployment (wheel chair lift) by bus stop.</td>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>Top 20 Paratransit Stops</td>
<td>Top 20 Paratransit Stops</td>
<td>Top 20 most frequently used paratransit locations.</td>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>Barriers Across Barrier Connections</td>
<td>Recommended ARBCs from the 2008 Countywide Bike Plan.</td>
<td>Recommended ARBCs from the 2008 Countywide Bike Plan.</td>
<td>2008</td>
<td></td>
</tr>
<tr>
<td>Pedestrian - Vehicle Collisions</td>
<td>Pedestrian-vehicle collisions resulting in death or severe injury. Data from TIMS.</td>
<td>Pedestrian-vehicle collisions resulting in death or severe injury. Data from TIMS.</td>
<td>2003-2012</td>
<td></td>
</tr>
<tr>
<td>Socioeconomics Communities of Concern</td>
<td>Census tracts that meet low income and minority thresholds as defined and/or at least 4 of 8 other factors considered to render people in a census tract as disadvantaged.</td>
<td>Census tracts that meet low income and minority thresholds as defined and/or at least 4 of 8 other factors considered to render people in a census tract as disadvantaged.</td>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>CARE</td>
<td>Census block groups with high concentrations of Toxic Air Contaminants, that are also home to sensitive populations with income below 185% of the Federal Poverty Level.</td>
<td>Census block groups with high concentrations of Toxic Air Contaminants, that are also home to sensitive populations with income below 185% of the Federal Poverty Level.</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Major Destinations Major Employers</td>
<td>Top 72 employers, based on employee numbers, in Santa Clara County as per the Business Journal Book of Lists.</td>
<td>Top 72 employers, based on employee numbers, in Santa Clara County as per the Business Journal Book of Lists.</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Colleges</td>
<td>All four year and junior colleges.</td>
<td>All four year and junior colleges.</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Senior Centers</td>
<td>All senior centers and senior nutrition centers in the county.</td>
<td>All senior centers and senior nutrition centers in the county.</td>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>All public and private middle and high schools in Santa Clara County.</td>
<td>All public and private middle and high schools in Santa Clara County.</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Health Care Facilities</td>
<td>Hospitals, drop in clinics, surgical centers, cancer treatment centers.</td>
<td>Hospitals, drop in clinics, surgical centers, cancer treatment centers.</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Housing Housing Density</td>
<td>Housing density calculated from the 2010 US Census.</td>
<td>Housing density calculated from the 2010 US Census.</td>
<td>2010</td>
<td></td>
</tr>
<tr>
<td>Journey to Work Residents who commute by Bus</td>
<td>Census 2010 residents by census tract.</td>
<td>Census 2010 residents by census tract.</td>
<td>2010</td>
<td></td>
</tr>
<tr>
<td>Residents who commute by Rail</td>
<td>Census 2010 residents by census tract.</td>
<td>Census 2010 residents by census tract.</td>
<td>2010</td>
<td></td>
</tr>
</tbody>
</table>
Figure 8.1: Recommended Focus Areas
Table 8.2: Pedestrian Planning Matrix- Focus Areas

<table>
<thead>
<tr>
<th>ID</th>
<th>Location/Corridor</th>
<th>Jurisdiction</th>
<th>Planning Effort</th>
<th>Evaluation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Capitol Expressway @ Alum Rock</td>
<td>County of Santa</td>
<td>Comp Cty Expwy Planning Study - Capitol</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clara</td>
<td>Expwy</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Capitol Expressway @ Story</td>
<td>County of Santa</td>
<td>Comp Cty Expwy Planning Study - Capitol</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clara</td>
<td>Expwy</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Gilroy Downtown/PDA</td>
<td>Gilroy</td>
<td>Downtown Gilroy Specific Plan</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>San Antonio @ El Camino</td>
<td>Mountain View</td>
<td>MV ECR Precise Plan/San Antonio Precise</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>View/Los Altos</td>
<td>Plan</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Shoreline @ El Camino</td>
<td>Mountain View</td>
<td>MV ECR Precise Plan</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>El Camino Real @ SR 85</td>
<td>Mountain View</td>
<td>MV ECR Precise Plan</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Bascom @ Moorpark</td>
<td>San Jose</td>
<td>Complete Street Audit Bascom</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Downtown San Jose - Santa Clara St</td>
<td>San Jose</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(San Pedro - 7th, St James - San</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carlos)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>King Road Corridor - Tully to Alum</td>
<td>San Jose</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Taylor @ Park</td>
<td>San Jose</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>William/Keyes @ First</td>
<td>San Jose</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Fair Oaks @ El Camino</td>
<td>Sunnyvale</td>
<td>SV ECR Precise Plan</td>
<td></td>
</tr>
</tbody>
</table>
Figure 8.2: Locations with Existing Pedestrian Planning Work
### Table 8.3: Pedestrian Planning Matrix – Existing Plans

<table>
<thead>
<tr>
<th>ID</th>
<th>Location/Corridor</th>
<th>Jurisdiction</th>
<th>Planning Effort</th>
<th>Evaluation Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Downtown Campbell</td>
<td>Campbell</td>
<td>Downtown Campbell Development Plan</td>
<td>X X X X X X</td>
</tr>
<tr>
<td>2</td>
<td>Winchester from Hamilton to Friar</td>
<td>Campbell</td>
<td>Winchester Blvd Master Plan</td>
<td>X X X X X X</td>
</tr>
<tr>
<td>3</td>
<td>Capitol Expressway</td>
<td>County of Santa Clara</td>
<td>Comprehensive County Expressway Planning Study - Capitol Expressway</td>
<td>X X X X X X</td>
</tr>
<tr>
<td>4</td>
<td>Valco Mall Area</td>
<td>Cupertino</td>
<td>South Valco Master Plan</td>
<td>X X X X</td>
</tr>
<tr>
<td>5</td>
<td>Stevens Creek in Cupertino</td>
<td>Cupertino</td>
<td>Heart of the City Master Plan</td>
<td>X X X X X X</td>
</tr>
<tr>
<td>6</td>
<td>Stevens Creek Corridor / DeAnza</td>
<td>Cupertino, Santa Clara</td>
<td>Stevens Creek BRT Study</td>
<td>X X X X X X X X</td>
</tr>
<tr>
<td>ID</td>
<td>Location/Consider</td>
<td>Jurisdiction</td>
<td>Planning Effort</td>
<td>Evaluation Factors</td>
</tr>
<tr>
<td>----</td>
<td>-------------------</td>
<td>--------------</td>
<td>-----------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>7</td>
<td>Gilroy Downtown/PDA</td>
<td>Gilroy</td>
<td>Downtown Gilroy Specific Plan</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Foothill Expressway from Parma to 280</td>
<td>Los Altos</td>
<td>Stevens Creek Trail Feasibility Study</td>
<td>X</td>
</tr>
<tr>
<td>9</td>
<td>Milpitas BART Station/Silicon Valley/Great Mall</td>
<td>Milpitas</td>
<td>Milpitas Transit Area Specific Plan</td>
<td>X, X, X</td>
</tr>
<tr>
<td>10</td>
<td>Milpitas Midtown/Milpitas BART Station/Silicon Valley/Great Mall</td>
<td>Milpitas</td>
<td>Midtown Specific Plan</td>
<td>X, X, X</td>
</tr>
<tr>
<td>11</td>
<td>Downtown Morgan Hill</td>
<td>Morgan Hill</td>
<td>Downtown Morgan Hill Specific Plan</td>
<td>X, X, X, X</td>
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<tr>
<td>12</td>
<td>NASA URT Station</td>
<td>Mountain View</td>
<td>NASA Ames Bayside Light Rail Station Pedestrian Access Improvement Plan</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Shoreline Park area north of 101</td>
<td>Mountain View</td>
<td>Shoreline Regional Park Community Transportation Study</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>San Antonio @ El Camino</td>
<td>Mountain View</td>
<td>San Antonio Precise Plan</td>
<td>X, X, X, X, X, X, X</td>
</tr>
<tr>
<td>15</td>
<td>Mountain View El Camino</td>
<td>Mountain View</td>
<td>MV ECR Precise Plan</td>
<td>X, X, X, X, X, X</td>
</tr>
<tr>
<td>16</td>
<td>Mountain View Transit Center</td>
<td>MV/VTA/SPB</td>
<td>MV Transit Center</td>
<td>X, X, X, X</td>
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<tr>
<td>17</td>
<td>Palo Alto Transit Center</td>
<td>PA/VTA/SPB</td>
<td>Palo Alto Transit Center</td>
<td>X, X, X, X</td>
</tr>
<tr>
<td>18</td>
<td>Diridon Station</td>
<td>San Jose</td>
<td>Diridon Station Area Plan</td>
<td>X, X, X, X, X, X</td>
</tr>
<tr>
<td>19</td>
<td>San Carlos from San Tomas to Sunol</td>
<td>San Jose</td>
<td>Complete Streets Audit San Carlos</td>
<td>X, X, X, X, X, X, X, X, X</td>
</tr>
<tr>
<td>20</td>
<td>Bascom from I-280 to Southwest Expressway</td>
<td>San Jose</td>
<td>Complete Street Audit Bascom</td>
<td>X, X, X, X, X, X</td>
</tr>
<tr>
<td>21</td>
<td>Tamien Caltrain/Light Rail Station Area</td>
<td>San Jose</td>
<td>Tamien Station Area Specific Plan</td>
<td>X, X, X, X, X, X, X</td>
</tr>
<tr>
<td>22</td>
<td>Hitachi/Cottle Area</td>
<td>San Jose</td>
<td>Hitachi Transit Village Master Plan</td>
<td>X, X, X, X, X, X</td>
</tr>
<tr>
<td>23</td>
<td>North San Jose Hwy 101/I-880 Junction to SR 280</td>
<td>San Jose</td>
<td>Vision North San Jose</td>
<td>X, X, X, X, X, X, X</td>
</tr>
<tr>
<td>24</td>
<td>Homestead @ Kiely</td>
<td>Santa Clara</td>
<td>Central Park Pedestrian and Bicycle Access Study</td>
<td>X, X, X, X, X</td>
</tr>
<tr>
<td>26</td>
<td>Levi's Stadium</td>
<td>Santa Clara</td>
<td>49ers Stadium</td>
<td>X, X, X, X</td>
</tr>
</tbody>
</table>

Pedestrian Access to Transit Plan: Existing Conditions Report
Santa Clara Valley Transportation Authority
Table 8.2: Pedestrian Planning Matrix, Continued

<table>
<thead>
<tr>
<th>ID</th>
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Figure 8.3: Communities of Concern and Community Air Risk Evaluation Areas in Santa Clara County
9 Bibliography

- Center on Urban Environmental Law. *Air Pollution and Environmental Inequity in the San Francisco Bay Area*. San Francisco: Golden Gate University School of Law, 2011.
• Santa Clara County Public Health Department. Traffic Safety and Active Transportation in Santa Clara County. San Jose, California: County of Santa Clara, May 2014.