Appendix C: Streetscape and Pedestrian Realm Needs



MEMORANDUM

Date: February 10, 2017
To: Brent Pearse, VTA

Cc: Carrie Modi, Fehr & Peers

From: Thomas Kronemeyer and Deepak Sohane, Community Design + Architecture

Re: Story-Keyes Complete Streets Study: Streetscape and Pedestrian Needs

Assessment Memorandum

This memorandum summarizes findings regarding the streetscape character and pedestrian needs along the Story-Keyes Corridor. The extent to which sidewalks provide space for pedestrian travel and activities associated with adjacent uses as well as a pedestrian environment that feels comfortable and safe can be best studied by mapping and assessing several key characteristics, such as sidewalk width and potential sidewalk width; continuity of sidewalks; sidewalk obstructions and driveways that may have implications for the compliance with ADA requirements; the presence of buffers between pedestrian travel areas and moving roadway traffic; the presence of street trees and light fixtures (pedestrian and roadway); as well as the presence of pedestrian connections between corridor sidewalks and commercial/retail uses setback from the street.

Results from the assessment of existing streetscape characteristics and pedestrian realm needs will help to determine and conceptualize complete streets solutions that enhance the quality and comfort of the pedestrian experience along the Story-Keyes Corridor.

CORRIDOR SEGMENTATION

Because of the diversity of conditions, the memorandum is organized to describe the streetscape and pedestrian realm needs for each of eight segments along the length of the Corridor. These segments have been identified based on differences between the segments that exist in the organization, type, and overall scale (parcel size) of land uses.

Table 1 below lists the eight corridor segments that have been identified.

TABLE 1: CORRIDOR SEGMENTATION

Segment #	Segment Extents
1	Willow Street between SR 87and Graham Avenue
2	Graham Avenue and Goodyear Street between Willow Street and S 1st Street
3	Keyes Street between S 1st Street and 12th Street
4	Keyes Street and 12 th Street to Story Road and Roberts Avenue
5	Story Road between Roberts Avenue and Via Ferrari/Olinder Ct
6	Story Road between Via Ferrari/Olinder Ct and Knox Avenue
7	Story Road between Knox Avenue and Bal Harbor Way
8	Story Road between Bal Harbor Way and Capitol Expressway



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METHODOLOGY

Sidewalk Width and Buffers

The width of sidewalks is a critical measure for safety and comfort of the pedestrian environment. Not only does the width of the sidewalk determine the area available for pedestrian travel, which includes the minimum accessible route required by Federal and State accessibility laws (ADA and Title 24), it also determines the space available for elements that buffer pedestrians from moving traffic, such as street trees, landscape buffers, light fixtures, bollards or other streetscape elements as well as the space available for other activities in the pedestrian realm, such as public seating, café seating, bicycle parking, and others.

Sidewalk Width

The overall width of the sidewalks was calculated using a combination of aerial imagery, GIS-based face of curb data and parcel line data, obtained from the City of San Jose. Because of the lack of detailed survey data, the sidewalk width for each block along the Corridor shown on the *Sidewalk Width and Buffers* map is expressed as a range¹. The following ranges were identified:

- Sidewalks with a width of less than 6 feet
- Sidewalks with a width ranging between 6 feet to under 8 feet
- Sidewalks with a width ranging between 8 feet to under 10 feet
- Sidewalk with a width greater than 10 feet.

In addition, locations were mapped where the continuity of sidewalks is disrupted by the complete absence of a sidewalk or the lack of ADA-compliant paving. Locations where sidewalks appear to extend onto adjacent private properties to form a contiguous wider sidewalk surface have been included in the mapping. The clear width of the paved sidewalk surface available for unobstructed pedestrian travel was determined by subtracting the width of the buffer (width of curb, plus the width of tree wells or parkways, where present) from the total width of the sidewalk. Locations for which this calculation results in a clear width 4 feet or less, would be out of compliance with the State accessibility requirement that calls for public sidewalks to have a minimum clear width of 4 feet. For this reason, a more detailed review and field-verified of sidewalk widths will be conducted in these locations during the Corridor Walk Audits.

The existing sidewalk width and buffer conditions were assessed by comparing them to applicable local best practices for sidewalks on complete streets included in the City of San Jose's Draft Complete Streets Guidelines². The guideline manual recommends minimum dimensions for several sidewalk zones, including the Through Zone (for the width of a clear area) and the Furnishings Zone, which includes landscape-based buffering elements such as trees and planting strips (see Figure 1).

¹Field measurements were taken during the Walk Audits after the writing of this memorandum. These and potentially necessary additional field measurements will be used during the concept development stage of the project.

² The Draft San Jose Complete Streets Guidelines are currently undergoing final review by the City of San Jose.

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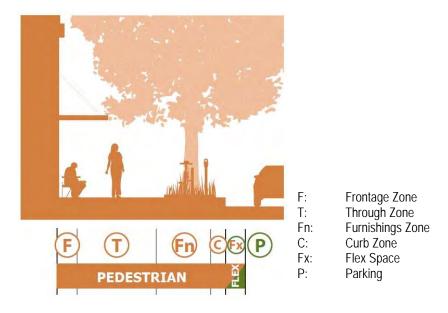


Figure 1: Example of Sidewalk Zones from the Draft San Jose Complete Streets Guidelines

The sidewalk width recommendations of the Draft Complete Streets Guidelines vary by street type, with the street types based on those called out in the General Plan's Transportation Network Diagram (see San José 2040 General Plan). A review of the Network Diagram determined that the following three General Plan street types apply to the Story-Keyes Complete Streets Corridor:

- a. Local Connector Street (SR87 to South 1st Street): Story Keyes Corridor Segments 1 and 2;
- b. *City Connector Street* (1st Street to US-101): Story Keyes Corridor Segments 3, 4, 5 and 6 (partial); and,
- c. Main Street (US-101 to Capitol Expressway): Story Keyes Corridor Segments 6 (partial), 7 and 8.

VTA's Community Design and Transportation Manual of Best Practices for Integrating Transportation and Land Use (2003) provides additional recommendations for designing pedestrian spaces that support transit.

Buffers

A combination of aerial imagery and Google Street View was used to identify and map the locations of the different buffer conditions that occur along the corridor. The following elements were identified as providing pedestrians traveling on sidewalks along the Corridor with a sense of separation from moving traffic:

- Street trees (located in Furnishing Zone of sidewalk);
- Landscaped parkways (located in Furnishing Zone of sidewalk);
- Bike lanes (located within the roadway); and,
- On-street parking (located within the roadway).

All of these buffering elements were included on the *Sidewalk Width and Buffer* map, along with information on the posted speed limit, in order to support a review of the Corridor for the potential cumulative presence of buffers or their absence. Further review and interpretation of how effectively

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these elements shield pedestrian from moving traffic (at a given posted speed) during the concept development stage of the Study will help to determine if and what additional buffering may be needed.

Sidewalk-Crossing Driveways

While driveways are necessary vehicular access points to corridor-adjacent land uses, each driveway also represents a potential conflict point between vehicles, pedestrians, and bicyclists. Particularly blocks with frequent driveways or driveways with excessive width can become a significant issue for the safety of pedestrians/bicyclists and the comfort of those traveling in wheelchairs. In order to identify blocks on which the frequency and width of driveways may present an issue that needs to be addressed, the number of driveways along each block and their apparent width was identified using a combination of aerial imagery and Google Street View. Driveways along the corridor were then categorized into the following three types:

- 1. ADA-compliant driveway (driveway includes a 4-foot wide (min.) path of travel on the sidewalk that does not exceed 2% in cross-slope)
- 2. Not ADA-compliant ((driveway does <u>not</u> include a 4-foot wide (min.) path of travel on the sidewalk that does not exceed 2% in cross-slope)
- 3. Street-like access points to parking lots and uses like shopping centers (these "driveways" are often designed like T-intersections and include curb returns and curb ramps at the ends of adjoining sidewalk segments)

The block-by-block frequency of driveways is reflected on the *Driveways* map. The map also identifies how many of the found driveways appear not to be compliant with current ADA requirements. Very wide driveways are discussed in the segment-specific paragraphs below.

Streetscape Treatments

Street trees and light fixtures provide a broad range of benefits to the overall street design and pedestrians realm in particular. Street trees provide shade, buffer pedestrians from roadway traffic, mitigate the urban heat island effect, and are the backbone for a pleasant streetscape environment that people enjoy walking in and shop along. High quality street lighting increases the safety for all users of a street and can encourage nighttime usage of sidewalks, restaurants and other businesses as well as bus stops. The use of pedestrian-scale light fixtures (with a height of 14 to 18 feet), in addition to taller fixtures that light the roadway and crosswalks, provides lighting that is specifically directed at the pedestrian realm, provides a human scale, and creates a sense of place for the community.

The Streetscape – Street Trees and Streetscape – Lighting maps reflect the presence of existing street trees and light fixtures along the Story Keyes Corridor.

Street Trees, Parkways, and Medians

Street trees along the Story-Keyes Corridor occur along sidewalks (in tree wells or landscaped parkways) and in medians. In several locations, trees on private properties beyond the sidewalk supplement the presence of trees in the public right-of-way. The *Streetscape – Street Trees* map reflects the general length of where a row of street trees occurs within the right-of-way along a given block. The map graphically identifies locations with two or more trees using a colored bar³. The length of the bar indicates

³ The length of the bar does not take into account the spacing of trees.

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the continuity of the trees along sidewalks and medians. In addition, the map identifies existing decorative hardscape pavement treatments that have been installed in the medians on Keyes Street and Story Road east of South 11th Street.

The mapping of street trees was accomplished using a combination of aerial imagery and Google Street View. San Jose's tree inventory (https://sanjose.mytreekeeper.com/) provides additional detailed information regarding the trees (e.g. tree species) that occur along the Story-Keyes Corridor. This information will be used during the development of the complete streets concepts.

Lighting

Two types of light fixtures occur along the Story-Keyes Corridor: "cobra-type" roadway light fixtures (see Figure 2 - on the left) and decorative "acorn-type" pedestrian-scale light fixtures (see Figure 2 - on the right). The Streetscape - Lighting map provides a block-by-block overview of where along the Corridor each of the two fixture types or a combination of both occurs. The length of the colored bars⁴ indicate the presence of light fixtures only and do not identify specific fixture locations or the spacing of fixtures. A lighting study would be required to determine, if the lighting level provided by the existing fixtures meets current design standards. In addition, the Streetscape -Lighting map provides information about stretches of the Corridor where banners are attached to roadway or pedestrian-scale light fixtures, i.e. to draw attention to a particular corridor feature, like Emma Prusch Farm Park, or business district.

The mapping of light fixture types was accomplished using a combination of aerial imagery and Google Street View.

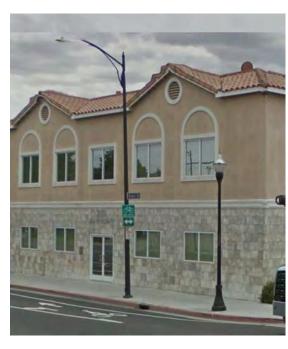


Figure 2: Types of roadway and pedestrian-scale light fixtures

Furniture

Using Google Street View, the corridor was reviewed for the presence of street furniture, such as trash receptacles, benches, newspaper racks, bicycle racks or other. Where the presence of such amenities consistently occurred along a number of blocks to establish a streetscape theme this was noted in the text below.

⁴ The length of the bar does not take into account the spacing of lighting fixtures.

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STREETSCAPE AND PEDESTRIAN REALM NEEDS

<u>Please note that for simplicity the following descriptions use cardinal directions as if the corridor had a true east-west orientation even though the actual orientation of the corridor deviates from this by 30 to 40 degrees depending on the location.</u>

Segment 1 –Willow Street between from SR 87and Graham Avenue

Sidewalk Width and Buffers

Sidewalk Width

The width of sidewalks is mostly consistent along the entire segment and ranges between 8 and 10 feet. Between Palm Street and Locust Street, the sidewalk width along the northern stretch is over 10 feet, which may be attributed to the presence of civic uses, such as the church and the school. The sidewalk under the Caltrain overpass narrows to less than 7 feet (see Figure 3), which contributes to an unpleasant pedestrian walking environment under the overpass, where a sidewalk is entirely missing along the northern side of Willow Street. Where 3.5 to 6 feet wide tree wells occur in the sidewalk, the clear sidewalk width is reduced to about as low as 4 feet if tree grates are not counted toward contributing to the clear path of travel. On some properties buildings along this segment are set back up to 8 feet from the property line (and back of sidewalk) and setbacks are paved to extend the sidewalk to the edge of buildings. However, this condition does not occur consistently along any of the blocks long this segment (also see *Sidewalk Width and Buffers* map) (see Figure 4).



Figure 3: Sidewalk along Willow Street under Caltrain Overpass

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Figure 4: Paved area on private property integrates with existing sidewalk and allows for public use

The General Plan's Transportation Network Diagram identifies this segment of the Corridor as a "Local Connector Street". Table 2 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines.

TABLE 2: COMPARISON OF SIDEWALK ZONE WIDTHS

Sidewalk Zone	Existing Condition (width in feet)	Recommended Dimensions per San Jose Complete Street Guidelines (width in feet)
Through Zone	3.5' to 5'	5′
Furnishing Zone	4' to 6'	4.5'
Total Width	7' to 11'	10'

Buffers

Along this segment, street design elements that buffer pedestrians traveling on sidewalks include on-street parking, street trees, and an unplanted parkway strip. On-street parking and rows of trees are consistently present along most of the segment and create a sense of safety for pedestrians walking along it (see *Sidewalk Width & Buffer* map). The existing buffer elements provide adequate buffering in light of the relatively low posted speed of 25 mph. However, on stretches of Willow Street without consistent rows of street trees, additional buffering through the planting of supplemental trees may be desirable.

Sidewalk-Crossing Driveways

Driveways occur on most blocks of this segment, with the exception of the northern stretch between Palm Street and Locus Street. Throughout the remaining segment, the number of driveways varies between 1 and 5 per block. None of the driveways appear to be ADA-compliant. The majority of driveways range between 10 feet to 20 feet in width; the widest being 30 feet wide occurring on the parcel at the intersection of Willow Street and Pepitone Avenue.

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Streetscape Treatments

Street Trees, Parkways, and Medians

Street trees occur consistently along sidewalks of the Willow Street segment. An average of 4-5 trees exists at regular spacing on most of the blocks except for the southern stretch between Palm Street and Locust Street. While the northern stretch of the street between Harliss Avenue and Palm Street has a less than average placement of trees within the right-of-way, they are supplemented by mature trees on private

properties that establish a sense of continuity with regard to the visual presence of trees and provides a pleasant walking environment. The trees are planted in tree wells fitted with tree grates (see Figure 5) in most of the locations. An exception to this general condition occurs on either side of Palm Street, where palm trees are planted in tree wells covered with paving stones. The section of Willow Street closer to SR87 lacks street trees. At this location, a side median with a few trees branches off of Willow Street where one part of the street diverges to Mclellan Avenue and the other continues to an underpass under SR87. At Harliss Avenue several trees are planted in a median island that is paved with concrete (see Figure 6).



Figure 5: Tree planted in well with tree grate



Figure 6: Trees planted in median island at Willow Street and Lick Avenue

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Lighting

Segment 1 has a combination of roadway and pedestrian-scale light fixtures. While roadway light fixtures occur throughout the segment; pedestrian-scale light fixtures are limited to the stretch between Palm Street and Almaden Avenue. The pedestrian-scale light fixtures follow a regular spacing whereas the roadway lights are spaced at a broad range of distances. The light fixtures along most blocks of this segment include banners that announce the "Calle Willow" Business District. In locations where the pedestrian-scale light fixtures and roadway lights occur together, the banners (see Figure 7) are only provided on the pedestrian-scale fixtures.

Street Furniture

The stretch of Willow Street between Palm Street and Graham Avenue has one or two trash receptacles on every block. Other amenities such as bicycle racks, newspaper racks, retail display signs et.al. occur intermittently through this segment. The furniture at this location was lined up to create a clear through path. However, the selection and installation of furnishings appears to have occurred incrementally over time and does not rise to a coordinated "theme" with respect to the street furniture.



Figure 7: Banner announcing "Calle Willow" on pedestrian-scale light fixture

The combination of slow vehicle speeds, street trees, pedestrian-scale lighting, and a direct spatial relationship between small-scale, mixed-use and commercial buildings with frequent entries that engage the sidewalks produce an engaging and comfortable pedestrian walking environment along this segment of the Corridor.

Segment 2 – Graham Avenue and Goodyear Street between Willow Street and South 1st Street

Sidewalk Width and Buffers

Sidewalk Width

The width of sidewalks is mostly consistent along the entire segment and ranges between 8.5 and 10 feet. Along the northern stretch of Graham Avenue and the south side of Goodyear Street between Sherman Street and South 1st Street, the sidewalk width increases up-to 11 feet. Where 4 to 6 feet wide tree wells and parkways occur in the sidewalk, the clear sidewalk width can be as low as 4 feet.

The General Plan's Transportation Network Diagram identifies this segment of the Corridor as a "Local Connector Street". Table 3 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines Manual.

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TABLE 3: COMPARISON OF SIDEWALK ZONE WIDTHS

Sidewalk Zone	Existing Condition (width in feet)	Recommended Dimensions per San Jose Complete Street Guidelines (width in feet)
Through Zone	4' to 6'	5′
Furnishing Zone	4' to 6'	4.5'
Total Width	8.5' to 11'	10'

Buffers

Along this segment, street design elements that buffer pedestrians traveling on sidewalks include on-street parking, street trees, and landscaped parkways. While the consistent presence of on-street parking provides some buffer function throughout the segment, the buffering from trees and parkways is limited as their presence along the segment is inconsistent and trees do not form continuous rows due to their farapart spacing (see *Sidewalk Width & Buffer* map). Although the buffering provided by on-street parking may be deemed adequate in the context of a posted speed of 25 mph, it is likely desirable to provide additional buffering through the planting of supplemental street trees.

Sidewalk-Crossing Driveways

Driveways occur on all blocks of this segment. Their frequency varies between 2 and 8 per block. With the exception of the three driveways on the southern stretch of Goodyear Street between Sherman Street and South 1st Street, all other driveways appear to be out of compliance with ADA requirements. The majority of driveways along the residential properties range between 10 feet to 12 feet in width, with the widest falling into a range between 24 feet to 30 feet in width. These typically occur at parcels associated with an auto-oriented use.

Streetscape Treatments

Street Trees, Parkways, and Medians

Along this segment, street trees occur consistently only along the northern stretch of Graham Avenue and Goodyear Street, with an average of 3-4 trees regularly spaced trees per block. The row of trees on the south side of Graham Avenue is discontinuous but supplemented by trees on private property that complement the overall streetscape character. Trees are planted in tree wells without tree grates with the exception of trees along the south side of Goodyear Street. Both ends of Graham Avenue have triangular median islands that are planted with trees (see Figure 8). In contrast, the medians along Goodyear Street do not include trees and are paved with concrete.

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Figure 8: Trees planted in a median island at intersection of Graham Avenue/Goodyear Street Lighting

Roadway light fixtures occur along the sidewalks on all blocks of this segment. A single fixture is located on the concrete divider median between Graham Avenue and Goodyear Street. With the exception of one light fixture at the intersection of Graham Avenue and Almaden Avenue, none of the other fixtures include banners.

Street Furniture

This segment does not have any street furniture except for those located at the one bus stop situated along the northern stretch of Goodyear Street at its intersections with South 1st Street.

While slow vehicle speeds, well buffered sidewalks create a basic level of pedestrian comfort, this segment's sidewalks lack pedestrian-scale lighting, frequent building entries, and consistent rows of street trees.

Segment 3 -Keyes Street between South 1st Street and South 12th Street

Sidewalk Width and Buffers

Sidewalk Width

The width of sidewalks is mostly consistent along the entire segment and ranges between 8 and 10 feet. However, a sidewalk is entirely missing along the south side of the block between South 3rd and South 4th Streets⁵. Where tree wells ranging between 4 feet to 6 feet in width occur in the sidewalk, the clear sidewalk width is reduced to about as low as 4 feet. The sidewalk along the parcel at the southeast corner of the intersection of Keyes Street and South 10th Street has a width of about 15 feet, which matches the width of the sidewalk on South 10th Street along the same parcel.

⁵ The development proposal PRE15-060 mitigates this condition by proposing a 15-foot sidewalk along Keyes Street. A second development proposal PDA07-094-01 proposes a 15-foot sidewalk between southern stretch of Keyes Street between South 2nd Street and South 3rd Street as well.

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The General Plan's Transportation Network Diagram identifies this segment of the Corridor as a "City Connector Street". Table 4 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines Manual.

TABLE 4: COMPARISON OF SIDEWALK ZONE WIDTHS

Sidewalk Zone	Existing Condition (width in feet)	Recommended Dimensions per San Jose Complete Street Guidelines (width in feet)
Through Zone	4' to 6'	5′
Furnishing Zone	4' to 6'	4.5'
Total Width	8.5' to 11'	10'

Buffers

Along this segment, street design elements that buffer pedestrians traveling on sidewalks include on-street parking, street trees, and bike lanes. While the consistent presence of a 5-foot wide bike lane provides some buffer function throughout the segment, additional buffering from on-street parking and rows of trees is only present along portions of the segment (see *Sidewalk Width & Buffer* map). In light of the posted speed of 35 mph, it is likely desirable to provide buffering beyond that provided by the presence of a 5-foot wide bike lane. Due to the discontinuous presence of parking and rows of street trees along this segment this condition is currently not met.

Sidewalk-Crossing Driveways

Driveways occur on all of blocks of this segment, with the exception of the southern stretch between South 1st Street and South 2nd Street along Cadwallader Park. The frequency of driveways varies between 1 and 5 per block. None of the driveways appear to be ADA-compliant. The width of the driveways along this segment ranges from 12 feet to 30 feet. Wider driveways are typically associated with auto-oriented uses, which occur frequently throughout this segment. Between South 3rd Street and South 5th Street driveway widths range between 40 feet and 50 feet due to the right-of-way set aside for South 4th at the Union Pacific Railroad right-of-way (see Figure 9).



Figure 9: Example of wide driveway at South 4th Street

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Streetscape Treatments

Street Trees, Parkways, and Medians

The contribution trees make to the streetscape character along this segment is the most inconsistent if compared to all other Corridor segments. As shown on the *Streetscape – Street Trees* map, trees occur consistently along some blocks (northern stretch of Keyes Street between South 2nd and South 6th Streets; the southern stretch of Keyes Street between South 4th Street and South 6th Street, northern stretch between South 8th Street and South 9th Street, and the southern stretch between South 8th Street and South 11th Street), with an average of 5 trees or more per block and at a regular spacing. On all other blocks, however, fewer than 3 trees per block are present without any regular spacing. The most consistent presence of street trees occurs between South 11th Street and South 12th Street where regularly spaced trees are located on both sides of the street along with a tree-lined median that includes a decorative hardscape treatment at either end, consisting of cobbles set in concrete (see Figure 10). All trees along this segment are planted in tree wells without tree grates.



Figure 10: Tree-lined median with decorative hardscape treatment

Lighting

This segment has a combination of roadway and pedestrian-scale light fixtures. While the spacing of roadway and pedestrian-scale light fixtures follows a somewhat consistent rhythm on most of the blocks, the placement of the two fixture types relative to one another is poorly coordinated. (see Figure 11). A special decorative light fixture is used on each side of Keyes Street between South 1st Street and South 2nd Street (see Figure 12). Banners do not occur on any of the light fixtures along this segment.





Figure 11 (left): Poor coordination between placement of light fixtures

Figure 12 (right): Decorative pedestrian-scale light fixture

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Street Furniture

Street furniture, such as bicycle racks and benches, occur intermittently between South 10th Street and South 12th Street. The extent of street furniture throughout the remainder of the segment is limited to those associated with bus stops.

The lack of consistency in the buffer function provided by street trees, combined with the frequently occurring utilitarian fences, blank walls, and small surface parking lots that form the direct frontages of the auto-related and auto-oriented uses along the back of sidewalk, negatively impact the quality of the pedestrian realm and pedestrian comfort along this segment.

Segment 4 – Keyes Street and 12th Street to Story Road and Roberts Avenue

Sidewalk Width and Buffers

Sidewalk Width

The sidewalk widths vary significantly along the length of this segment. In the transition zone on Keyes Street between South 12th Street and Senter Road, the width of the sidewalk ranges between 8 and 10 feet. This width reduces to 6 to 8 feet on the stretch of Story Road between Senter Road and Roberts Avenue, which also includes a pinch point on the south side of Story Road where the sidewalk width drops to 4 feet. An exception to the narrow sidewalk conditions along this segment occurs on the southern stretch of Story Road between the entry to Happy Hollow Park & Zoo and Roberts Avenue where the sidewalk width is about 9 to 10 feet. In the locations of tree wells, which range in size between 4 to 5 feet, the clear sidewalk width is reduced to about as low as 4 feet.

The General Plan's Transportation Network Diagram identifies this segment of the Corridor as a "City Connector Street". Table 5 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines Manual.

TABLE 5: COMPARISON OF SIDEWALK ZONE WIDTHS

Sidewalk Zone	Existing Condition (width in feet)	Recommended Dimensions per San Jose Complete Street Guidelines (width in feet)
Through Zone	4' to 5'	5′
Furnishing Zone	4' to 5'	4.5'
Total Width	4' to 10'	10'

Ruffers

Along this segment, street design elements that buffer pedestrians traveling on sidewalks include street trees, low barrier walls, and bike lanes. While the consistent presence of a 5-foot wide bike lane provides some buffer function throughout the segment, additional buffering from rows of trees is only present along portions of the segment where sidewalk widths are greater than 8 feet. A low barrier wall separates pedestrians from adjacent traffic lanes where Story Road crosses Coyote Creek (see *Sidewalk Width & Buffer* map). In light of the posted speed of 40 mph, it is likely desirable to provide buffering beyond that provided by the presence of a 5-foot wide bike lane. Due to the discontinuous presence of rows of street trees along this segment this condition is currently not met.

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Sidewalk-Crossing Driveways

The only driveway along this segment of the corridor occurs on the northern stretch of Story Road at its intersection with Senter Road. The driveway is about 20 feet wide and associated with Coyote Creek Trail and Emergency Vehicle Access to the open space area along and beyond the creek. The sidewalk at the driveway does not appear to be ADA-compliant.

Streetscape Treatments

Street Trees, Parkways, and Medians

Street trees occur consistently along the northern sidewalk of Keyes Street between South 12th Street and Senter Road and some stretches along the south side of Story Road between Senter Road and Roberts Avenue (see *Streetscape – Street Trees* map). The trees are planted in tree wells without tree grates. The medians on Keyes Street are lined with regularly spaced trees planted in rock mulch. At either end medians include a decorative hardscape treatment consisting of cobbles set in concrete (see Figure 13). The median between Remillard Court and Roberts Avenue consist only of the hardscape treatment.



Figure 13: Tree-lined median with decorative hardscape treatment

Lighting

This segment has regularly spaced roadway light fixtures along its entire length, except for the block between South 12th Street and Senter Road, which includes a combination of roadway and pedestrian-scale light fixtures. Only the roadway lights between Remillard Court and Roberts Avenue include banners announcing "Little Saigon" (see Figure 14).

Street Furniture

This segment does not have any street furniture, except for those associated with bus stops.



Figure 14: Banners announcing "Little Saigon" on roadway light fixtures

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The frontage of uses along this segment solely consists of open spaces (Coyote Creek and Trail) and landscaped areas along the edge of Happy Hollow Park & Zoo. This land use condition produces only few "eyes on the street" and therefore may negatively affect pedestrians' sense of security while traveling through this area. Pedestrian comfort is further challenged by sidewalks that are narrow in parts, higher vehicle speeds (posted speed limit is 40 mph), and lighting that is provided only by auto-oriented cobrahead type light fixtures.

Segment 5 – Story Road between Roberts Avenue and Via Ferrari/Olinder Court

Sidewalk Width and Buffers

Sidewalk Width

The sidewalk widths along this segment range between 6 feet to 8 feet on most blocks with the exception of some stretches of Story Road. For instance, the sidewalk along the San Jose Vietnam Town retail area and Story Road Smog Check are as wide as 11 feet. Where tree wells of 3 to 5 feet width occur in the sidewalk, the clear width of the sidewalk is reduced to about as low as 3.5 feet. A gap in the continuity of the sidewalk exists on the south side of Story Road between Mclaughlin Avenue and Via Ferrari where sections of curb exists, but the sidewalk area is unpaved.

The General Plan's Transportation Network Diagram identifies this segment of the Corridor as a "City Connector Street". Table 6 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines Manual.

Sidewalk Zone

Existing Condition (width in feet)

Through Zone

Furnishing Zone

Total Width

Existing Condition (width in feet)

Recommended Dimensions per San Jose
Complete Street Guidelines (width in feet)

5'

4.5'

10'

TABLE 6: COMPARISON OF SIDEWALK ZONE WIDTHS

Buffers

Along this segment, street design elements that buffer pedestrians traveling on sidewalks include street trees and bike lanes. While the presence of a 5-foot wide bike lane provides some buffer function for most of the segment, additional buffering from rows of trees is only present on the stretch between Lucretia Avenue and Clemence Avenue (see *Sidewalk Width & Buffer* map). The stretch between Mclaughlin Avenue and Via Ferrari lacks any buffer. In light of the posted speed of 35 mph, it is likely desirable to provide buffering beyond that provided by the presence of a 5-foot wide bike lane. Due to the absence of rows of street trees along the majority of the segment this condition is currently not met.

Sidewalk-Crossing Driveways

Driveways occur on all blocks along this segment. Their frequency varies between 2 and 8 per block. Some of the driveways, such as the ones providing access to San Jose Vietnam Town, the Walmart Supercenter, and the Grand Century Shopping Mall fall into the quasi-street category. All other driveways do not appear to be ADA-compliant. The width of the driveways along this segment ranges between 25 and 35 feet, with the majority of driveways being around 25 feet wide. A signalized, 40-foot wide quasi-street constitutes the largest of three entrances into the Grand Century Shopping Mall.

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Streetscape Treatments

Street Trees, Parkways, and Medians

Most of the street trees along this segment occur in tree-lined medians. Between Lucretia Avenue and Via Ferrari, the trees in medians are planted in tree wells along with understory landscaping and a decorative pavement that consists of colored and patterned stamped concrete (see Figure 15). Between Roberts Avenue and Lucretia Avenue medians have the same decorative hardscape treatment (of cobbles set in concrete) as west of Roberts Avenue (Segment 4). The presence of street trees in sidewalks is limited to the stretch in front of San Jose Vietnam Town and the corresponding stretch on the south side between Lucretia Avenue and Clemence Avenue. Here, trees are planted in tree wells without tree grates. On all other blocks, except for the one between McLaughlin Avenue and Via Ferrari, the lack of street trees is somewhat mitigated by trees located on private property along the back of the sidewalk (see Figure 16).



Figure 15: Tree-lined median with signature decorative hardscape treatment



Figure 16: Trees in landscaped building setback on private property

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Lighting

Roadway light fixtures occur consistently along all blocks of this segment. Banners announcing "Little Saigon" are present on only one or two of the roadway lights per block. The fixtures are located closer to the back of sidewalk on the northern stretch between Lucretia Avenue and McLaughlin Avenue. In locations where trees are present along this block, this condition requires wheel chair users to alternately meander around light fixture and tree locations (see Figure 17).



Figure 17: Placement of roadway light fixtures along the back of sidewalk requires wheel chair users to meander around light fixtures and tree locations

Street Furniture

Street furniture, such as trash receptacles, newspaper racks, and retail display signs occur intermittently throughout the segment. However, there is no consistent "theme" to the selection and color of the existing street furniture. In addition, there are street furniture associated with bus stops.

Throughout this segment the majority of corridor-adjacent uses face the pedestrian realm with landscaped building setbacks or landscaped buffers along surface parking lots. Only few buildings are built at the back of sidewalk or provide direct access to entries via designated pedestrian walkways. This distance between active uses and the pedestrian realm may negatively affect pedestrians' sense of security while traveling along Story Road because of the reduced degree to which other corridor users provide "eyes on the street". A positive exception to these conditions is the walking environment along the Vietnam Town and Grand Century Shopping Mall frontages where sidewalks include street trees and buildings are connected to buildings via pedestrian walkways.

Segment 6 – Story Road and US 101 Interchange

Sidewalk Width and Buffers

Sidewalk Width

With widths ranging from 4 to 7 feet, the sidewalks along this segment are among the narrowest in the entire Corridor.

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The General Plan's Transportation Network Diagram identifies the stretch between Via Ferrari and US-101 as a "City Connector Street" and the stretch between US-101 and Knox Avenue as a "Main Street". Table 7 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines Manual.

TABLE 7: COMPARISON OF SIDEWALK ZONE WIDTHS

Sidewalk Zone	Existing Condition (width in feet)	Recommended Dimensions per San Jose Complete Street Guidelines (width in feet)
Through Zone	4' to 7'	5′
Furnishing Zone	0'	4.5'
Total Width	4' to 7'	10'

Buffers

Sidewalks along this segment do not have any buffers. In light of the posted speed of 40 mph, it will be important to provide some form of separation between roadway traffic and pedestrians in the future.

Sidewalk-Crossing Driveways

This segment of the corridor has only two driveways: one on each side of Story Road at its intersection with Via Ferrari/Olinder Court. The driveways are about 22 feet and 30 feet wide respectively. They do not appear to be ADA-compliant.

Streetscape Treatments

Street Trees, Parkways, and Medians

Most of the street trees along this segment occur in tree-lined medians. The trees in medians are planted in tree wells along with understory landscaping and a decorative pavement that consists of colored and patterned stamped concrete. The US-101 overpass has a concrete median without trees and decorative paving. A consistent row of trees occurs along the back of sidewalk on Story Road between US-101 and Knox Avenue. On the south side of the Story Road/Knox Avenue intersection the area between Story Road and what becomes Terilyn Avenue creates an area next to the sidewalk that includes a grove of trees and decorative hardscape pavement, that is akin to that in the medians (see Figure 18).



Figure 18: Expanded sidewalk with grove of trees and decorative pavement at Knox Avenue

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Lighting

The spacing of roadway light fixtures along this segment is the most inconsistent compared to all other corridor segments. Roadway lights are at times spaced far apart and likely provide only inconsistent light for the pedestrian environment (see Figure 19). The roadway light fixture spacing ranges from 180 feet to 800 feet, in contrast to a range of 75 feet to 200 feet in other locations across the corridor. None of the roadway lights have banners.



Figure 19: Roadway light fixtures spaced far apart likely provide insufficient light for pedestrians to feel safe

Street Furniture

There is no street furniture along this segment.

The frontage of uses along this segment solely consists of open space (Emma Prusch Farm Park) and landscaping along the edges of the Story Road/U.S 101 interchange. This land use condition produces only few "eyes on the street" and therefore may negatively affect pedestrians' sense of security while traveling through this area. Pedestrian comfort is further challenged by sidewalks that are narrow, high observed vehicle speeds, and lighting that is provided only by auto-oriented cobra-head type light fixtures as well as high noise levels.

Segment 7 – Story Road between Knox Avenue and Bal Harbor Way

Sidewalk Width and Buffers

Sidewalk Width

The width of sidewalks along this segment is very consistent and ranges between 10 and 13 feet. The exception to this is the northeastern corner at the intersection of Story Road and South King Road, where the sidewalk width is 8 feet. However, here paved areas on private property integrate with the existing sidewalk and allow for public use (see Figure 20). Where tree wells ranging in width between 4 and 5 feet occur in the sidewalk, the clear width of the sidewalk is reduced to between 5 and 8 feet. The parcel on the southeast corner of the intersection of Story Road and South King Road also has an expanded sidewalk on private property. Here the clear sidewalk width is increased to as high as 12 feet. The stretch of Story Road fronting onto Emma Prusch Farm Park includes a park trail that runs parallel to the sidewalk.

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Figure 20: Paved area on private property integrates with existing sidewalk and allows for direct building access

The General Plan's Transportation Network Diagram identifies this segment of the Corridor as a "Main Street". Table 8 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines Manual.

TABLE 8: COMPARISON OF SIDEWALK ZONE WIDTHS

Sidewalk Zone	Existing Condition (width in feet)	Recommended Dimensions per San Jose Complete Street Guidelines (width in feet)
Through Zone	5' to 8'	5′
Furnishing Zone	4' to 5'	4.5'
Total Width	10' to 13'	10'

Buffers

Along this segment, street trees are the only design element that buffers pedestrians traveling on sidewalks from roadway traffic. They are consistently present along the entire length of the segment and create a basic sense of comfort and safety for pedestrians walking along this segment (see *Sidewalk Width & Buffer* map).

Sidewalk-Crossing Driveways

Driveways occur on all blocks of this segment. Their frequency varies between 1 and 4 per block. All of the driveways along this segment appear to be ADA-compliant, either by providing a 4-foot clear path of travel that does not exceed 2% cross slope or through a configuration as a quasi-street. The width of the driveways along this segment ranges between 25 feet to 35 feet. The signalized entry to the Plaza San Jose (Target) measures around 48 feet and is configured as a quasi-street.

Streetscape Treatments

Street Trees, Parkways, and Medians

Along most of the sidewalks in this segment, street trees occur as consistent rows. Trees are planted in tree wells without tree grates. The landscaped appearance of the streetscape is, supplemented by trees and landscaping located on private property. The stretch of Story Road along Emma Prusch Farm Park benefits from the amenities located along the edge of the park, which include landscaping and a

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pedestrian trail (see Figure 21). The medians are planted with tall palm trees in landscaped tree wells and the same decorative colored and patterned stamped concrete pavement that is used in adjacent segments of Story Road. A median with only the decorative pavement occurs between the driveway at Target and McCreery Avenue.



Figure 21: Sidewalk and trail along frontage of Emma Prusch Farm Park

Lighting

Roadway light fixtures occur consistently along all blocks of this segment, with the exception of the stretch along Emma Prusch Farm Park, which includes only one roadway light at either end on the block. Banners announcing "Story Road" are somewhat inconsistently attached to only a few roadway lights per block (see Figure 22). There are no pedestrian light fixtures along this stretch.

Street Furniture

Street furniture, such as trash receptacles, newspaper racks, and retail display signs occur intermittently throughout the segment. However, there is no consistent "theme" to the selection and color of the existing street furniture. In addition, there are street furniture associated with bus stops.

Although sidewalks throughout this segment include consistently include street trees that provide some level of buffering, pedestrian comfort is still challenged by the number of travel lanes, higher observed vehicle speeds, and the significant level of noise from the high volume of vehicles that travel through the area as well as lighting that is provided only by auto-oriented cobra-head type light fixtures.



Figure 22: Banners announcing "Story Road" on roadway light fixtures

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Segment 8 - Story Road between Bal Harbor Way and Capitol Expressway

Sidewalk Width and Buffers

Sidewalk Width

The width of sidewalks is very consistent along the length of this segment and ranges between 8.5 and 12 feet. Narrower sidewalks between 6.5 and 8 feet in width exist along the parcel on the north side of Story Road facing Adrian Way and the parcel on the southwest corner of the intersection of Story Road and Capitol Expressway. Both parcels have auto-oriented uses. Where tree wells and/or landscaped parkways ranging between 3 to 8 feet in width occur in the sidewalk, the clear sidewalk width is reduced to as low as 3.5 feet.

The General Plan's Transportation Network Diagram identifies this segment of the Corridor as a "Main Street". Table 9 provides a comparison of the existing sidewalk zone dimensions to those recommended in the San Jose Complete Street Guidelines Manual.

TABLE 9: COMPARISON OF SIDEWALK ZONE WIDTHS

Sidewalk Zone	Existing Condition (width in feet)	Recommended Dimensions per San Jose Complete Street Guidelines (width in feet)
Through Zone	3.5' to 5'	5′
Furnishing Zone	3' to 8'	4.5'
Total Width	8.5' to 12'	10'

Buffers

Along this segment, street design elements that buffer pedestrians traveling on sidewalks include on-street parking, street trees, and landscaped parkways. Rows of street trees and parkways are consistently present along the entire length of the segment and create a basic sense of comfort and safety for pedestrians walking along this segment. Additional buffering from on-street parking is provided along some stretches of the segment (see *Sidewalk Width & Buffer* map). In light of the posted speed of 35 mph, additional buffering may be desirable along stretches without on-street parking.

Sidewalk-Crossing Driveways

With exception of the northern stretch between McCreery Avenue and Sunset Avenue, driveways occur on all blocks along this segment. Their frequency varies between 1 and 23 per block (see *Driveways* map). Most of the driveways associated with residential parcels appear to be ADA-compliant. Their width ranges between 12 and 16 feet. On the other hand, the driveways associated with commercial and other land uses do not appear to be ADA-compliant. Their width varies between 12 and 36 feet, with wider driveways typically being associated with auto-oriented uses.

Streetscape Treatments

Street Trees, Parkways, and Medians

Street trees along this segment form consistent rows of street trees along Story Road. Trees occur in both the segment's sidewalks and medians, with exception of the block between Adrian Way and Jackson Avenue, which only has trees along the sidewalk. The median in this location only has a decorative pavement treatment but no trees. All other medians have trees that are planted in landscaped tree wells and the same decorative colored and patterned stamped concrete pavement that is used in adjacent

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segments of Story Road. Along the sidewalk, street trees occur with a regular spacing except where driveways at parcels associated with auto-oriented use include wide driveways. Trees along this segment are planted in tree wells without tree grate or in a landscaped parkway located between the curb and the paved portion of the sidewalk. The landscaped parkways occur on the north side of Story Road between McCreery Avenue and Sunset Avenue; and Jackson Avenue and Galahad Avenue and on the south side between Bal Harbor Way and Leeward Drive (see Figure 23).



Figure 23: Trees planted in landscaped parkways

Lighting

Regularly spaced roadway light fixtures occur consistently along all blocks of this segment. Along the north side of Story Road between South Sunset Avenue and Diana Avenue, some of the roadway lights are located closer to the back of sidewalk. In locations where trees are present along this stretch, this condition requires wheel chair users to alternately meander around light fixture and tree locations (see Figure 24). Banners announcing "Story Road" are somewhat inconsistently attached to only a few roadway lights per block.

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Figure 24: Placement of roadway light fixtures along the back of sidewalk requires wheel chair users to meander around light fixtures and tree locations

Street Furniture

Street furniture, such as trash receptacles, newspaper racks, and retail display signs occur intermittently throughout the segment. However, there is no consistent "theme" to the selection and color of the existing street furniture. In addition, there are street furniture associated with bus stops.

Although sidewalks throughout this segment consistently include street trees or landscaped, tree-lined parkways that provide some level of buffering from moving traffic, pedestrian comfort is still challenged by the number of travel lanes, higher observed vehicle speeds, and the significant level of noise from the high volume of vehicles that travel through the area as well as lighting that is provided only by auto-oriented cobra-head type light fixtures.

Potential Streetscape and Pedestrian Improvements

Based on the review of existing conditions and the initial findings presented above, the following improvements should be taken into consideration during the concept development process of the Story-Keyes Complete Streets Study. These are only initial recommendations and likely will be supplemented and modified in the context of assessments related to bicycle, vehicle, and transit needs.

Sidewalk Width

- Eliminate gaps in the continuity of sidewalks in locations where such gaps have been identified.
- Expand sidewalk widths based on pedestrian volumes related to both existing and planned land uses. Refer to the San Jose Draft Complete Street Design Guidelines for recommended sidewalk widths per street types. Accommodate added sidewalk width within the existing public right-of-way or, where conditions are constrained, through sidewalk easements on private property. This will require close coordination with property owners/future developers and potential incentives as redevelopment of adjacent parcels occurs over time.

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Expand clear sidewalk widths along sections of sidewalk that do not meet State ADA requirements (4-foot clear)⁶

• Consider curb extensions and the elimination of channelized turns where feasible to expand the sidewalk width at intersections where pedestrian volumes are higher and/or other functions, such as bicycle parking or seating need to be accommodated on the sidewalk.

Buffers

- During the alternatives development for complete streets improvements, determine the overall need for the buffering of pedestrians on sidewalks based on the speed and volume of traffic. Consider all elements with buffer function (parking, bicycle lanes, landscape buffers) in determining the minimum width and character of buffers located in the sidewalk.
- Replant existing but currently empty tree wells with new trees to improve buffering conditions along a given sidewalk.
- Where unplanted parkways are present, add drought-tolerant groundcover landscaping, green infrastructure, and/or trees to improve buffering.
- Consider including new or expanding existing landscape based buffering elements (i.e. parkways and street trees in sidewalks) for locations that are poorly buffered.
- Consider the incorporation of "parklets" into the parking lane along segments of the Corridor with main street-like character.

Driveways

- Consider reducing the number of driveways that serve the same property to the extent feasible.
- Where possible, eliminate driveways on the Corridor by replacing them with driveways on side streets where feasible.
- Consider consolidating driveways that access a contiguous parking area that serves multiple properties to the extent feasible.
- Reduce the width of driveways to the minimum needed to accommodate the vehicles that use the driveway for access.
- Modify driveways that create sidewalk conditions that are inconsistent with State and Federal ADA requirements to the extent feasible.

Streetscape General

 Consider establishing clearly defined streetscape themes for different parts of the Corridor to enhance neighborhood and district identity. Streetscape theme may include the use of segment or district-specific light fixtures, street trees, landscaping, paving, banners, trash receptacles and other street furnishings.

Streetscape - Street Trees

- Replace dead trees and replant trees in empty tree wells (see *Streetscape Trees and Median Paving* map).
- Increase the number of street trees along blocks with inconsistent or wide spacing of trees.
- Introduce new rows of trees where buffering with vertical elements is needed (also see Buffers above) and where trees are a desirable streetscape theme element.

⁶ Locations identified in this memorandum as potentially not meeting the 4-foot requirement will be field verified during the Walk Audit.

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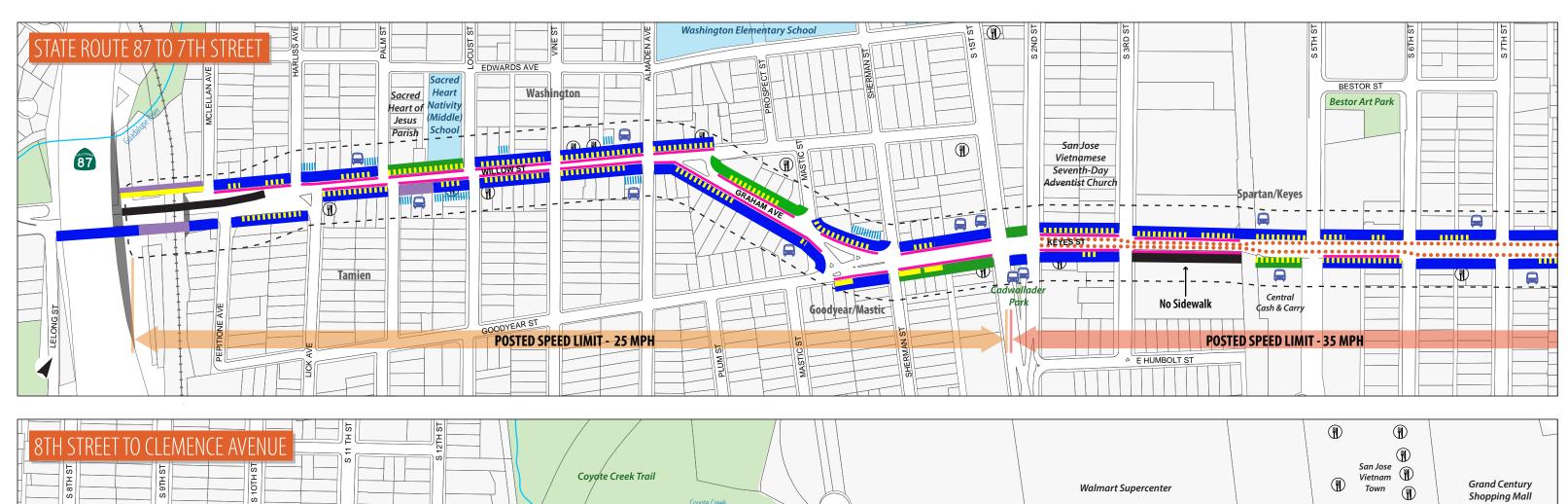
- Consider adding tree grates in areas with constrained sidewalks but high pedestrian activity in order to increase the clear sidewalk width.
- Where buffering functions needs to be boosted in less urban locations (away from segments with "Main Street" function), consider linking existing tree wells to create longer parkways that can increase the buffering effect of landscape treatments and/or double as green infrastructure.
- Incorporate sidewalk areas gained from eliminating/consolidating driveways or channelized right turns to accommodate additional street trees and landscaped parkways as appropriate.

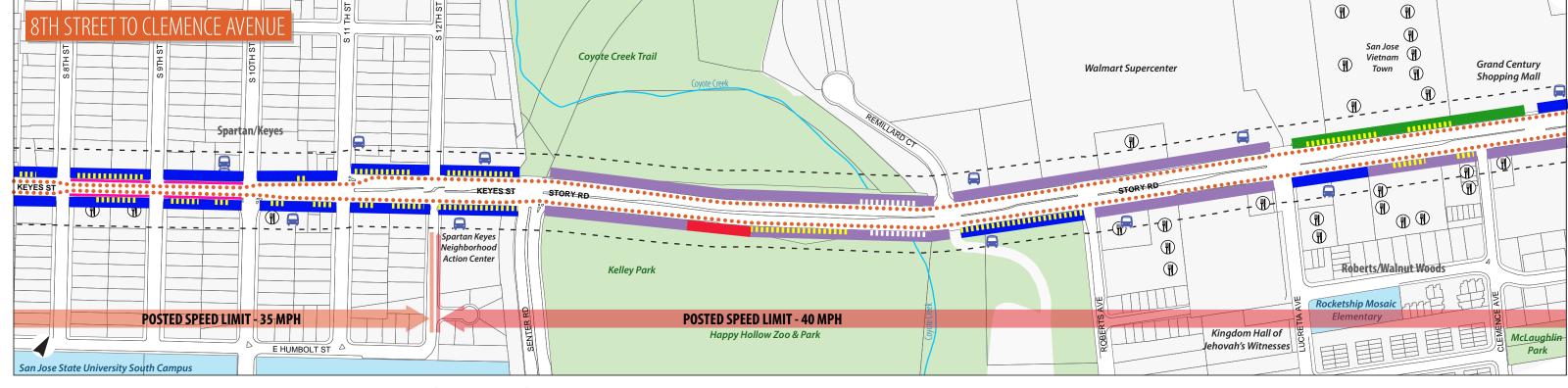
Streetscape - Lighting

- Add new or supplement existing pedestrian-scale light fixtures along sections of the corridor categorized or functioning as "Main Street" and/or in locations where high number of pedestrians are expected to walk due to the presence of a key destination, as well as along routes used for access to transit.
- Specifically improve the overall lighting conditions (roadway and pedestrians) along Segment 6 (US-101 +/- 2 blocks) and block fronting Emma Prusch Farm Park.
- Consider relocating roadway light fixtures that due to their location toward the back of sidewalk force a meandering path of travel for wheelchair users.

Streetscape - Street Furniture

- Consider the introduction of neighborhood or district themed street furnishings where this is supported by the neighborhood and/or business association.
- Coordinate the placement of street furnishings with the need for bicycle parking along the Corridor, especially near key pedestrian/bike traffic generators.
- Encourage coordinating the existing and future public art on utility boxes with the streetscape theme selected for the neighborhood or district.





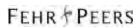
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SIDEWALK & BUFFER

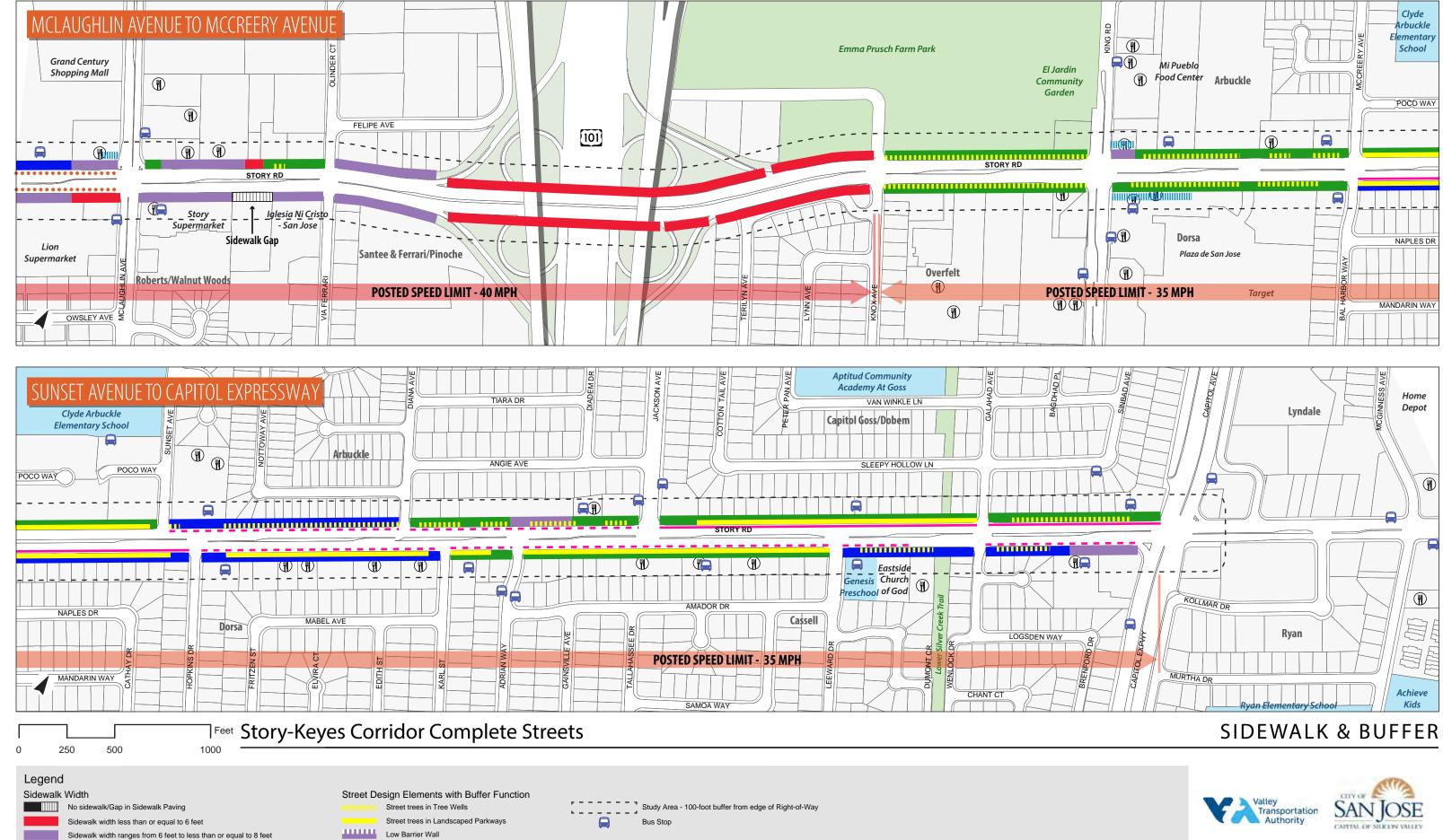














2/10/2017





Sidewalk width ranges from 6 feet to less than or equal to 8 feet Sidewalk width ranges from 8 feet to less than or equal to 10 feet

Area where additional sidewalk surface extends on to adjacent private properties

Sidewalk width is greater than 10 feet





Legend

x 'x' number of driveways per block

y' number of driveways not compliant with ADA requirements*

Study Area - 100-foot buffer from edge of Right-of-Way

Bus Stop

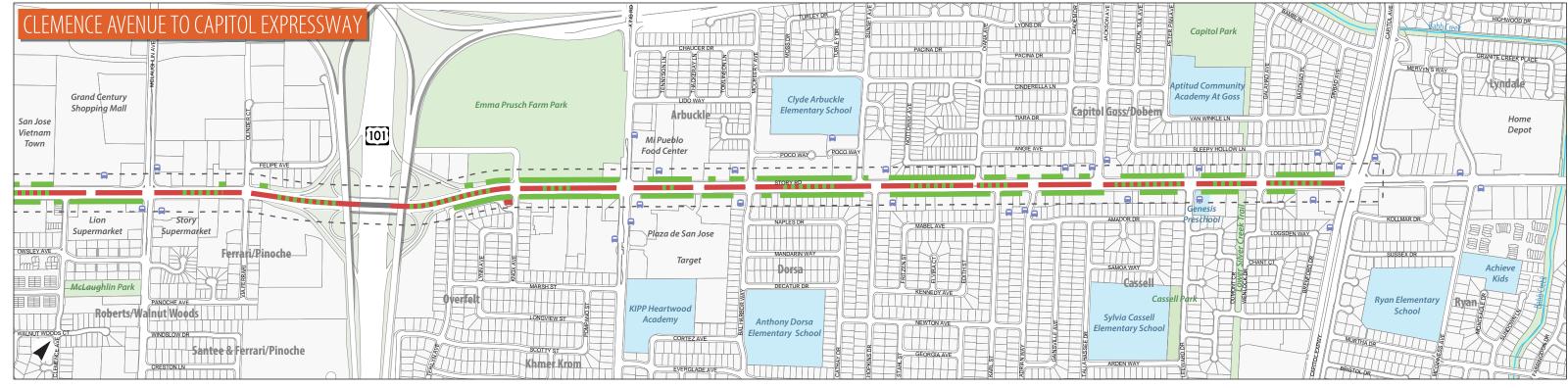






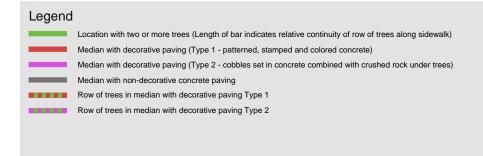






Story-Keyes Corridor Complete Streets

STREETSCAPE - TREES AND MEDIAN PAVING



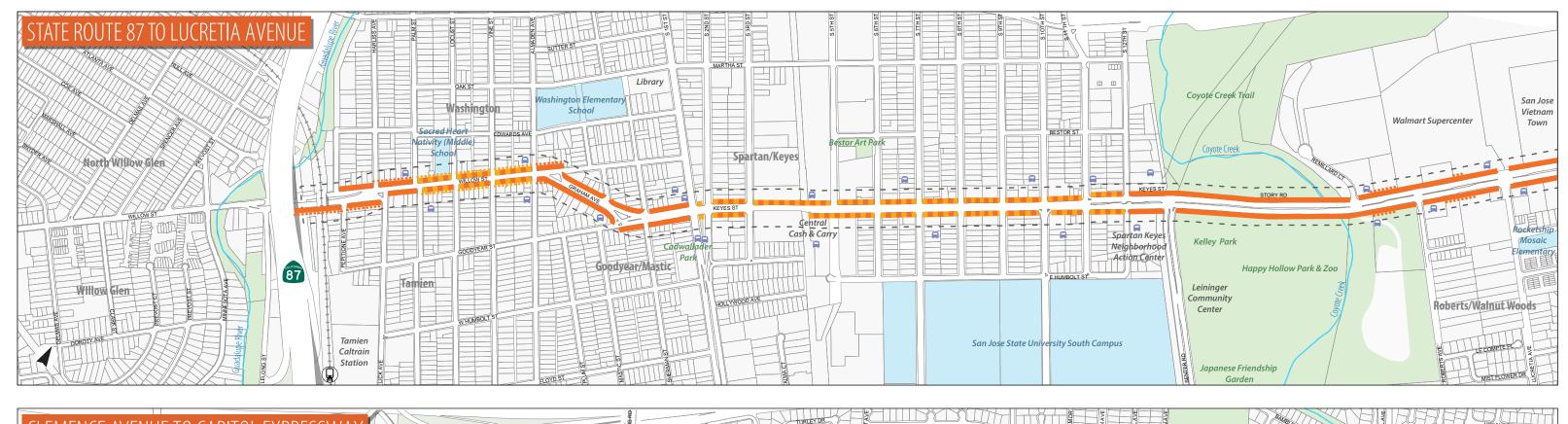














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STREETSCAPE - LIGHTING







